ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

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POPULATION OF THE PHILIPPINES



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PREFACE

As part of the work programme of the Economic and Social Commission for Asia and the Pacific (ESCAP), the secretariat's Population and Social Affairs Division has undertaken the preparation and publication of a series of country monographs on the population situation of each interested country in the region. Each monograph is being prepared in close co-operation with country experts and with the financial support of the United Nations Fund for Population Activities (UNFPA). The present monograph on the Philippines is the fifth in the series. The first on Hong Kong, the second on the Republic of Korea, the third on Thailand, and the fourth on Sri Lanka have been published. Work is in progress on similar studies for Japan, Nepal, Malaysia, Bangladesh, India, and Papua New Guinea. Monographs on other countries will be prepared as the resources of the secretariat permit.

The purpose of the monographs is to provide the countries of the ESCAP region with an understanding of existing population problems as well as with a scientific basis for decision-making, policy formulation and determination of development goals and targets. In addition to the analysis of trends in fertility, mortality, migration, and over-all population growth, the scope of the monograph includes an examination of the relationship of population growth and development factors, particularly education, health, housing, food and nutrition, manpower and employment. The need to consider population policies and programmes as an integral part of socio-economic development planning is amplified by this analysis.

The present monograph was prepared in close collaboration with the University of the Philippines; the National Census and Statistics Office, National Economic and Development Authority; the Food and Nutrition Research Institute, National Science Development Board; and the Department of Education and Culture. The country experts collaborating in this study were:

Dr. (Miss) Mercedes B. Concepcion	Dean, Population Institute, University of the Philippines
Dr. Peter C Smith	Visiting Lecturer and Research Associate, Population Institute
Dr. Ernesto M. Pernia	Research Associate, Population Institute
Mrs. Zelda C. Zablan	Assistant Professor, Population Institute
Miss Imelda Zosa	Assistant Professor, Population Institute
Miss Dionisia R. dela Paz	Instructor, Population Institute
Mr. Eliseo A. De Guzman	Instructor, Population Institute
Miss Aurora E. Perez	Research Associate, Population Institute
Dr. (Miss) Irene R. Cortes	Dean, College of Law, Unifersity of the Philippines
Mr. Carmelo V. Sison	Assistant Professor, College of Law, University of the Philippines
Miss Myrna Feliciano	Librarian, College of Law, University of the Philippines
Dr. Rodolfo A. Bulatao	Associate Professor, Department of Sociology, College of Arts and Sciences, University of the Philippines
Dr. Telesforo W. Luna	Chairman, Department of Geography, College of Arts and Sciences, University of the Philippines
Dr. Tito A. Mijares	Executive Director, National Census and Statistics Office

Mr. Francisco V. Nazaret	Supervising Census Statistical Co-ordinator, National Census and Statistics Office
Dr. Rene R. Calado	Chief, Project Development and Evaluation Division, Planning Service, Department of Education and Culture
Dr. Carmen L. Intengan	Director, Food and Nutrition Research Institute, National Science Development Board

The assistance of these experts and the co-operation of the Government of the Philippines and of the Population Institute, University of the Philippines, are gratefully acknowledged. Dr. Mercedes B. Concepcion rendered valuable assistance by acting as country co-ordinator for the monograph. The assistance of the Government of France in providing ESCAP with the expert services of Mr. Alain Lery, on a non-reimbursable loan basis, is gratefully acknowledged.

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INTRODUCTION

A. LOCATION AND AREA

The Republic of the Philippines lies 600 miles off the southeast coast of Asia and 15 degrees north of the equator. The Pacific Ocean extends along its eastern seaboard, while the South China Sea borders its western shores.

The country is composed of 7,107 islands spread out over a distance of 1,000 miles from north to south and 625 miles from east to west. It has an irregular coastline that stretches for 10,850 statute miles, twice as long as that of the United States of America. Only about 800 of the islands are inhabited, while the rest consist of rock or coral formations. Of the total number of islands, 466 have an area of a little more than a square mile each.

The total land area of about 116,000 square miles (300,000 km^2), scattered and discontinuous, is heavily concentrated in the two largest islands, Luzon (40,814 square miles or 105,708 km^2) in the north and Mindanao (36,906 square miles or 92,587 km^2) in the far south. Lying between these two is a group of smaller islands known as the Visayan Islands. Only 11 of the main islands of the country are as large as 1,000 square miles each. Together, they comprise nine tenths of the total land area. The population density is some 140 persons per square kilometre.

The Philippines has 17.2 million hectares of cultivable land, a little over half of the total land area. However, only 41 per cent of these 17.2 million hectares is under cultivation, with the remaining area still largely unexploited.

B. PHYSICAL FEATURES

Viewed from the air, the topography of the Philippines is a varied one. By and large, the land surface is criss-crossed with mountains and drained by small river systems. Volcanic in origin, the rocky ranges traverse the archipelago and form natural barriers. There are three large ranges in Luzon which protect the central plains: the Cordilleras in the north; the Sierra Madre or Pacific Coast range, which is the longest continuous range in the Philippines; and the eastern ranges which culminate in the Mayon Volcano in the province of Albay and Bulusan Volcano in Sorsogon. The island of Mindanao has four distinct ranges: the Surigao range which follows the Pacific coastal contours; the Butuan range extending to the south; the central-western ranges, of which Mount Apo is the highest peak (9,600 ft. or 2,926 metres); and the western range.

The extensive but small river systems are mostly delineated by the mountain ranges. The fluvial system of Luzon is represented by the Rio Grande de Cagayan and its tributaries, the Agno Grande, the Abra River system and the Rio Grande de Pampanga. Mindanao has the largest river system in the country. The Rio Grande de Mindanao drains the central basin of Mindanao and receives the waters of two lakes. The Agusan River, second to the Rio Grande, drains the basin of Surigao.

Volcanoes are found in all three geographic regions. At least 10 of these volcanoes are still active, with the Mayon Volcano in Albay province reputed to be the most active of them all. In the past decade, Taal Volcano in the province of Batangas formed new craters during its various eruptions.

The Philippines lies within the Pacific seismic belt and has consequently experienced severe earthquakes. One of the most destructive hit the island of Mindanao in August 1976, causing heavy damage to property. A subsequent tidal wave swept thousands of inhabitants into the sea. Since then, earthquakes of up to intensity 7 have been felt in northeast Luzon, causing heavy property losses.

The irregular coastline makes for numerous harbours and straits. Manila Bay, one of the finest natural harbours in the world, has an area of over 700 square miles with a circumference of 120 miles. Many of the islands have natural harbours that can accommodate large sea-going vessels and in stormy weather have been the refuge of ships in distress.

C. CLIMATE AND RAINFALL

The climate is generally pleasant throughout the year with only two pronounced seasons: the rainy season, from June to October, and the dry season, from November to May. The warmest months are April and May; the coolest are December, January and February. The mean temperature is around 80°F, or 27°C.

During the rainy season, some rainfalls every day. However, when typhoons bring strong winds

and heavy rains, towns and cities become flooded, causing heavy damage to crops and property. The city of Manila has an average annual rainfall of about 81 inches (2,060 mm). Cebu, in the Visayas, reports an average 48 inches (1,220 mm), while Laoag, in the northwest, averages 66 inches (1,680 mm). By comparison, Surigao, on the island of Mindanao, gets 128 inches yearly (3,250 mm).

Differences in temperature are also caused by differences in elevation. Manila, which lies almost at sea level, has an average temperature of 73°F (23°C). Appari, the northernmost town of Luzon, averages 10 degrees less (17°C), while Baguio, which is situated 5,000 feet above sea level, experiences a mean temperature of 64°F (18°C). Jolo, off the southern coast of Mindanao, maintains a temperature of 68°F (20°C) throughout the year.

D. HISTORICAL SKETCH[1]

The earliest known site of human civilization in the Philippine archipelago is in the Cagayan Valley, in northeast Luzon. Stone tools which ancient men possibly used for hunting big game have been found in close association with bones of extinct animals. The oldest of the people of the Philippines, the Negritos, are believed to have come into the country from Borneo, Sumatra and Malaya about 30,000 years ago. Their successive waves of migration made Malays the dominant group, either assimilating the original inhabitants or driving them back into the mountainous interior. From 1,500 to 200 B.C., migrations in relatively small numbers came from south China and Indo-China.

Filipino contacts with the outside world, particularly with the neighbouring countries, appear to have intensified towards the turn of the millenium A.D. with the development of relatively efficient maritime transportation. Traders from other parts of Asia, particularly India and the Middle East, came to transact business with local entrepreneurs. In turn, local merchants followed the maritime trade routes of the foreigners for a similar purpose. That led to the intensification of inter-island contacts and commerce and the transformation of small villages of slash-and-burn agriculturists into commercial centres with a big population of traders.

One of the earliest groups of foreigners to introduce radical changes to the ways of life of Filipinos during the fourteenth and fifteenth centuries was the Arabs. Initially, they came to trade but later decided to stay and to establish a religio-political foothold in the archipelago. The Filipinos' reaction to the introduction of the Islamic culture was one of accommodation. Native religious beliefs were fused with the organized doctrine of Islam. Local practices were observed side by side with the commandments of Allah. The sultanate was superimposed on the existing social organization. Socio-political units, while maintaining their independence, responded favourably to the sultan's call for military alliance, thus providing the basis for a centralized government.

Attempts at westernizing Filipinos began in the sixteenth century when European mercantile expansion in Asia brought the Spanish to the Philippines. The Portuguese explorer, Ferdinand Magellan, in the service of the King of Spain, landed on the island of Cebu on 16 March 1521. He was able to gain the acceptance of the local leaders but in the following month was killed by the natives during an intertribal war. Four more Spanish expeditions which followed in 1525, 1526, 1527, and 1542 also ended in failure. In 1565, Miguel Lopez de Legaspi arrived from Mexico under royal orders to establish a permanent settlement in the Philippines. Legaspi established his headquarters first in Cebu, but in view of food shortages and constant harrassment by Portuguese warships later moved to Manila, a Moslem outpost, which he established as a permanent centre for his government in 1572.

For the next century, Spain undertook to bring the native settlements under its rule by the cross and the sword. Only the Moslem Filipinos, or *Moros*, as the Spaniards referred to them, held fast and engaged in skirmishes against the Christian settlements and armed outposts. It was only sometime during the nineteenth century that the Moslems lost out to superior force.

> "Three objectives encouraged the Spaniards to colonize the Philippines. One was to secure a share in the lucrative spice trade, which theretofore had been a Portuguese monopoly. Another was to establish direct contacts with China and Japan, which might pave the way for their conversion to Christianity. And the third goal was to Christianize the inhabitants of the

1 For detailed discussion, see Teodoro A. Agoncillo and Milagros C. Guerrero, *History of the Filipino People* (Quezon City, R.P. Garcia Publishing Company, 1973); and Onofre D. Corpuz, *The Philippines* (Englewood Cliffs, New Jersey, Prentice Hall Inc., 1965).

archipelago. Of the three objectives, only the third proved realizable. The intervention of the Dutch ultimately dashed to pieces Spanish dreams in the Spice Islands, and the 'spiritual conquest' of Japan and China was to prove a chimera".[2]

The Philippines was under the Spanish crown for more than three centuries and Spanish domination ended with the Filipino Revolution in 1896. The Filipino revolutionists defeated the Spaniards and organized the Republic of the Philippines in 1897. Meanwhile, the United States declared war with Spain and in May 1898 a United States force entered Manila Bay and destroyed the Spanish navy. The Filipinos helped the Americans in the fight against a common enemy. But Filipino-American collaboration soon ended and the Filipinos fought the Americans who easily conquered them by superior force of arms. In the end, the Filipinos found themselves only with a change of sovereignty – from the Spaniards to the Americans.

By the Treaty of Paris, Spain ceded the Philippines to the United States in December 1898. The Filipinos accepted their fate with resignation but they immediately conducted a peaceful campaign for independence in order to gain in peace what they had lost in war. In preparation for their eventual independence, the Congress of the United States authorized the organization of a commonwealth form of government by the Filipinos in 1935. The reins of government, with the exception of currency and foreign relations, were in Filipino hands.

The 10-year period preparatory to independence, known as the commonwealth regime, was disrupted when the Japanese attacked Pearl Harbour in December 1941. The United States declared war against Japan and after much resistance the Philippines was occupied by the Japanese. For three years civil liberties were suppressed by the occupation forces, the economy was geared to the demands of the Japanese war effort, the educational system was revamped to reorient Filipino thinking along Japanese lines, and political life was limited to the Japanese-sponsored republic. In August 1945, the Japanese surrendered to the American forces and the commonwealth government was re-established.

On 4 July 1946, Philippine independence was proclaimed and the formal establishment was accompanied by expressions of friendship and goodwill between the Philippines and the United States. The United States gave material and financial aid to the country in return for parity rights to be given to Americans in the exploitation of the country's natural resources.

Social conditions emerging after independence in 1946 led to mass exploitation by Filipinos whose values and tastes were essentially those of the colonial administrators. Graft and corruption became rampant. Chaos and anarchy reigned. Owing to this crisis in society, President Ferdinand E. Marcos issued Proclamation 1081 on 21 September 1972 which placed the country under martial law. This act was in response to the challenge of subversion and rebellion which endangered the stability of the Philippines society. The democratic revolution was based on the belief that revolution is by necessity "an instrument of individual and social change, and its end is the advancement of human freedom". The democratic revolution generated a series of radical changes in the political, social, cultural economic and religious life of the people. A new constitution was adopted in 1973 and in 1976 the Interim Batasan Bayan, a people's legislative council, was established.

Recent years have seen an easing of relations with the communist countries of the region, particularly China, which the Government of the Philippines recognized in June 1975, and Viet Nam, which improved bilateral contacts with several Association of South-East Asian Nations (ASEAN) countries in the course of 1977. Diplomatic relations were also established with the Union of Soviet Socialist Republics in July 1976.

2 John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses, 1565-1700* (Madison, Milwaukee and London, University of Wisconsin Press, 1967), p. 7.

E. THE PEOPLE

In general, the native inhabitants of the Philippines are homogeneous physically. With the exception of the dwarf blacks popularly termed Negritos, the natives belong to Mongoloid racial stock. Culturally, however, distinct ethnographic groups, differing in behaviour, customs and usages, may be recognized. Some 55 different ethnographic groups, speaking a total of more than 90 languages and dialects (with subdialects running up the total to about 135), have been identified.

The various population types inhabiting the Philippines can be divided into three categories: (a) the general lowland Christian population, who constitute about 90 per cent of the total population; (b) the Moslem and pagan peoples, or "non-Christians", who comprise about 9 per cent of the total population; and (c) the alien ethnic groups composing the remaining 1 per cent of the population, the largest single group being the Chinese.[4]

The lowland Christian majority consists of eight groups, each having its own language and a known geographical distribution. The largest of these groups is the Cebuano (Sugbuhanon) who, together with the Samar-Leyte (Waray-Waray) and the Hiligaynon (Ilongo), constitute the Visayan unit, noted for their intrepid seafaring ways and their great love of the sea. The second largest group among the Christians is the Tagalogs, living largely in central Luzon. The third largest group is the Ilocanos, who originally occupied the northwestern coast of Luzon but have "partially penetrated into the mountain regions and have settled along the eastern and southern sides of the northern mountains".[5] The Ilocanos have a reputation for being energetic workers, good fighters and more future-oriented than any other class of Filipino. The other three Christian groups are the Bicol, Pampango and the Pangasinan, all located in different parts of Luzon. By and large, the lowland Christian groups live in rural areas growing rice, coconuts, tobacco, or sugar-cane.

The largest non-Christian ethnic group in the Philippines is made up of the Moslems who are mostly concentrated in the Sulu archipelago and in western Mindanao. There are nine groups among these Moslems – Maguindanao, Maranao, Tausug, Samal, Yakan, Jama Mapun, Sangil, Melebuganon and Bajao – each group being distinguished by its own language. Before their conversion to Islam, these groups had their own cultural differences which are still maintained today.

Next to the Moslems, the Igorot or mountaineer groups were the largest block of indigenous population to resist attempts at Hispanization and Christianization. The Igorots are divided into seven subgroups: Apayao, Tinggian, Kalinga, Bontoc, Ifugao, Kankanai and Ibaloi.

> "Neither the all-encompassing term Igorot nor the major group names denotes cultural homogeneity. Cultural differences gradually increase with distance from any given point, and ethnic identity has traditionally been based on a home territory as the centre of kinship and marriage ties and co-operation in war and ritual. A secondary extension of identity has coincided with the limits of a known mother tongue. At the same time the absence of any abrupt cultural break supports the hypothesis that the mountain groups represent a population with much common cultural foundation" [6]

> "The beginning and the continuance of Chinese immigration which has substantially altered the ethnic composition of the Philippines can be ascribed to the galleon trade between Manila and Acapulco. So large was the Chinese colony that in the early 1580s it was assigned a separate quarter, the Parian, located within range of the guns of Manila's fortress. The Parian, meaning market place in Chinese, became the nerve centre of the capital's commercial life. In its colourful bazaars could be purchased all the goods and products of East and West. The Chinese soon acquired a virtual monopoly of the retail business. They dominated the craft trades, and their agricultural skills eventually did much to increase productivity."[7]

An important feature of Philippine culture is the diversity of languages. No single language is the mother tongue of more than a fourth of the popula-

4 Marcelo Tangco, "The Christian peoples of the Philippines", *Natural and Applied Science Bulletin*, vol. XI, No. 1 (January-March 1951), p. 23.

5 Frederic H. Chaffee and others, *Area Handbook for the Philippines* (Washington, DC, Foreign Area Studies, The American University, 1969), p. 50.

6 *Ibid.*, p. 59.

7 John Leddy Phelan, *op. cit.*, p. 11.

tion. However, it will be possible to divide the population into three broad linguistic groups: (a) the Northern Luzon group, where Ilocano is the dominant language but includes Igorot languages, such as Ifugao, Bontoc and Kalinga; (b) the central Philippine group which includes Tagalog, Cebuano, Hiligaynon, Samar-Leyte, Bicol, and other less important languages in Southern Luzon, the Visayan Islands and most of the Moslem languages; (c) the Southern Mindanao group consisting of Tiruray, Bilaan and Tagabili. Particularly within each of the major subgroups, the languages are similar enough to permit speakers to communicate after minimal contact. According to the 1970 Census of Population and Housing,[8] the two principal languages in the country are Tagalog, spoken by 24.5 per cent of the population, and Cebuano, spoken by 24.2 per cent, while Iloco is spoken by 11.3 per cent, Hiligaynon by 10.2 per cent, and Bicol by 6.8 per cent of the population.

With a view to developing national unity, the Government has promoted the dissemination of a form of Tagalog called Pilipino as the national language. The 1970 census showed that about 55 per cent of the Philippine people were able to speak this national language.

Among the non-native languages, English is by far the most important. Though only about 35,000 Filipinos specified English as their mother tongue in 1970, as many as 16.4 million or about 45 per cent of the total population were able to speak English. According to the 1970 census, only 3.6 per cent of the people were able to speak Spanish. As a mother tongue, Chinese is the most widely used foreign language in the Philippines with about 80,000 persons speaking this language in 1970. But, unlike English and Spanish, it has no function as a second language.

F. ADMINISTRATIVE SYSTEM

Prior to the declaration of martial law in 1972, the Philippines was a republic of the presidential type. Its Constitution, ratified by the people in 1935, was founded upon certain basic principles: full rights for the people, social justice, government by laws, the separation of legislative, executive and judicial powers, and a general system of checks and balances.

The President and Vice President, elected every four years, were the highest representatives of the executive branch. Legislative power was vested in a two-house Congress, the Senate, whose 24 members, elected at large, served a six-year term, and a House of Representatives, whose 110 members, chosen from congressional districts, served four years. To be passed, a bill had to be approved by both houses and then signed by the President. A two-thirds vote from the two chambers could override a Presidential veto.

The Supreme Court and the lower courts exercised judicial powers vested in them by the Constitution, and were jealous of their independence.

The country is divided into provinces which, in turn, are divided into cities and municipalities. The latter are divided into *barrios,* or villages. The highest provincial and municipal officials were elected by the people, while those of a lower rank were appointed by the Government.

Although provinces and municipalities operated independently, they were subject, in the last resort, to the rulings of the Chief Executive. This led to overcentralization and to undue dependence on Malacanang (the President's official residence). To check this unhealthy tendency, a bill was passed by Congress enabling local governments to make fuller use of their powers and privileges.

After martial law was declared, the Constitutional Convention (which had been meeting since the first week of June 1971 in order to frame a new Constitution to replace that of 1935) met on 25 September 1972 and "voted unanimously" to "continue deliberations on vital issues". A motion was presented in the Convention to adjourn the plenary meeting until the lifting of martial law. The proposal was defeated. Consequently, the Convention continued its sessions and the suggested constitutional amendments were brought before the Citizens' Assemblies numbering 36,000 all over the country. The *Kapulungan,* or general assembly of all citizens' assemblies, met from 10 to 15 January 1973 to consider the provisions of the new charter. Three questions were submitted to the *Kapulungan,* namely: (1) "Do you approve of the Citizens' Assembly as a way of popular government to decide issues affecting our people?" (2) "Do you approve of the new Constitution?" and (3) "Do you want a plebiscite to be called to ratify the new Constitution?" The first two questions received an over-

8 Philippines 1970 Census of Population and Housing, National Summary, vol. II (Manila, National Census and Statistics Office, 1974), table III-15.

whelming "Yes", while the third received a thumping "No". In view of the results of the referendum, President Marcos, dramatizing the occasion, signed before the *Kapulungan* three proclamations: (1) Proclamation No. 1102, which announced the ratification of the Filipino people of the 1971 Constitution as at noon on 17 January 1973; (2) Proclamation No. 1103, which declared the interim National Assembly, provided for in Article XVII of the new Constitution, not convened; and (3) Proclamation No. 1104, which declared the continuation of martial law.

The coming into effect of the new Constitution resulted in (a) the abolition of Congress; (b) the exercise by President Marcos of the powers of the President and of the Prime Minister; (c) the change in the form of government from presidential to parliamentary; and (d) the exercise by the President of the power to call the interim Assembly

G. MINERAL RESOURCES

The mineral resources of the Philippines, metallic and non-metallic, are enormous and await development. Only a part of the country's reserves has been explored and exploited. More geologists, mining engineers and, of course, financiers are needed to develop these resources.

Various valuable base metals, such as copper, iron, chrome, nickel and manganese, are mined as ores and shipped abroad in their crude state. Copper heads the export list and the Philippines is at present the largest producer of copper in Asia. The country promises to be the leading producer of sulphur in the region with the discovery of very extensive sulphur deposits. The chrome and nickel deposits are some of the largest in the world and the Philippines is the world's top exporter of refractory chromite. Iron ore deposits are sufficient to suport the local steel industry and could be developed further for export purposes. Coal and mercury exist in commercial quantity.

Among the precious metals, gold takes first place. The Philippines is the world's eighth ranking gold producer and can easily increase its output. Silver concentrates are an important export. Platinum and palladium are also mined, but in smaller quantities.

Non-metallic minerals are also plentiful. The local cement industry is a big one. Salt, mined in great quantities, augments the resources of an industry which produces salt from sea water. There are vast reserves of clay and limestone. Significant deposits of marble, phosphate rock, silica, feldspar and dolomite have been found.

The search for oil has begun but it is too early to make any forecast. However, it is believed that this valuable fuel exists in the islands.

H. TRANSPORTATION AND TELECOMMUNICATIONS

In the Philippines, roads continue to dominate land transportation, carrying about 60 per cent of total passenger transport and 80 per cent of freight movements. However, road development has lagged behind the growth of vehicle fleet and the demand for road transport over the 1960s. As at mid-1971, the country's highway network consisted of 72,979 kilometres, of which about 79 per cent was composed of gravel and earth roads generally in poor condition. The road network is unevenly distributed, with the more developed regions, principally Metropolitan Manila, exhibiting the highest road density and underdeveloped areas in Mindanao showing the sparsest network. While feeder roads in rural areas are in particularly short supply, urban centres, chiefly Manila, are plagued by serious traffic congestion, which together suggest the need for some capacity expansion.

The railways form an important element in the land transportation development programme, notwithstanding the rather limited availability of long-band inland distances in the country. The railway system in Luzon is operated by the Philippines National Railway, a government-owned corporation. There is only one other railway system in the country – a 117-kilometre railway line between Iloilo City and Roxas City on the island of Panay, owned and operated by the Philippine Railway Company. Available rolling stock, as at early 1973, consisted of 73 locomotives, 62 passenger cars, 29 railcars and 1,124 freight cars which carried 4.5 million passengers and 350,000 metric tons of freight during the previous year.

Air transport is fast gaining acceptance because of its adaptability to rapid inter-island passenger movement. Domestic passenger traffic has been increasing by about 17 per cent a year. Manila International Airport services 15 majors international

airlines and domestic carriers. There are 75 operational public airports in the country. Two are regular international airports (Manila and Mactan), three are designated alternate international airports, and six are trunkline airports serving the principal commercial centres of the Philippines. Complementing these airports are 39 secondary and 25 feeder airports scattered among the inhabited islands.

The Philippines possesses great potentials for the development of its water transportation system. There are 81 national ports, 392 municipal ports and a number of private ports over the archipelago. These public and private ports service the Philippine maritime fleet which in 1971 totalled some 1.03 million gross registered tonnage (GRT) and included 110 ocean-going vessels of 750,000 GRT, 259 inter-island vessels of 270,000 GRT and various tugs, barges and lighters. Inter-island and coastal shipping accounts for a large share of freight transport, probably about 40 per cent. Public ports, however, handle a very small fraction of export. The Port of Manila handles about 85 per cent of imports but only 15 per cent of the country's exports. Many business concerns exporting sugar, copra, pineapple and mining products own and operate a sizable number of private piers and wharfs equipped with modern handling facilities to transport and handle their export products more cheaply and efficiently than the general-purpose ports and berths owned and operated by the Government.

The consolidated system of telecommunication services, such as telephone, telegraph, safety and special radio services and broadcasting services, has a total coverage of almost 32 per cent of the country's populated areas. However, nodal points are mostly located in densely populated centres rather than in strategic places, which ensures maximum coverage. Some 400,000 telephones service the entire country which has a telephone density of 1 per 100 people. Private companies provide about 350,000 telephones and operate about 600 telegraph stations.

I. THE ECONOMY

The economy of the Philippines is characterized by an open dualistic structure consisting of the traditional rural sector and an urban industrial sector linked to each other and to the outside world through trade. The rural sector consists of two subsectors, one exporting primary products and the other producing food for domestic consumption. Primary products still constitute the chief exports from the country and the foreign exchange earnings from these exports have been used to finance the imported capital goods and the raw materials needed by the urban industrial sector.

Agriculture is by far the most important sector of the Philippines' economy and will continue to remain so for many more years. It is clear from table 1 that the major industry group consisting of agriculture, forestry and fishing contributes 36 per cent of the gross domestic product (GDP) and provides employment for about 50 per cent of the country's work force. The most important crops are rice, corn, coconuts, sugar-cane, sweet potatoes, manioc, bananas, abaca, tobacco and coffee, while forest products play a major role. Coconut products, sugar and lumber are the largest exports, constituting about two thirds in a normal year.

Until the 1950s, the growth of the agricultural sector in the Philippines was due largely to an expansion in the area under cultivation. In the early years, most of this expansion was in response to increased world demand for export crops. In later years, the increase in domestic demand for food created by exported-led growth in aggregate income and by rapid growth of population resulted in an expansion of the area under food crops. However, in recent years there has been a shift in the growth pattern of the agricultural sector from one based on expansion of area under cultivation to one based on increasing productivity of land already under cultivation.

> "This shift represents the response of Philippine agriculture to the mounting pressure of population against the constraint of land resources. Although the cultivation frontier has not yet closed physically, it has become increasingly difficult to maintain or increase labour productivity by increasing the area under cultivation. Raising the productivity of land to counteract the deterioration in the man-land ratio is essential both for increasing the welfare of the rural population and for meeting the food and other requirements of the national economy. Although the recent pattern of agricultural growth reflects an increase in land

Table 1. Percentage distribution of net domestic product[a] by industrial origin, 1963-1974

	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Agriculture, hunting, forestry and fishing	33.3	32.2	32.9	32.7	33.3	34.8	36.6	36.3	37.2	36.5	36.4	36.4
Mining and quarrying	1.1	1.1	1.2	1.5	1.5	1.6	1.8	2.5	2.3	2.3	2.9	2.7
Manufacturing	19.3	18.7	18.0	18.0	18.3	18.1	17.5	18.9	19.2	19.3	21.3	24.6
Electricity, gas and water	0.6	0.6	0.7	0.7	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.6
Construction	3.6	3.8	4.0	3.7	3.8	3.2	3.4	2.6	2.5	3.0	3.0	2.4
Wholesale and retail trade[b]	11.2	11.4	11.0	11.0	10.8	10.0	9.5	9.7	9.5	9.5	9.4	9.1
Transport, storage and communication	3.5	3.5	3.5	3.5	3.5	3.4	3.2	3.1	3.0	3.0	2.9	2.6
Finance, insurance and real estate	4.3	4.4	4.4	4.5	4.6	4.8	4.5	4.6	4.9	5.0	4.7	4.9[c]
Ownership of dwellings	4.7	4.9	5.3	5.3	5.2	5.2	4.9	4.7	4.4	4.2	3.8	3.2
Public administration and defence	7.6	8.0	8.0	7.9	7.7	7.7	7.6	7.3	7.1	7.3	6.0	5.2
Community, social and personal services[b]	10.7	11.2	11.0	11.3	10.9	10.7	10.4	9.9	9.5	9.4	9.0	8.3[c,d]
Net domestic product at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: *Statistical Yearbook for Asia and the Pacific, 1974* (United Nations publication, Sales No. E/F.75.II.F.15); and *Yearbook of National Accounts Statistics, 1975* (United Nations publication, Sales No. E.76.XVII.2), vol. II.

a Net domestic product at factor cost.
b Hotels and restaurants included in community, social and personal services.
c Business services included in community, social and personal services.
d Including all "others".

productivity, the rate of that increase has been far from satisfactory."[9]

In recent years there has been a rapid expansion in the industrial sector resulting in a dramatic increase in manufacturing output, urbanization of the population and a shift of the labour force from agriculture. This is because industrialization came to be regarded as the preferred path of economic growth and was raised to the level of a national value judgement. There were important reasons for this preference.

> "The pressure of population growth has created the necessity of providing rapid employment opportunities, and industry is the most important outlet. The restrictions on the world trading pattern have not really given a clear-cut case for specialization. Moreover, the phenomenon of a high proportion of primary exports to total exports has exposed the country to high fluctuations of the terms of trade. Most of all, the usual association of sustained economic growth with industrialization is an important reason. The presence of a national value judgement elevates theoretical justification to a national objective."[10]

The expansion of the industrial sector was to a large extent promoted by the adoption of a deliberate policy of import substitution under which the industrialists were protected from import competition by tariff walls and favoured by low interest rates, and overloaded currency and fiscal advantages. As a consequence of that policy, though import capacity as a fraction of the gross national product (GNP) gradually declined until 1960 and remained more or less stationary at about 17 to 18 per cent during the following decade, that capacity was increasingly used to increase the imports of capital goods and raw materials. Today, manufacturing contributes about 25 per cent of the gross national product compared to about 18 per cent in 1967, and employs about 12 per cent of the country's work force.

Though the economy has registered substantial gains in recent decades and averaged annual economic growth rates of 5 to 6 per cent in the years following the imposition of martial law, there are still some important development problems facing the country. These are: (a) a rapid rate of population growth, averaging about 3 per cent per annum during 1960-1970 and currently estimated at about 2.8 per cent; (b) uneven or lopsided income distribution and incidence of poverty, particularly among the rural masses; (c) unemployment estimated at about 5 to 7 per cent of the labour force, and substantial underemployment estimated at about 16 per cent of the labour force; (d) inadequacy of infrastructure facilities; and (e) rapidly rising prices. The Government's development efforts are, therefore, directed towards the solution of these problems. Specifically, the development policies have been geared to (a) promotion of employment and minimization of underemployment; (b) more equitable distribution of income and wealth; (c) regional development and industrialization; (d) promotion of social development; and (e) maintenance of an acceptable level of price and balance-of-payments stability.[11]

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9 Sharing in Development: A Programme of Employment, Equity and Growth for the Philipines (Geneva, International Labour Organisation, 1974), p. 441.

10 Gerardo P. Sicat, "The Philippine economy" in Gerardo P. Sicat ed., *The Philippine Economy in the 1960s* (Quezon City, Institute of Economics, Development and Research, University of the Philippines, 1964), pp. 12-13.

11 Four-Year Development Plan, FY 1974-77, condensed report (Manila, National Economic and Development Authority, 1973), p. 4.

Chapter I

GROWTH AND DISTRIBUTION OF POPULATION

A. POPULATION GROWTH IN THE PAST

An estimated half a million persons lived in the Philippines in 1521 when Ferdinand Magellan landed on the island of Homonhon. Accounts of the first expeditions to the Philippines at the beginning of the sixteenth century tell of the sparse population encountered by the Spaniards. The present great towns of 100,000 or more had their counterparts then in small settlements of 20 to 50 families. These were found mostly along the coasts of Ilocos and Iloilo, the rich river valleys of Pampanga and Bicol, around the bay of Laguna, and in Manila.

The earliest known complete enumeration of the islands is contained in the *Relación de Encomiendas,*[1] a report of King Philip II of Spain made on 31 May 1591. The report listed the tributes and the estimated number of persons in the towns and provinces subject to the King at that time. Each tribute represented a man and his wife and lesser children and was commonly taken to equal four persons. Thus, the total of 166,903 tributes in the *Relación* accounted for an estimated 667,612 persons.

During the early part of the seventeenth century, war was declared between Spain and Holland. The available resources of the colony were utilized, and the consequent depletion of population is reflected in the following estimates of total inhabitants taken from tribute rolls and parish reports:

1591	:	664,000
1593	:	481,000
1612	:	535,000
1621	:	611,000
1655	:	510,000

A word of caution concerning the interpretation of these figures must be made. Owing to the numerous exemptions from tribute payment granted to chiefs, eldest sons, office-holders, etc., the omissions were considerable. The rolls were seldom brought up to date, resulting in tributes being paid for men long dead. It has been claimed that the *fiscales* or *cabezas de barangay* placed in charge of collection would have been interested in updating their lists since they had to account for every addition and omission or be held responsible for any deficiencies in the number of tributes. However, the scatter of the islands and the many instances of flight to pagan territory interfered with the efficiency of the system.[2]

Following the Treaty of Münster, which put an end to the Dutch War, there was a relaxation of the pressure for goods and services and the population curve showed an upward trend.

The religious orders that accompanied the Spanish *conquistadores* in their voyage to the islands remained to take charge of the parishes. The parish returns, citing the number of souls within the spiritual jurisdiction of the priests, supply a continuous record of the growth of the Christian population throughout the provinces.

Aside from losses of lives caused by enforced labour during the early seventeenth century, the islands were also ravaged by severe epidemics of cholera, smallpox and influenza. Father Pedro Chirino, in his *Relación de las islas Filipinas* (Manila, 1890), tells of the plague of smallpox which reigned in Manila and its vicinity in 1591. As much as a third of the population was stricken ill and died of the

1 Following the Spanish custom in the Americas, most of the Filipino population was distributed among the colonists under the *encomienda* system. *Encomienda* was a right vested by the King in deserving persons *(encomendoros)* in recognition of special service, to receive and enjoy annual tribute from a specified population, in return for which the *encomendero* would be responsible for the material and spiritual welfare of the tribute payers and their families. Also, for detailed discussion on early censuses and enumerations see annex I.

2 Tomás de Comyn, *Estado de las Islas Filipinas* (Londres, 1821), commenting on the reasons for the non-observance of the quinquennial census of natives for the assessment of tribute states that: "The wide extent of the 27 provinces of which they are composed, scattered, as they are, through the great space comprehended between the southern part of Mindanao and the almost desert islands known by the name of Batanes and Babuyanes, to the north of that of Luzon, presents almost insurmountable obstacles, and in some measure affords an excuse for the omission. Among these obstacles may be mentioned the necessity of waiting for the favourable monsoon to set in, in order to perform the several voyages from one island to the other; the encumbered state of the grounds in many parts, the irregular and scattered situations of the settlements and dwellings, the variety among the natives and their dialects, the imperfect knowledge hitherto obtained of the respective limits and extent of many districts, the general want of guides and auxiliaries, on whom reliance can be placed, and above all, the extreme repugnance the natives evince to the payment of tributes, a circumstance which induces them to resort to all kinds of stratagems, in order to elude the vigilance of the collectors, and conceal their real numbers". Furthermore, the annual lists by district magistrates and perish priests "inspire so little confidence that it is necessary to use them with great caution". Not all magistrates and priests exercised the same attention to detail in the enumeration and "the number of tributes not included in the annual returns is very considerable".

disease. The earliest cholera epidemic on record occurred in Manila about 1628, and caused death to many within a few hours. Successive epidemics took place in the latter half of the seventeenth century and throughout the nineteenth century. The epidemic of 1820 was one of the most tragic recorded. The people revolted against the foreigners whom they accused of poisoning the water wells. In 1882, the deaths brought about by the epidemic amounted to about 1,300 a day when the disease was at its height. According to Worcester[3], 15,000 to 20,000 victims were claimed by the disease.

The first official enumeration of the populations authorized by a royal decree was carried out on 31 December 1877. According to this enumeration, the population of the Philippines numbered 5,567,685. The next enumeration, carried out in 1887, recorded a population of 5,984,727. The last enumeration under the Spanish régime was in 1897 but was not completed because of the Spanish-American War. However, the censuses during that period were not scientific and hence they were not very accurate.

3 D. C. Worcester, *The Philippine Islands and Their People* (New York, 1898).

B. POPULATION GROWTH IN THE TWENTIETH CENTURY

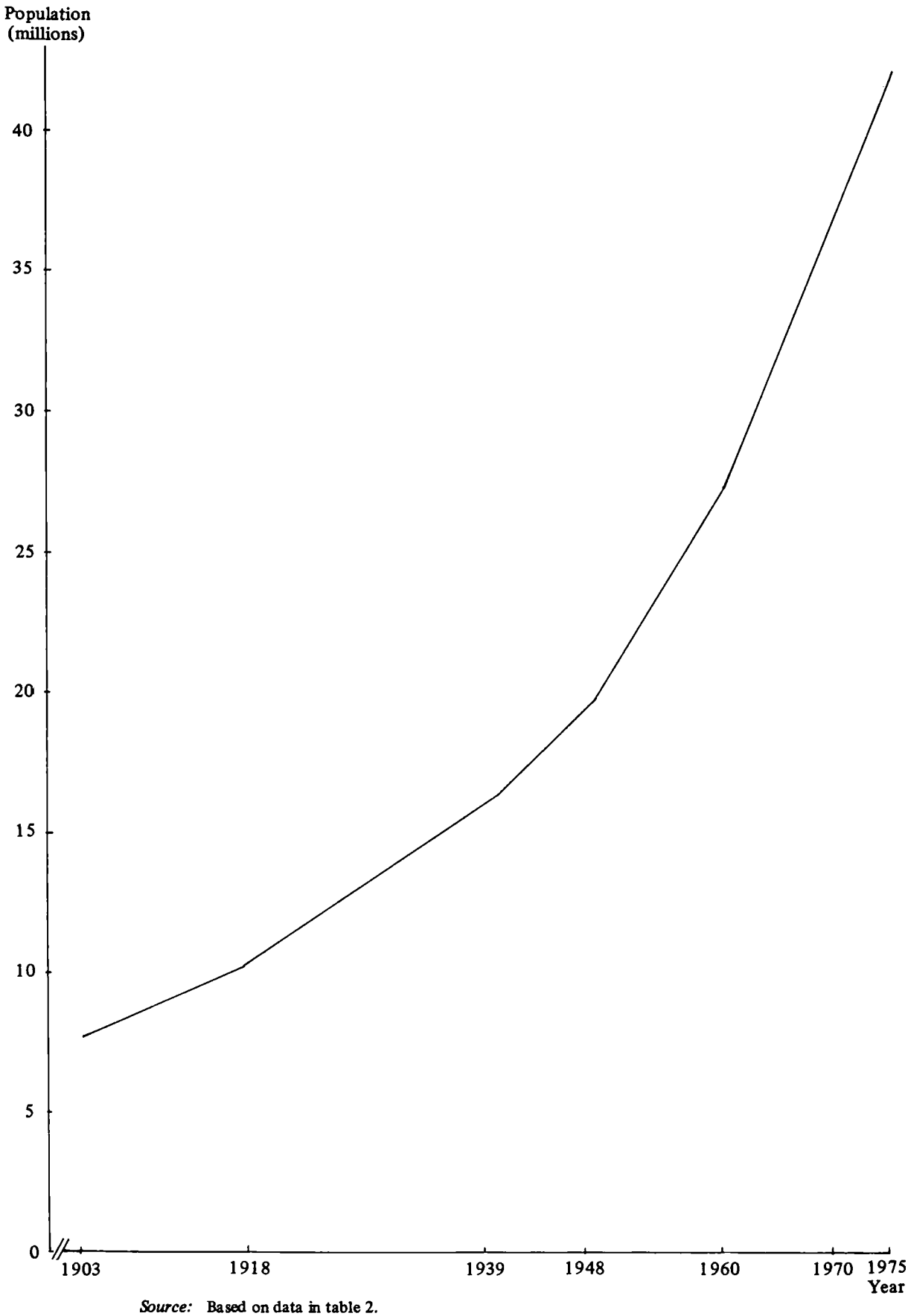
The first complete returns of the population of the archipelago were made in 1903. This was the first census enumerated under the United States régime. The population then was estimated at 7.6 million. The second census of the Philippines during the United States régime was taken on 31 December 1918, showing a population of 10.3 million inhabitants. According to the third census, taken 21 years later in 1939, the population numbered 16.0 million. The next census was taken in 1948, the first to take place after the Philippines achieved independence. The total population of the country was then about 19.2 million. Since 1948, three more censuses have been taken, in 1960, 1970 and 1975, and the populations recorded amounted to 27.1 million, 36.7 million and 42.1 million, respectively. The total population recorded at the various censuses from 1903, the intercensal increase, percentage increase and intercensal average annual growth rates are shown in table 2. The population growth since 1903 is illustrated in figure 1.

From 1903 to 1939, the average annual population increment was 234,000; this average rose to 690,000 between 1948 and 1960. During the 1950s, the total population of the Philippines expanded by

Table 2. Population of the Philippines in census years 1903 to 1975, intercensal increase, percentage increase and average annual growth rates

Year and date of population census	Enumerated population	Intercensal increase	Percentage increase	Average annual growth rates (percentage)
1903, 2 March	7,635,426			
1918, 31 December	10,314,310	2,678,884	35.1	1.92
1939, 1 January	16,000,303	5,685,993	55.1	2.22
1948, 1 October	19,234,182	3,233,879	20.2	1.91
1960, 15 February	27,087,685	7,853,503	40.8	3.06
1970, 6 May	36,684,486	9,596,801	35.4	3.01
1975, 1 May	42,070,660	5,386,174	14.7	2.79

Sources: *Censo de las Islas Filippinas, 1903, Tomo II: Población* (Washington, DC, United States Bureau of the Census, 1905); *Census of the Philippines, 1960,* vol. II, Population and Housing (Manila, Bureau of the Census and Statistics, 1962); *Philippines 1970 Census . . .*, National Summary, vol. II; and unpublished results of the 1 May 1975 census.



Source: Based on data in table 2.

Figure 1. Population growth in the Philippines, 1903-1975.

6.5 million, a growth of 32 per cent. The 1960s witnessed a further addition of nearly 10 million persons, averaging some 930,000 annually. The increment to the population during the first half of the 1970s amounted to 5.4 million persons, or about 15 per cent.

Since the time intervals of the various intercensal periods have not been equal, the intercensal percentage increases do not give a correct picture of the trends in Philippine population growth. A more accurate measure is the average annual growth rate calculated in respect of each intercensal period. According to those rates, there was an increase in the rate of growth of the population from an average of 1.92 per cent for the period 1903-1918 to 2.22 per cent during 1918-1939. Between 1939 and 1948 the rate of growth declined to 1.91 per cent per annum but increased to an all-time high of 3.06 per cent during the next intercensal period 1948-1960, remaining more or less constant at that level during the subsequent decade.[4] Between 1970 and 1975 the average rate of growth declined to 2.79 per cent per annum. Nevertheless, this is one of the highest rates of population growth in the world.

Rapid population growth is a relatively new phenomenon in the Philippines. Most of the country's history has been characterized by slight increases over long periods of time punctuated by periods of sharp declines. The demographic processes that underlie the recent unprecedented increase seem innocuous at first glance. Estimates indicate that from the time of the first complete Philippine census in 1903 until the Second World War, the crude death rates declined gradually from about 38 deaths per thousand population in 1903 to about 27 in 1939. Between 1939 and 1960, the rate of decline accelerated rapidly resulting in an estimated crude death rate in 1960[5] of about 15. Between 1960 and 1975, the crude death rate appears to have declined less rapidly, the rate for mid-1975 being placed at about 9 per thousand persons. In contrast, estimates of the crude birth rate have remained relatively constant, hovering at a very high level of about 45 per thousand for a very long time. However, in recent years there has been a slight decline in these rates and the estimated crude birth rate in 1975 was placed around 37 per thousand. Consequently, the current rate of population growth is estimated at about 2.8 per cent per annum.[6] This rate of growth, when applied to the figures released by the National Census and Statistics Office for the May 1975 census returns, results in a net growth of 1.1 million persons per annum. The current rate of population growth also implies a doubling of the population in less than 25 years.

In terms of population size, the Philippines ranks seventh in Asia and sixteenth in the world. In May 1975, the population of the Philippines was 42.1 million, i.e. nearly twice the population of Canada which has more than 33 times as much land area.

C. DEMOGRAPHIC TRANSITION

The pattern of population growth manifested by the Philippines has not been typical of the pattern which obtained in Europe and the United States. Historically, in those areas both birth and death rates were high until the middle of the nineteenth century when the advent of modern medicine reduced the number of deaths and increased life expectancy. Though differing in the timing, these countries all went through a pattern of slowly decreasing death rates followed by a decline in the birth rate. Eventually a more manageable balance was achieved between the two.[7]

The most striking difference between the demographic experience of the West during the

4 In terms of absolute numbers, between 1948 and 1960 the population of the Philippines increased by 7,853,503, slightly more than the total population in 1903, while between 1960 and 1970 the increase in the population was 9,596,801 persons, or about 26 per cent more than the 1903 census population.

5 Basilio B. Aromin, "The trend of mortality in the Philippines, 1903 to 1960", *The Statistical Reporter*, vol. V, No. 3 (Manila, National Economic Council, July 1961). On the basis of his estimate, Aromin concluded: "Except for epidemic and war years... the death rate fluctuated rather widely during the first three decades of the century around an average death rate of about 26 per thousand. Improvement apparently became a permanent trend only after about 1930. The 18 and 19 per cent declines in the death rate during the two successive quinquennial periods after World War II support the assumption that improvement in mortality has been extremely rapid after the war and easily explains the phenomenal rate with which the population of the Philippines grew during the intercensal period from 1948 to 1960".

6 It has been observed, "Thus the rapid population growth can be credited to a declining death rate interacting with a consistently high birth rate, rather than to an increasing birth rate". Mercedes B. Concepcion, *The Philippines*, Country Profile Series of the Population Council and the International Institute for the Study of Human Reproduction, Columbia University (New York, The Population Council, June 1970), p. 2.

7 This sequence of phases in demographic change in Western industrial countries has been embodied in the Theory of Demographic Transition. For a full discussion of this theory, see Frank W. Notestein, "Population: the long view" in I.W. Schully, ed., *Food for the World* (Chicago, 1945), pp. 33-51; C.P. Blacker "Stages in population growth", *Eugenics Review*, vol. XXXIX, No. 3 (October 1973), pp. 88-102; and Kingsley Davis, *Human Society* (New York, Macmillan Co., 1949), pp. 603-608.

nineteenth century and that of non-industrialized nations such as the Philippines in the present century is that, while in the Western countries the process of declining death rates was a relatively protracted one spread over a period of 50 to 100 years, the recent fall in the death rates of the developing countries has been much more rapid. Further, the gradual decline in the death rate which took place in the Western developed countries was dependent, particularly in the early stages, on the more or less direct effects of economic development and not so much on rapid advances in medical science. In contrast, the rapid decline in the death rate in developing countries such as the Philippines was the result largely of technological advances in the prevention and control of diseases and the growth and expansion of medical services. Thus, the spectacular decline in the death rates of the developing countries was not only more significant, but was also faster and preceded any sustained economic and social development.

Nations in Europe in the late nineteenth and throughout the twentieth centuries have voluntarily adjusted their fertility to balance the changes in mortality. At present, all but two European countries (Ireland and Albania) have birth rates below 20 per thousand population – lower than those of Canada, Australia and New Zealand. Thus, it has been claimed that consonant decline of births and deaths allowed the European population to grow at a relatively slow pace and made possible impressive technological and economic developments. Population growth never exceeded 1.5 per cent per year during any decade in any west European country. On the other hand, in developing countries such as the Philippines in recent years, not only were the declines in the death rate sharper and faster but such declines were not followed by comparable declines in the birth rate which for long remained at traditionally high levels. Consequently, the developing countries have been experiencing an unprecedented rate of population growth which is two to three times the rate experienced by the developed countries.

Today, most European countries, along with Japan, have the lowest rate of population increase in the world, generally under 1 per cent. Among those showing the slowest growth – 0.4 per cent or less – are Belgium, Hungary, Denmark and the United Kingdom of Great Britain and Northern Ireland (England and Wales only). At such a rate, it will take 173 years or more for their populations to double. This is not the case in the Philippines, where the rate of increase is around 2.7 per cent with a potential for a doubling of the population in just under 25 years.[8]

D. POPULATION DISTRIBUTION

1. Provincial distribution

The population of the Philippines is characterized by an uneven distribution over space. Some provinces contain a larger population than others. There is also a marked variation in the growth rates of these provinces; some are growing at a very rapid rate while others are either maintaining their population size or losing their numbers. Basic physical and climatic characteristics, natural resources, market conditions, employment opportunities, transportation facilities, and vital events are important counteracting forces which cause one province to increase faster than another. The growth of the provinces has been greatly affected by internal migration flows. In the Philippines, these flows have been found to be originally "frontier-oriented" and subsequently more "urban-oriented" and directed towards places characterized by extractive industries. The flow of migrants from one province to another is also affected by certain movement- modifying variables such as contiguity, ethnic similarity and regional similarity.

The distribution and growth of the Philippine population by province for the various census years from 1903 to 1975 is shown in table 3. The 10 most populous provinces in 1975, in descending order of size, were: Rizal (3,754,477); Cebu (1,818,410); Negros Occidental (1,785,792); Pangasinan (1,520,085); Manila (1,479,116); Iloilo (1,313,049); Leyte (1,203,118); Quezon (1,115,962); Bulacan (1,050,134), and Pampanga (1,042,164). These 10 provinces together contained 16,082,307 persons, or 38.2 per cent of the Philippines total population in 1975.

It is also clear from table 3 that very remarkable increases in population have taken place in some of the provinces. Between 1960 and 1970, the increase

8 In the Philippines, not only is the current rate of population growth high, but there also exists a potential for further large additions to the country's population. First, if the death rates were to decline further, there would be an increase in the rate of growth of the population. Secondly, the youthful age-structure now established in the country as a result of recent rapid increases in population is favourable to high birth rates.

Table 3. Population and percentage change by province, 1903-1975

(1903 and 1918 figures in thousands)

Province	Census population						
	1975 (1 May)	1970 (6 May)	1960 (15 February)	1948 (1 October)	1939 (1 January)	1918 (31 December)	1903 (2 March)
Total Philippines	42,070,660	36,684,486	27,087,685	19,234,182	16,000,303	10,314	7,635
Abra	147,010	145,508	115,193	86,600	87,780	73	52
Agusan del Norte	300,735	278,053	177,333	88,917	64,121	45	31
Agusan del Sur	213,216	174,682	93,677	37,531	34,902	*a*	*a*
Aklan	293,349	263,358	226,232	196,982	176,625	137	114
Albay	728,827	673,981	514,980	394,694	333,920	260	201
Antique	308,484	289,172	238,405	233,506	199,414	155	136
Basilan[b]	171,027	-	-	-	-	-	-
Bataan	263,269	216,210	145,323	92,901	85,538	58	47
Batanes	11,870	11,398	10,309	10,705	9,512	8	8
Batangas	1,032,009	926,308	681,414	510,224	442,034	340	258
Benguet	302,065	263,550	183,657	110,081	122,204	*c*	*c*
Bohol	759,370	683,297	592,194	553,407	491,608	358	269
Bukidnon	532,818	414,762	194,368	63,470	57,561	40	21
Bulacan[d]	1,050,134	836,431	555,819	411,382	332,807	249	224
Cagayan	644,075	581,237	445,289	311,088	292,270	191	148
Camarines Norte	288,406	262,207	188,091	103,702	98,324	52	45
Camarines Sur	1,023,819	948,436	819,565	553,691	385,695	219	194
Camiguin	52,547	53,913	44,717	69,599	40,805	*e*	*e*
Capiz	445,716	394,041	315,079	244,889	228,660	155	117
Catanduanes	172,780	162,302	156,329	112,121	98,545	64	39
Cavite	628,321	520,180	378,138	262,550	238,581	157	135
Cebu	1,818,410	1,634,182	1,332,847	1,123,107	1,068,078	855	654
Cotabato[f]	472,302	1,136,007	734,360	336,809	240,531	172	126
Davao del Norte	589,697	442,543	262,889	91,367	60,349	107	65
Davao del Sur	936,263	785,398	497,541	205,122	173,963	*g*	*g*
Davao Oriental	299,426	247,995	132,593	68,365	58,288	*g*	*g*
Samar, Eastern	287,149	271,000	237,747	197,734	154,572	*h*	*h*
Ifugao	104,707	92,487	76,788	49,902	68,598	*c*	*c*
Ilocos Norte	371,724	343,427	287,333	251,455	237,586	219	179
Ilocos Sur	419,776	385,139	338,058	276,278	271,532	247	190
Iloilo	1,313,049	1,167,973	966,266	816,382	744,022	503	410
Isabela	730,386	648,123	442,062	264,495	219,864	113	76
Kalinga-Apayao	163,225	136,249	89,528	56,134	46,934	*c*	*c*
La Union	414,635	373,682	293,330	237,340	207,701	178	138
Laguna	803,750	699,736	472,064	321,247	279,505	196	149
Lanao del Norte	381,234	349,942	270,603	131,606	99,427	21	22
Lanao del Sur	499,882	455,508	378,327	212,312	144,010	70	*i*

Table 3. *(continued)*

Province	Percentage change							
	1970-1975	1960-1970	1948-1960	1939-1948	1918-1939	1903-1918	1903-1970	1903-1975
Total Philippines	14.7	35.4	40.8	20.2	55.1	35.1	380.5	451.0
Abra	1.0	26.3	33.0	-1.3	20.2	40.4	179.8	182.9
Agusan del Norte	8.1	56.8	99.4	38.7	*	45.2	*	*
Agisam del Sur	22.1	86.5	149.6	7.5	*a*	*a*	*a*	*a*
Aklan	11.4	16.4	14.8	11.5	29.0	20.2	131.0	157.3
Albay	8.1	30.9	30.5	18.2	28.4	29.4	235.3	262.6
Antique	6.7	21.3	2.1	17.1	28.7	14.0	112.6	126.8
Basilan[b]	-	-	-	-	-	-	-	-
Bataan	21.8	48.8	56.4	8.6	47.5	23.4	360.0	460.1
Batanes	4.1	10.6	-3.7	12.5	19.0	.0	42.5	48.4
Batangas	11.4	35.9	33.6	15.4	30.0	31.8	259.0	300.0
Benguet	14.6	43.5	66.8	-9.9	*c*	*c*	*c*	*c*
Bohol	11.1	15.4	7.0	12.6	37.3	33.1	154.0	182.3
Bukidnon	28.5	113.4	206.2	10.3	44.0	90.5	1,875.1	2,437.2
Bulacan[d]	25.5	50.5	35.1	23.6	33.7	11.2	273.4	368.8
Cagayan	10.8	30.5	43.1	6.4	53.0	29.1	292.7	335.2
Camarines Norte	10.1	39.4	81.4	5.5	89.1	15.6	482.6	540.9
Camarines Sur	7.9	15.7	48.0	43.6	76.1	12.9	388.9	427.7
Camiguin	-2.5	20.6	-35.8	70.6	*e*	*e*	*e*	*e*
Capiz	13.1	25.1	28.7	7.1	47.5	32.5	236.8	280.9
Catanduanes	6.5	3.8	39.4	13.8	54.0	64.1	316.2	343.0
Cavite	20.8	37.6	44.0	10.0	52.0	16.3	285.3	365.4
Cebu	11.3	22.6	18.7	5.2	25.0	30.7	149.9	178.0
Cotabato[b]	*	54.7	118.0	40.0	*	36.5	*	*
Davao del Norte	33.2	68.3	187.7	51.4	*	64.6	*	*
Davao del Sur	19.2	57.9	142.6	17.9	*g*	*g*	*g*	*g*
Davao Oriental	20.7	87.0	93.9	17.3	*g*	*g*	*g*	*g*
Samar, Eastern	5.9	14.0	20.2	27.9	*h*	*h*	*h*	*h*
Ifugao	13.2	20.4	53.9	-27.3	*c*	*c*	*c*	*c*
Ilocos Norte	8.2	19.5	14.3	5.8	8.5	22.3	91.9	107.7
Ilocos Sur	9.0	13.9	22.4	1.8	10.0	30.0	102.7	120.9
Iloilo	12.4	20.9	18.4	9.7	48.0	22.7	184.9	220.3
Isabela	12.7	46.6	67.1	20.3	94.6	48.7	752.8	861.0
Kalinga-Apayao	19.8	52.2	59.5	19.6	*c*	*c*	*c*	*c*
La Union	11.0	27.4	23.6	14.3	16.7	29.0	170.8	200.5
Laguna	14.9	48.2	46.9	14.9	42.7	31.5	369.6	439.4
Lanao del Norte	8.9	29.3	105.6	32.4	373.5	*	*	*
Lanao del Sur	9.7	20.4	78.2	47.4	105.7	*i*	*i*	*i*

Table 3. *(continued)*

Province	Census population						
	1975 (1 May)	1970 (6 May)	1960 (15 February)	1948 (1 October)	1939 (1 January)	1918 (31 December)	1903 (2 March)
Leyte	1,203,118	1,110,626	963,364	819,310	743,301	476	389
Maguindanao[j]	478,119	-	-	-	-	-	-
Manila	1,479,116	1,330,788	1,138,611	983,906	623,492	285	220
Marinduque	162,804	144,109	114,586	85,828	81,768	57	52
Masbate	533,387	492,908	335,971	211,113	182,483	68	44
Misamis Occidental	356,319	319,855	248,371	207,575	210,057	81	45
Misamis Oriental	560,490	472,756	343,898	300,072	173,007	127	87
Mountain Province	94,096	93,112	85,866	62,003	59,138	194	136
Negros Occidental	1,785,792	1,503,782	1,332,323	1,038,758	824,858	397	308
Negros Oriental	740,417	715,240	597,761	443,461	394,680	273	201
Samar, Northern	354,665	306,114	261,424	227,957	155,050	*h*	*h*
Nueva Ecija	947,995	851,294	608,362	467,769	416,762	227	134
Nueva Vizcaya	213,151	221,965	138,090	82,718	78,505	36	20
Occidental Mindoro	185,787	144,032	84,316	43,149	39,039	28	13
Oriental Mindoro	388,744	328,364	228,998	124,556	92,530	44	24
Palawan	300,065	236,635	162,669	106,269	93,673	69	36
Pampanga	1,042,164	907,275	617,259	416,583	375,281	258	224
Pangasinan	1,520,085	1,386,143	1,124,144	920,491	742,475	566	443
Quezon	1,115,962	983,324	653,426	416,719	358,553	212	153
Quirino[k]	65,763	-	-	-	-	-	-
Rizal[l]	3,754,477	2,844,689	1,456,362	673,060	444,805	230	151
Romblon	182,209	167,082	131,658	108,817	99,367	65	53
Siquijor[m]	69,077	-	-	-	-	-	-
Sorsogon	446,502	427,047	347,771	291,138	247,653	178	120
Cotabato, South	586,867	466,110	294,759	102,860	58,404	*n*	*n*
Leyte, Southern	276,418	251,425	209,608	187,581	172,552	122	*o*
Sultan Kudarat[p]	238,812	-	-	-	-	-	-
Sulu	240,001	425,617	326,898	240,826	247,117	173	91
Surigao del Norte	298,080	238,714	194,981	155,003	125,914	67	84
Surigao del Sur	302,305	258,680	165,016	109,949	99,981	56	*q*
Tarlac	640,899	559,708	426,647	327,018	264,379	172	135
Tawi-Tawi[r]	143,487	-	-	-	-	-	-
Samar, Western	478,378	442,244	368,823	331,521	236,684	380	266
Zambales	416,280	343,034	213,442	138,536	106,945	84	60
Zamboanga del Norte	490,515	409,379	281,429	167,700	138,849	57	17
Zamboanga del Sur	1,002,852	1,034,018	742,404	354,241	217,135	90	81

Table 3. *(continued)*

Province	Percentage change							
	1970-1975	1960-1970	1948-1960	1939-1948	1918-1939	1903-1918	1903-1970	1903-1975
Leyte	8.3	15.3	17.6	10.2	56.2	*	*	*
Maguindanao[j]	-	-	-	-	-	-	-	-
Manila	11.1	16.9	15.7	57.8	118.8	29.5	505.0	572.3
Marinduque	13.0	25.8	33.5	5.0	43.5	9.6	177.1	213.1
Masbate	8.2	46.7	59.1	15.7	168.4	54.6	1,020.2	1,112.2
Misamis Occidental	11.4	28.8	19.7	- 1.2	159.3	80.0	610.8	691.8
Misamis Oriental	18.6	37.5	14.6	73.4	*	46.0	*	*
Mountain Province	1.1	8.4	38.5	4.8	*	42.6	*	*
Negros Occidental	18.7	12.9	28.3	25.9	107.8	28.9	388.2	479.8
Negros Oriental	*	19.7	34.8	12.4	44.6	35.8	255.8	*
Samar, Northern	15.9	17.1	14.7	47.0	*h*	*h*	*h*	*h*
Nueva Ecija	11.4	39.9	30.1	12.2	83.6	69.4	535.3	607.5
Nueva Vizcaya	*	60.7	66.9	5.4	118.1	80.0	1,009.8	*
Occidental Mindoro	29.0	70.8	95.4	10.5	39.4	115.4	1,008.0	1,329.1
Oriental Mindoro	18.4	43.4	83.9	34.6	110.3	83.3	1,268.2	1,519.8
Palawan	26.8	45.5	53.1	13.4	35.8	91.7	557.3	733.5
Pampanga	14.9	47.0	48.2	11.0	45.5	15.2	305.0	365.2
Pangasinan	9.7	23.3	22.1	24.0	31.2	27.8	212.9	243.1
Quezon	13.5	50.5	56.8	16.2	69.1	38.6	542.7	629.4
Quirino[k]	-	-	-	-	-	-	-	-
Rizal[l]	32.0	95.3	116.4	51.3	93.4	52.3	1,784.0	2,386.4
Romblon	9.0	26.9	21.0	9.5	52.9	22.6	215.2	243.8
Siquijor[m]	-	-	-	-	-	-	-	-
Sorsogon	4.6	22.8	19.5	17.6	39.1	48.3	255.9	272.1
Cotabato, South	25.9	58.1	186.6	76.1	*n*	*n*	*n*	*n*
Leyte, Southern	9.9	20.0	11.7	8.7	41.4	*o*	*o*	*o*
Sultan Kudarat[p]	-	-	-	-	-	-	-	-
Sulu	*	30.2	35.7	- 2.6	42.8	90.1	367.7	*
Surigao del Norte	24.9	22.4	25.8	23.1	88.0	*	*	*
Surigao del Sur	16.9	56.8	50.1	10.0	78.5	*q*	*q*	*q*
Tarlac	14.5	31.2	30.5	23.7	53.7	27.4	314.6	374.7
Tawi-Tawi[r]	-	-	-	-	-	-	-	-
Samar, Western	8.2	19.9	11.3	40.1	*	42.9	*	*
Zambales	21.3	60.7	54.1	29.5	27.3	40.0	471.7	593.8
Zamboanga del Norte	19.8	45.5	67.8	20.8	143.6	235.3	2,308.1	2,785.4
Zamboanga del Sur	*	39.3	109.6	63.1	141.3	11.1	1,176.6	*

Source: Compiled from census reports since 1903.

Note: *Not computed here, because of change in the areal boundaries of the province; refer to addendum to table 3.

a Agusan del Sur included in Agusan del Norte.
b Created between 1970 and 1975, Basilan was formerly included in Zamboanga del Sur.
c Benguet, Ifugao, Kalinga-Apayao included in Mountain Province.
d Municipality of Valenzuela included in Bulacan in 1975 census.
e Camiguin included in Misamis Oriental.
f In 1975, refers only to North Cotabato. During the 1970-1975 intercensal period, Cotabato was subdivided into three provinces: North Cotabato, Maguindanao and Sultan Kudarat.
g Davao de Sur and Davao Oriental included in Davao del Norte.
h Eastern and Northern Samar included in Western Samar.
i Lanao del Sur included in Lanao del Norte.
j Created between 1970 and 1975, Maguindanao was formerly included in Cotabato.
k Created between 1970 and 1975, Quirino was formerly included in Nueva Vizcaya.
l Rizal (Metropolitan Manila) included in Rizal in 1975 census.
m Created between 1970 and 1975, Siquijor was formerly included in Negros Oriental.
n South Cotabato included in Cotabato.
o Southern Leyte included in Leyte.
p Created between 1970 and 1975, Sultan Kudarat was formerly formerly included in Cotabato.
q Surigao del Sur included in Surigao del Norte.
r Created between 1970 and 1975, Tawi-Tawi was formerly included in Sulu.

Addendum to table 3

When a province A is divided into new provinces, B and C for instance, it is meaningless to compute percentage changes such as

$\frac{P'_B - P_A}{P_A} \times 100$ or $\frac{P'_C - P_A}{P_A} \times 100$, where P_A, P'_B and P'_C are the populations of A, B, and C, at dates t and t', respectively.

Values of $\frac{P'_B + P'_C - P_A}{P_A} \times 100$ have therefore been calculated in regard to those indicated with an asterisk (*) in table 3. They are shown below.

Original provice (as named in table 3)	New constituent provinces (as of 1975)	Percentage change				
		1970-1975	1918-1939	1903-1918	1903-1970	1903-1975
Agusan del Norte	Agusan del Norte Agusan del Sur		120.1		1,360.4	1,557.9
Cotabato[a]	North Cotabato Maguindanao Sultan Kudarat South Cotabato	10.9	73.8		1,171.5	1,309.6
Davao del Norte	Davao del Norte Davao del Sur Davao Oriental		173.5		2,170.7	2,708.3
Lanao del Norte	Lanao del Norte Lanao del Sur			313.7	3,561.1	3,905.1
Leyte	Leyte Southern Leyte			53.7	250.1	280.3
Misamis Oriental	Misamis Oriental Camiguin		68.4		505.4	604.6
Mountain Province	Mountain Province Benguet Ifugao Kalinga-Apayao		53.0		330.4	388.3
Negros Oriental	Negros Oriental Siquijor	13.2				302.7
Nueva Vizcaya	Nueva Vizcaya Quirino	25.7				1,294.6
Sulu	Sulu Tawi-Tawi	–9.9				321.4
Surigao del Norte	Surigao del Norte Surigao del Sur			46.4	492.1	614.7
Western Samar	Western Samar Eastern Samar Northern Samar		43.8		283.2	321.1
Zamboanga del Sur	Samboanga del Sur Basilan	13.5				1,349.2

a The original Cotabato province has been subdivided twice: (i) between 1918 and 1939 into Cotabato province and South Cotabato province, and (ii) between 1970 and 1975; while South Cotabato province remained intact, Cotabato province was further subdivided into North Cotabato, Maguindanao and Sultan Kudarat. The percentages above relate to the totality of the territory defined as Cotabato in 1903. However, the percentage changes between 1970 and 1975 can be computed separately, as follows:

Cotabato (North Cotabato + Maguindanao + Sultan Kudarat)	4.7
South Cotabato	25.9

in population was 50 per cent or more in 16 provinces. Six of those 16 provinces increased by 25 per cent or more between 1970 and 1975. The five fastest growing provinces during the 1960-1970 period, with a rate of change of 70 per cent or more, were: Bukidnon (113.4); Rizal (95.3); Davao Oriental (87.0); Agusan del Sur (86.5); and Occidental Mindoro (70.8). During the period 1970-1975, three out of the five provinces grew at a rate of change of about 30 per cent: Rizal (32.0); Occidental Mindoro (29.0); and Bukidnon (28.5).

It will also be observed from table 3 that Bukidnon and Agusan del Sur maintained their first and fourth place positions, respectively, as the fastest growing provinces from 1948 to 1960. Bukidnon dropped from first to fourth place in 1975. However, the provinces of Rizal, Occidental Mindoro and Davao Oriental which were the seventh, eleventh and twelfth fastest growing provinces in 1960 appeared as the second, fifth and third fastest, respectively, in 1970. Rizal maintained its second place position and Occidental Mindoro rose from fifth to third place in 1975. South Cotabato, which was the third fastest growing province from 1948 to 1960, dropped to ninth place in 1970 but ascended to sixth place in 1975. Davao del Norte dropped from second place in 1948-1960 to sixth place in 1960-1970 but occupied first place in 1970-1975.

The increase in the population of these provinces has been mainly due to "in-migration and the boom in their agricultural and industrial activities.

> "Rizal province, for example, has been the recipient of most people going out of the city of Manila. The population of the city of Manila area has spilled out into the suburbs, a substantial portion of these areas being within the province of Rizal. Also, vast areas of the province adjoining the city of Manila are now housing sub-divisions, such as in San Pedro, Makati and the foothills of Antipolo. The city of Manila, comprising only 38.3 square kilometres in area, cannot all absorb the increase of its population so that the province of Rizal has to accommodate some of these. Other reasons for the high per cent change experienced in Rizal province are its rapid industrialization and expansion of manufacturing activities. The overcrowded factories in certain sections of Manila appear to have been relocated in the northwestern portion of the province along the Marikina River going north to the extent where the river is navigable".[9]

The provinces of Bukidnon, Davao Oriental, Agusan del Sur, and Occidental Mindoro were also areas of heavy in-migration. The availability of suitable land for agriculture and the establishment of settlement schemes by the Government were chief factors responsible for the large-scale migration into these provinces.

Between 1960 and 1970, the provinces that recorded the slowest rates of growth were Catanduanes (0.37 per cent per annum), Mountain Province (0.80 per cent) and Batanes (0.99 per cent). The very slow rate of growth experienced by these provinces has largely been attributed to out-migration to other provinces in search of better job opportunities.

Even at the beginning of this century, the highest rates of population growth were recorded in respect of those provinces where land suitable for agriculture was available. Between 1903 and 1918, the fastest growing provinces were Lanao del Norte (which then also included what is now Lanao del Sur), Zamboanga del Norte, Occidental Mindoro, Palawan, Bukidnon, Sulu, and Oriental Mindoro.

During the entire 72-year period 1903-1975, the population of the country as a whole increased by 451 per cent. However, the increase in the population of those provinces which did not experience any territorial divisions varied from a maximum of 2,785.4 per cent for the province of Zamboanga del Norte to a minimum of 48.4 per cent for Batanes. During the period 1903-1975, the population of the following six provinces increased by over 1,000 per cent:

Zamboanga del Norte	2,785.4
Bukidnon	2,437.2
Rizal	2,386.4
Oriental Mindoro	1,519.8
Occidental Mindoro	1,329.1
Masbate	1,112.2

However, if provinces which were subdivided are also taken into account, it will be noted that the following six provinces (now groups of pro-

9 Tito A. Mijares, *The Population of the Philippines: Its Growth and Development*, Technical Paper No. 3 (Manila, Bureau of the Census and Statistics, 1973), p. 5.

vinces), also recorded increases in population of over 1,000 per cent during the same period:

Lanao del Norte + Lanao del Sur	3,905.1
Davao del Norte + Davao del Sur + Davao Oriental	2,708.3
Agusan del Norte + Agusan del Sur	1,557.9
Zamboanga del Sur + Basilan	1,349.2
North Cotabato + Maguindanao + Sultan Kudarat + South Cotabato	1,309.6
Nueva Vizcaya + Quirino	1,294.6

2. Urban-rural distribution

The number and proportion of city dwellers as distinct from country or rural dwellers is one aspect of spatial distribution that has concerned researchers dealing with the distribution of population. The evolution of the definition of urban areas and the difficulties of applying the latest definition to earlier data are discussed at length in chapter IV, entitled Population growth and urbanization. However, this section will make use of the 1963 definition of urban as developed by the then Bureau of the Census and Statistics (now the National Census and Statistics Office) and adhere to the provincial units of 1960 as they are more adaptable to the earlier censuses.[10]

The distribution of the Philippine population by urban and rural areas at the various censuses from 1903 to 1975 is shown in table 4. It will be seen from this table that the proportion of urban population rose from 13.1 per cent in 1903 to 32.7 per cent in the early 1970s. Correspondingly, the proportion of rural population diminished from 86.9 per cent to 67.3 per cent during the same period. The growth in the urban and rural population, like that of the total population, has not been uniform over the years, as is evident from the following growth rates:

Sector	1903-1918	1918-1939	1939-1948	1948-1960	1960-1970	1970-1975
Urban	1.64	5.03	4.26	3.97	4.01	2.66[a]
Rural	1.96	1.66	1.17	2.70	2.56	2.85[a]
Total	1.92	2.22	1.91	3.06	3.01	2.79

a Provisional estimates.

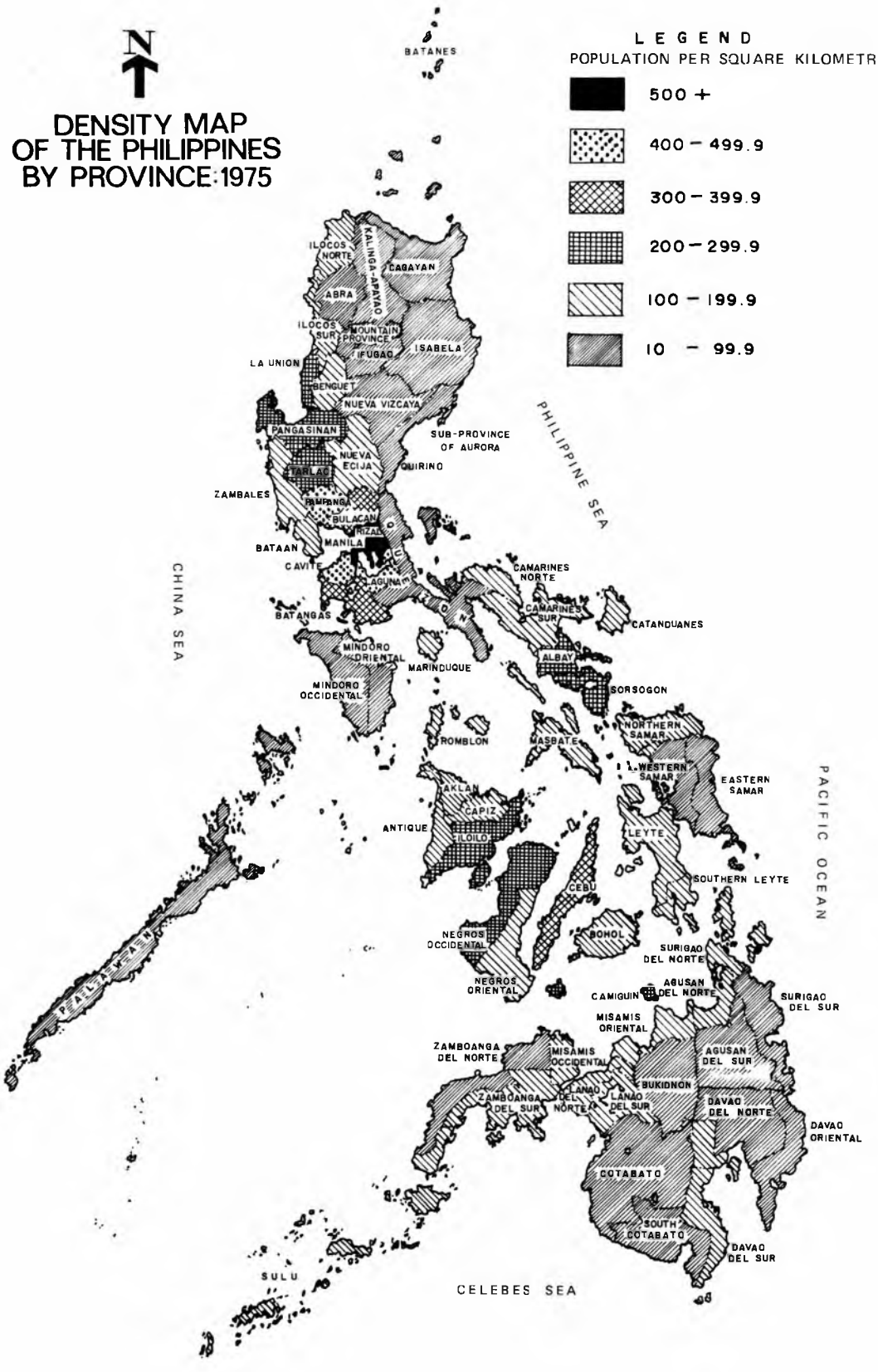
It is interesting to note that the highest growth rate of the urban population occurred during the years following the First World War, while the greatest growth in rural population took place after the Second World War. The rural sector seems to have absorbed more of the acceleration in the total population growth during this period than did the urban sector. The slowing pace of urbanization since the 1950s indicates that rapid population growth was not necessarily accompanied by rapid urbanization as was commonly thought. What occurred was primarily an increase in urban concentration as manifested by the greater domimance of Metropolitan Manila.

3. Regional distribution

In this section, the distribution and growth of the population is discussed in terms of the major administrative regions into which the country is divided. This classification refers to the 11 administrative regions adopted by the National Economic and Development Authority (NEDA) based on the recommendations of the Reorganization Commission in 1975. In addition, four cities and thirteen municipalities were excluded from the two regions in which they were situated to form a unique region that is Metropolitan Manila. The major administrative regions and their component provinces are shown in table 5 and figure 2.

The numerical as well as percentage distribution of the population by administrative division for all census years from 1903 to 1975 are given in table 6. It will be noted that in 1975, the largest proportion of the country's population, 12.6 per cent, was concentrated in the southern Tagalog region which contained only about 16 per cent of the total land area. Three regions – Central Luzon, Southern Tagalog and Metropolitan Manila – which together accounted for 23.7 per cent of the land area contained within them over 34 per cent of the country's

10 The 1963 definition of urban places is based on population density and size. A later definition developed for use in the 1970 census enumeration was a definite improvement as it included certain institutional criteria. However, this later definition is inapplicable to past censuses which do not contain information on the institutional characteristics of the localities enumerated. The application of the two definitions results in slight differences in estimates at the national level and marked differences at the subnational level. The 1963 definition seems suitable for the purpose of depicting aggregate trends and patterns.



Source: Prepared by the University of the Philippines Population Institute.
Note: The province of Pangasinan, formerly included in Central Luzon, is now part of Ilocos.

Figure 2. Administrative regions and their component provinces, 1970.

Table 4. Urban-rural distribution of the population, 1903-1975

Census year	Total population		Urban population[a]		Rural population[b]	
	Number	Percentage	Number	Percentage	Number	Percentage
1903	7,635,426	100.0	1,000,177	13.1	6,635,249	86.9
1918	10,314,310	100.0	1,294,173	12.5	9,020,137	87.4
1939	16,000,303	100.0	3,450,671	21.6	12,549,632	78.4
1948	19,234,182	100.0	5,183,687	27.0	14,050,495	73.0
1960	27,087,685	100.0	8,072,485	29.8	19,015,200	70.2
1970	36,684,486	100.0	12,068,801	32.9	24,615,685	67.1
1975[c]	42,070,660	100.0	13,757,106[c]	32.7	28,313,554	67.3

Sources: *a* E.M. Pernia, *Indicators of Philippine Urbanization in the Twentieth Century*, Research Note No. 47 (Manila, Population Institute, University of the Philippines, 1975), for 1903 to 1970; *b* Computed from total population for each census year; *c* Adjusted to the 1963 definition of urban by crude estimation owing to constraint imposed by inavailability of data to follow strictly the methodology employed by Pernia for the years 1903 to 1970.

Table 5. Major administrative regions and their component provinces, 1970[a]

Ilocos	Abra, Ilocos Note, Ilocos Sur, La Union, Mt. Province, Benguet, Pangasinan
Cagayan Valley	Batanes, Cagayan, Isabela, Nueva Vizcaya, Kalinga-Apayao, Ifugao
Central Luzon	Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac, Zambales
Southern Tagalog	Batangas, Cavite, Laguna, Marinduque, Occidental Mindoro, Oriental Mindoro, Palawan, Quezon, Rizal Romblon
Metropolitan Manila	Caloocan City, Manila City, Pasay City, Quezon City, the municipalities of Las Piñas, Makati, Malabon, Mandaluyong, Marikina, Navotas, Parañaque, Pasig, Pateros, San Juan, and Taguig in Rizal and the municipalities of Meycauayan and Valenzuela in Bulacan.
Bicol	Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate, Sorsogon
Western Visayas	Aklan, Antique, Capiz, Iloilo, Negros Occidental
Central Visayas	Bohol, Cebu, Negros Oriental
Eastern Visayas	Leyte, Southern Leyte, Eastern Samar, Northern Samar, Western Samar
Western Mindanao	Sulu, Zamboanga del Norte, Zamboanga del Sur
Northern Mindanao	Agusan del Norte, Agusan del Sur, Bukidnon, Camiguin, Lanao del Norte, Lanao del Sur, Misamis Occidental, Misamis Oriental, Surigao del Norte, Surigao del Sur
Southern Mindanao	Cotabato, South Cotabato, Davao del Norte, Davao del Sur, Davao Oriental

a Between 1970 and 1975, the following provinces were subdivided: Nueva Vizcaya, into Nueva Vizcaya and Quirino; Negros Oriental, into Negros Oriental and Siquijor; Sulu, into Sulu and Tawi-Tawi; Zamboanga del Sur, into Zamboanga del Sur and Basilan; Cotabato into Northern Cotabato, Maguindanao and Sultan Kudarat.

Table 6. Population by region, 1903-1975

Region	Census year						
	1975	1970	1960	1948	1939	1918	1903
Total Philippines	42,070,660	36,684,486	27,087,685	19,234,182	16,000,303	10,314,310	7,635,425
I. Ilocos	3,269,391[a]	1,604,418[b]	1,303,437[b]	1,023,757[b]	985,941[b]	810,374[b]	603,412[b]
II. Cagayan Valley	1,933,177	1,691,459	1,202,066	775,042	715,683	449,986	343,399
III. Central Luzon	4,149,911[b]	4,950,662[a]	3,617,289[a]	2,774,680[a]	2,324,187[a]	1,613,896[a]	1,265,988[a]
IV-A. Southern Tagalog	5,307,922	4,522,065	3,103,120	2,652,419	2,169,855	1,397,835	1,024,888
IV-B. Metropolitan Manila	4,936,152[c]	3,952,615[c]	2,472,829[c]	983,906[d]	623,492[d]	285,306[d]	219,928[d]
V. Bicol	3,193,721	2,966,881	2,362,707	1,666,459	1,346,620	840,004	643,901
VI. Western Visayas	4,146,390	3,618,326	3,078,305	2,530,517	2,173,579	1,347,249	1,083,474
VII. Central Visayas	3,387,274	3,032,719	2,522,802	2,119,975	1,954,366	1,485,976	1,124,444
VIII. Eastern Visayas	2,599,728	2,381,409	2,040,966	1,764,103	1,462,159	977,525	655,159
IX. Western Mindanao	2,047,882	1,869,014	1,350,731	762,767	603,101	320,109	188,675
X. Northern Mindanao	3,497,626	3,016,865	2,111,291	1,376,034	1,049,785	505,850	290,959
XI. Southern Mindanao	3,601,486	3,078,053	1,922,142	804,523	591,535	280,200	191,199

Region	Percentage distribution							
	1975	1970	1960	1948	1939	1918	1903	Land area
Total Philippines	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
I. Ilocos	7.77[a]	4.37[b]	4.81[b]	5.32[b]	6.16[b]	7.86[b]	7.90[b]	5.40[b]
II. Cagayan Valley	4.59	4.61	4.44	4.03	4.47	4.36	4.50	12.13
III. Central Luzon	9.86[b]	13.51[a]	13.36[a]	14.44[a]	14.53[a]	15.66[a]	16.59[a]	7.86[a]
IV-A. Southern Tagalog	12.62	12.33	11.46	10.73	11.21	12.18	11.93	15.67
IV-B. Metropolitan Manila[c]	11.73	10.77	9.13	8.17	6.25	4.13	4.37	0.20
V. Bicol	7.59	8.09	8.72	8.66	8.42	8.14	8.43	5.88
VI. Western Visayas	9.86	9.86	11.36	13.17	13.58	13.06	14.19	6.74
VII. Central Visayas	8.05	8.27	9.31	11.02	12.21	14.41	14.73	4.98
VIII. Eastern Visayas	6.18	6.49	7.53	9.17	9.14	9.48	8.58	7.14
IX. Western Mindanao	4.87	5.09	4.99	3.96	3.77	3.10	2.47	6.23
X. Northern Mindanao	8.31	8.22	7.79	7.15	6.56	4.90	3.81	14.49
XI. Southern Mindanao	8.56	8.39	7.10	4.18	3.70	2.72	2.50	13.28

a Including Pangasinan. *b* Excluding Pangasinan.

c Refers to PREPF definition of Metropolitan Manila (PREPF is a three-year research project entitled "Population, Resources, Environment and the Philippine Future" which was started in January 1975).

It is also possible to calculate the percentage shares of the city of Manila alone and of the complete Southern Tagalog region from the data given in the upper part of the table. These shares are as follows:

	1948	1939	1918	1903
Southern Tagalog	13.79	13.56	13.55	13.42
City of Manila	5.12	3.90	2.77	2.88

d Refers to city of Manila only.

population in 1975. The three Visayan regions together contained a further 24 per cent of the population, while another 22 per cent lived in the whole of Mindanao during the same reference period. The greatest concentration of population in relation to land area occurred in Metropolitan Manila, where more than 11 per cent of the nation's population dwells in very much less than 1 per cent of the total land area. Of course, this is a consequence of the fact that the region serves as the nation's commercial, industrial and cultural centre. The Tagalogs of central Luzon, despite rising tenancy rates and declining farm sizes, are not well disposed to migrate; hence the resulting high concentration. Central Visayas contains the second largest metropolitan area, Cebu City, which also serves as the region's hub of industry, commerce and education.

Between 1903 and 1975, only two regions in Mindanao and Metropolitan Manila had considerably increased their proportionate share of the total population. Southern Mindanao had increased its proportionate share by more than three times while the increase in the share of Northern Mindanao was more than twofold. The Ilocos and the Visayan regions have revealed dwindling proportions of population over the years (the upward figure for Ilocos in 1975 was a result of adding the province of Pangasinan). Heavy out-migration of males before 1939 and the predominantly female out-movement in later years has led to delays in marriage and consequent declines in fertility. The central and western parts of the Visayas have manifested a persistent male out-migration and a substantial shift toward later marriage. Only the Cagayan Valley, Southern Tagalog, and Bicol regions seemed to have maintained a constant share over the years, about 4 per cent, 12 per cent and 8 per cent, respectively.

The intercensal average annual rates of population growth of the major administrative regions are shown in table 7. It will be seen that over the entire period, 1903-1975, while the population of the country as a whole grew at an average annual rate of 2.39 per cent, the population of Metropolitan Manila increased at an estimated rate of 3.8 per cent per annum. The three regions of Mindanao also recorded annual rates of growth substantially higher than the national average during that period, while the average rates of growth of the population in

Table 7. Annual rates of population growth by region, 1903-1975

Region	Average annual growth rates (percentage)							
	1970-1975	1960-1970	1948-1960	1939-1948	1918-1939	1903-1918	1903-1970	1903-1975
Total Philippines	2.79	3.01	3.06	1.91	2.22	1.92	2.36	2.39
I. Ilocos	1.80[a]	2.05	2.15	0.39	0.98	1.94	1.47	1.59[a]
II. Cagayan Valley	2.71	3.39	3.95	0.55	2.34	1.78	2.40	2.42
III. Central Luzon	3.10[b]	4.45	2.36	1.83	1.83	1.60	2.05	2.27[b]
IV-A. Southern Tagalog	5.05	3.74	3.65[c]	2.08	2.21	2.04	2.41[c]	2.47[c]
IV-B. Metropolitan Manila	3.40	4.68	4.07[c]	4.79	3.97	1.71	3.75[c]	3.80[c]
V. Bicol	1.48	2.25	3.13	2.21	2.38	1.75	2.30	2.24
VI. Western Visayas	2.76	1.59	1.74	1.57	2.41	1.43	1.81	1.88
VII. Central Visayas	2.23	1.81	1.55	0.84	1.37	1.83	1.49	1.54
VIII. Eastern Visayas	1.77	1.52	1.29	1.94	2.02	2.64	1.94	1.93
IX. Western Mindanao	1.84	3.22	5.17	2.44	3.20	3.51	3.47	3.36
X. Northern Mindanao	3.00	3.54	3.85	2.81	3.70	3.67	3.54	3.51
XI. Southern Mindanao	3.19	4.70	7.99	3.20	3.79	2.52	4.22	4.15

Source: Table 6.

a Computed by including Pangasinan in 1970 and 1903, respectively.

b Computed by excluding Pangasinan in 1970 and 1903, respectively.

c Rates estimated on the basis of numbers and percentages given in table 6, for unchanged geographical boundaries, taking into account the PREPF definition of Metropolitan Manila.

Table 8. Population density in selected countries of the ESCAP region, 1975.

(Persons per km^2)

Country	Population density
Afghanistan	30
Australia	3
Bangladesh	533
Bhutan	25
Burma	46
China	87
Cook Islands	107
Fiji	32
Hong Kong	4,179
India	182
Iran	20
Japan	298
Lao People's Democratic Republic	14
Malaysia	37
Nepal	89
New Zealand	11
Pakistan	87
Papua New Guinea	6
Philippines	140
Republic of Korea	345
Samoa	56
Singapore	3,872
Sri Lanka	213
Thailand	82

Source: Demographic Yearbook, 1975 (United Nations publication, Sale No. E/F76.XIII.1, table 3; and 1975 Philippines census.

Cagayan Valley and Southern Tagalog were slightly higher than the average national rate. In all other regions, the average annual rates of population growth during the 72-year period were lower than the national average. However, during the intercensal period, 1960-1970, in addition to Metropolitan Manila, Cagayan Valley, Southern Tagalog, and the three regions of Mindanao, one more region, namely Central Luzon, experienced a rate of growth higher than the national average. Only Central Luzon, Southern Tagalog, Metropolitan Manila, and Northern and Southern Mindanao maintained the same pattern during the period 1970-1975. The slowest growing region during the 1960s was Eastern Visayas with a rate of 1.52 per cent – half the rate for the country as a whole. During the early 1970s, Bicol exhibited the slowest rate of growth (1.48 per cent).

4. Population density

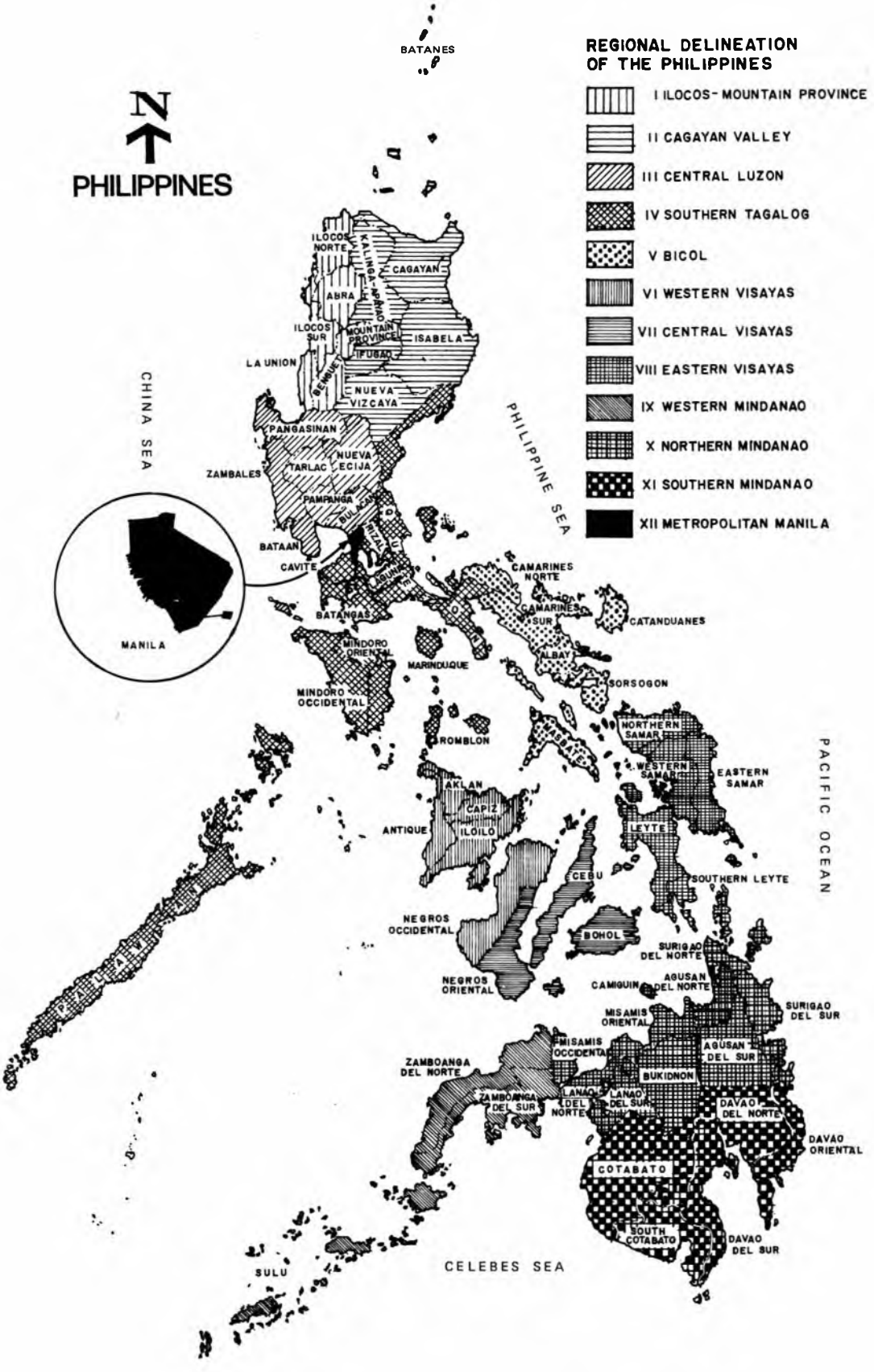
With a total land area of 300,000 square kilometres and an enumerated population of 42,070,660 in 1975, the density of population works out at 140.2 persons per square kilometre. In other words, if the population of the Philippines were distributed evenly over its land area, each province would be populated in proportion to its land area by about 140 persons per square kilometre. With the growth in population, the density has steadily increased over the years from 25.5 persons per square kilometre in 1903 to 34.4 in 1918, 53.3 in 1939, 64.1 in 1948, 90.3 in 1960 and 122.3 in 1970 to the current level of about 140.2.

The 1975 population density for selected countries in the ESCAP region is shown in table 8. Compared to a large number of countries of the region, the Philippines has a very high density of population. With the exception of Hong Kong and Singapore, only four developing countries or areas in the region – Bangladesh, India, the Republic of Korea and Sri Lanka – have higher densities than the Philippines.

Table 9 gives the density of population by province for all census years from 1903 to 1975. In general, it will be noted that in almost every province there has been an increase in the density at every census. As is to be expected, the population densities of some of the provinces were below, and of others higher than, the national average. In 1903, the density of population ranged from a high of 5,747.1 for the city of Manila to a low of 2.2 for Occidental Mindoro. In 1975, the highest concentration of population (38,619.2) was noted again in respect of the city of Manila while the lowest density (20.1) was recorded for the province of Palawan, which contains the second highest proportion of the country's land area. Figure 3 illustrates the density of population by province in 1975.

5. Conclusion

In summary, it may be stated that the major factors which have influenced the current pattern of population distribution in the Philippines are: (a) the rural-to-urban migration of the population, particularly to the two largest metropolitan centres; (b) the distribution of land suitable for agricultural use, and the differences in rainfall, climate and other factors affecting agriculture; and (c) the availability of water and air transportation and the development of sea ports.



Source: Based on data in table 9. Prepared by the University of the Philippines Population Institute.
Note: Manila and Rizal are the only two provinces with densities over 500 inhabitants per square kilometre, viz. about 38,600 and 2,000, respectively.

Figure 3. Population density, 1975.

Table 9. Land area, percentage distribution and density of population by province, 1903-1975

Province	Land		Percentage distribution of population						
	Area in km^2	Percentage distribution	1975	1970	1960	1948	1939	1918	1903
Total Philippines	300,000.0	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Abra	3,975.5	1.32	.35	.40	.43	.45	.55	.71	.68
Agusan del Norte	2,590.3	.86	.71	.76	.65	.46	.40	.44	.41
Agusan del Sur	8,965.5	2.99	.51	.48	.35	.20	.22	*a*	*a*
Aklan	1,817.9	.61	.70	.72	.84	1.02	1.10	1.38	1.49
Albay	2,552.6	.85	1.73	1.84	1.90	2.05	2.09	2.52	2.63
Antique	2,552.0	.84	.73	.79	.88	1.21	1.25	1.50	1.78
Bataan	1,373.0	.46	.63	.59	.54	.48	.53	.56	.62
Batanes	209.3	.07	.03	.03	.04	.06	.06	.08	.11
Batangas	3,165.8	1.05	2.45	2.52	2.52	2.52	2.76	3.30	3.38
Benguet	2,655.4	.89	.72	.72	.68	.57	.76	*b*	*b*
Bohol	4,117.3	1.37	1.80	1.86	2.19	2.88	3.07	3.47	3.52
Bukidnon	8,293.8	2.76	1.27	1.13	.72	.33	.36	.39	.28
Bulacan	2,672.0	.89	2.50	2.28	2.05	2.14	2.08	2.41	2.93
Cagayan	9,002.7	3.00	1.53	1.58	1.64	1.62	1.83	1.85	1.94
Camarines Norte	2,112.5	.71	.68	.71	.69	.54	.61	.50	.59
Camarines Sur	5,266.8	1.76	2.43	2.59	3.03	2.88	2.41	2.12	2.54
Camiguin	299.8	.08	.12	.15	.16	.36	.25	*c*	*c*
Capiz	2,633.2	.88	1.06	1.07	1.16	1.27	1.43	1.50	1.53
Catanduanes	1,511.5	.50	.41	.44	.58	.58	.62	.62	.51
Cavite	1,287.5	.43	1.49	1.42	1.40	1.36	1.49	1.52	1.77
Cebu	5,088.4	1.70	4.32	4.45	4.92	5.84	6.68	8.29	8.57
Cotabato	16,328.3	5.44	2.86[d]	3.10	2.71	1.75	1.50	1.67	1.65
Davao del Norte	8,129.7	2.71	1.40	1.21	.97	.47	.38	1.04	.85
Davao del Sur	6,377.6	2.12	2.22	2.14	1.83	1.07	1.09	*e*	*e*
Davao Oriental	5,164.5	1.72	.71	.68	.49	.36	.36	*e*	*e*
Samar, Eastern	4,339.6	1.45	.68	.74	.88	1.03	.97	*f*	*f*
Ifgao	2,517.8	.84	.25	.25	.28	.26	.43	*b*	*b*
Ilocos Norte	3,399.3	1.13	.88	.94	1.06	1.31	1.48	2.12	2.35
Ilocos Sur	2,579.6	.86	1.00	1.05	1.25	1.44	1.70	2.39	2.49
Iloilo	5,324.0	1.77	3.12	3.18	3.57	4.25	4.65	4.88	5.37
Isabela	10,664.6	3.56	1.74	1.77	1.63	1.37	1.37	1.10	1.00
Kalinga-Apayao	7,047.6	2.35	.39	.37	.33	.29	.29	*b*	*b*
La Union	1,493.1	.50	.98	1.02	1.08	1.23	1.30	1.73	1.81
Laguna	1,759.7	.59	1.91	1.91	1.74	1.67	1.75	1.90	1.95
Lanao del Norte	3,092.0	1.03	.91	.95	1.00	.69	.62	.20	.29
Lanao del Sur	3,872.9	1.29	1.19	1.24	1.40	1.10	.90	.68	*g*
Leyte	6,268.3	2.08	2.86	3.03	3.56	4.26	4.65	4.62	5.10
Manila	38.3	.01	3.52	3.63	4.20	5.12	3.90	2.76	2.88
Marinduque	959.2	.32	.39	.39	.42	.45	.51	.55	.68
Masbate	4,047.7	1.35	1.27	1.34	1.24	1.10	1.14	.66	.58
Misamis Occidental	1,939.3	.65	.85	.87	.92	1.08	1.31	.79	.59
Misamis Oriental	3,570.1	1.19	1.33	1.29	1.27	1.56	1.08	1.23	1.14
Mountain Province	2,097.3	.70	.22	.25	.32	.32	.37	1.88	1.78
Negros Occidental	7,926.1	2.64	4.24	4.10	4.91	5.40	5.16	3.85	4.03
Negros Oriental	5,745.8	1.92	1.92[h]	1.95	2.21	2.30	2.47	2.65	2.63
Samar, Northern	3,498.0	1.16	.84	.83	.96	1.19	.97	*f*	*f*
Nueva Ecija	5,284.3	1.76	2.25	2.32	2.25	2.43	2.60	2.20	1.76
Neuva Vizcaya	6,961.1	2.32	.66[i]	.61	.51	.43	.49	.35	.26
Occidental Mindoro	5,879.8	1.96	.44	.39	.31	.22	.24	.27	.17
Oriental Mindoro	4,364.7	1.45	.92	.90	.84	.65	.58	.43	.31
Palawan	14,896.3	4.97	.71	.65	.60	.55	.59	.67	.47
Pampanga	2,180.7	.72	2.48	2.47	2.28	2.17	2.35	2.50	2.93
Pangasinan	5,368.2	1.79	3.61	3.78	4.15	4.79	4.64	5.49	5.80
Quezon	11,946.1	3.98	2.65	2.68	2.41	2.17	2.24	2.06	2.00
Rizal	1,859.6	.62	8.92	7.75	5.38	3.50	2.78	2.23	1.98
Romblon	1,355.9	.45	.43	.46	.49	.57	.62	.63	.69
Sorsogon	2,141.4	.71	1.06	1.17	1.28	1.51	1.55	1.73	1.57
Cotabato, South	7,468.8	2.49	1.39	1.27	1.09	.54	.36	*j*	*j*
Leyte, Southern	1,734.8	.58	.66	.69	.77	.97	1.08	1.18	*k*
Sulu	2,687.8	.90	.91[l]	1.16	1.21	1.25	1.54	1.68	1.19
Surigao del Norte	2,739.0	.91	.71	.65	.72	.81	.79	.65	1.10
Surigao del Sur	4,552.2	1.52	.72	.70	.61	.57	.62	.54	*m*
Tarlac	3,053.4	1.02	1.52	1.53	1.57	1.70	1.65	1.67	1.77
Samar, Western	5,591.0	1.87	1.14	1.21	1.36	1.72	1.48	3.68	3.48
Zambales	3,714.4	1.24	.99	.93	.79	.72	.67	.81	.79
Zamboanga del Norte	6,075.2	2.03	1.17	1.11	1.04	.87	.87	.55	0.22
Zamboanga del Sur	9,922.1	3.31	2.79[n]	2.81	2.74	1.84	1.36	.87	1.06

Table 9. *(continued)*

Province	Density						
	1975	1970	1960	1948	1939	1918	1903
Total Philippines	140.2	122.3	90.3	64.1	53.3	34.4	25.5
Abra	37.0	36.6	29.0	21.8	22.1	18.4	13.1
Agusan del Norte	116.1	107.3	68.5	34.3	24.8	3.9	2.7
Agusan del Sur	23.8	19.5	10.4	4.2	3.9	*a*	*a*
Aklan	161.4	144.9	124.4	108.4	97.2	75.4	62.7
Albay	285.5	264.0	201.7	154.6	130.8	101.9	78.7
Antique	122.3	114.7	94.5	92.6	79.1	61.5	45.2
Bataan	191.7	157.5	105.8	67.7	62.3	42.2	34.2
Batanes	56.7	54.5	49.3	51.1	45.4	38.2	38.1
Batangas	326.0	292.6	215.2	161.2	139.6	107.4	81.5
Benguet	113.7	99.3	69.2	41.5	46.0	*b*	*b*
Bohol	184.4	166.0	143.4	134.4	199.4	87.0	65.3
Bukidnon	64.2	50.0	23.4	7.7	6.9	4.8	2.5
Bulacan	393.0	313.0	208.0	154.0	124.6	93.2	83.8
Cagayan	71.5	64.6	49.5	34.6	32.5	21.2	16.4
Camarines Norte	136.5	124.1	89.0	49.1	46.5	24.6	21.3
Camarines Sur	194.4	180.1	155.6	105.1	73.2	41.6	36.8
Camiguin	228.7	234.6	194.6	302.9	177.6	*c*	*c*
Capiz	169.3	149.6	119.7	93.0	86.8	58.9	44.4
Catanduanes	114.3	107.4	103.4	74.2	65.2	42.3	25.8
Cavite	488.0	404.0	293.7	203.9	185.3	121.9	104.9
Cebu	357.4	321.2	261.9	220.7	209.9	168.0	128.5
Cotabato	72.8[d]	69.2	45.0	20.6	14.7	7.2	5.3
Davao del Norte	72.5	54.4	32.3	11.2	7.4	5.4	3.3
Davao del Sur	146.8	123.4	78.0	32.2	27.3	*e*	*e*
Davao Oriental	58.0	48.0	25.7	13.2	11.3	*e*	*e*
Samar, Eastern	66.2	62.4	54.8	45.6	35.6	*f*	*f*
Ifugao	41.6	36.7	30.5	19.8	27.2	*b*	*b*
Ilocos Norte	109.3	101.0	84.5	74.0	69.9	64.4	52.7
Ilocos Sur	162.7	149.3	131.1	107.1	105.3	95.8	73.7
Iloilo	246.6	219.4	181.5	153.3	139.7	94.5	77.0
Isabela	68.5	60.8	41.5	24.8	20.6	10.6	7.1
Kalinga-Apayao	23.2	19.3	12.7	8.0	6.7	*b*	*b*
La Union	277.7	250.3	196.5	159.0	139.1	119.2	92.4
Laguna	456.7	397.6	268.3	182.6	158.8	111.4	84.7
Lanao del Norte	123.3	113.2	87.5	42.6	32.2	6.8	3.2
Lanao del Sur	129.1	117.6	97.7	54.8	37.2	18.1	*g*
Leyte	191.9	177.2	153.7	130.7	118.6	75.9	48.6
Manila	38,619.2	34,746.4	29,728.7	25,689.5	16,287.7	7,445.1	5,747.1
Marinduque	169.7	150.2	119.5	89.5	85.2	59.4	54.2
Masbate	131.8	121.8	83.0	52.2	45.1	16.8	10.9
Misamis Occidental	183.7	164.9	128.1	107.0	108.3	41.8	23.2
Misamis Oriental	157.0	132.4	96.3	84.1	48.5	33.4	22.9
Mountain Province	44.9	44.4	40.9	29.6	28.2	13.5	9.5
Negros Occidental	225.3	189.7	168.1	131.1	104.1	50.1	38.9
Negros Oriental	140.9[h]	124.5	104.0	77.2	68.7	47.5	35.0
Samar, Northern	101.4	87.5	74.7	65.2	44.3	*f*	*f*
Nueva Ecija	179.4	161.1	115,1	88.5	78.9	43.0	25.4
Nueva Vizcaya	40.1[i]	31.9	19.8	11.9	11.3	5.2	2.9
Occidental Mindoro	31.6	24.5	14.3	7.3	6.6	4.8	2.2
Oriental Mindoro	89.1	75.2	52.5	28.5	21.2	10.1	5.5
Palawan	20.1	15.9	10.9	7.1	6.3	4.6	2.4
Pampanga	477.9	416.0	283.1	191.0	172.1	118.3	102.7
Pangasinan	283.2	258.2	209.4	171.5	138.3	105.4	82.5
Quezon	93.4	82.3	54.7	34.9	30.0	17.7	12.8
Rizal	2,019.0	1,529.7	783.2	361.9	239.2	123.7	81.2
Romblon	134.4	123.2	97.1	80.3	73.3	47.9	39.1
Sorsogon	208.5	199.4	162.4	136.0	115.6	83.1	56.0
Cotabato, South	78.6	62.4	39.5	13.8	7.8	*j*	*j*
Leyte, Southern	159.3	144.9	120.8	108.1	99.5	70.3	*k*
Sulu	142.7[l]	158.4	121.6	89.6	91.9	64.4	33.9
Surigao del Norte	108.8	87.2	71.2	56.6	46.0	24.6	11.5
Surigao del Sur	66.4	56.8	36.2	24.2	22.0	12.3	*m*
Tarlac	209.9	183.3	139.7	107.1	86.6	56.3	44.2
Samar, Western	85.6	79.1	66.0	59.3	42.3	28.3	19.8
Zambales	112.1	92.4	57.5	37.3	28.8	22.6	16.2
Zamboanga del Norte	80.7	67.4	46.3	27.0	22.9	9.4	2.8
Zamboanga del Sur	118.3[n]	104.2	74.8	35.7	21.9	9.1	8.2

a Agusan del Sur included in Agusan del Norte.
b Benguet, Ifugao, and Kalinga-Apayao included in Mountain Province.
c Camiguin included in Misamis Oriental.
d Including the provinces of Maguindanao and Sultan Kudarat.
e Davao del Sur and Davao Oriental included in Davao del Norte.
f Eastern and Northern Samar included in Western Samar.
g Lanao del Sur included in Lanao del Norte.
h Including the province of Siquijor.
i Including the province of Quirino.
j South Cotabato included in Cotabato.
k Southern Leyte included in Leyte.
l Including the province of Tawi-Tawi.
m Surigao del Sur included in Surigao del Norte.
n Including the province of Basilan.

Chapter II

AGE AND SEX COMPOSITION

A. SEX COMPOSITION

The classification of the population by sex is of fundamental importance in demographic analysis. Hence, particulars regarding the sex of the population was collected at all censuses held in the Philippines. Though sex is seldom reported incorrectly, the quality of the data collected thereon, whether in censuses or sample surveys, concerns the differential completeness of coverage of the sexes.

A common measure of the sex composition of the population is the sex ratio or the number of males per 100 females. The sex ratios by age groups for the various census years from 1903 to 1970 are given in table 10. It will be noted that in the total population of the Philippines, males exceed females at all censuses up to 1960; the 1970 census counted more females than males. The sex ratio also increased gradually from 100.1 in 1903 to 101.6 in 1939. However, it declined to 100.7 in 1948, perhaps largely owing to the low sex ratios observed in this year in respect of the age groups 20-39 years, reflective of the effects of the Second World War.

The slight preponderance of females over males in 1970 appears somewhat spurious. In the first instance, even the 1948 census undertaken after the end of the Second World War showed that the number of males in the total population still exceeded the number of females. Secondly, though mortality conditions had improved during the 1950s, narrowing the difference in the number of male and female deaths, the over-all sex ratio of 101.8 in 1960 was the highest ever recorded. Assuming that the improvement in mortality conditions continued in the 1960s, the low sex ratio of 99.0 in 1970 is, therefore, something to think about. This could have happened only if the mortality conditions of the males had deteriorated so much as to lag behind female attribution. An examination of the recorded deaths indicated that sex differential in mortality had not deviated from the normal situation. Thirdly, differential emigration could not be a plausible explanation either, because females in the Philippines are as migratory as their male counterparts. Fourthly, a sex ratio of 101.0 reported from the 1975 census shows a continuation of the earlier trend, thus rendering the sex ratio for 1970 suspect. The low over-all sex ratio may be an indication of male under-count in 1970.[1]

It is also evident from table 10 and figure 4 that there are differences in the sex ratios for the various age groups. The sex ratios at the very early ages, 0-14 years, have almost always been above 100 because of a sex ratio at birth that is favourable to males. In all of the six censuses, low ratios were recorded in respect of the age groups 15-34 years. In other words, women have been greater in number at ages 15-34. The sex ratios exhibit greater variations in the ages 35 years and over. In contrast with the other years, there was generally an excess of females aged 45 years and over in 1970.

In a normal population not disturbed by migration, if the population count is accurate, or if the errors for males are as frequent and of the same magnitude as those for females, sex ratios will change gradually from one age group to another. The sex ratio will gradually decline with age.[2] The troughs observed in the sex ratios for 15-34 age groups in the Philippine population may therefore be due either to the effects of migration or to faulty enumeration, or both.

Data on international migration are lacking, but informed sources seem to point to an inconsequential effect of international migration on the size and composition of the population. The population of the Philippines is considered "closed". Alien population during the present century constituted such a small proportion of the total that it had little effect on the size and composition of the population.[3] A logical explanation, therefore, for the troughs at ages 15-34 years is that males in these age groups are undercounted but reappear in the censuses of later years at older ages. The fact of under-enumeration is not difficult to visualize since those particular group of males, just out of school and generally still unmarried

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1 Luisa T. Engracia, *An Estimate of the Life Table Functions for the Philippines in 1970*, Monograph No. 1, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1974), p. 3.

2 *Method of Appraisal of Quality of Basic Data for Population Estimates*, Population Studies No. 23 (United Nations publication, Sales No. 1956.XIII.2).

3 Basilio B. Aromin, "The demographic situation in the Philippines", *The Statistical Reporter*, vol. 11, No. 3, July 1958 (Manila, National Economic Council).

Table 10. Sex ratio[a] by age group, 1903-1970

Age group	1903	1918	1939	1948	1960	1970
All ages	100.1	100.3	101.6	100.7	101.8	99.0
0-4	101.8	101.1	104.4	106.0	106.1	103.3
5-9	104.4	102.8	105.2	106.1	106.6	103.7
10-14	106.9	99.8	105.1	105.3	105.8	102.8
15-19	89.7	94.8	93.4	94.2	96.9	94.6
20-24	77.4	94.0	99.4	93.7	94.4	94.0
25-29	94.4	96.2	96.7	92.0	95.1	93.5
30-34	102.6	98.6	98.2	94.7	96.7	94.7
35-39	119.4	99.5	105.5	101.3	96.8	98.2
40-44	100.6	104.5	98.3	98.4	98.9	97.2
45-49	116.3	109.7	112.3	110.3	103.3	95.4
50-54	90.5	109.4	93.3	91.3	106.0	97.7
55-59	121.0	103.3	107.1	107.0	107.2	99.5
60-64	99.8	102.3	109.8	103.1	116.4	103.0
65-69	114.6	113.1	118.3	111.9	99.6	97.3
70-74	94.5	112.8	93.2	98.3	104.6	106.3
75-79	105.3	110.9	96.6	111.4	102.7	92.3
80 and over	88.0	112.2	80.4	91.1	93.4	83.7

Source: Bureau of the Census and Statistics, census reports for 1093 to 1970.

a Number of males per 100 females.

are quite mobile so that at the time of the census enumeration, they were hardly found in their usual place of residence. On the other hand, a misreporting of female ages could also be a plausible cause of the low sex ratio at these ages. It has been observed universally that females, particularly in the middle ages, tend to be coy about reporting their true ages so that the general tendency is for females to report themselves younger than they actually are.[4] Thus, what seems to be a considerably excess of females at ages 15-34 then, may possibly have been only an error of age mis-statement of the type described above. However, male under-enumeration appears to be a more convincing reason and a more plausible cause of error.

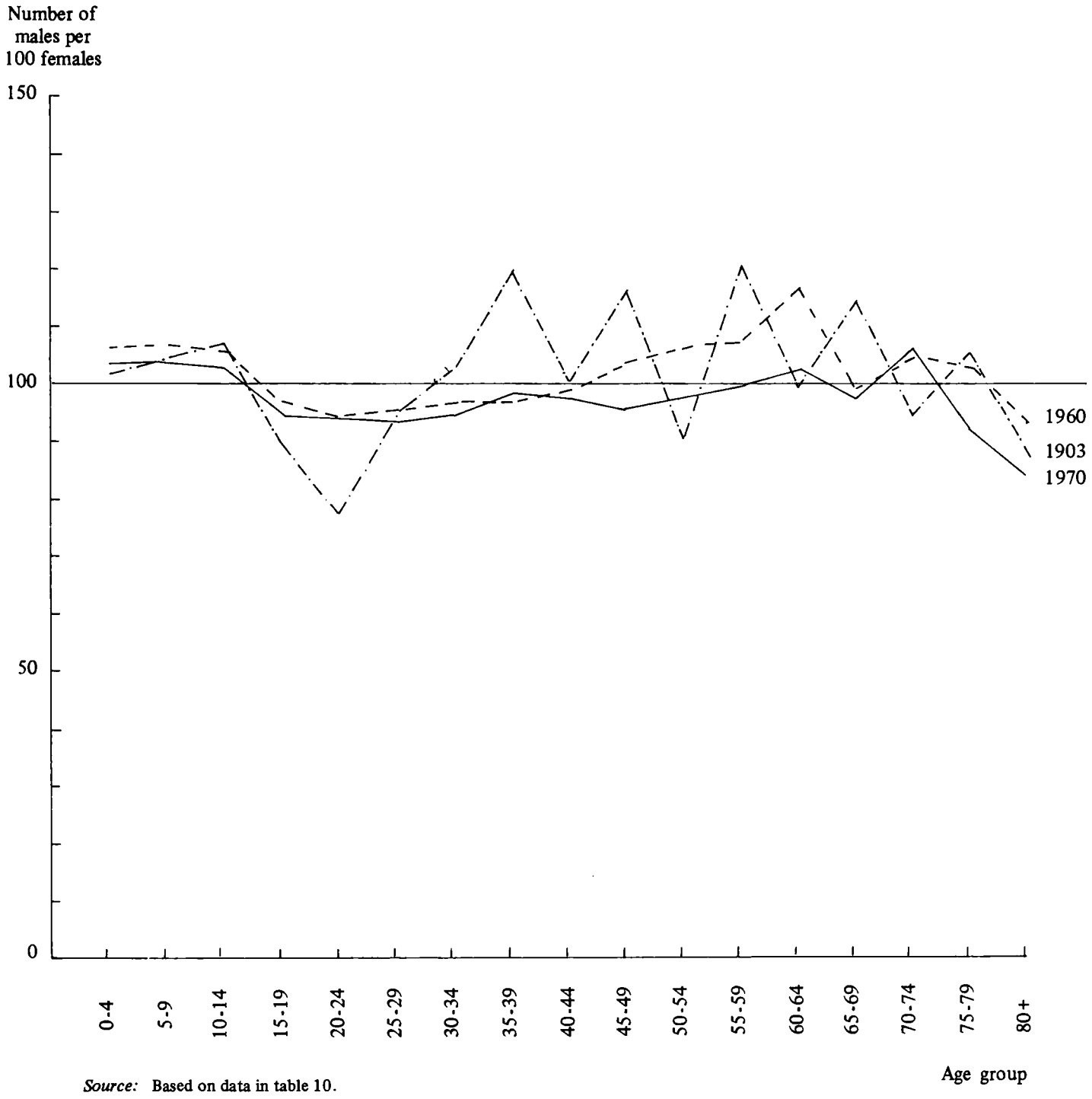
The 1970 age-specific sex ratios of the population for major administrative regions are given in table 11. The over-all ratios show that males outnumber the females in the Cagayan Valley, the Bicol region, Eastern Visayas, Northern Mindanao, and Southern Mindanao. With the exception of Eastern Visayas, the high sex ratios in the other regions may be explained largely by the fact that for a long time there had been heavy in-migration in which males predominated. The diminishing frontier phenomenon, however, has been responsible for the gradual decline in the sex ratio in these areas. The preponderance of males in Eastern Visayas may be partly explained by the greater volume of female out-migration from the region which became more pronounced during the 1960s.

The low sex ratios in the Ilocos region, Central Luzon, Western Visayas and Central Visayas have been the consequence of the large out-movement of males. Southern Luzon and Metropolitan Manila, on the other hand, have increasingly been the destination of young female migrants. For example, in 1970, nearly 28 per cent of all women aged 15-19 years in Manila and Rizal Province had resided elsewhere in 1965.[5]

Generally, all the regions have sex ratios over 100 in the ages 0-14 years. For most regions, the

4 Luisa T. Engracia, *op. cit.*, p. 4.

5 Peter C. Smith, *Provincial and Urban-rural Difference in Marriage Pattern: The Evidence for the 1960s*, Research Note No. 49 (Manila, Population Institute, University of the Philippines, 1975).



Source: Based on data in table 10.

Figure 4. Sex ratio by age group for total population, 1903, 1960 and 1970

Table 11. Sex ratio by age group for major administration regions, 1970

Age group	Major administrative regions											
	Ilocos region	Cagayan valley	Central Luzon	Southern Luzon	Bicol region	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Midanao	Southern Mindanao	Metropolitan Manila
All ages	95.9	102.9	98.0	99.4	101.6	96.7	96.1	101.4	99.6	102.0	104.9	93.3
0-4	103.3	108.6	103.2	106.1	103.7	101.4	103.4	103.4	100.6	102.0	102.9	105.4
5-9	102.9	91.6	103.5	103.2	104.0	101.5	103.5	103.3	102.6	103.3	104.3	104.6
10-14	103.7	104.6	103.1	102.7	104.6	100.8	102.0	104.0	102.4	102.8	104.6	99.9
15-19	99.4	101.3	96.9	96.8	103.8	96.9	92.8	107.1	93.3	95.6	96.4	74.3
20-24	97.3	98.1	95.2	95.2	96.1	93.9	91.7	96.9	89.3	96.8	99.2	83.9
25-29	91.3	95.0	94.0	93.2	93.6	89.9	88.6	95.0	90.4	94.3	102.5	89.2
30-34	91.5	96.4	92.7	99.6	94.6	89.1	88.8	93.8	95.7	99.9	107.0	93.0
35-39	95.9	101.6	94.9	98.7	97.7	94.5	91.9	100.6	99.6	102.6	109.6	95.7
40-44	87.8	95.9	91.7	98.6	97.4	87.6	91.1	97.6	105.0	107.9	114.1	99.1
45-49	89.1	96.3	88.8	96.5	97.0	87.6	89.8	96.3	104.7	110.2	112.0	92.7
50-54	84.9	99.0	91.2	95.5	100.3	92.1	91.4	96.9	112.2	116.7	124.7	94.0
55-59	83.2	100.6	92.5	99.7	106.2	98.4	91.3	100.0	113.2	116.0	123.3	95.0
60-64	74.5	105.0	93.7	102.8	116.0	109.4	93.3	105.7	121.6	123.8	132.2	98.6
65-69	75.6	99.6	91.0	114.4	104.7	96.7	91.3	102.0	118.7	113.8	124.6	90.0
70-74	82.0	108.3	101.3	108.3	117.7	103.4	94.4	117.2	131.6	123.7	139.5	95.9
75-79	77.3	98.1	88.8	96.3	101.0	85.8	86.2	101.5	109.3	108.4	115.0	86.6
80 and over	74.1	91.6	77.2	85.4	97.1	78.8	70.4	97.2	104.2	94.0	101.7	66.0

Source: National Census and Statistics Office, census report for 1970.

women are more numerous than men in the ages 15-54. But the sex ratios tend to vary widely in the older ages. Three regions, namely the Ilocos, Central Visayas and Metropolitan Manila, have shown an excess of females in all age groups above 15 years, while a fourth region, Central Luzon, shows a similar picture except for the 70-74 age group where males predominate.

The sex ratio of the population by major administrative region and by urban-rural residence is given in table 12. The table shows that the number of females exceed that of males in the urban areas for all regions except Southern Mindanao, where there is a slight excess of males. This picture is also confirmed by the findings of the 1973 National Demographic Survey, according to which females were predominant in the broad migration streams, lifetime as well as period, of rural-urban and urban-urban transfers. The sex ratios for both types of streams range from 54.9 to 90.5 in the case of rural-urban migration and from 78.4 to 84.5 with regard to urban-urban migration in favour of females.[6] The rural population is generally characterized by an excess of males, and where the rural sex ratio for a region is less than 100, it is much higher than the corresponding urban ratio.

Table 12. Sex ratio in urban and rural areas by major administrative region, 1970

Major administrative region	Sex ratio[a]		
	Urban	Rural	Total
Ilocos	89.2	97.5	95.9
Cagayan Valley	98.9	103.6	102.9
Central Luzon	94.1	99.6	98.0
Southern Luzon	95.6	102.5	99.4
Bicol	96.0	103.0	101.6
Western Visayas	91.2	98.8	96.7
Central Visayas	93.1	97.3	96.1
Eastern Visayas	95.5	102.9	101.4
Western Mindanao	93.3	100.8	99.6
Northern Mindanao	97.6	103.2	102.0
Southern Mindanao	100.2	106.3	104.9
Metropolitan Manila	93.3	-	93.3
Total Philippines	94.5	101.2	99.0

Source: Same as for table 11.

a Number of males per 100 females.

6 Ernesto M. Pernia, *Patterns of Philippines Internal Migration*, Research Note No. 36 (Manila, Population Institute, University of the Philippines, 1975).

B. AGE COMPOSITION

Age is the most important demographic variable in the study of mortality, fertility, nuptiality, and other characteristics. Social scientists have a special interest in the age-structure of a population since social relationships within a community are considerably affected by the relative number at each age. Many types of planning, particularly those of community institutions and services, require data on age composition. Age is an important variable in estimating the current as well as projected population of school-going age, voting population or working population, and in determining the demand for educational facilities, health services, food and housing. Hence, information regarding age is collected on a high priority basis in the censuses of most countries, including the Philippines.

Age appears simple and easy to report: its statistical accuracy should be higher than that of any other item in a survey or census. It can even be reasonably assumed that the extent of age and sex accuracy represents the confidence limits of a census itself. If age data is not satisfactorily reported, the correctness of the declaration on other items may be even more doubtful. Based on this premise, the extent of the erroneous reporting of ages has often been examined in determining the reliability of census results. However, information on age is often far from accurate. The most common sources of errors in age reporting are: (a) the tendency to round off to the nearest age ending in say 0 or 5, reflecting perhaps ignorance of exact age or some sort of vague tendency towards orderliness; (b) natural inclination to overstate when nearing some socially significant age; (c) a tendency to understate as middle age approaches in an effort to "preserve one's youth"; and (d) the converse tendency to overstate age at the later years owing, probably, to traditional veneration for old age.

The distribution of the population by age groups, or the age structure of a population, is the result of past levels and trends of fertility, mortality and migration. The age structure of the Philippine population as at the various censuses from 1903 to 1970 is shown in table 13. The table shows that since 1918 there have been no significant changes in the distribution of the population by five-year age groups. However, greater variations have been observed in respect of the 10-14, 25-29 and 50-74 age groups. It will also be noted that since 1939 the rela-

tive shares of the 20-24 and 25-29 age groups have gradually been declining while the share of the 30-34 age group has remained more or less steady.

A classification of the population by three broad age groups, namely, 0-14, 15-64 and 65 and over (given at the bottom of table 13) shows that children aged 0-14 constitute a large proportion of the total population. This proportion increased by 6.2 percentage points from 39.5 per cent in 1903 to 45.7 per cent in 1960 and 1970. Concomitantly, the proportion in the age group 15-64 years experienced a decline from 57.2 per cent in 1903 to 51.5 per cent in 1970. The proportion aged 65 years and over decreased from 3.3 per cent to 2.7 per cent in 1960, thereafter increasing slightly to 2.8 in 1970. "The decline in the death rate is believed to have relatively little effect on age composition. The volume of net migration has also been mentioned as too small to influence the age structure of the population. The high birth rate in the Philippines, on the other hand, has kept the proportion of young children in the population at a level believed to be one of the highest in the world at present."[7]

Another measure of the youthfulness of a population is the median age or the age at which the population is divided equally into two halves. The median age of the Philippine population at the various census dates is shown in table 14. It will be seen that the median age of the population, which was 20.2 years in 1903, dropped to 17.1 in 1960 and further to 16.9 in 1970. The high median age at the beginning of the twentieth century was due to the high death rates in the younger age groups while "the recent decline in the median age may be due to the constant high fertility and the reduced rate of infant mortality."[8]

The age pyramids for the various censuses are presented in figure 1. The broad base of each pyramid indicates a high level of fertility which has remained more or less constant in previous years. A very prominent characteristic of the pyramids is the absence of bulges or depressions. An analysis of figure 5 reveals a preponderance of males over females in the ages 0 to 14. Apparently this advantage in favour of males widened slightly during the post-war years. However, a reversal of this trend has been noted in

7 Basilio B. Aromin, *loc. cit.*, p. 4.

8 Tito A. Mijares, *The Population of the Philippines: Its Growth and Development*, Technical Ppaper No. 3 (Manila, Bureau of the Census and Statistics, 1973), p. 11.

Table 13. Percentage distribution of the population by age group, 1973-1970 census years

Age group	Percentage of total population in census years					
	1903	1918	1939	1948	1960	1970
All ages	100.0	100.0	100.0	100.0	100.0	100.0
0-4	15.1	16.9	16.3	15.6	16.9	15.9[a]
5-9	13.7	15.5	15.6	15.3	16.1	16.1[a]
10-14	10.7	11.8	11.2	13.3	12.7	13.7
15-19	10.0	9.9	10.4	10.7	10.4	11.1
20-24	8.0	9.3	9.5	9.2	9.1	8.6
25-29	9.1	7.8	8.4	7.8	7.2	6.7
30-34	7.3	6.2	5.7	5.8	5.7	5.7
35-39	6.1	5.1	5.4	5.9	5.3	5.2
40-44	4.8	4.4	3.8	3.9	4.1	4.0
45-49	3.6	3.6	3.6	3.6	3.8	3.5
50-54	3.2	2.8	2.6	2.3	2.6	2.8
55-59	2.5	2.4	2.0	1.8	1.8	2.2
60-64	2.6	1.9	2.2	1.7	1.6	1.7
65-69	1.3	1.2	1.2	1.0	0.8	1.0
70-74	1.0	0.7	0.9	0.9	0.8	0.8
75-79	0.3	0.4	0.4	0.4	0.4	0.4
80 and over	0.7	0.1	0.9	0.8	0.7	0.6
0-14	39.5	44.2	43.1	44.2	45.7	45.7
15-64	57.2	53.4	53.5	52.7	51.6	51.5
65 and over	3.3	2.4	3.4	3.1	2.7	2.8

Source: National Census and Statistics Office, census reports for 1903 to 1970.

a Percentages based on unadjusted data. Adjusted figures are 16.9 and 15.1 for age groups 0-4 and 5-9, respectively.

Table 14. Median age of the Philippine population, 1903-1970

Year	*Median age*
1903	20.2
1918	18.5
1939	18.3
1948	17.7
1960	17.1
1970	16.9

Source: Tito A. Mijares, *The Population of the Philippines: Its Growth and Development*, Technical Paper No. 3 (Manila, Bureau of the Census and Statistics, 1973), p. 11.

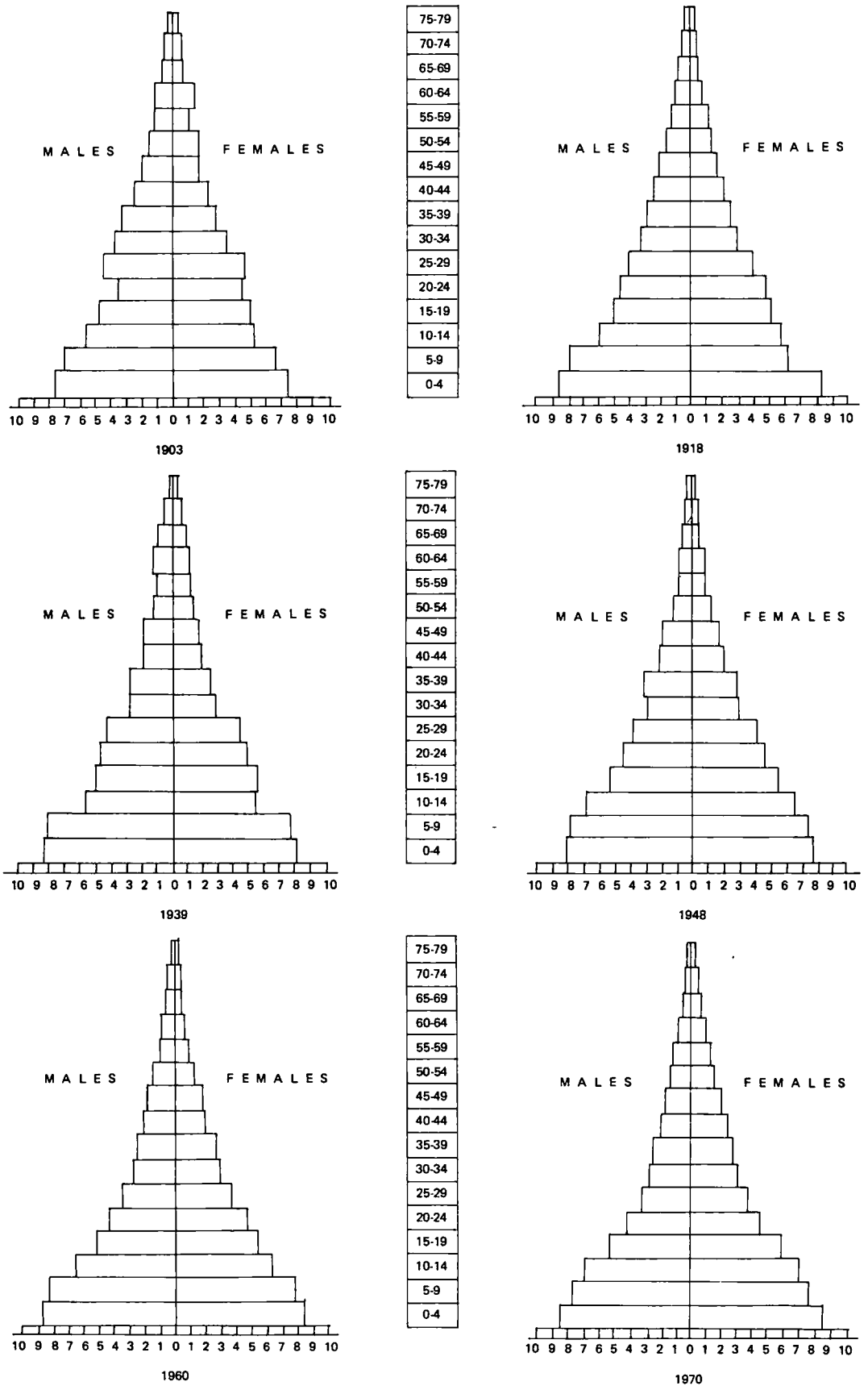


Figure 5. Age pyramids of the population, 1903-1970

the early working ages, 15 to 34, where the proportions of females are relatively higher. No definite pattern is discernible in ages 35 to 54, although the post-war years saw near or complete equilibrium of the sexes. In the advanced ages there is an almost equal number of males and females.

The age structure of the type obtaining in the Philippines with a heavy concentration of the population in the very young and dependent ages has economic and demographic significance and implications. The economic significance lies in the correlation between age and economic activity and productivity. For the economy as a whole, the number of gainfully employed is disproportionately small in relation to the unproductive groups who are dependent on them. This means a heavy burden for the economically productive sector of the population and a major hindrance to economic progress. This aspect will be discussed in the next section of this chapter.

Demographically, a young age structure is favourable to further large additions to the country's population in the future. A high proportion of persons in the pre-productive years means that each year, as the young people grow up and move into the reproductive years, the size of the childbearing fraction of the population will increase tremendously. In turn, their children will further inflate the size of the younger age groups. That is, potential parents are much more numerous than the present reproducing cohorts. If the present patterns of family formation and fertility levels were to continue, the increase in the population of the Philippines during the next generation would far exceed that experienced up to this time. This aspect will be discussed in detail in the chapter on population projections.

The percentage distribution of the urban, rural and total population in 1970 by age group and sex is shown in table 15 and illustrated in figures 6 and 7. It will be seen that for both males and females, the proportion of the population aged 0-14 years is higher in the rural than in the urban areas; while for those aged 15-64 years the urban proportions are higher than the rural ones. These conditions have largely been the result of comparatively higher fertility obtaining among the rural population and of the age selectivity of rural-urban migration. The differences in the proportions of those aged 65 years and over in rural and urban areas are very insignificant. It will also be noted that the percentages of females in each age group from 35 years upwards have been equal, almost without exception, in the rural and urban areas, while among males this feature is noticeable only in respect of ages 45 and over.

Table 15. Percentage distribution of the male and female population by age group and residence, 1970

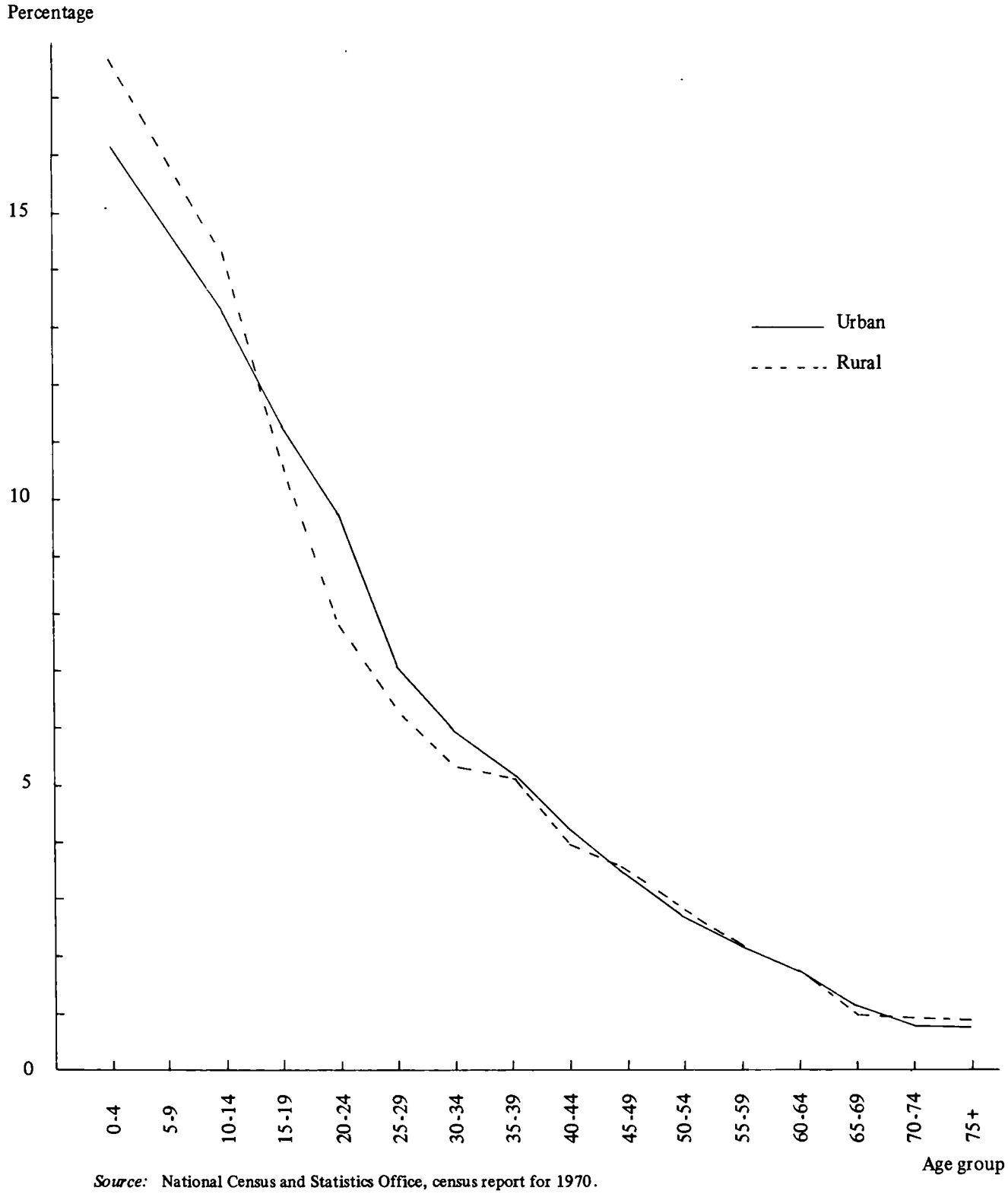
Age group	Male			Female		
	Total	Urban	Rural	Total	Urban	Rural
All ages	100.0	100.0	100.0	100.0	100.0	100.0
0-4	17.2	16.2	17.7	16.6	14.8	17.5
5-9	15.5	14.6	15.9	14.7	13.1	15.5
10-14	14.0	13.2	14.3	13.4	12.6	13.9
15-19	10.9	11.3	10.7	11.4	13.3	10.5
20-24	8.4	9.7	7.8	8.8	10.5	8.0
25-29	6.5	7.0	6.3	6.9	7.4	6.6
30-34	5.5	5.9	5.3	5.8	6.1	5.6
35-39	5.2	5.2	5.1	5.2	5.2	5.2
40-44	4.0	4.2	3.9	4.1	4.1	4.1
45-49	3.4	3.4	3.5	3.6	3.5	3.6
50-54	2.7	2.7	2.8	2.8	2.8	2.8
55-59	2.2	2.2	2.2	2.2	2.2	2.2
60-64	1.7	1.7	1.7	1.6	1.6	1.6
65-69	1.1	1.1	1.0	1.1	1.1	1.1
70-74	0.8	0.8	0.9	0.8	0.7	0.8
75 and over	0.9	0.8	0.9	1.0	1.0	1.0
0-14	46.7	44.0	47.9	44.7	40.5	46.9
15-64	50.5	53.3	49.3	52.4	56.7	50.2
65 and over	2.8	2.7	2.8	2.9	2.8	2.9

Source: Same as for table 11.

The age structure of the population by region is given in table 16. The median ages seem consistent with the proportions of those aged under 15 years. Low proportions of young population are accompanied by high median ages. The Ilocos region, Central Visayas, and Metropolitan Manila have the oldest population, with median ages 18.6, 17.5 and 19.1 years, respectively. Following the same order, these regions registered 42.6, 44.6 and 39.7 per cent in the 0-14 age group. These figures are below the national level of 45.7 per cent for the same broad age group. It has been found that these three regions have the lowest indexes of marriage[9] and moderately low levels of fertility.[10] Metropolitan Manila has the

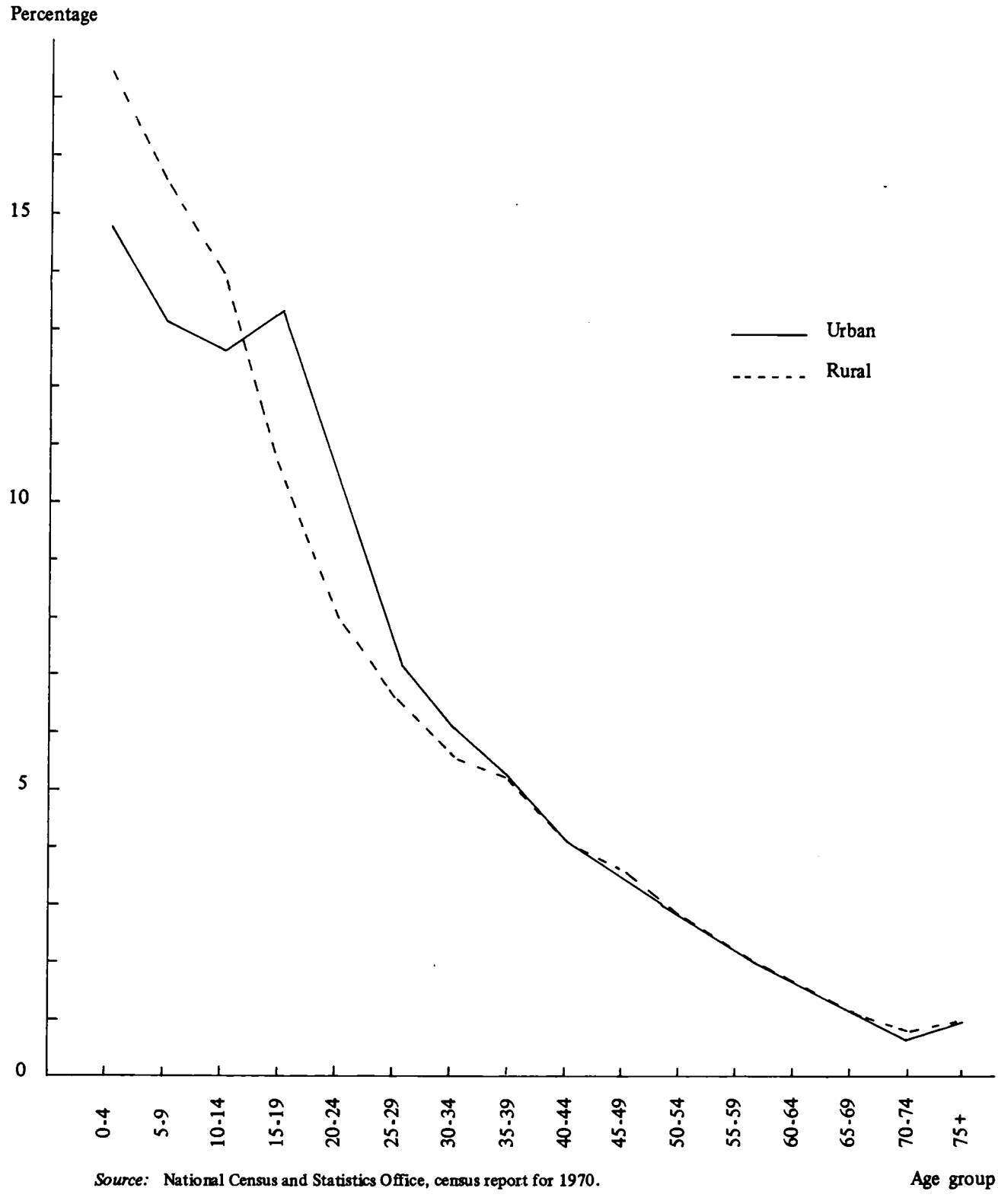
9 Peter C. Smith, *op. cit.*

10 Mercedes B. Concepcion, *Changes in Period Fertility as Gleaned from the 1973 NDS*, Research Note No. 13 (Manila, Population Institute, University of the Philippines, 1974).



Source: National Census and Statistics Office, census report for 1970.

Figure 6. Percentage distribution of the male population by five-year age group for urban and rural areas, 1970



Source: National Census and Statistics Office, census report for 1970.

Figure 7. Percentage distribution of the female population by five-year age group for urban and rural areas, 1970

Table 16. Age structure of the population by major region, 1970

Age group	Major administrative regions											
	Ilocos region	Cagayan Valley	Central Luzon	Southern Luzon	Bicol region	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Metropolitan Manila
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
0-4	14.3	17.0	16.0	16.4	17.1	15.3	15.3	16.2	16.2	16.6	17.1	14.4
5-9	15.1	17.6	15.6	15.7	17.1	16.1	15.7	17.2	17.4	17.2	17.0	13.5
10-14	13.2	13.4	13.7	13.8	14.8	14.2	13.6	14.3	14.3	14.1	13.8	11.8
15-19	10.5	10.4	11.2	11.2	10.9	11.3	10.8	9.9	11.0	11.0	11.1	12.7
20-24	7.9	7.6	9.0	8.5	7.7	7.9	8.1	7.2	8.2	8.2	8.6	11.9
25-29	6.2	6.2	6.4	6.8	6.0	6.5	6.4	6.2	7.2	6.9	7.3	8.2
30-34	5.6	5.6	5.4	5.5	5.0	5.5	5.6	5.2	5.8	5.9	5.8	6.7
35-39	5.1	5.3	5.0	5.2	4.7	5.2	5.1	5.1	5.5	5.5	5.3	5.5
40-44	4.2	3.9	4.0	4.1	4.0	3.9	4.2	4.2	4.1	4.1	3.9	4.2
45-49	4.2	3.6	3.5	3.5	3.3	3.7	3.7	3.8	3.2	3.3	3.1	3.2
50-54	3.5	2.9	2.8	2.4	2.6	2.9	3.1	3.0	2.4	2.4	2.4	2.6
55-59	2.9	2.1	2.4	2.3	2.2	2.5	2.6	3.4	1.7	1.8	1.7	2.0
60-64	2.4	1.7	1.8	1.7	1.7	1.8	2.0	2.0	1.3	1.3	1.2	1.4
65-69	1.8	1.0	1.2	1.1	1.0	1.1	1.4	1.2	0.7	0.7	0.7	0.8
70-74	1.3	0.8	0.9	0.8	0.9	0.9	1.1	1.0	0.5	0.5	0.5	0.5
75-79	0.7	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.2	0.2	0.2	0.3
80 and over	1.1	0.6	0.7	0.6	0.6	0.8	0.8	0.7	0.3	0.3	0.3	0.3
0-14	42.6	48.0	45.3	45.9	49.0	45.6	44.6	47.7	47.9	47.9	47.9	39.7
15-64	52.5	49.3	51.5	51.2	48.1	51.2	51.6	49.0	50.4	50.4	50.4	58.4
65 and over	4.9	2.7	3.2	2.9	2.9	3.2	3.8	3.3	1.7	1.7	1.7	1.9
Median age	18.6	16.3	17.1	16.9	15.5	17.0	17.5	16.2	16.0	16.0	16.0	19.1

Source: Same as for table 11.

highest proportion of population of working age (58.4 per cent) followed by the Ilocos region (52.5 per cent). The Bicol region, which has the youngest population, with a median age of 15.5 years and 49 per cent in the 0-14 age group, has the lowest proportion, 48.1 per cent, in the economically-productive ages. The Ilocos region, with 4.9 per cent, has the highest proportion of population in the oldest age group, 65 years and over.

A lower proportion in the 0-4 age group than in the next higher age group has been observed for the Ilocos region, Cagayan Valley, the Visayan regions, Western Mindanao and Northern Mindanao. A smaller number of children in the 0-4 age group compared with the number of children aged 5-9 years could have been possible only if there had been a rapid decline of fertility in those areas between 1965 and 1970. In the absence of evidence supporting such a decline in the birth rate, the higher proportion of children aged 5-9 years compared to those aged 0-4 years might be due to under-enumeration of very young children and to misreporting of ages.

C. DEPENDENCY BURDEN

A very significant aspect of rapid population growth is the resultant problem of dependency burden. Persons in the 15-64 age group are conventionally thought as the population of working ages upon whom children under 15 years and those aged 65 years and over are dependent. The ratio of the size of the dependent age groups to the size of the working population therefore provides a rough measure of the burden of dependency which age structure imposes on a population. When the young and the old age groups are disproportionately large, the burden of supporting these two unproductive ends of the age scale fall on the relatively small proportion of gainfully employed.

Table 17 gives the dependency ratios for the various census years from 1903 to 1970. A high level of fertility coupled with declines in infant and child mortality have resulted in an almost continuous increase in the total dependency ratio from 75.0 per hundred persons aged 15-64 years in 1903 to 94.3 in 1970. The youth or child dependency ratios closely followed the increasing trend of total dependency ratio. The child dependency ratio, which was only 69.3 in 1903, rose to 88.8 in 1970. The aged dependency ratio, however, fluctuated around a level of 5.5 per 100 persons aged 15-64 years. This ratio, which was 5.7 in 1903, dropped to 4.6 in 1918 but increased to 6.0 in 1948, falling again to 5.3 in 1960 and then increasing slightly to 5.5 in 1970. Thus the increase in the total dependency ratio over the years has been due to the increases in the youth dependency ratios.

The dependency ratios in 1970 for the different regions of the country are shown in table 18. It will be seen that the Cagayan Valley, Bicol region and Eastern Visayas had the highest total dependency ratios in 1970. Metropolitan Manila, where in-migration has resulted in a very high proportion of persons of working age, had the lowest dependency ratio. The Ilocos region had the highest old-age dependency ratio and the second lowest youth dependency ratio. It is also interesting to note that the youth as well as old age dependency ratios were the same for the three Mindanao regions.

In table 19, the dependency ratios for the Philippines are compared with corresponding ratios for a few selected countries of the world. It will be observed that in the Philippines and other developing countries of the world, roughly 100 persons in the working age group have to support about 80 to 110 dependants. This is in contrast to the situation obtaining in the developed countries where 100 persons in the working age group have to support only about 50-60 dependants. "An interesting feature about the dependency burden is that old-age dependency is heavier in developed regions and countries experiencing low rates of population growth, while childhood or youth dependency is heavier in the developing countries with high population growth rates".*11*

It must, however, be noted that the true dependency burden is considerably higher than is shown by the dependency ratios because not all persons of working age are actually employed. For instance, according to the 1970 population census, only about 57 per cent of persons aged 15-64 years were employed; the remaining 43 per cent were either unemployed, or full-time students or housekeepers, etc. Thus, though belonging to the working age group, a substantial proportion of persons aged 15-64 years are not at work and should therefore be considered as dependants.

11 S. Selvaratnam, *Implications of Population Growth: The Asian Context*, background paper presented to the International Labour Organisation (ILO) Asian Regional Workshop for Trade Union Education Officers and Teaching Staff of Workers' Education Institutions on Population and Family Planning, Quezon City, Philippines, 11-29 March 1974, pp. 35-37.

Table 17. Dependency ratios, 1903-1970 census years

Census year	Dependency ratios		
	Youth[a]	Old-age[b]	Total[c]
1903	69.3	5.7	75.0
1918	82.6	4.6	87.2
1939	80.3	5.8	86.1
1948	83.8	6.0	89.8
1960	88.6	5.3	93.9
1970	88.8	5.5	94.3

Source: Based on the relevant data for the various census years.

a Number of persons aged 0-14 years per 100 persons aged 15-64 years.

b Number of persons aged 65 years and over per 100 persons aged 15-64 years.

c Number of persons aged 0-14 years and 65 years and over per 100 persons aged 15-64 years.

Table 18. Dependency ratios for various regions, 1970

Regions	Dependency ratios		
	Youth	Old-age	Total
Ilocos	81.2	9.4	90.6
Cagayan Valley	97.2	5.5	102.7
Central Luzon	88.0	6.2	94.2
Southern Luzon	89.6	5.7	95.3
Bicol	101.7	6.1	107.6
Western Visayas	88.8	6.5	95.3
Central Visayas	86.4	7.4	93.8
Eastern Visayas	97.3	6.7	104.0
Western Mindanao	95.0	3.4	98.4
Northern Mindanao	95.0	3.4	98.4
Southern Mindanao	95.0	3.4	98.4
Metropolitan Manila	76.9	3.4	80.3

Source: Same as for table 11.

Table 19. Dependency ratios in selected countries of the world, 1968-1975

Country	Year	Dependency ratios		
		Youth	Old-age	Total
		Asia		
Bangladesh	1974	80.5	4.8	85.3
Indonesia	1971	82.2	4.7	86.9
Japan	1974	35.9	11.3	47.2
Nepal	1971	71.6	5.4	77.0
Pakistan	1968	82.4	7.3	89.7
Philippines	1970	88.8	5.5	94.3
		Africa		
Ghana	1970	94.9	7.4	102.3
Kenya	1969	100.7	7.4	108.1
Morocco	1973	90.9	4.9	95.8
Mali	1970	99.7	3.2	102.9
		Americas		
Canada	1974	42.1	13.0	55.1
Chile	1975	60.3	8.6	68.9
Costa Rica	1973	84.0	6.7	90.7
Ecuador	1974	86.4	7.4	93.8
Mexico	1974	92.3	6.9	99.2
Paraguay	1972	87.4	7.9	95.3
United States	1974	40.5	16.2	56.7
		Europe		
Denmark	1973	35.6	20.1	55.7
France	1972	37.8	21.6	59.4
Greece	1974	37.9	18.8	56.7
Sweden	1974	32.1	23.0	55.1
United Kingdom	1975	36.7	22.5	59.2
		Oceania		
Australia	1973	49.8	13.7	63.5

Source: Computed from data in *Demographic Yearbook, 1975* (United Nations publication, Sales No. E/F.76.XIII.1).

Chapter III

INTERNAL MIGRATION

A. INTRODUCTION

The movement of people from one area to another is today important phenomenon characteristic of the developing countries. Such movements exert a pervasive influence on the economic, political and demographic structures of both the sending and the receiving areas. The demographers' interests have included migration (a) as a key factor in population change; (b) as an inducing variable in population redistribution and residential relocation among geographic areas; and (c) as an adjustive mechanism concomitant to growth and development. For these reasons, several studies of the internal migratory movement of the population in the Philippines have already been undertaken.[1] Today, the extent, causes and selectivity/differentials of migration are increasingly engaging the attention and concern of social scientists.

The principal sources of migration data for recent periods are the place-of-birth data obtained in the 1960 and 1970 censuses of population; data on place of residence in 1960, cross-classified by place of residence in 1970; and estimates of net migration derived by the census survival ratio method. The National Demographic Survey of 1973, on the other hand, provides data on characteristics of migrants at the time of the survey. Although characteristics at place of origin and at time of movement are not available, the survey data allow analysis of greater detail for a more refined study.

While the various sources of data are sufficient for a study of life-time and period migration, the inherent deficiencies and inaccuracies in the data render difficult an exact assessment of the movements and their impact on the population structure of the sending and receiving areas. For instance, in regard to the data from the censuses, it has been observed:

> "Although there is broad agreement between these different sources of migration data for most of the regions, for some, there are significant differences. There is no reason to believe that one source is better than the others for all regions. The birth place data, and that on residence in 1970, seem to be deficient in Manila City and the provinces around it... Migration estimates by the census survival ratio method are affected by regional variations in mortality and mis-statement of age. Thus all the three sources have deficiencies and there is no reason to believe that one set of estimates is better than the other."[2]

These and other deficiencies in the data have to be borne in mind in interpreting the results of the analysis.

Moreover, the number of migrants during any particular period of time is a function of the definition of "migrant". A migrant is here defined as a persons who moved across migration-defining areas and incurred a change of residence during a specific time interval. In terms of time interval, migrants may be classified as lifetime (those whose place of birth differs from place of residence at the time of enumeration) and period (those whose places of residence at two specific dates differ, e.g. intercensal (1960-1970) period migrant). In terms of migration-defining areas traversed by the migrant, a migrant may be classified as inter (intra) municipal, inter (intra) provincial, or inter (intra) regional. The migration-defining areas (municipality, province and region) are the administrative units arranged in hierarchical order, with the municipality at the base and the region at the apex.

B. VOLUME OF MIGRATION

As shown in census tabulations of birthplace-current place of residence data for 1960 and 1970, migration is an experience common to Filipinos. In 1960, according to the census data, 3,405,000 persons (12.6 per cent of the population of all ages) were living in a region different from the one in which they were born. This proportion increased

1 Some of the important studies on internal migration in the Philippines are listed in the bibliography appended to *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, UNFPA-NCSO Population Research Project, Monograph No. 5 (Manila, National Census and Statistics Office, 1976).

2 K.C. Zachariah and Ernesto M. Pernia, *Migration in the Philippines with Particular Reference to Less Developed Regions in the Country*, paper prepared for the World Bank (Manila, 1975), (mimeo), p. 7.

to 13.2 per cent at the time of the 1970 census enumeration (4,830,000 persons).[3]

In 1970, the migrant segment of the country's total population aged 10 years and over numbered approximately 5 million. Of these, 2,092,000 crossed regional boundaries between 1960 and 1970, representing 8.3 per cent of the population 10 years old and over. Although the volume of decade migration is not directly comparable to lifetime migration because of changes in the size and structure of the population and the differences in the time interval of the reference period, the estimates discussed above suggest that interregional migration in the Philippines remains a very significant phenomenon, in fact, the major demographic factor underlying regional population growth differentials.

Generally speaking, there is supposedly an inverse relationship between distance and migration. The volume of migration then is expected to decrease with distance. Movements across and within migration-defining areas in the Philippines, however, offer evidence to the contrary. Census data on lifetime migrants in 1970 appear to underscore the dominance of long-distance movements across provincial and regional boundaries.[4] Of the total lifetime migrants enumerated (8,920,019), nearly 71 per cent (6,300,374) experienced interprovincial transfer and about 54 per cent (4,829,573) accounted for interregional exchange of population.

For a shorter interval of time (1960-1970), nearly 16 per cent of the population aged 10 years and over (3,973,174 persons) experienced relocation of municipal residence, while a lower proportion, about 11 per cent (2,668,375 persons), changed provincial address. Thus, during the 1960-1970 period a significant 67 per cent of intermunicipal migrants changed their province of residence. Again, it can be noted from table 20 that more than half of the migrants, 51.2 per cent, crossed regional boundaries. It is needless to emphasize that the consequences and the impact of long-distance movements remain important matters confronting local policy-makers.

Table 20. Intercensal migration status of the population 1960-1970

	Number	Percentage
Total population	36,642,666	100.00
Non-migrants	31,597,216	86.23
Migrants[a]	5,045,450	13.77
Intraprovincial[b]	1,736,293	4.73
Intraregional[c]	727,395	1.99
Interregional	2,581,762	7.05

Source: Geographical Patterns of Internal Migration in the Philippine, 1960-1970.

a Excluding international migrants. Migrants have been defined to include "children born since 1960 whom the 1970 census report includes in its listings of lifetime migrants, i.e. persons who, in 1970, were residing in a place different from their place of birth. Because the census publication...do not indicate the specific province of birth of these children, and no special tabulations concerning lifetime migrants were prepared, their total number has been distributed over the 67 provinces of the country proportional to the number of persons 10 years and older which individual provinces had lost since 1960".

b Intraprovincial migrants are persons who changed their municipalities of residence within the same province. Data exclude "local movers", i.e., persons who changed residence within the same municipality or city. Only migrants within the city of Manila are included.

c Excluding Region XII (city of Manila).

C. MIGRATION STATUS BY REGIONS

Since detailed information for 1960 are not available, only the magnitude of lifetime in-migration and, correspondingly, of the proportion of the total population of a region born in the same region are estimated for that year. These estimates are given in table 21.

It will be observed from the table that six regions, namely, Ilocos, Central Luzon, Bicol and the three Visayas, had in 1960 strikingly low proportions of their population, 4 per cent or less, born in another region. For the other six regions, the corresponding proportions were well over 15 per cent, the proportion being as high as 45.4 per cent in the city of Manila and 37.8 in Southern Mindanao. The pull exercised by the city of Manila was one of

3 Slightly lower values, viz. 10.7 per cent (2,888,000 persons) for 1960, and 11.8 per cent (4,294,000 persons) for 1970 were reported by Zachariah and Pernia (*ibid.*, p. 8 and table 10) The difference is due to differences in definition of migration areas. For instance, while the present study treated Manila City and Southern Luzon as two separate regions, Zachariah and Pernia classified these two areas as one region. However, their conclusion is the same: "Between 1960 and 1970, the mobility of the population of the Philippines appears to have increased."

4 It is, however, necessary to interpret this data with great caution since "inter-provincial migrants cannot necessarily be equated with short-distance movers, and inter-regional migrants not with long distance ones. While such equations may be factually correct in many instances, it depends on the size of a province and its location relative to the boundrary of the region of which it is a part. Migration between city of Manila and Rizal Province is a case in point". See *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, p. 5.

Table 21. Migration status of the population by region of residence, 1960

Region of residence in 1960		Percentage of total population born: in other regions	in same region
I.	Ilocos	3.50	96.50
II.	Cagayan Valley	15.77	84.23
III.	Central Luzon	4.09	95.91
IV.	Southern Tagalog	19.41	80.59
V.	Bicol	3.48	96.52
VI.	Western Visayas	2.27	97.73
VII.	Central Visayas	3.15	96.85
VIII.	Eastern Visayas	1.81	98.19
IX.	Western Mindanao	29.30	70.70
X.	Northern Mindanao	16.65	83.35
XI.	Southern Mindanao	37.80	62.20
XII.	City of Manila	45.44	54.56

Source: Computed on the basis of 1960 Census data.

Table 22. Proportion of total population born in another region, by region of residence, 1970

Region of residence in 1970		Percentage of total population born in other regions[a]
I.	Ilocos	4.9
II.	Cagayan Valley	12.7
III.	Central Luzon	5.8
IV.	Southern Tagalog	21.2
V.	Bicol	4.6
VI.	Western Visayas	2.9
VII.	Central Visayas	4.6
VIII.	Eastern Visayas	3.3
IX.	Western Mindanao	19.0
X.	Northern Mindanao	17.6
XI.	Southern Mindanao	32.2
XII.	City of Manila	34.1

Source: Computed on the basis of 1970 Census data.

a The percentages shown here have been calculated with, as denominator, the number of residents excluding those residents born abroad or whose place of birth was not stated.

the chief factors responsible for migratory movements, as well as the settlement of the frontier areas of Mindanao and, to a lesser extent, Southern Tagalog.

The analysis of the 1970 census data given in table 22 presents a situation similar to the one obtaining in 1960. In 1970, the proportions of persons residing in one region but born in another was very low in the very same six regions as in 1960, their proportions varying from about 3 to 6 per cent. The city of Manila maintained its position as the region with the highest proportion of persons born outside it, though there has been a decrease in the proportion over the 1960 level. Southern Mindanao and Western Mindanao, which contained the second and third highest proportion of persons born in other regions also recorded a decline in the proportions between 1960 and 1970. The increase in the proportion in Southern Tagalog reflects the increasing in-migration into that region as evidenced by the data on 1960-1970 intercensal migration.

A classification of the total population by place of birth and by place of residence in 1970, and another of the population 10 years old and over by place of residence in 1960 and 1970, are given in tables 23 and 24. The per cent distribution of migrants across municipal, provincial and regional boundaries is given in table 25. It will be observed that in 1970, for all regions combined, nearly three fourths of the total population were born in the municipality of their current residence.[5] This proportion has, however, varied from region to region, being lowest for the city of Manila (53.7 per cent) and highest in Eastern Visayas (86.6 per cent) and Ilocos (86.5 per cent).

It will also be noted that, for the country as a whole, many lifetime migrants were born outside their current province of residence (less than 30 per cent migrated within the same province), or even in another region (about 54 per cent). The situation in regard to the various regions shows marked variations. It is clear from column (4) of table 25 that the proportion of migrants who migrated within the same province is very low in the city of Manila, (3.2 per cent), in the Mindanao regions, particularly Southern Mindanao (13.7 per cent) and in Southern Tagalog, and very high (around 60 per cent) in the three Visayas. A similar picture emerges in regard to migration within the same region [table 25 column (5)].

5 This does not, however, mean that these people have never moved from their place of birth. Some of them might have moved out and later returned to their place of birth; but the data do not permit measurement of this phenomenon.

Table 23. Distribution of population, all ages, by place of birth and region of residence in 1970

Place of residence in 1970		Place of birth						
		Total residents	In same municipality, same province	In other municipality, same region	In other province, same region	In other region	Foreign country and not stated	Total migrants
		(a)	(b)	(c)	(d)	(e)	(f)	(g)=(c)+(d)+(e)
I.	Ilocos	1,604,418	1,388,565	77,909	54,104	77,723	6,117	209,736
II.	Cagayan Valley	1,691,459	1,315,442	116,905	43,420	214,081	1,611	374,406
III.	Central Luzon	5,100,095	4,279,819	311,940	196,805	295,794	15,737	804,539
IV-A.	City of Manila	1,330,788	714,551	17,515	94,601	427,717	76,403	539,834
IV-B.	Southern Tagalog	6,994,459	4,701,507	419,602	360,243	1,478,001	35,106	2,257,846
V.	Bicol	2,966,881	2,395,486	292,365	139,609	135,237	4,184	567,211
VI.	Western Visayas	3,618,326	2,944,055	402,703	159,075	105,770	6,723	667,548
VII.	Central Visayas	3,032,719	2,525,621	298,802	60,839	140,301	7,154	499,944
VIII.	Eastern Visayas	2,381,409	2,062,217	189,022	48,499	79,382	2,289	316,903
IX.	Western Mindanao	1,869,014	1,334,568	130,364	47,013	353,603	3,466	530,980
X.	Northern Mindanao	3,016,865	2,117,252	191,049	173,210	531,494	3,863	895,750
XI.	Southern Mindanao	3,078,053	1,816,671	171,469	93,383	990,470	6,060	1,255,322
	All regions	36,684,486	27,595,754	2,619,645	1,470,801	4,829,573	168,713	8,920,019

Sources: Philippines 1970 Census, table IV-9; and unpublished tabulation of lifetime (birth-1970) interprovincial migration (conducted by the University of the Philippines Population Institute research staff).

Table 24. Distribution population 10 years old and over, by place of residence in 1960 and 1970, by region

Place of residence in 1970		Total residents[a] 10+	Place of residence in 1960		
			In same municipality	In other municipality, same province	In other province
		(h)	(i)	(j)	(k)
I.	Ilocos	1,140,252	1,043,095	31,359	65,798
II.	Cagayan Valley	1,135,354	988,319	60,324	86,711
III.	Central Luzon	3,481,337	3,119,293	120,705	241,339
IV-A.	City of Manila	946,181	720,898	11,784	213,499
IV-B.	Southern Tagalog	4,868,510	3,758,713	251,494	858,303
V.	Bical	1,956,870	1,709,434	128,368	119,068
VI.	Western Visayas	2,497,683	2,216,791	172,044	108,848
VII.	Central Visayas	2,134,949	1,907,125	121,937	105,887
VIII.	Eastern Visayas	1,604,601	1,458,701	80,617	65,283
IX.	Western Mindanao	1,243,591	1,039,630	84,532	119,429
X.	Northern Mindanao	1,987,504	1,571,885	109,702	305,917
XI.	Southern Mindanao	2,032,734	1,522,508	131,933	378,293
	All regions	25,029,566	21,056,392	1,304,799	2,668,375

Source: Philippines 1970 Census..., table IV-12.

a Excluding people whose place of residence in 1960 was either "not stated" or in a foreign country.

It is also evident from column (7) of table 25 that, while for the country as a whole nearly 77 per cent of the interprovincial migrants have crossed region boundaries, the proportion is as high as 91 per cent in Southern Mindanao and 88 per cent in Western Mindanao and as low as 40 per cent for Western Visayas. In Bicol, 49 per cent of interprovincial migrants were born in another region and 51 per cent were born within the region.

Considering the 1960-1970 period, it would appear that the range in the proportion of persons living in 1960 in another province [column (10) of table 25] was narrower than in 1970 [column (2) of table 25 gives the complement to 100 of those percentages]. In 1960, while the average of the country as a whole was 10.7 per cent, the proportion was higher than the national average in only four regions, namely, the city of Manila (22.6 per cent), Southern Mindanao (18.6 per cent), Southern Tagalog (17.6 per cent) and Northern Mindanao (15.4 per cent). Cagayan Valley and Western Mindanao no longer appear to be so attractive to people of other provinces.

Nearly 95 per cent of the migrants aged 10 years and over living in the city of Manila in 1970 changed their province of residence between 1960 and 1970; only 5 per cent remained in the province in which they resided in 1960. The next highest proportion of those who changed the province of residence during the 10-year period is found in Southern Tagalog (about 77 per cent). A similar proportion (roughly 74 per cent) was noted in Northern and Southern Mindanao. In all other regions, the proportions ranged from about 32 to 62 per cent.

It will, of course, be more interesting to find out which of the provinces contained most migrants in terms of absolute numbers as well as proportion to the local population. According to estimates prepared by the National Census and Statistics Office:

> "... almost one fourth of all intercensal migrants, 1,161,447 were concentrated in the city of Manila (5.3 per cent) and surrounding areas of Rizal (17.7 per cent); approximately 30 per cent, 1,469,834, were living in Mindanao. In the Province of Rizal resided the largest number of migrants of any type: intraprovincial (135,027), intraregional (78,016), and interregional (687,514); this indicates the tremendous economic opportunities which this industrializing area offers. In Mindanao it was the large agricultural provinces of Zamboanga del Sur, the Cotabatos and the Davaos in the south, and Bukidnon and Agusan in the north, rather than the industrializing areas around Iligan and Cagayan de Oro, which drew most migrants. The two Visayan provinces with relatively large numbers of migrants were Negros Occidental and Cebu; the first because of its rich sugar resources, the latter on account of Metropolitan Cebu City, the trade and education centre of the central and southern Philippines. However, both of these provinces differed from those with population concentrations in Luzon and Mindanao: while the latter attracted predominantly intraregional and interregional migrants, the bulk of migrants in the former were intraprovincial movers, indicating that their drawing powers were of regional and not national dimensions."[6]

A careful examination of all data at the provincial and regional levels shows that the proportions of migrants vary from 35 per cent in Agusan del Sur and Bukidnon (Northern Mindanao) to less than 3 per cent in Sulu (Western Mindanao). Aside from movements to Rizal and to the city of Manila, most movements tended to go towards areas of low population density:

> "Regions least attractive to interregional migrants were the Visayan regions (regions VI, VII, VIII) and the regions located at the northern and southern end of Luzon (regions I and V). By contrast, unattractive provinces can be found in every part of the country, including Mindanao (Sulu, Lanao del Sur)..."[7]

D. MIGRATION FLOWS

Patterns of population movement, by its nature, have been highly complex. The more significant flows, seen from a historical perspective, are those across considerable distances. The prevailing areas of destination may be grouped into three broad regional divisions: Luzon (regions I to V and XII) Visayas (regions VI to VIII), and Mindanao (regions IX to XI). Although it is primarily the areal variation

6 *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, pp. 10-11.

7 *Ibid.*, p. 18.

Table 25. Distribution of migrants across municipal, provincial and regional boundaries, 1970

(Percentage)

Region of residence in 1970		Total population born			Migrants who migrated		Interprovincial migrants		Population 10+ living in 1960 in			Migrants 10+ remaining within province of residence in 1960
		in same municipality	in same province	in same region	within same province	within same region	remaining within region	moving to another region	same municipality	same province	other province	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I.	Ilocos	86.5	91.4	94.8	37.1	62.9	41.0	59.0	91.5	94.2	5.8	32.3
II.	Cagayan Valley	77.8	84.7	87.2	31.2	42.8	16.9	83.1	87.0	92.4	7.6	41.0
III.	Central Luzon	83.9	90.0	93.9	38.8	63.2	40.0	60.0	89.6	93.1	6.9	33.3
IV-A.	City of Manila	53.7	55.0	62.1	3.2	20.8	18.1	81.9	76.2	77.4	22.6	5.2
IV-B.	Southern Tagalog	67.2	73.2	78.4	18.6	34.5	19.6	80.4	77.2	82.4	17.6	22.7
V.	Bicol	80.7	90.6	95.3	51.5	76.2	50.8	49.2	87.4	93.9	6.1	51.9
VI.	Western Visayas	81.4	92.5	96.9	60.3	84.2	60.1	39.9	88.8	95.6	4.4	61.2
VII.	Central Visayas	83.3	93.1	95.1	59.8	71.9	30.2	69.8	89.3	95.0	5.0	53.5
VIII.	Eastern Visayas	86.6	94.5	96.6	59.6	75.0	37.9	62.1	90.9	95.9	4.1	55.3
IX.	Western Mindanao	71.4	78.4	80.9	24.6	33.4	11.7	88.3	83.6	90.4	9.6	41.4
X.	Northern Mindanao	70.2	76.5	82.3	21.3	40.7	24.6	75.4	79.1	84.6	15.4	26.4
XI.	Southern Mindanao	59.0	64.6	67.6	13.7	21.1	8.6	91.4	74.9	81.4	18.6	25.9
	All Regions	75.2	82.4	86.4	29.4	45.9	23.3	76.7	84.1	89.3	10.7	32.8

Sources: Philippines 1970 Census, tables IV-9 and IV-12; and unpublished tabulation of lifetime (birth-1970) interprovincial migration (conducted by the University of the Philippines Population Institute research staff). The percentages are derived as follows:

From table 23

Column		*Procedure*
(1)	=	100 x (b) : (a)
(2)	=	100 x [(b) + (c)] : (a)
(3)	=	100 x [(b) + (c) + (d)] : (a)
(4)	=	100 x (c) : (g)
(5)	=	100 x [(c) + (d)] : (g)
(6)	=	100 x (d) : [(d) + (e)]
(7)	=	100 x (e) : [(d) + (e)]

From table 24

Column		*Procedure*
(8)	=	100 x (i) : (h)
(9)	=	100 x [(i) + (j)] : (h)
(10)	=	100 x (k) : (h)
(11)	=	100 x (j) : [(j) + (k)]

in levels of economic growth and development that is considered the main source of differentials in net interregional migration rates, the influence of the regional similarity/dissimilarity as to ethnic-cultural composition should not be entirely disregarded. It is these factors that act as principal catalysts for the social amelioration of the rural migrant in an urban environment. On the other hand, there is that possible "ruralization" of the urban natives.

Almost half of the flow across regional boundaries was in fact a flow from one of the three broad divisions of the country defined above (Luzon, Visayas and Mindanao) to another. However, the proportion slightly decreased from 49.7 for lifetime migrants in 1960 to 44.1 for period-migrants aged 10 and over, between 1960 and 1970. The effects of these long-distance movements are clearly evidenced by the change in the proportions of the Philippine population living in broad regions of the country, as presented in table 26 for the census years between 1903 and 1970.

The proportion of the total population living in Mindanao in 1970 was two and a half times greater than the proportion in 1903. During the same period, the share of the Visayas decreased by roughly one third, and that of Luzon remained almost unchanged. This implies a tremendous redistribution of the population on which the analysis of interregional and intraregional streams will throw some light.

E. INTERREGIONAL STREAMS

Since a detailed description of all interregional streams and counter-streams is cumbersome, this section will be limited to such analysis as will bring out clear-cut patterns and trends of movements across the regions. In general, interregional migration in the Philippines has the following salient features: (a) dominance of long-distance movements; (b) frontier settlement of the Mindanao area and a response to the "pull" forces in more urbanized areas before 1960; (c) a simultaneous suburban movement from the urban centre to contiguous areas economically linked with the centre after 1960; and (d) decreasing stream effectiveness after 1960.

1. Long-distance movements

It has been mentioned earlier that, among lifetime migrants, 54.1 per cent experienced interregional migration. Of special interest in relation to this observation is the destination preference of the Visayan mobile population. There were more who chose to settle in any one of the three Mindanao areas than in other surrounding Visayan islands. Percentages of out-migrants going into Mindanao before 1960 contrast sharply with the much less significant flow of interregional movement within the larger Visayas region composed of Western Visayas, Central Visayas and Eastern Visayas.

A shift in the patterns of movement occurred during the period 1960 to 1970, as is evident from table 27. Proportions migrating to Mindanao declined for each of the Visayan regions although Central Visayas continued to send migrants at substantial levels relative to pre-1960 flows. Similarly, movement to the primate city decreased. Outflows northward to the Southern Luzon region, however, continued to increase.

The Ilocanos,[8] located in the northern part of the country, constitue another group of movers that corroborates the dominance of long-distance moves.

8 The inhabitants of the Ilocos region are well known for their love of adventure.

Table 26. Proportions of the population living in broad regions of the Philippines, 1903-1970

Broad region	1903	1918	1939	1948	1960	1970
All regions	100.0 (7,635,426)	100.0 (10,314,310)	100.0 (16,000,303)	100.0 (19,234,182)	100.0 (27,087,685)	100.0 (36,684,486)
Luzon	53.7	52.4	51.0	51.3	51.9	53.6
Visayas	37.5	36.9	34.9	33.3	28.2	24.6
Mindanao	8.8	10.7	14.1	15.4	19.9	21.8

Source: Geographical patterns of Internal Migration in the Philippines, 1960-1970, p. 9.

Table 27. Destination of the Visayan interregional migrants

Percentage of migrants from the Visayas going to		Period		Percentage point difference
		Birth to 1960	1960 to 1970	
Western Visayas				
IV.	Southern Tagalog	17.6	27.4	+9.8
VII and VIII.	Central and Eastern Visayas	5.5	8.3	+2.8
IX to XI.	Tripartite Mindanao region	62.4	50.2	-12.2
XII.	City of Manila	10.5	8.6	-1.9
Central Visayas				
IV.	Southern Tagalog	4.4	11.3	+6.9
V.	Bicol	3.0	2.7	-0.3
VI and VIII.	Western and Eastern Visayas	8.9	10.1	+1.2
IX to XI.	Tripartite Mindanao region	79.7	69.6	-10.1
Eastern Visayas				
IV.	Southern Tagalog	23.0	36.5	+13.5
V.	Bicol	2.4	2.2	-0.2
VI and VII.	Western and Central Visayas	8.2	6.8	-1.4
IX to XI.	Tripartite Mindanao region	44.6	31.7	-12.9
XII.	City of Manila	18.4	14.3	-4.1

Source: 1960 and 1970 Census migration tables.

Table 28. Destination of interregional migrants from the Ilocos region

Percentage of migrants from the Ilocos region going to		Period		Percentage point difference
		Birth to 1960	1960 to 1970	
II.	Cagayan Valley	25.0	20.0	-5.0
III.	Central Luzon	15.4	14.2	-1.2
IV.	Southern Tagalog	26.2	37.1	+10.9
IX to XI.	Tripartite Mindanao region	13.7	9.7	-4.0
XII.	City of Manila	19.2	15.3	-3.9

Source: 1960 and 1970 Census tables.

During the 1960 enumeration, 13.9 per cent of the native-born were found residing in another region. It will be seen from table 28 that, of these out-migrants, a majority were in Southern Tagalog and the nearby Cagayan Valley region. Between these two destinations, there were more who chose to migrate to Southern Tagalog, hundreds of kilometres farther away, than in Cagayan Valley, a neighbouring region. Moreover, significant numbers of migrants from the Ilocos went to the city of Manila and to Mindanao.

Table 28 reveals not only diminishing short-distance moves and frontier settlement, but also a stepped-up movement towards more urbanized areas, e.g. Southern Tagalog. This pattern is the result of the attempt to avoid the pollution and congestion festering in the urban centre, i.e. the city of Manila. The contiguity of the areal units of the Southern Tagalog region is in conjunction with post-1960 suburban movement.

There are, of course, exceptions to the "rule" of long-distance movement, which may in fact be more apparent than real, a mere coincidence with the map of economic opportunities and the attractiveness of the different possible destinations. For example, Southern Tagalog and the city of Manila together, with a combined population of 8,325,247 in 1970, received 45.4 and 52.4 per cent of migrants from the Ilocos region in the two periods considered, much more than the tripartite Mindanao region, which had a population of 7,963,932 in 1970 and received only 13.7 and 9.7 per cent of the migrants during the same periods.

2. Pre-1960 trend of movement

It is well known that earlier movements have been towards rural areas and that one salient feature of recent social change is the sustained heavy in-migration to major urban centres. The exodus of population from rural areas to urban centres has generally been treated as an explanatory variable to the phenomenal growth of city population. There is considerable evidence to indicate the rapid population redistribution that has taken place over the years in the major urban centres of the Philippines, because of differential economic growth.

According to the 1960 Census, the city of Manila had a total net gain of 189,119 persons from internal migration. Simultaneously, there was substantial out-migration to the neighbouring Southern Tagalog areas, Western Mindanao and Southern Mindanao. Total loss was estimated to be 147,781, of which 96.8 per cent went to the Southern Tagalog area.

While it is true that the pull exercised by the city of Manila was the chief factor behind the migratory movements, it should not be forgotten that before 1960 the bulk of the spatial mobility configuration was induced. The settlement of the frontier areas of Mindanao via government intervention in an effort to level off unbalanced regional development, initiated the accelerated growth of the once neglected region.

The rates given in table 29 indicate that, although the city of Manila ranked highest in recipiency, movement out of the city proper to a large extent offset the effects of the heavy influx of people. Thus, in terms of net migration rates, it ranked only third. The opposite trend, however, appears to be the case in respect of the Mindanao regions, especially Southern Mindanao. Southern and Western Mindanao ranked second and third in terms of in-migration rates and continued to draw settlers. The fact that they ranked very low in regard to out-migration rates accounted for their being ranked first and second respectively in regard to net-migration rates. Movements before 1960, therefore, were primarily of the pioneer settlement type. This explains the high sex ratios of in-migrants to each of the three Mindanao regions, ranging from 102.4 to 108.8.

It should also be noted that by 1960 Southern Tagalog was already a major in-migration area, as it ranked fourth, ahead of Norhtern Mindanao.

Migration propensities also vary by the region of birth. All regions with low in-migration rates have, except Bicol, the highest out-migration rates, apart from the city of Manila. Thus, Ilocos and the Visayas, which can be classified as poor region[9], experienced very important losses, in terms of population born in the region but moved to other regions prior to 1960.

9 For a more detailed discussion of migration movements with reference to level of development of the regions, see Zachariah and Pernia, *op. cit.*

Table 29. Rates (percentages) and rank order of in-migration, out-migration, and net migration, birth to 1960, by region

	Region	In-migration rates	Rank	Out-migration rates	Rank	Net migration rates	Rank
I.	Ilocos	3.50	8	13.94	4	-11.44	9
II.	Cagayan Valley	15.77	6	6.65	9	10.28	5
III.	Central Luzon	4.09	7	13.83	5	-10.70	8
IV.	Southern Tagalog	19.41	4	4.72	10	16.70	4
V.	Bicol	3.48	9	8.39	8	- 5.22	7
VI.	Western Visayas	2.27	11	14.26	3	-13.07	11
VII.	Central Visayas	3.15	10	24.35	2	-24.58	12
VIII.	Eastern Visayas	1.81	12	13.20	6	-11.58	10
IX.	Western Mindanao	29.30	3	3.71	11	30.65	2
X.	Northern Mindanao	16.65	5	11.85	7	5.61	6
XI.	Southern Mindanao	37.80	2	2.77	12	43.91	1
XII.	City of Manila	45.44	1	34.22	1	18.63	3

Source: 1960 Census migration tables.

Table 30. Rates (percentages) and rank order of in-migration, out-migration and net migration, 1960 to 1970, by region

	Region	In-migration rates	Rank	Out-migration rates	Rank	Net migration rates	Rank
I.	Ilocos	3.84	10	9.61	4	- 6.18	8
II.	Cagayan Valley	5.78	6	4.35	10	1.50	5
III.	Central Luzon	4.88	7	6.88	7	- 2.12	6
IV.	Southern Tagalog	14.83	2	3.50	12	12.47	1
V.	Bicol	3.86	9	7.64	6	- 4.01	7
VI.	Western Visayas	2.27	12	8.73	5	- 6.83	9
VII.	Central Visayas	4.02	8	12.76	2	- 9.54	11
VIII.	Eastern Visayas	2.88	11	11.57	3	- 9.36	10
IX.	Western Mindanao	7.84	5	4.82	9	3.22	4
X.	Northern Mindanao	10.93	4	5.42	8	6.00	3
XI.	Southern Mindanao	14.57	3	4.30	11	11.34	2
XII.	City of Manila	21.66	1	34.07	1	-17.20	12

Source: 1970 Census migration tables.

3. Post-1960 trend of movement

The accelerated social changes occurring after 1960 were accompanied by movement from an urban centre, exemplified by the city of Manila, to the contiguous areas within commutable distance, mostly located in the Southern Tagalog area. The outflow from other regions to the Mindanao regions continued, but not at the relatively high levels experienced before 1960.

The focus of interest during the decade 1960-1970 was the conglomeration of urban conurbations that gave shape to the rapidly expanding Metropolitan Manila area. According to the 1970 Census, there was a general decrease in in-migration to the metropolitan centre, accompanied by an oscillating outflow of population from its crowded districts. There was a 44.9 per cent increase in the outflow of population from the densely inhabited centred and a -16.1 per cent change in the inflow of population to this "decentralizing" core city.

Comparing the period rates and lifetime rates for Southern Tagalog would reinforce the observed trend of movement away from the metropolitan core. Whereas before 1960 Southern Tagalog ranked fourth in terms of in-migration and net migration rates, and tenth in terms of out-migration rates, during the decade 1960-1970 it ranked second, twelfth, and first in terms of in-, out-, and net migration rates respectively (table 30). These rankings are in conformity with the argument that Manila has been experiencing minimum levels of spatial mobility, in terms of in-migration, thereby losing population through out-migration as early as the 1950s.[10]

4. Movement out of the metropolitan centre

The process of "suburbanization" in the Philippines is well recognized by social researchers. The 1970 Census data provide a valuable basis for the analysis of movement out of the centre in terms of rural/urban destination. This analysis is shown in table 31. It will be noted from table 31 that, of a total number of 453,925 out-migrants from Manila, as many as 298,708 (or 66 per cent) moved into Southern Tagalog. Of those moving into Southern Tagalog, 93.2 per cent went to urban areas and only 6.8 per cent to rural areas. The high proportion moving into urban sectors of Southern Tagalog is due to the fact that a large part of Metropolitan Manila is located in this region. On the whole, 78.5 per cent of the out-migrants from Manila had urban destinations and only 21.5 per cent moved to rural areas.

It will also be noted from table 32 that out-migration from Central Luzon conforms very closely to the post-1960 trend. Over 50 per cent of the outflow from the central plains had a destination in the fast urbanizing fringe areas of Manila in the Southern Tagalog region.

The data presented in tables 31 and 32 are indicative of the progressive movement into the periphery of the developing metropolitan area. This process implies a thinning out of green land in response to the ever-increasing housing needs of the growing number of metropolitan areas confronted with problems of space in the core and suburban districts.

Of the 132 existing migration streams and counter-streams between the 12 regions of the country, only 12 consisted of more than 50,000 persons (table 33[11]), and these 12 movements together accounted for about 50 per cent of all interregional migrants. Six of these streams had Southern Tagalog as their area of desination; five streams originated in the Visayas. The biggest stream was that from the city of Manila to Southern Tagalog and especially to the neighbouring province of Rizal (234,926 persons) which received 48 per cent of all out-migrants from the city of Manila, or 9 per cent of all interregional migrants in the country. This large proportion underlines the magnitude of the process of suburbanization which has been taking place around the metropolis.

Along with Southern Tagalog and the Mindanao regions, Central Luzon is one of the main migrant-receiving areas. The status of Central Luzon as a recipient area is not related to its importance as the main rice-growing area in the country. In fact, of all provinces of Central Luzon, it is Bulacan – which is adjacent to Rizal and which is involved

10 See Elvia M. Pascual, "Urbanization in the Philippines", paper submitted to the South-East Asia Development Advisory Group (SEADAG) Population Panel Seminar on Population Change and Development in Southeast Asia: Urban Focus, Pattaya, Thailand, June 1972.

11 This table, as well as the discussions based thereon, is drawn from the National Census and Statistics Office (NCSO) study. As noted earlier, migrants were defined in the NCSO study to include children below 10 years. Hence the absolute number of migrants and the percentages based on them differ from those given in earlier tables.

Table 31. Numerical and percentage distribution of out-migrants from Manila to other regions by urban and rural locale of destination, 1970

Region of destination	Locale of destination				Total	%
	Urban	%	Rural	%		
I. Ilocos	4,745	45.3	5,736	54.7	10,481	2.3
II. Cagayan Valley	2,549	44.3	3,209	55.7	5,758	1.3
III. Central Luzon	34,187	55.9	27,007	44.1	61,194	13.5
IV. Southern Tagalog	278,353	93.2	20,355	6.8	298,708	65.8
V. Bicol	7,548	36.5	13,110	63.5	20,658	4.6
VI. Western Visayas	6,065	45.2	7,367	54.8	13,432	3.0
VII. Central Visayas	6,026	66.8	3,000	33.2	9,026	2.0
VIII. Eastern Visayas	4,664	37.0	7,936	63.0	12,600	2.8
IX. Western Mindanao	1,670	55.4	1,343	44.6	3,013	0.7
X. Northern Mindanao	4,319	52.5	3,915	47.5	8,234	1.8
XI. Southern Mindanao	5,997	55.4	4,824	44.6	10,821	2.4
Total	356,123	78.5	97,802	21.5	453,925	100.0

Source: 1970 Census.

Table 32. Destination of interregional migrants from Central Luzon

Per cent of migrants from Central Luzon going to	Period		Percentage point difference
	Birth to 1960	1960 to 1970	
I. Ilocos	4.4	5.7	+ 1.3
II. Cagayan Valley	16.8	11.2	- 5.6
IV. Southern Tagalog	36.2	51.7	+25.5
IX to XI. Tripartite Mindanao region	12.2	9.0	- 3.2
XII. City of Manila	28.4	19.4	- 9.0

Source: 1960 and 1970 census migration tables.

Table 33. Number of 1960-1970 interregional migrants,[a] by region of origin and region of destination

Region of destination		Region of origin												
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	All in-migrants
I.	Ilocos		10,228	17,401	5,449	1,459	685	786	1,123	588	523	1,530	15,299	55071
II.	Cagayan Valley	29,635		34,232	4,812	1,820	876	609	835	82	202	436	8,996	82,535
III.	Central Luzon	22,144	10,898		48,458	16,809	10,340	6,839	18,932	1,276	2,204	3,170	67,801	208,871
IV.	Southern Tagalog	51,837	21,936	151,518		125,981	77,049	40,628	89,160	8,523	10,791	12,087	276,397	865,907
V.	Bicol	1,948	784	5,600	29,425		3,798	10,079	5,953	402	1,295	1,892	36,951	98,127
VI.	Western Visayas	642	674	1,890	7,546	3,040		22,230	1,671	2,161	2,619	8,422	22,377	73,272
VII.	Central Visayas	408	382	1,646	5,660	3,212	22,774		15,445	10,088	17.593	15,585	14,045	106,838
VIII.	Eastern Visayas	798	228	1,368	4,837	2,831	1,739	17,700		1,136	4,735	4,719	22,816	62,907
IX.	Western Mindanao	838	342	3,003	2,684	944	17,722	33,799	7,735		44,872	8,909	3,906	124,754
X.	Northern Mindanao	3,312	2,425	3,794	6,195	3,324	28,452	119,567	33,229	27,745		37,537	11,040	276,620
XI.	Southern Mindanao	10,008	2,384	20,877	8,468	3,764	101,161	110,884	40,837	19,362	40,336		13,378	371,459
XII.	City of Manila	21,226	9,301	55,292	62,219	25,830	23,716	14,190	34,746	1,909	2,868	4,104		255,401
	All out-migrants	142,796	59,582	296,621	185,753	189,041	288,312	377,311	249,666	73,272	128,083	98,391	493,006	2,581,762

Source: Geographical Patterns of Internal Migration in the Philippines, 1960-1970.

a Both sexes.

☐ = Significant interregional migration stream, i.e. involving more than 50,000 persons.

in the process of suburbanization and industrialization centred in the latter – that has received most migrants.

Out-migrants from the three Visayan regions have obvious preferences in regard to their destinations. The bulk of the interregional migrants (63 per cent) from Samar and Leyte (Eastern Visayas) move to Luzon; from the Central and Eastern Visayas the main movement has been towards Mindanao. In Mindanao, the Western Visayas migrants clearly have preferred to move to the southern half of the island, while central Visayans have been more evenly distributed between the northern half and the southern half.

The analysis of migratory movement at the provincial level is given in table 34. The table shows "very clearly the tremendous drawing power which the industrialized-commercial complex of the country, centred around Rizal and Manila, exercised during the 1960s. Of the 55 "significant" provincial migration streams, 19 had Rizal as destination, and 6 the city of Manila. If we add to these the two streams directed towards Bulacan, we find that 27 out of 55 streams either terminated in the industrial-commercial centre (20) or effected a reshuffling of the population which resided in the centre area during the 1960s (7). The attraction of Rizal Province as in-migration area becomes even more clear when we look at the largest (not necessarily "significant") out-migration streams from every province: Rizal absorbed 32 of these streams. Of the 35 Luzon provinces, 26 sent the majorities of their migrants to Rizal; the 9 which did not were predominantly isolated island or mountain provinces (Benguet, Ifugao, Kalinga-Apayao, Mountain Province, Palawan, Romblon, Marimduque)".[12]

It will also be noted that as many as 47 out of the 55 "significant" migration streams were one-directional. It was only in respect of six provinces that significant out-migration to a particular province was either in part or fully offset by significant counter-migration from that province. There were five pairs of such significant streams and counter-streams among net out-migration provinces, namely, Manila-Pampanga; Manila-Pangasinan; Manila-Leyte; Cebu-Leyte; and Iloilo-Negros Oriental. It was only the movement between Rizal and Bulacan that involved net in-migration provinces.

12 *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, p. 50.

5. Stream effectiveness

The effectiveness of a pair of inter-area migration flows relates net transfers to turnover. This measure defines the extent to which moves will effect a given amount of population redistribution.[13] Computed indices of effectiveness[14] for lifetime and period migration present evidence for the reduced effectiveness of a stream and its counter-stream. Considering the 12-region system of flows, 12.6 per cent of the population changed regions between birth and 1960, with a net displacement[15] of 7.9 per cent. During the period 1960-1970, 8.3 per cent of the population 10 years old and over changed regions, with a net displacement of only 3.8 per cent.

The fair degree of effectiveness of the pre-1960 flows is indicative of the long-distance frontier streams characterizing the era. A good example is the voluminous influx from Western Visayas to Southern Mindanao, estimated to be 242,000 persons. The counter-stream was a little over 1,200. The flow then effected a 200 to 1 population redistribution. In the same manner, the Central Visayas-Southern Mindanao pair of flows had a net transfer-turnover ratio of 68 to 1. For short-distance moves, the stream: counter-stream ratios were not so lopsided. The Bicol-Southern Tagalog flow, for instance, had a ratio of less than 5 to 1.

Developments since 1960 provide a basis to counter the argument that the very high stream: counter-stream ratios of earlier frontier flows involved a severing of contact with origin among migrants, resulting in low probabilities of return migration. The over-all index of effectiveness declined from 63 to 46 during the 1960s. Significantly, the traditional dominant streams have been countered by substantial return flows. Thus, net displacement has been reduced largely, from 7.9 to

13 *Methods of Measuring Internal Migration*, Manual IV (United Nations publication, Sales No. E.70.XIII.3), p. 49.

14 Index of effectiveness $= \frac{|M_{ij} - M_{ji}|}{M_{ij} + M_{ji}} \cdot k$

or $\frac{\text{net in-migrants}}{\text{total inter-area migrants}} \cdot k$, where M_{ij} is the number of migrants from area i to area j, and M_{ji} the number of migrants from area j to area i. k is a constant, in this case 100.

15 Index of net displacement $= \frac{0.5 \sum_i |M_{.i} - M_{i.}|}{0.5 (P_t - P_{t+n})} .k$

or $\frac{\text{net change due to migration}}{\text{average population within which the displacement occurred}} .k$

Table 34. Largest interprovincial intercensal migration streams, by broad region and province of origin and destination, number of migrants, and rank order according to size, 1960-1970

Province of origin	Province of destination	Number of migrants	Rank order by size
	Intra-Luzon streams		
1. Manila	Rizal	234,926	1
2. Pangasinan	Rizal	43,833	2
3. Albay	Rizal	25,718	7
4. Bulacan	Rizal	23,441	12
5. Batangas	Rizal	19,047	18
6. Pampanga	Rizal	17,930	19
7. Camarines Sur	Rizal	17,622	20
8. Quezon	Rizal	16,010	24
9. Laguna	Rizal	15,801	25
10. Nueva Ecija	Rizal	15,438	26
11. Sorsogon	Rizal	14,591	30
12. Ilocos Sur	Rizal	13,613	33
13. Ilocos Norte	Rizal	13,301	34
14. Cavite	Rizal	12,870	37
15. Rizal	Manila	24,810	9
16. Pangasinan	Manila	16,069	23
17. Pampanga	Manila	13,047	35
18. Manila	Bulacan	21,886	14
19. Rizal	Bulacan	11,953	41
20. Manila	Pampanga	12,364	38
21. Manila	Pangasinan	11,816	43
22. Nueva Ecija	Isabela	10,277	50
	Luzon-Visayas stream		
1. Manila	Leyte	11,037	48
	Visayas-Luzon streams		
1. Eastern Samar	Rizal	31,920	3
2. Leyte	Rizal	30,518	4
3. Cebu	Rizal	25,346	8
4. Iloilo	Rizal	24,452	10
5. Negros Occidental	Rizal	12,316	39
6. Eastern Samar	Manila	16,075	22
7. Leyte	Manila	14,514	31
8. Cebu	Manila	10,221	51
	Intra-Visayas streams		
1. Iloilo	Negros Oriental	21,864	15
2. Negros Occidental	Negros Oriental	14,276	32
3. Negros Occidental	Iloilo	11,524	44
4. Cebu	Negros Occidental	11,430	45
5. Cebu	Leyte	10,060	54
6. Leyte	Cebu	10,053	55
	Visayas-Mindanao streams		
1. Iloilo	Cotabato	29,116	5
2. Cebu	Cotabato	10,135	53
3. Iloilo	South Cotabato	21,551	16
4. Cebu	South Cotabato	11,996	40
5. Cebu	Bukidnon	26,224	6
6. Bohol	Bukidnon	19,448	17
7. Bohol	Davao del Norte	15,116	27
8. Cebu	Davao del Norte	10,099	53
9. Cebu	Davao del Sur	23,703	11
10. Bohol	Davao del Sur	13,003	36
11. Cebu	Zamboanga del Sur	14,968	28
12. Cebu	Lanao del Norte	10,351	49
	Intra-Mindanao streams		
1. Misamis Occidental	Zamboanga del Sur	23,348	13
2. Zamboanga del Norte	Zamboanga del Sur	11,827	42
3. Davao del Sur	Davao del Norte	17,507	21
4. Cotabato	Davao del Norte	11,429	46
5. Misamis Oriental	Bukidnon	14,740	29
6. Cotabato	South Cotabato	11,408	47

Source: Same as for table 33.

3.8.[16] It may be inferred, therefore, that changes geared towards balanced regional development narrowed down the wide differences in the relative attractiveness of the origin and destination areas. A by-product of these changes is the reduced decadal net displacement, whereby a more balanced spread of population over the geographical units is somehow attained.

The more recent interregional flows present a mosaic of closely and increasingly interrelated configurations of areas. Clearly, the spatial mobility of a population is a function of some underlying social processes that have direct bearing on the changing magnitudes of inter-area migration flows.

The "index of effectiveness" is only a rough measure[17] of the real effectiveness of migration; nevertheless, it indicates the extent to which migration affects the geographical redistribution of the population. The over-all index of 46 for the 1960s conceals the great variations between the different regions of the country. It will be seen from table 35 that between 54 and 90 per cent of the streams from the Visayas to Central Luzon, Southern Tagalog and the Mindanao regions were involved in outright population shifts. "For every ten migrants who went from the Visayas to Luzon, less than three migrants left Luzon for the Visayas. The same holds for Visayas-Mindanao migration. Though the effectiveness indexes shown apply to the 1960-1970 intercensal period, they nevertheless suggest, when taken in connexion with the fact that the proportion of all Filipinos living in the Visayas has been constantly declining during this century, that most Visayas who leave their home region do so for good."[18]

However, migration from Luzon and the Visayas to the city of Manila presents a different pattern. It would appear that these migrants do not consider Manila as a place to settle but more as a place in which to be employed for some time, thereafter to move to other areas in Luzon or to return home. "Interregional migration within the Visayas amounted to not much more than 'milling around', suggesting that none of the three central Philippine regions offers much in economic advantages over the others".[19] This is probably the reason why, as mentioned earlier, Visayan migrants prefer long-distance movements to short-distance ones. It will also be seen from table 35 that interregional migration was generally more effective in transplanting females than males.

Indices of effectiveness can also be calculated for each region, on the basis of the interprovincial flows. The regional summary indices given in table 36 show that interregional migration was most effective in net in-migration regions. Indices for Bicol and the three Visayan regions, particularly Central Visayas, are extremely low and reflect perhaps the lack of resources in these areas. Western Mindanao has the highest index, and the relatively high index for the Ilocos region is the consequence of the existence of a highly attractive regional in-migration centre, Benguet, in an otherwise poor area.

F. DIRECTIONAL PATTERNS OF MIGRATION STREAMS

General typologies of migration have been developed. One concept that has been accepted and adapted from Petersen is the distinction between "conservative" and "innovating" migration.[20] In the context of the urban-rural dichotomy, innovating migration is that spatial mobility involving movements from the traditional rural sector to the modern urban sector for purposes of achieving the new. Such movements constitute a shift in behaviour pattern. On the other hand, when persons respond to a change in conditions for purposes of retaining what they have had, moving geographically in order to remain where they are in all other respects, such movements could be termed conservative. Conservative migration involves movement within the traditional or within the modern sector as well as movement from the modern sector to the traditional sector.

It is not possible on the basis of the Philippines Census data to analyse the directional patterns of migration streams except at the provincial level.

16 This large reduction is also due to the fact that the period of time during which migration was observed was shorter in the latter case (1960-1970) than in the former (birth to 1960), thus making difficult the exact global assessment of the growing impact of return migration.

17 For instance, this index does not say whether migration is effective in economic terms nor does it take into account the structure of the population involved in the movements. For example, the movement of say 10,000 men and women aged 20-30 years from A to B is not really neutralized by the movement of 10,000 retired persons from B to A, although the corresponding index of effectiveness would be equal to zero.

18 *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, pp. 141-142.

19 *Ibid.*, p. 142.

20 William Petersen, *Population*, 2nd ed. (New York, The MacMillan Company, 1972), pp. 289-291.

Table 35. Indices of interregional migration stream effectiveness, 1960-1970

Region of loss[a]	Region of gain[a]											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
I. Ilocos		49	12	81	14				18	73	74	16
Male		51	17	80	15				24	71	77	7
Female		47	8	82	13				11	74	70	24
II. Cagayan Valley				64					61	85	69	2
Male				58					51	79	71	
Female				70					72	89	67	12
III. Central Luzon		52		52					40	27	74	
Male		58		51					54	40	74	
Female		46		53					26	15	73	
IV. Southern Tagalog												
Male												
Female												
V. Bicol		40	50	62					40	44	33	
Male		27	39	59					22	61	37	
Female		55	58	65					57	29	28	
VI. Western Visayas	3	13	69	82	11		1	2	78	83	85	3
Male	7	28	62	78	16		6	22	80	82	86	
Female	1	0	74	86	6				76	84	83	14
VII. Central Visayas	32	23	57	76	52			7	54	74	75	1
Male	19	34	36	68	50			20	54	75	74	
Female	46	9	76	89	53	3			54	74	77	11
VIII. Eastern Visayas	17	57	87	90	36				74	75	79	21
Male	13	34	75	88	27				73	74	78	8
Female	22	72	92	91	42	13	4		76	77	80	29
IX. Western Mindanao				52							37	
Male				48							36	
Female				56							38	
X. Northern Mindanao				27					24		4	
Male				17					18		0	
Female				37					29		8	
XI. Southern Mindanao				18								47
Male				11								49
Female				27								46
XII. Manila			10	63	18				34	59		
Male		11	15	64	29	12	14		51	66		
Female			6	63	9				20	51		

Source: *Geographical Patterns of Internal Migration in the Philippines*, 1960-1970.

a Effectiveness indices for areas with net migration gains are listed in the columns, while those for areas with net migration losses are indicated in the rows.

Table 36. Summary indexes of intraregional migration effectiveness and net migration status of regions 1960-1970[a]

Region	Effectiveness index	Migration status[b]
I. Ilocos	47	O
II. Cagayan Valley	34	I
III. Central Luzon	23	O
IV. Southern Tagalog	41	I
V. Bicol	11	O
VI. Western Visayas	22	O
VII. Central Visayas	7	O
VIII. Eastern Visayas	20	O
IX. Western Mindanao	53	I
X. Northern Mindanao	37	I
XI. Southern Mindanao	32	I

Source: Same as for table 35.

a Migrants of both sexes combined.

b I refers to net in-migration region; O refers to net out-migration region.

However, an overview of the rural-urban patterns of internal migration in the country could be obtained from the data collected for the 1973 National Demographic Survey. The definitions adopted for purposes of the Survey vary from previous census definitions of urban and rural. The Survey considered as urban the areal sub-units of Metropolitan Manila, [21] chartered cities and *poblaciones.*[21] All *barrios*[23] were considered rural. On the basis of these definitions, the level of national urbanization in 1970 would work out to 39.1 per cent, or 6.2 and 7.3 percentage points higher than the levels estimated on the basis of 1960 and 1970 Censuses' definitions respectively.

According to the National Demographic Survey, of the total population of 22,513,942 aged 15 years and over, as many as 7,860,464 or about 35 per cent were migrants. The Survey classified the migrants into lifetime, period and chronic migrants, the criteria for such classification being the time-period of movement. Those who moved between birth and 1965 were classified as lifetime migrants. Period migrants were those who moved between 1965 and 1973, while two-time movers, from birth to 1965 and again between 1965 and 1973, were classified as chronic migrants. Lifetime migrants comprised 62.6 per cent of all migrants while period and chronic movers constituted 21.9 per cent and 15.5 per cent respectively. However, for purposes of the present analyses, chronic movers are being classified as period migrants.[24]

It will be noted from table 37 that pre-1965 movers were more conservative, in that nearly 57 per cent of all migrants were either rural-rural migrants or urban-urban or urban-rural migrants. The innovating migrants constituted the remaining 43 per cent. This analysis also provides supplementary evidence for the preponderance of frontier flows in the earlier years.

In the case of females, the two rural-rural and rural-urban flows were of almost equal importance, accounting for 30.3 per cent and 30.8 per cent respectively of the total female migration. However, this was not so in the case of male migrants, of whom a greater proportion, 35.8 per cent, constituted rural-rural flow while the rural-urban flow accounted for 28.9 per cent of all male migrants. Roughly one seventh of the migrants moved from rural areas to Manila and one tenth from urban areas to rural areas. The other streams were small; the smallest, less than 1 per cent, was from Manila to other urban places.

The sex ratios of the migrants by age groups and type of migration stream are shown in table 38. It will be noted that sex ratios for migrants have varied from a low of 49 males per 100 females in respect of the 25-34 years age group moving from Manila to rural areas to a high of 149 in respect of rural-rural migrants aged 50 years and over. The ratios are highest among streams with rural destinations, particularly rural-rural, which are mostly the pioneering kinds of flows with a predominance of males. Among the innovating lifetime migrants, sex ratio is highest for rural migrants with Metropolitan Manila as destination in all age groups except 25-34. On the whole, however, the innovating streams are female dominant. The reason for male dominance in the

21 Metropolitan Manila, for purposes of the Survey, is composed of the cities of Manila, Caloocan, Pasay and Quezon, plus the suburban municipalities of Makati, Mandaluyong, Navotas, San Juan, Marikinia, Malabon, Paranaque, Pasig and Tagvia located in Rizal Province, and the municipality of Valenzuela in Bulacan Province.

22 ***Poblaciones*** are the centres of socio-economic activity in a municipality. They number about 1,400.

23 ***Barrios*** or ***barangays*** are the smallest administrative subdivisions comprising a municipality.

24 However, this classification is somewhat arbitrary and underestimates the number of lifetime migrants, or persons who moved before 1965, by roughly one fifth, resulting in some bias.

Table 37. Distribution of migrant population 15 years old and over by migrant type, stream, and sex, 1973

Type of stream	Birth-1965	%	1965-1973	%	Total	%
			BOTH SEXES			
Rural-rural	1,583,682	32.6	590,594	19.7	2,174,276	27.7
Rural-urban	1,453,005	29.9	770,988	25.7	2,223,993	28.3
Rural-Manila	661,358	13.6	405,361	13.5	1,066,719	13.6
Urban-urban	255,785	5.3	169,109	5.6	424,894	5.4
Urban-Manila	323,198	6.6	500,068	16.7	823,266	10.5
Urban-rural	461,997	9.5	335,093	11.2	797,090	10.1
Manila-rural	83,127	1.7	138,518	4.6	221,645	2.8
Manila-urban	41,494	0.9	87,087	2.9	128,581	1.6
All	4,863,646	100.0	2,996,818	100.0	7,860,464	100.0
			MALES			
Rural-rural	830,911	35.0	296,503	22.4	1,127,414	30.5
Rural-urban	686,292	28.9	309,474	23.4	995,766	26.9
Rural-Manila	323,328	13.6	153,449	11.6	476,777	12.9
Urban-urban	106,591	4.5	73,338	5.6	179,929	4.9
Urban-Manila	147,177	6.2	219,253	16.6	366,430	9.9
Urban-rural	223,330	9.4	158,845	12.0	382,175	10.3
Manila-rural	40,579	1.7	66,269	5.0	106,848	2.9
Manila-urban	18,042	0.8	43,782	3.3	61,824	1.7
All	2,376,250	100.0	1,320,913	100.0	3,697,163	100.0
			FEMALES			
Rural-rural	752,771	30.3	294,091	17.5	1,046,862	25.1
Rural-urban	766,713	30.8	461,514	27.5	1,228,227	29.5
Rural-Manila	338,030	13.6	251,912	15.0	589,942	14.2
Urban-urban	149,194	6.0	95,771	5.7	244,965	5.9
Urban-Manila	176,021	7.1	280,815	16.8	456,836	11.0
Urban-rural	238,667	9.6	176,248	10.5	414,915	10.0
Manila-rural	42,548	1.7	72,249	4.3	114,797	2.8
Manila-urban	23,452	0.9	43,305	2.6	66,757	1.6
All	2,487,396	100.0	1,675,905	100.0	4,163,301	100.0

Source: National Demographic Survey, 1973.

Table 38. Age-specific sex ratios by type of stream for lifetime migrants, birth to 1965

Type of stream	Age group				
	15-24	25-34	35-49	50+	Total
Conservative					
Rural-rural	106.7	100.7	97.5	148.8	110.4
Urban-urban	65.8	74.8	86.3	55.7	72.2
Urban-rural	110.0	66.9	93.9	110.7	93.6
Manila-rural[a]	90.5	49.3	146.2	101.8	95.4
Innovating					
Rural-urban	73.5	98.0	83.1	106.2	89.5
Rural-Manila[a]	90.3	73.9	92.8	129.2	95.7
Urban-Manila[a]	93.8	67.2	86.9	83.0	83.6

Source: National Demographic Survey, 1973.

a Manila here refers to the areas encompassed by the Metropolitan Manila area, as defined and applied by the Survey.

Table 39. Percentage distribution and rank order of migration stream types for two intervals: birth to 1965 and 1965 to 1973

Type of stream	Birth to 1965	Rank	1965 to 1973	Rank	Percentage point difference
Conservative	49.9		44.0		-5.9
Rural-rural	32.6	1	19.7	2	-12.9
Urban-rural	9.5	4	11.2	5	-1.7
Manila-rural	1.7	7	4.6	7	+2.9
Urban-urban	6.1	6	8.5	6	+2.4
Innovating	50.1		55.9		+5.8
Rural-urban	29.9	2	25.7	1	-4.2
Rural-Manila	13.6	3	13.5	4	-0.1
Urban-Manila	6.6	5	16.7	3	+10.1

Source: National Demographic Survey, 1973.

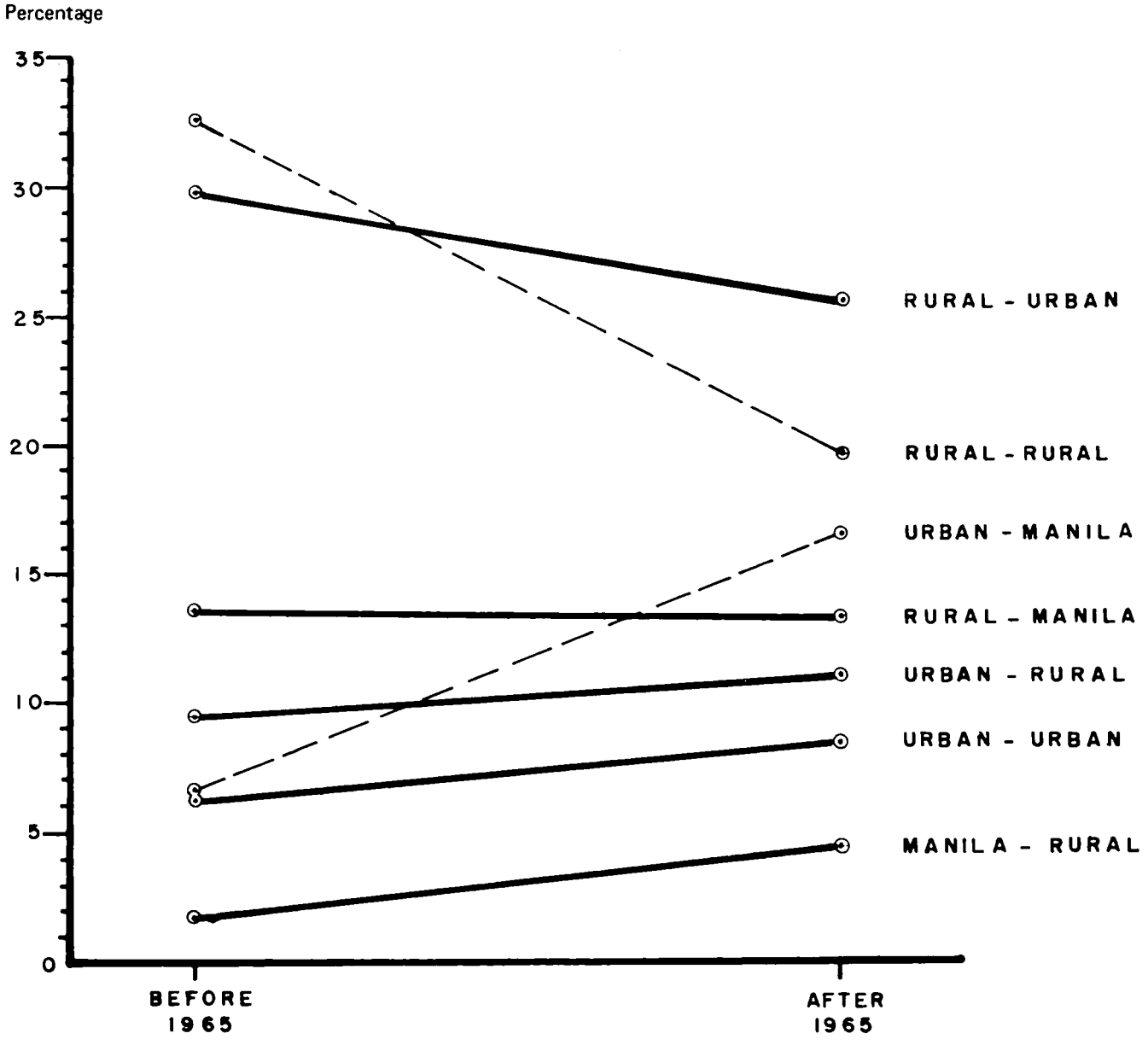
streams towards rural areas and female dominance in the urban-ward streams is to be sought in the differential in the structure of employment opportunities between urban and rural destinations. The proliferation of service industries in the urban areas, especially in Metropolitan Manila, accounts for the higher proportion of females in the streams towards urban destinations.

The more recent flows, however, present a different picture. It will be noted from table 37 and figure 8 that, during the period 1965-1973, rural-urban migrants were the most significant in volume. Nearly 26 per cent of all migrants were rural-urban movers, while a further 14 per cent moved from rural Manila to the city of Manila. It will also be noted that females were preponderant in the rural to urban migrants. Of a total of 770,988 migrants in the category, as many as 461,514 or 59.9 per cent were females. The female dominance is still stronger in the rural to Manila streams, the females constituting 62.1 per cent of this stream.

It will be noted from table 39 that the period migrants (1965-1973) were more innovating than conservative. Of the total period migrants, a significant 56 per cent had as their destination either an urban area or Metropolitan Manila. The proportion of innovating migrants to total migrants during the 1965-1973 period was 5.8 percentage points higher than the corresponding proportion for lifetime migrants. Table 39 conforms to the Zelinskje structural and spatial population transition: there is an upward mobility, or innovating movement, as development processes, such as urbanization, modernization or industrialization, get under way. This upward mobility stems in part from the rising socio-economic aspirations which accompany the development process.

Another interesting feature is the increasing movement from less developed urban areas to the more urbanized metropolitan area. The proportionate share of this stream in total migration increased from 6.6 per cent for lifetime migrants (birth to 1965) to 16.7 per cent for period migrants (1965-1973). Attendant on this change is the sharp decline in the proportionate share of rural-rural streams and the slight decline in the share of the streams from rural areas to Metropolitan Manila and other urban areas. The increase in the flow from less developed urban areas to the more urbanized metropolitan complex is to some extent due to the development of better transportation and communication facilities linking the former and the latter.

Although not impressive, the increase in the proportion of movers from urban areas and Metropolitan Manila to rural areas is quite significant. Their combined share increased from 11.2 for the period prior to 1965 to 15.8 per cent for the 1965-1973 period. Since, as mentioned earlier, the share of their counter-streams decreased from 43.5 per cent to 39.2 per cent, there was a reduction in the "effecti-



Source: Based on data in table 37.

Figure 8. Type of migration streams before and after 1965

veness" of the migration between rural areas and urban centres, including Manila. Nevertheless, as will be seen from tables 38 and 40, the increase in the proportion of women in the rural-urban streams was considerably greater than in the urban-rural streams.

The innovating streams are more female dominated. Over-all sex ratio is lowest (60.9) for rural migrants moving into Metropolitan Manila, but the lowest age-specific sex ratio (45.2) is recorded in respect of rural-urban movers aged 15-24 years. The influx of young females into the metropolitan area and other urban areas is reflected in the changes in the structure of the labour force in the recipient areas.

In the case of the conservative migrants, the inter-urban movements appear to consist more of females than males, while males are dominant in the inter-rural streams. A possible explanation for this phenomenon is the predominance of farming activities in the rural areas. A further explanation may be found in the observed levels of sex ratios in the populations concerned. For instance, the urban population aged 15-24 years had a very low sex ratio (77 in 1970) which explains partly the low urban-urban, urban-rural and urban-Manila sex ratios in this age group.

G. SOME MEASURES OF STREAM INTENSITY

It is often desirable to calculate relative indices that permit comparisons between migratory movements. Empirical research has supported the generalization that less developed areas or areas with lower living standards tend to be areas of net out-migration, while more developed areas or areas with higher living standards tend to be areas of net in-migration. Implicit in this theory is the fact that the volume, the direction and the net effect of migrant streams are highly sensitive to socio-economic changes occurring in the areas of origin and destination. An abstract measure that quantitatively expresses the socio-economic conditions affecting migration is the "index of net-velocity", a variant of the measure of relative stream velocity developed by Bogue, Shryock and Hoermann.[25] Based on net streams between areal units, the index of net-velocity was modified by Kono and Shio in 1965.[26]

Table 40. Age-specific sex ratios by type of stream for period migrants, 1965-1973

Type of stream	Sex ratios of migrants in the age groups				
	15-24	25-34	35-49	50 and above	All ages
Conservative					
Rural-rural	91.3	118.7	87.8	130.4	100.8
Urban-urban	51.7	94.7	117.3	132.9	84.2
Urban-rural	61.8	98.2	134.1	92.3	90.1
Manila-rural	79.5	86.6	146.0	140.5	91.7
Innovating					
Rural-urban	45.2	79.7	94.1	117.2	67.1
Rural-Manila	58.1	70.7	63.7	57.3	60.9
Urban-Manila	65.0	82.3	91.4	94.0	78.1

Source: National Demographic Survey, 1973.

As noted earlier, the direction of migration streams, particularly rural-rural, remained constant for several decades. The primacy of the inter-rural movements reflects the continued action of a given set of re-distribution forces, pioneer settlements and the predominance of farm activities. Migration in this case involves the movement largely of males to areas where their services can be used more effectively. Velocities of other streams, rural-urban or rural-metropolitan, are not comparable. For purposes of the present study, net velocities of streams originating from rural areas and moving towards urban areas will be compared.

It will be observed from table 41 that higher velocities are recorded in respect of lifetime and period migration streams to metropolitan area. Net velocity was higher for male than female lifetime migrants headed for the metropolitan area. In the case of period migrants, that is, those who moved between 1965 and 1973, however, net velocity was markedly higher for female migrations. All in all, there was a reduction in velocity in respect of the two types of flows after 1965. This reduction presumably reflects a narrowing of the differences in the level of development and hence

25 Donald J. Bogue, Henry S. Shryock Jr. and Siegfried A. Hoermann, *Streams of Migration between Subregions, Subregional Migration in the United States, 1935-40*, vol. I, Scripps Foundation Studies in Population Distribution, No. 5 (Oxford, Ohio, Scripps Foundation for Population Research, 1957).

26 S. Kono and M. Shio, *Inter-prefectural Migration in Japan, 1956 and 1961: Migration Stream Analysis* (New York, Asia Publishing House, 1965).

Table 41. Index of net velocity of migration streams for lifetime and period migration, by sex

Migration interval and sex	Rural-to-urban	Rural-to-metropolitan	Difference
Lifetime migration			
Both sexes	300	451	151
Males	293	453	160
Females	308	450	142
Period migration			
Both sexes	123	168	45
Males	89	112	23
Females	155	220	65

Source: National Demographic Survey, 1973.

Note: Index of net velocity = $(M_{ji} - M_{ij}) \times \frac{P}{P_i P_j}$

where:

M_{ji} = number of migrants from area j to area i

M_{ij} = number of migrants from area i to area j

P = Total population

P_i = Population in area i

P_j = Population in area j

of living standards between areas of origin and destination. The difference of 45 between the net velocities of the two flows during the period 1965-1973 (period migration) indeed reflects a substantial decrease from the corresponding difference of 151 for the birth-to-1965 period (lifetime migration).

Another index which relates net migration to turnover is called the "Effectiveness Index". The indices given in table 42 show that the effectiveness of the rural-metropolitan stream is greater by far than that of the streams from rural areas to other urban areas for both migration intervals. Prior to 1965, rural-to-urban flows were more effective in the displacement of females than males, but in the case of rural-to-metropolitan flows, the indices for males and females were almost equal. After 1965, however, the indices for females in respect of both types of migration flows were considerably higher than the corresponding indices for males, the differential being more pronounced in the rural-to-metropolitan flow.

In general, there was a decline in the effectiveness of both streams after 1965. Whereas prior to 1965 metropolitan-to-rural movement constituted only 1.7 per cent of all migration streams, during

Table 42. Index of effectiveness of migration streams for lifetime and period migration, by sex

Migration interval and sex	Rural-to-urban	Rural-to-metropolitan	Difference
Lifetime migration			
Both sexes	517	777	260
Males	509	777	268
Females	525	776	251
Period migration			
Both sexes	394	491	97
Males	322	397	75
Females	447	554	107

Source: National Demographic survey, 1973.

the period 1965-1973 it gained 2.9 percentage points in its proportionate share of total migrants. Similarly, urban-to-rural flows increased by 1.7 percentage points, a plausible explanation for this phenomenon being the increasing housing problems in overcrowded urban areas, especially the metropolitan centre (table 39).

In the Philippines, adequate data are not available to analyse the relative contribution of each of the main components to the growth of urban population over the years. Nevertheless, it is generally recognized that rural-urban migration has contributed overwhelmingly to urban growth in the past. However, the reduced net velocities and effectiveness of streams originating in rural areas with urban or metropolitan destinations seem to suggest that the role of rural-to-urban migration in urban growth is diminishing in importance.

H. MIGRATION DIFFERENTIALS

Migrants tend to be different from the original or parent population in a number of ways. However, an analysis of the differences between parent population and migrant population is rendered difficult by the fact that nearly all studies on migrants are limited to one locale, namely, the area of destination. Consequently, the degree and kind of migrant selectivity, though of relevance to the interpretation of important problems, are nearly always unknown.

In the absence of census data relevant to the measurement of migrant selectivity, indices of migration differentials with respect to some specific charac-

teristics are used for purposes of ascertaining the magnitude of differences between the migrant and non-migrant segments of the population at destination. With regard to the Philippines, the 1973 National Demographic Survey had collected information relating to several characteristics of the migrant segment of the sample population, thus making it possible to obtain a clear picture of the characteristics of the migrant population vis-à-vis the non-migrant population.

1. Age selectivity

A universal feature of migration is age selectivity. The numerical as well as percentage distribution of the migrants by type of migration, and of non-migrants is given in table 43. It will be seen from this table and from the age pyramids derived (figure 9) that more than half of all recent migrants were aged 15 to 24 years. This is to be expected as mobility is associated with those phases of the life cycle during which labour force entry, family formation or higher educational aspirations are the most important traits. Conversely, lifetime migrants are concentrated in the older age groups, 25-34 and 35-44 years. However, the age structure of all migrants relates very closely to that of non-migrants in that the highest concentration is in the youngest age group and the proportion in each successive age group less than in the previous one.

As noted earlier, migrants of all types and ages constituted nearly 35 per cent of the total population, of which lifetime migrants formed 21.9 per cent, period migrants 4.7 per cent and other (chronic) migrants 5.4 per cent. However, these shares vary considerably with age as will be seen from table 44. For example, migrants constituted about 40 per cent of the total population in the 25-64 age group but only 27 per cent in the 15-24 age group. While in the 15-24 age group lifetime migrants and period migrants were almost equal in numbers, for ages 45-64 the number of period migrants was less than one eighth the lifetime migrants. The share of lifetime migrants in the total population increases from 11.9 per cent in the 15-24 age group to 31.9 per cent at ages 45-54, thereafter declining gradually. On the other hand, the proportionate share of period migrants shows a constant decline from 11.5 per cent in the youngest age group to 3.4 per cent in the oldest age group.

Table 45 gives the age differentials for population aged 15 years and over. The indices for all migrants follow a parabolic curve that starts from a low -28.79 and ends in another low -7.12. This reflects high differentials between native and migrant residents at destination in the extreme age groups. A sharp contrast is noticeable between males and the females. The differential is highest at ages 45-54 for males and at ages 35-44 for females. Another important difference is the continuous mobility of males even at retiring age. Females, on the other hand, start becoming less mobile even earlier.

Differentials for lifetime migrants closely resemble the general trend, with negative values at the lower extreme age groups for both sexes. Period migrants, however, show the opposite trend with negative values gradually increasing from the middle age group to the upper extreme age group. This conforms to the empirically proved hypothesis on age selectivity of migrants' peak mobility at younger ages. As a result, at the regional level, in-migration areas have younger populations than out-migration areas, although there are exceptions to this general pattern, namely, Southern Tagalog and Eastern Visayas.[27]

2. Sex selectivity

A basic demographic measure is the sex ratio, or the number of males per 100 females. This measure is to a large extent determined by the relative levels of mortality among males and females and, where there is substantial migration, by the age-sex composition of the migrant population.

Table 46 shows the age-specific sex ratios of the population aged 15 years and over by migration status and migration type. It will be seen that for the total population the over-all sex ratio is 94.8, which reflects the predominance of females in the sample population. However, the age-specific sex ratios show that there are more females at the younger ages and more males at the older ages.

A comparison of the migrant and non-migrant segments of the population shows that migrants have much lower sex ratios in the lower age groups, this difference being more marked in the 15-24 age group, suggesting a higher mobility among females in these age groups. This phenomenon is more marked in the case of period migrants. There has been evidence that more recent movements have

27 *Geographical Patterns of Internal Migration in the Philippines, 1960-1970*, pp. 156-159.

Table 43. Age-sex distribution of Philippine population aged 15 and over by "migration status and type of mover

Age and sex	Lifetime migrants[a] (1)	Percentage distribution (2)	Period migrants[b] (3)	Percentage distribution (4)	Other migrants[c] (5)	Percentage distribution (6)	All migrants (7)	Percentage distribution (8)	Non-migrants (9)	Percentage distribution (10)	Total population* (11)	Percentage distribution (12)
Both sexes, 15+	4,920,122	100.00	1,725,159	100.00	1,215,183	100.00	7,860,464	100.00	14,350,755	100.00	22,513.942	100.00
15 - 24	964,683	19.61	931,811	54.01	325,709	26.80	2,222,203	28.27	5,696,666	39.70	8,110,575	36.02
25 - 34	1,084,983	22.05	410,963	23.82	390,304	32.12	1,886,250	24.00	2,853,777	19.89	4,775,491	21.21
35 - 44	1,157,625	23.53	178,253	10.33	260,696	21.45	1,596,574	20.31	2,330,849	16.24	3,954,732	17.57
45 - 54	894,998	18.19	104,294	6.05	129,635	10.67	1,128,027	14.36	1,658,830	11.56	2,808,711	12.48
55 - 64	513,111	10.43	60,275	3.49	63,297	5.21	636,683	8.10	1,044,129	7.28	1,694,442	7.53
65 +	304,722	6.19	39,563	2.29	45,542	3.75	389,827	4.96	766,504	5.34	1,169,991	5.20
Males, 15 +	2,408,354	100.00	690,697	100.00	598,112	100.00	3,697,163	100.00	7,115,147	100.00	10,955,137	100.00
15 - 24	453,573	18.83	330,790	47.89	145,644	24.35	930,007	25.15	2,929,008	41.17	3,942,853	35.99
25 - 34	508,273	21.10	183,538	26.57	192,026	32.10	883,837	23.91	1,364,778	19.18	2,266,410	20.69
35 - 44	558,360	23.18	79,034	11.44	137,086	22.92	774,480	20.95	1,127,731	15.85	1,920,101	17.53
45 - 54	444,431	18.45	46,862	6.78	64,396	10.77	555,689	15.03	788,248	11.08	1,350,222	12.33
55 - 64	283,662	11.78	30,672	4.44	35,230	5.89	349.564	9.45	516,377	7.26	874,205	7.98
65 +	160,055	6.65	19,801	2.87	23,730	3.97	203,586	5.51	389,005	5.47	601,346	5.49
Females, 15 +	2,511,768	100.00	1,034,462	100.00	617,071	100.00	4,163,301	100.00	7,235,608	100.00	11,558,805	100.00
15 - 24	511,110	20.35	601,021	58.10	180,065	29.18	1,292,196	31.04	2,767,658	38.25	4,167,722	36.06
25 - 34	576,710	22.96	227,425	21.98	198,278	32.13	1,002,413	24.08	1,488,999	20.58	2,509,081	21.71
35 - 44	599,265	23.86	99,219	9.59	123,610	20.03	822,094	19.75	1,203,118	16.63	2,034,631	17.60
45 - 54	450,567	17.94	57,432	5.55	65,239	10.57	573,238	13.77	870,582	12.03	1,458,489	12.62
55 - 64	229,449	9.13	29,603	2.86	28,067	4.55	287,119	6.90	527,752	7.29	820,237	7.10
65 +	144,667	5.76	19,762	1.91	21,812	3.53	186,241	4.47	377,499	5.22	568,645	4.92

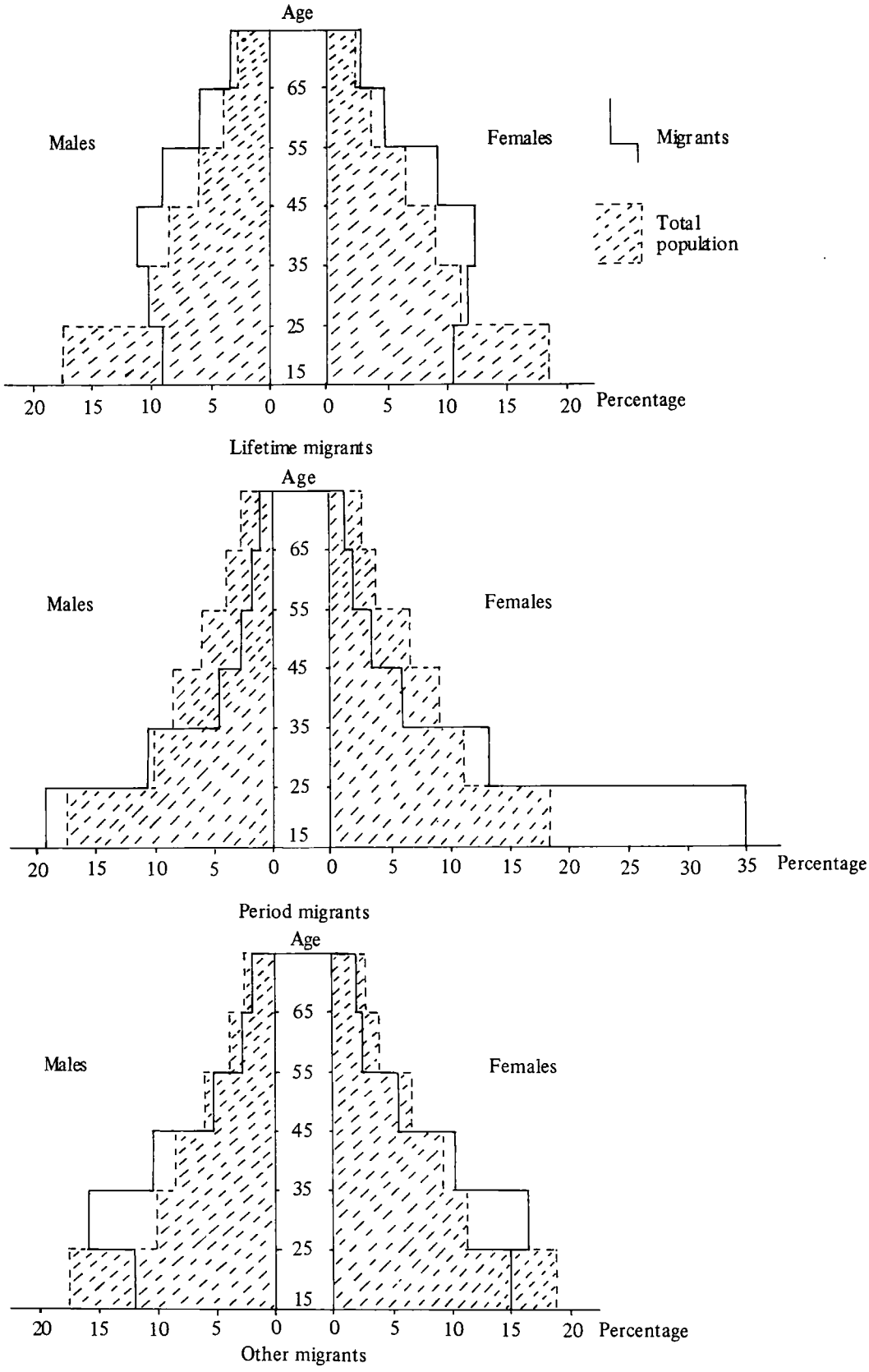
Source: National Demographic Survey, 1973.

Note: * Includes "no information".

a Those whose residence in 1965 differed from their place of birth.

b Those whose residences in 1973 were different from their residences in 1965.

c "Chronic movers" who changed residences from birth to 1965 and again between 1965 and 1971.



Source: Based on data in table 43.

Note: Refer to table 43 for the definition of "lifetime", "period" and "other migrants".

Figure 9. Age pyramids of the population aged 15 and over, by type of migration

Table 44. Percentage share of the different types of migrants in the total population by age group, 1973

Age group	Lifetime migrants	Period migrants	Other migrants	All migrants	Total population
15-24	11.89	11.49	4.02	27.40	100.00
25-34	22.72	8.61	8.17	39.50	100.00
35-44	29.27	4.51	6.59	40.37	100.00
45-54	31.87	3.71	4.62	40.20	100.00
55-64	30.28	3.56	3.74	37.58	100.00
65+	26.04	3.38	3.89	33.31	100.00
All ages	21.85	7.66	5.40	34.91	100.00

Source: Based on data in table 43.

Table 45. Age differentials at destination, by sex and migrant type, for population aged 15 years and over, 1973

Sex	15-24	25-34	35-44	45-54	55-64	65+
All migrants						
Both sexes	-28.79	20.66	25.06	24.22	11.26	-7.12
Males	-38.91	24.66	32.18	35.65	30.17	0.73
Females	-18.85	17.01	18.76	14.46	-5.35	-14.37
Lifetime migrants						
Both sexes	-50.60	10.86	44.89	57.35	43.27	15.92
Males	-54.02	10.01	46.25	66.52	62.26	21.57
Females	-46.80	11.56	43.48	49.13	25.24	10.34
Period migrants[a]						
Both sexes	36.05	19.76	-36.39	-47.66	-52.06	-57.12
Males	16.32	38.53	-27.82	-38.81	-38.84	-47.53
Females	51.90	6.80	-42.33	-53.87	-60.77	-63.41

Source: Table 43.

a Does not include other (or chronic) migrants. The percentage distribution given in table 43, column (4) is compared with that for non-migrants given in column (10).

been more towards the urban areas. The lure of job opportunities in service industries located in urban centres in the context of industrial development may well be a contributing factor to the predominance of females among the younger migrants. On the whole, migrants, whether lifetime or period, are characterized by a gradual increase in sex ratios with

Table 46. Age-specific sex ratios of the population aged 15 years and over by migration status and migration type, 1973

Age group	Lifetime migrants	Period migrants	Other migrants	All migrants	Non-migrants	Total population
All ages	95.9	66.8	96.9	88.8	98.3	94.8
15-24	88.7	55.0	80.9	72.0	105.8	94.6
25-34	88.1	80.7	96.8	88.2	91.7	90.3
35-44	93.2	79.7	110.9	94.2	93.7	94.4
45-54	98.6	81.6	98.7	96.9	90.5	92.6
55-64	123.6	103.6	125.5	121.7	97.8	106.6
65 and over	110.6	100.2	108.8	109.3	103.0	105.8

Source: Same as for table 43.

advancing age. The decrease in sex ratio after age 65 is noteworthy and reflects relatively lower female mortality and hence longer survival of females.

The age-specific sex ratio differentials given in table 47 show a variation in magnitude as well as in direction among population subgroups. This is a function of differentials in the distribution of the total population among subgroups. It will be seen that male migrants are of lesser magnitude compared to non-migrants and female migrants. The various values in respect of period migrants give a clearer picture of sex selectivity. Briefly, the data presented in the table underscore the fact that in the Philippines females are more migratory than males.

3. Marital status

The data from the 1973 National Demographic Survey pertain to marital status of migrants at the time of the survey and not at the time of the movement. Nevertheless, the data provide a basis for ascertaining the degree to which the variable operates as a determining factor in the move-or-stay decision called for by the migration process. Moreover, by segregating the period migrants, it is possible to obtain information on marital status of migrants at the beginning and end of a migration interval.

The data presented in table 48 show that the proportion married is considerably greater among migrants than among non-migrants. The opposite is true of the never married. Further classification

Table 47. Age-specific sex ratio differentials[a] of the population aged 15 years and over by migration type, 1973

Age group	Lifetime migrants	Period migrants	Other migrants	All migrants
15-24	-16.16	-48.02	-23.53	-31.95
25-34	- 3.93	-12.00	5.56	- 3.82
35-44	- 0.53	-14.94	18.36	0.53
45-54	8.95	- 9.83	9.06	7.07
55-64	26.38	5.93	28.32	24.44
65+	7.38	- 2.72	5.63	6.12
All ages	- 2.44	-32.04	- 1.42	- 9.66

Source: Based on data in table 46.

a For a given category, the differential is the per cent difference from the sex ratio value for the corresponding category in respect of the non-migrant population.

Table 48. Index of marital status (1965) differentials by migrant type and sex for population aged 15 years and over

Migrant type and sex	Never married	Married	Widow	Divorced/ separated
Both sexes				
All migrants	-17.69	21.12	3.94	21.43
Lifetime migrants	-38.87	45.12	27.96	42.86
Period migrants	20.88	-45.30	-33.33	-57.14
Other migrants	-13.10	17.87	-39.07	46.43
Males				
All migrants	-23.40	30.93	-8.76	7.14
Lifetime migrants	39.74	51.51	11.68	42.86
Period migrants	26.57	-33.45	-37.96	-35.71
Other migrants	-15.27	22.34	-56.20	-100.00
Females				
All migrants	-11.64	12.60	4.31	27.43
Lifetime migrants	-37.86	39.41	32.06	40.48
Period migrants	51.40	-53.22	39.47	-66.67
Other migrants	-10.62	-13.81	-34.45	88.10

Source: National Demographic Survey, 1973.

of migrants into early (lifetime) and recent (period) movers, however, results in differential patterns of distribution. While earlier movers were mostly married at the date of the survey, recent migrants seem to have been mostly single. There is a sharp difference between the proportion married and the proportion never married among those, particularly females, who moved after 1965.

At first glance, the indices of marital status seem to contradict the popular notion that single individuals have higher possibilities of moving. It has been noted earlier that larger proportion of migrants were lifetime migrants and that these early migrations involved substantial shifts of population from rural to urban. It may therefore be justifiably argued that the pressure exerted by increasing family size on depleting rural resources would have induced many families to move into urban areas as a relief from the prevailing unpleasant and unwanted conditions in the stagnant hinterland. Period migrants, however, seem to conform to the hypothesis that an individual's life cycle exerts an influence on the decision to move or stay.

Differences in the age structure of the migrant and non-migrant population are primarily responsible for the differentials shown in table 48. This is evident especially from the positive indices for never-married period migrants. Period migrants being much younger than all other migrants and non-migrants, it is to be expected that this category of migrants is characterized by a much higher proportion of never-married persons.[28]

28 Even on the basis of the assumption of equal proportions of never-married persons in each given age group whatever the category of migrants, the over-all proportion of never-married will be different because of varying are structures of the different categories of migrants. For example, let the following proportions of never-married be assumed: .8 at ages 15-26; .6 at ages 25-34; .2 at ages 35-44; .1 at ages 45-54; .05 at age 55 and over. On the basis of the age distribution given in table 43, the following results will be obtained:

	Percentage never married	*Differentials*
Lifetime migrants	36.27	-24.59
Period migrants	60.46	25.70
Other migrants	46.07	- 4.22
All migrants	43.17	-10.25
Non-migrants	48.10	–

These results bring out clearly the effect of age structure alone, apart from any variations in nuptiality.

I. DETERMINANTS OF MIGRATION

Several studies have attributed a dominant role to "economic" factors as a cause of migration over other factors. The 1973 National Demographic Survey of the Philippines collected information on reasons for leaving previous place of residence. The motivation factors have been summarized by various expressions of essentially the same concept: "loss of job"; "unable to find a job"; "no land to work on"; "dissatisfaction with job", etc. The numerical as well as per cent distribution of types of migrant by reasons for leaving previous residence and choosing current residence are shown in table 49. It will be seen from the table that, for female migrants of both types, job-related reasons have been the most instrumental in leaving previous residence, while in the case of males, familial reasons such as marriage have played a more important role in their decisions to move. Males who migrated for familial reasons were about 40 per cent greater than those who moved for job related reasons. A readily accepted explanation for the difference is that more females than males migrate to urban areas for employment in domestic and specialized services (e.g. household helpers, manicurists, beauticians, dressmakers, etc.).

It is also evident from table 49 that among the reasons for choosing the place of destination, social and psychological factors play equally significant roles. The major reason appears to be familial and includes such motives as "to accompany or join paternal or other relatives"; "got married, had to leave parental home to join spouse"; or "to accompany, join or rejoin spouse". More than for reasons of mere economic security, the Filipino migrant prefers to seek employment in those areas where the presence of relatives would render adjustments much easier.

Table 49. Numerical and percentage distribution of lifetime and period migrants by major reason for leaving previous residence and choosing current residence, 1973

Sex and reasons	For leaving previous residence				For choosing current residence			
	Lifetime migrants		Period migrants		Lifetime migrants		Period migrants	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Both sexes	4,848,994	100.00	1,701,772	100.00	4,852,002	100.00	1,701,772	100.00
Job related	1,510,687	31.15	573,486	33.70	581,982	11.99	225,408	13.25
Familial	978,097	20.17	537,929	31.61	1,352,630	27.88	620,812	36.48
Educational	564,680	11.65	204,662	12.03	69,730	1.44	74,359	4.37
Others	113,671	2.34	130,848	7.69	1,201,551	24.76	505,321	29.69
No information	1,681,859	34.68	254,847	14.98	1,646,109	33.93	275,872	16.21
Males	2,370,397	100.00	678,765	100.00	2,371,970	100.00	678,765	100.00
Job related	485,608	20.49	174,357	25.69	395,601	16.68	110,819	16.33
Familial	673,270	28.40	241,748	35.62	395,023	16.65	202,665	29.86
Educational	341,134	14.39	118,792	17.50	33,512	1.41	26,745	3.94
Others	60,501	2.55	55,116	8.12	768,311	32.39	243,426	35.86
No information	809,884	34.17	88,752	13.08	779,523	32.86	95,110	14.01
Females	2,478,597	100.00	1,023,007	100.00	2,480,032	100.00	1,023,007	100.00
Job related	1,025,079	41.36	399,129	39.02	186,381	7.52	114,589	11.20
Familial	304,827	12.30	296,181	28.95	957,607	38.61	418,147	40.87
Educational	223,546	9.02	85,870	8.39	36,218	1.46	47,614	4.65
Others	53,170	2.15	75,732	7.40	433,240	17.47	261,895	25.60
No information	871,975	35.18	166,095	16.24	866,586	34.94	180,762	17.67

Source: National Demographic Survey, 1973.

J. CHARACTERISTICS OF MIGRANTS

1. Educational attainment

The most important single factor that could perhaps determine a migrant's successful adaptation to his environment is his educational attainment. Generally speaking, the educational opportunity and facilities available in the less developed areas will be less adequate than those available in the more developed areas of a country. According to a recent study relating to the Philippines, this disparity in the availability of educational opportunities and facilities has been an important factor behind out-migration among lifetime and recent migrants with rural origins and urban destinations.[29] Moreover, education in itself induces movement in so far as it raises the level of aspirations and of unsatisfied needs of the population in the less developed areas.

An analysis of the educational attainment of the sample population covered by the 1973 National Demographic Survey indicates that a substantial proportion among both men and women had only received one to four years of schooling. Though migrants exhibited a similar pattern, it is interesting to note that, compared to non-migrants, a larger population of migrants had attained educational levels corresponding to "high school" and "college" categories. This may have been for two reasons. It might be that individuals who have attained a higher level of education may have difficulty in finding employment positions compatible with their educational attainment and may therefore be more prone to migrate. Or it may be that individuals responding to the "pull factors" at destination are the better educated who have had more knowledge of available opportunities and are also better equipped to take advantage of such opportunities and are thus among the first to migrate. This is brought out very clearly by the indices of educational attainment differentials between recent migrants and non-migrants shown in table 50. Another interesting feature is the higher indices for recent migrants with college education than for lifetime migrants with the same level of educational attainment.

However, as stated earlier, since the age structures of the two categories are very different, there is an over-estimation of the differences in educational levels. In any case, with more detailed information, it is possible to control for age, and the differentials obtained for an age-standardized population are shown in table 51. It will be seen that the gaps between the indices constructed on the basis of age-standardization for lifetime and period migrants are much narrower than those based on the unstandardized data given in table 50.

Table 50. Index of educational attainment differentials by sex and migrant type for population 15 years old and over, 1973

Educational attainment and sex	Lifetime migrants	Period migrants	Other migrants	All migrants
Both sexes				
No schooling	-16.91	-55.88	-48.28	-30.29
Some elementary	-3.17	-34.78	-22.07	-13.02
Elementary	-7.97	7.87	-9.07	-4.65
High school	2.80	32.81	20.95	12.20
College	38.64	76.65	89.89	54.92
No information	-35.00	-40.00	-43.00	-37.00
Males				
No schooling	-14.58	-46.82	-42.30	-25.15
Some elementary	-4.88	-29.31	-24.52	-12.63
Elementary	-12.36	-7.83	-19.58	-12.69
High school	-3.55	-24.61	8.44	3.63
College	66.67	92.97	141.54	83.68
No information	-31.91	4.26	-40.43	-26.60
Females				
No schooling	-18.84	-61.17	-52.95	-34.68
Some elementary	-1.45	-38.27	-19.62	-13.30
Elementary	-3.91	17.09	0.67	1.98
High school	10.74	44.80	36.27	22.99
College	15.68	63.20	47.36	32.18
No information	-38.32	-68.22	-45.79	-46.73

Source: National Demographic Survey, 1973.

According to a recent study of the intraregional and interregional streams by rural/urban origin/destination, in most regions rural out-migrants to urban places have a higher educational attainment than non-migrants in rural areas and rural-rural migrants. Conversely, non-migrants in urban areas have a higher educational attainment than urban migrants who moved to rural areas, except in the Ilocos and Cagayan Valley regions. However, urban migrants to other urban areas are better educated than non-migrants, a pattern observed in respect of each of

29 Ernesto M. Pernia, *Philippines Migration Streams: Demographic and Socio-economic Characteristics*, Research Note No. 51 (Manila, University of the Philippines Population Institute, 1975).

Table 51. Index of educational attainment differentials by migrant type for population aged 15 years and over, standardized for age, 1973

Educational attainment	Lifetime migrants	Period migrants	Other migrants	All migrants
No schooling	-35.73	-23.29	-42.73	-36.34
Some elementary	-13.33	-23.59	-23.35	-18.30
Elementary	-8.03	-1.75	-10.06	-3.69
High school	21.41	19.95	25.58	21.45
College	52.63	59.53	85.75	59.89

Source: National Demographic Survey, 1973.

the regions. "As a result of migration, rural areas have lost educational skills on two accounts. First, the number of rural-urban migrants is much larger than the number of urban-rural migrants. Second, the average educational attainment of a rural-urban migrant is higher than that of an urban-rural migrant."[30]

2. Occupation

The numerical and per cent distribution of the Philippine population aged 15 years and over by migration status and occupational group is shown in table 52. It will be observed that the pattern of occupational distribution more or less conforms to the pattern of educational attainment noted earlier. Migrants hold better jobs at destination than native residents. A comparison of migrants and non-migrant groups shows that a larger proportion of migrants were found in the following occupational categories: professional, technical, administrative and related workers; clerical workers; service; sports and related workers. This is true for both males and females and is more pronounced in the non-professional category of service employees who are mostly concentrated in domestic and specialized services. Conversely, there are far fewer "farmers, fishermen and related workers" among the migrants, particularly the category of "other migrants". Among recent migrants, the proportion of clerical workers was three to six times larger than among non-migrants.

On the basis of the data collected for the 1973 National Demographic Survey, Zachariah and Pernia compared the occupational structure of the migrants at the beginning and at the end of the migration period and pointed out the consequence of migration on the occupational structure of the migrants. They concluded that "among males, the main effect is a decrease in the proportion in farming, particularly among the out-migrants from rural areas and among the in-migrants to urban areas. However, there is very little change in the proportion among out-migrants from urban areas or in-migrants to rural areas. Female migrants tend to move into service occupations, the proportion increases from 22 per cent at the beginning of the migration period to 54 per cent at the end among out-migrants from rural areas and from 25 to 54 per cent among in-migrants to urban areas. Female in-migrants to rural areas move from service occupations to sales, clerical, professional and similar occupations. Female out-migrants from urban areas tend to give up farming and take up white collar jobs."[31]

3. Cash income

An analysis of the data from the National Demographic Survey indicates that about 4.4 per cent of male migrants earn a cash income of between ₱1,000 and ₱4,999, the corresponding proportion of non-migrants being about 33 per cent. The analysis also shows that females were concentrated in the lower-paying jobs, about 82 per cent of female migrants earning less than ₱1,000 per annum.

A further analysis of the data presented in table 53 shows that income differentials of migrants vary by their stream type; that is, whether the migrants originate in rural or urban areas, whether they move into rural or urban places, etc. In general, out-migrants from rural areas have higher average incomes than the non-migrants who remained in the villages. The difference is as much as 35 per cent for interregional rural migrants and 27 per cent for intra-regional rural-urban migrants. However, interregional rural-rural migrants have less cash income compared with the non-migrants in the rural areas from which the migrants originated, although there were a few exceptions. On the other hand, the average income of the non-migrants who remain in urban places is higher than that of migrants originating in urban places. This pattern holds in the case of urban-rural migrants for all regions except Central Visayas. There are more exceptions with respect to urban-urban migrants. The data are insufficient to evaluate the consequences of migration on the income of migrants. Other studies, however, indicate that the differentials at the end of the migration period are due partly to selectivity at the beginning and partly to changes after migration.

30 Zachariah and Pernia, *op. cit.*, p. 18.

31 *Ibid.*, p. 19.

Table 52. Numerical and percentage distribution of the population 15 years old and over, by migrant type and occupational group, 1973

Migrant type and sex	Professional technical and related workers (1)	Clerical workers (2)	Sales workers (3)	Farmers, fishermen and related workers (4)	Workers in transport and communi-cations (5)	Craftsmen, production process workers and labourers (6)	Farm workers (7)	Miners, quarrymen and related workers (8)	Service sports, and related workers (9)	No information (10)	Total (11)
						Number					
Lifetime migrants											
Both sexes	220,121	96,819	262,611	750,226	121,080	319,907	296,086	2,108	206,511	50,113	2,325,582
Males	118,197	65,045	135,554	690,133	120,803	247,840	194,052	2,108	142,930	19,156	1,735,818
Females	101,924	31,774	127,057	60,093	277	72,067	102,034	-	63,581	30,957	589,764
Period migrants											
Both sexes	35,799	25,766	33,977	148,340	22,055	59,596	62,930	639	38,995	15,697	443,794
Males	21.320	16,327	11,378	135,740	21,781	38,028	35,911	639	21,801	3,434	306,359
Females	14,479	9,439	22,599	12,600	274	21,568	27,019	-	17,194	12,263	137,435
Other migrants											
Both sexes	51,655	38,302	48,382	127,153	43,326	82,913	59,136	2,469	69,052	18,134	540,522
Males	35,193	22,765	25,223	116,299	43,052	63,618	39,499	2,469	38,994	10,031	397,143
Females	16,462	15,537	23,159	10,854	274	19,295	19,637	-	30,058	8,103	143,379
All migrants											
Both sexes	307,575	160,887	344,970	1,025,719	186,461	462,416	418,152	5,216	314,558	83,944	3,309,898
Males	174,710	104,137	172,155	942,172	185,636	349,486	269,462	5,216	203,725	32,621	2,439,320
Females	132,865	56,750	172,815	83,547	825	112,930	148,690	-	110,833	51,323	870,578
Non-migrants											
Both sexes	221,609	94,117	369,753	2,159,821	187,649	628,061	1,044,824	6,609	248,644	128,858	5,089,945
Males	103,796	71,172	146,841	1,997,840	186,649	355,935	598,545	5,605	180,408	51,675	3,698,466
Females	117,813	22,945	222,912	161,981	1,000	272,126	446,279	1,004	68,236	77,183	1,391,479
						Percentage					
Lifetime migrants											
Both sexes	9.47	4.16	11.29	32.26	5.21	13.76	12.73	0.09	8.88	2.15	100.00
Males	6.81	3.75	7.81	39.76	6.96	14.28	11.18	0.12	8.23	1.10	100.00
Females	17.28	5.39	21.54	10.19	0.05	12.22	17.30	-	10.78	5.25	100.00
Period migrants											
Both sexes	8.07	5.81	7.66	33.43	4.97	13.43	14.18	0.14	8.79	3.54	100.00
Males	6.96	5.33	3.71	44.31	7.11	12.41	11.72	0.21	7.12	1.12	100.00
Females	10.54	6.87	16.44	9.17	0.20	15.69	19.66	-	12.51	8.92	100.00
Other migrants											
Both sexes	9.56	7.09	8.95	23.52	8.02	15.34	10.94	0.46	12.78	3.35	100.00
Males	8.86	5.73	6.35	29.28	10.84	16.02	9.95	0.62	9.82	2.53	100.00
Females	11.48	10.84	16.15	7.57	0.19	13.46	13.70	-	20.96	5.65	100.00
All migrants											
Both sexes	9.29	4.86	10.42	30.99	5.63	13.97	12.63	0.16	9.50	2.54	100.00
Males	7.16	4.27	7.06	38.62	7.61	14.33	11.05	0.21	8.35	1.34	100.00
Females	15.26	6.52	19.85	9.60	0.09	12.97	17.08	-	12.73	5.90	100.00
Non-migrants											
Both sexes	4.35	1.85	7.26	42.43	3.69	12.34	20.53	0.13	4.89	2.53	100.00
Males	2.81	1.92	3.97	54.02	5.05	9.62	16.18	0.15	4.88	1.40	100.00
Females	8.47	1.65	16.02	11.64	0.07	19.56	32.07	0.07	4.90	5.55	100.00

Source: National Demographic Survey, 1973.

Table 53. Average annual income in 1972 by migration status and type, and by region of origin of migrants, 1965-1972

(Rural origin)

Region of origin	Migrants from rural places to				Non-migrants in rural areas of the region
	Urban places of the same region	Urban places of other regions	All urban places	Rural places of other regions	
Less developed regions	1,163	1,129	1,144	766	858
Ilocos	773	1,361	1,108	1,032	881
Cagayan	648	1,554	1,319	1,136	786
Bicol	1,279	981	1,118	615	948
Eastern Visayas	1,362	1,039	1,157	804	803
Central Visayas	1,097	1,194	1,140	688	851
More developed regions	1,280	1,452	1,365	968	1,037
Manila, S. Luzon	1,374	1,854	1,739	1,162	1,071
Central Luzon	1,539	1,207	1,341	1,245	1,148
Western Visayas	1,141	1,324	1,221	1,432	914
Mindanao	1,193	1,154	1,181	762	977
Philippines	1,238	1,316	1,279	862	975

(Urban origin)

Region of origin	Migrants from urban places to				Non-migrants in urban places of the region
	Rural areas of the same region	Rural areas of other regions	All rural areas	Urban places of other regions	
Less developed regions	1,241	966	1,190	1,339	1,582
Ilocos	1,419	1,101	1,397	1,856	1,089
Cagayan	500	-	500	-	1,247
Bicol	723	500	708	1,029	2,863
Eastern Visayas	762	840	782	1,061	1,183
Central Visayas	1,650	1,020	1,424	1,464	1,409
More developed regions	1,080	1,275	1,189	1,643	1,687
Manila, S. Luzon	1,166	1,370	1,341	1,812	1,963
Central Luzon	1,364	1,428	1,379	1,228	1,411
Western Visayas	1,232	668	1,110	1,358	1,274
Mindanao	943	1,057	982	1,561	1,432
Philippines	1,138	1,247	1,190	1,554	1,663

Source: Zachariah and Pernia, *op. cit.*

Chapter IV

POPULATION GROWTH AND URBANIZATION

A. INTRODUCTION

A notable feature of the Philippines population in recent years is that a greater proportion has become urban. Continuing urbanization has meant that in 1970 one out of every three Filipinos was living in an area defined as urban compared to only one in eight at the beginning of the century. In absolute terms, urban population increased from about 1 million in 1903 to about 12 million in 1970. If that trend were to continue to the year 2000, then close to half the population in that year might be urban dwelling; that is, about 37 million or three times the number in 1970. Urban places have grown not only in size but also in number. Thus, while in 1903 there were only some 241 areas defined as urban, that number increased to more than 2,000 by 1970. At the same time, the number of chartered cities[1] increased from probably 5 to about 60.

The implications of urbanization are multifarious and their relevance to policy has been stressed time and again.[2] Although the importance of problems associated with urbanization cannot be overlooked, this chapter takes on a different objective. It presents the trends and patterns of urbanization with a view to examining their relationship to population growth and economic development.

Previous studies have been concerned more with the development of Philippine cities[3] or urbanism[4] rather than with urbanization trends *per se*. In 1969, Hollnsteiner wrote on the urban evolution of Manila in an historical and anthropological perspective[5] and, more recently, contrasted the planner's and the people's view on urban planning.[6] In 1970, Smith investigated the socio-ecological aspects of urbanization in lowland Luzon.[7] In 1972, Pascual presented a paper on Philippines urbanization[8] but did not explore the trends before the war nor make a comparative analysis with other countries. On the basis of scalogram analysis, an attempt was made to delimit urban places in Mindanao by Smith and Bouis[9] and in Central and Eastern Visayas by Abenoja.[10] Mariano tried to relate urbanization to internal migration in some Philippine cities using factor analysis.[11]

Two related assertions with respect to urbanization trends have become popular: (a) that, as a consequence of the acceleration in population growth, recent urbanization in developing countries has been stepped up at a tempo even more rapid than the historical experience of developed countries; and (b) that urbanization has proceeded at a much faster pace than economic development resulting in over-urbanization.[12] But as will be dis-

1 A chartered city is not automatically urban but its constituent *población* and *barrios* are inspected and classified according to urban criteria.

2 For instance, see Philip M. Hauser and Leo F. Schnore, eds., *The Study of Urbanization* (New York, John Wiley and Sons, Inc., 1965); Gerry E. Hendershot, "Challenge to urbanization in the seventies", in B.M. Concepcion, ed., *Philippine Population in the Seventies* (Manila, Community Publishers Inc., 1969); and Harley L. Browning, "Migrant selectivity and the growth of large cities in developing countries", in National Academy of Sciences, *Rapid Population Growth*, vol. II, Research Papers (Baltimore, The Johns Hopkins Press, 1971).

3 Paul F. Cressey, "The development of Philippine cities", *Silliman Journal*, No. 5, 1958; J.E. Spencer, "The cities of the Philippines", *Journal of Geography*, No. 57, 1958; Edward Ullman, "Trade centers and tributary areas of the Philippines", *Geographical Review*, No. 50, 1960; Robert R. Reed, "Hispanic urbanism in the Philippines: a study of the impact of church and State", *Journal of East Asiatic Studies, II*, March 1967, (University of Manila).

4 Urbanism refers to the socio-cultural aspects of urban life. See Louis Wirth, "Urbanism as a way of life", *American Journal of Sociology*, No. 44, July 1938.

5 Mary R. Hollnsteiner, "The urbanization of Metropolitan Manila" in Walden F. Bello and Alfonzo de Guzman, eds., *Modernization: Its Impact in the Philippines*, vol. IV (Quezon City, Ateneo de Manilo University Press, 1969).

6 Mary R. Hollnsteiner, "Urban planning: a curbside view", *Philippine Planning Journal*, No. 5, April 1974, pp. 65-72.

7 Peter Colin Smith, "Areal differentiation and the urbanization process in lowland Luzon", unpublished dissertation, University of Chicago, 1970.

8 Elvira M. Pascual, "Urbanization in the Philippines", paper submitted to the SEADAG Population Panel Seminar on Population Change and Development in Southeast Asia: Urban Focus, Pattaya, Thailand, June 1972.

9 Peter Colin Smith and Howarth Bouis, "An approach to delimiting social and economic concentrations through scalograms: Mindanao, 1972", Research Note No. 41, University of the Philippines Population Institute, Manila, 1975.

10 Macrina Abenoja, "Urbanization in the Central and Eastern Visayas", M.A. thesis, University of the Philippines Population Institute, Manila, 1975.

11 Vincente Mariano, "Urbanization and internal migration in forty-five Philippine cities in the 1960s, M.A. thesis, University of the Philippines Population Institue, Manila, 1975.

12 See Gunnar Myrdal, *Asian Drama* (New York, Pantheon Press, 1968); T.G. McGee, *The Urbanization Process in the Third World* (London, G. Bell and Sons Ltd., 1971); and Frederick C. Terzo, *Urbanization in the Developing Countries: the Response of International Assistance*, International Urbanization Survey (New York, The Ford Foundation, 1972).

cussed later in the chapter, these assertions are not valid in the case of the Philippines, where rapid population growth has, in fact, resulted in a deceleration in the pace of urbanization.[13] Furthermore, urbanization has been sufficiently linked to economic development.

1. Basic definitions and concepts

It is useful to spell out working definitions at the outset: (a) "level" or "degree" of urbanization refers to the proportion of the population living in urban places; (b) "urbanization" as such (or the process of) means the rise in the proportion of population living in urban places; (c) "rate of urban growth" is the percentage change in urban population from one period to the next; (d) "tempo" or "pace" of urbanization is the difference between the urban and the rural rates of growth (URGD); and (e) "primacy" is the ratio of the population of the largest city to the combined populations of the next three largest cities.

It is clear from the foregoing definitions that urbanization is a phenomenon distinct from, though closely related to, urban growth. While urbanization hinges on the changing balance between urban and rural populations, urban growth may proceed independently of this balance. For instance, urban population may be growing fast but because rural population is also increasing at nearly the same rate, the net effect on the level of urbanization is marginal. The distinction between urbanization and urban growth is analogous to that between economic development and economic growth – the former referring to structural and qualitative changes, the latter to gross increases.[14] Urban primacy is another related but distinct phenomenon. It reflects the general pattern in which urbanization is proceeding at the national level. A high primacy index, for example, would indicate that urbanization or urban growth is centralized or "unbalanced".

2. Data and method

As in other developing countries, an accurate analysis of trends in urbanization in the Philippines is rendered difficult by the inadequacy of data. In the first place, past censuses did not have a count of urban population as distinct from rural population. Secondly, the urban criteria developed in 1963 by the then Bureau of Census and Statistics, now the National Census and Statistics Office (NCSO), are based on population size and density.[15] Although population size and density correlate closely with urban characteristics, no doubt some places tend to be misclassified by the said criteria. In other words, a place that ought to be considered urban by virtue of its social and economic institutions may be considered rural just because its population size or density falls short of the "urban minimum"; conversely, one that possesses rural characteristics may be judged urban simply because it meets the size or density criterion.

In 1970, NCSO formulated a more precise definition of urban which, in addition to population size and density, took into account certain urban institutional features, such as street patterns, commercial establishments, economic activity, etc. However plausible in itself, the 1970 urban definition has a drawback in terms of its applicability to the past censuses which do not contain urban institutional records. The next best alternative was to apply the 1963 urban definition to all censuses carried out in the twentieth century (1903, 1918, 1939, 1948, 1960 and 1970) in order to derive consistent trends. This procedure entailed inspecting each municipality, *poblacion* and *barrio* with their boundaries at each census date, and then culling urban inhabitants according to the urban criteria.[16]

In concise form, the 1963 urban definition includes the following:

(a) Whole municipality with density of at least 1,000 per square kilometre;

(b) In any municipality with a density of at least 500 persons per square kilometre:

13 The same contention is made by Kingsley Davis for developing countries in general and by Gavin Jones for southeast Asian countries. See Kingsley Davis, *World Urbanization, 1950-1970,* volumes I and II, (Berkeley, University of California Institute of International Studies, 1972); and Gavin W. Jones "Implications of prospective urbanization for development planning in Southeast Asia", paper submitted to the SEADAG Population Panel Seminar on Population Change and Development in Southeast Asia: Urban Focus, Pattaya, Thailand, June 1972.

14 See Charles P. Kindleberger, *Economic Development* (New York McGraw Hill, 1958).

15 NCSO had developed other definitions in 1939 and 1948 but these were not applied, while a different definition was adopted for the Philippine Statistical Survey of Households in 1956.

16 In 1973, NCSO did this for 1948, 1960 and 1970 but not for the earlier censuses, while in this study it was done for all six censuses to ensure consistency. However, the results for 1948, 1960 and 1970 are slightly different from those of NCSO, even after the procedure was repeated.

(i) *Población* regardless of size;

(ii) *Barrio* with at least 2,500 population;

(iii) *Barrio* with at least 1,000 population and contiguous to the *poblacion;*

(c) In any municipality with at least 20,000 population:

(a) *Población* regardless of size;

(b) *Barrio* with at least 2,500 population and contiguous to the *poblacion;*

(d) *Población* with at least 2,500 population.

Commentaries on this urban definition are found in the works of Bennet[17], and Nazaret and Barretto[18], and a good discussion of its merits and demerits is provided by Smith[19] and Pernia[20]

An application of the 1963 and 1970 urban definitions to the 1970 census shows only slightly divergent results at the national and regional levels; at the provincial level, the differences are more noticeable.[21] We may assume that the results would be similar for the earlier censuses, i.e. the discrepancies would be negligible at the higher levels but show up at the lower levels (provinces and municipalities). On balance, for the purpose of analysing aggregate trends and patterns, the size-density definition may be as suitable as the one that includes institutional criteria.[22]

17 Don C. Bennett, "The new official definition of the urban population in the Philippines: a critique", *The Philippine Geographical Journal*, No. 9, January-June 1965.

18 Francisco V. Nazaret and Felisa R. Barretto, "Concepts and definitions of urban-rural areas in the Philippines", *The Philippines Statistician*, vol. 12, June-September 1963.

19 Peter Colin Smith, *op. cit.*, pp. 141-152.

20 Ernesto M. Pernia, "Some thoughts on the urban definition", Memorandum to University of the Philippines Population Institute staff, November 1974.

21 *The Growth of Urban Population in the Philippines and Its Perspectives* (Manila, National Census and Statistics Office, 1973).

22 It may even be argued that, although the 1970 definition is conceptually more plausible, the 1963 definition may offer more accurate results because it is simpler to apply in practice. In fact, provincial levels of urbanization according to the 1963 definition correlate better with other socio-economic indices (manufacturing and commercial establishments, radio ownership, literacy, etc.) than do urbanization levels according to the 1970 definition.

23 Of a total population of 7.6 million in 1903, about 648,000 or 8.5 per cent were considered *"infieles"* or uncivilized. Since they were not included in the municipal breakdowns, they could not be accounted for by the size-density urban definition. However, assuming that *"infieles"* (by definition) lived in the rural hinterlands, their numbers were simply included in the rural proportion in estimating provincial, regional and national levels of urbanization.

24 Adna F. Weber, *The Growth of the Cities in the Nineteenth Century: A Study in Statistics* (New York, the MacMillian Company, 1899), pp. 110 and 129.

B. AN HISTORICAL PERSPECTIVE, 1903-1970

1. The National trends

(a) Intercensal trends

The numerical distribution of the rural and urban population, their average annual growth rates, as well as the level and tempo of urbanization for various census years from 1903 to 1970, are shown in table 54. In 1903, the national level of urbanization, or the proportion of the total population living in urban areas, was about 13 per cent.[23] This was almost equal to the levels that were obtained in Sweden in 1870 and in Japan in 1887-1890.[24] In other words, only between about 15 and 33 years set the Philippines apart from these two now highly urbanized and industrialized nations. It is even more interesting to note that, in the southeast Asian context, Indonesia and Burma attained the 1903 Philippine level only around 1950, and Thailand only in 1960.

The relatively high degree of urbanization in the Philippines early in the century may have been induced by historical circumstances. First, the Spanish colonial tradition of urbanism through "reduction"[25] meant that, for the purpose of Christianization, the natives were resettled from scattered *barangays* into compact settlements.[26] And second, towards the end of the Spanish rule guerilla activities became rampant in the hinterlands, forcing country people to flee to the *poblaciones.*

A slight decline in urbanization level from 13.1 to 12.5 per cent occurred between 1903 and 1918. This unusual phenomenon was caused by three corollary factors. First, the departure of the Spanish administrators ended their aggressive resettlement programmes; there was vehement resistance to these programmes[27] to start with, so that a trickling-back of the natives to their rural hamlets seemed natural. Second, peace began to reign in the countryside as Filipinos accepted United States rule; this interpretation is consistent with the fact that most of the decrease in national urbanization was accounted for

25 The strategy of "reduction" was earlier applied to Hispanic America so that countries there also exhibit levels of urbanization that are high vis-à-vis other developing countries. See Robert R. Reed, *loc. cit.*, p. 35.

26 *Ibid.*, p. 33, and J.L. Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses, 1565-1700* (Madison, University of Wisconsin Press, 1959), p. 155.

27 Robert R. Reed, *loc. cit.*, p. 55.

Table 54. Total, rural and urban population, their respective annual growth rates[a], level[b] and tempo[c] of urbanization: census years 1903-1970

Census year	Total population		Rural population		Urban population		Level of urbanization[b] (%)	Tempo of urbanization[c]
	Number (000)	Annual growth rate (%)	Number	Annual growth rate (%)	Number (000)	Annual growth rate (%)		
1903	7,635.4	-	6,635.2	-	1,000.2	-	13.1	-
1918	10,314.3	1.91	9,020.1	1.96	1,294.2	1.64	12.5	-0.32
1939	16,000.3	2.22	12,549.6	1.66	3,450.7	5.02	21.6	3.36
1948	19,234.2	1.91	14,050.5	1.17	5,183.7	4.25	27.0	3.09
1960	27,087.7	3.06	19,015.2	2.70	8,072.5	3.98	29.8	1.28
1970	36,684.5	3.01	24,615.7	2.56	12,068.8	4.02	32.9	1.46

Source: National Census and Statistics Office, data from various censuses.

a Exponential rates.

b Level of urbanization refers to the proportion of population living in urban places.

c Tempo of urbanization is the difference between the urban and the rural rates of growth (URGD).

by a marked loss of urban population in the Central Luzon region, which was the foremost site of guerilla activities before the twentieth century. And third, further encouragement for the natives to return to the farms was created by (a) the distribution to deserving farmers of friar lands for cultivation of food and other primary products[28]; and (b) the lifting by 1913 of export duties on farm products, such as sugar, tobacco, hemp, and copra.[29]

The 1918-1939 period was pivotal in that urbanization was appreciable at all levels. The national level rose to 21.6 per cent, a gain of 9 percentage points in 21 years. The tempo of urbanization was at an all-time high as urban population growth accelerated sharply while rural growth decelerated. In 1939, the Philippines was more urbanized than Thailand, Indonesia and Burma had been in 1970, or the Republic of Korea in 1950. The pace of urbanization was also sharply faster in the Philippines than in the three southeast Asian countries during the preceding 20-year period.

The pronounced urbanization from 1918 to 1939 was no doubt tied to socio-economic developments during that period. First, a general improvement in educational standards[30] must have spurred rural-to-urban migration. Second, the United States policy of Filipinization must have opened up opportunities not only for direct employment but also for indirect participation in the political and economic affairs of the provincial capitals and the *poblaciónes*.[31] And, third, the commonwealth government embarked on a strategy of industrialization and product diversification to start weaning the Philippine economy from the United States[32]; thus, while in 1918 there were only about 5 manufacturing establishments per 10,000 population, by 1939 there were some 87 of them.

Between 1939 and 1948, an interval marked by the war and the Declaration of Independence in 1946, the rate of urbanization slowed down but the level climbed to 27.0 per cent and urban population increased from 3.4 million to 5.2 million. The 1950s and 1960s saw further deceleration in the tempo of urbanization as total population growth accelerated markedly. By 1970, the degree of urbanization had gone up only 6 percentage points to 32.9 per cent but the size of urban population had more than doubled to 12 million.

28 Dean C. Worcester, *The Philippines: Past and Present* (New York, The MacMillian Company, 1914), pp. 829-845.

29 Pedro Abelarde, *American Tariff Policy Towards the Philippines*, 1947.

30 Teodoro Agoncillo, *History of the Filipino People* (Quezon City, R.P. Garcia Publishing Company, 1971).

31 *Ibid.*, p. 303.

32 *Ibid.*, pp. 413-427.

(b) Over-all trend

The national trend can also be depicted by considering two long periods in the past, and the most recent decade.[33] This reveals smaller variations in the tempo of urbanization than shown earlier in table 54. The tempo of urbanization increases slightly from the first period (1903-1939) to the second period (1939-1960), and then slows down in the 1960-1970 decade, as evidenced by the urban-rural growth differences (URGD) in table 55.

Table 55. Percentage annual rates[a] of total, urban and rural population growth and urban-rural growth differences (URGD), 1903-1970

	1903-1939	1939-1960	1960-1970
Total	2.09	2.52	3.01
Urban	3.52	4.10	4.02
Rural	1.79	1.99	2.56
URGD	1.73	2.11	1.46

Source: Same as for table 54.

a Exponential rates.

The deceleration in the pace of urbanization during the 1960-1970 period can be accounted for in part (i.e. in demographic terms) by the acceleration in total population growth. More specifically, whereas the urban sector absorbed a larger share of the increase in total population during the period 1939-1960, the increase in the total population during 1960-1970 was absorbed by the rural sector. The slackening in the tempo of urbanization occurred despite the changing pattern in internal migrations from movements to frontier and rural areas in the earlier period to urbanward transfers in more recent times.[34] In effect then, the gains in urban population in the way of urban in-migration and natural increase were partly offset by the accelerated increase in rural population.

Against the background of a slackening urbanization at the national level, urban concentration increased considerably, as is evident from the index of urban primacy given in table 56. This index shows

Table 56. Index of urban primacy, 1903-1970

Area	1903	1939	1960	1970
Small metropolitan area[a]	4.03	3.57	4.27	4.26
Large metropolitan area[b]	-	-	4.91	5.31

a Comprises 4 cities and 4 municipalities.

b Comprises 4 cities and 13 municipalities. Much of the larger metropolitan area was still rural in 1903 and 1939.

the ratio of Metropolitan Manila relative to the combined populations of the next three largest cities, namely, Cebu, Iloilo and Bacolod. Similarly, while the smaller version of Metropolitan Manila accounted for approximately a quarter of the nation's urban population throughout the entire period, the larger version's share steadily increased from a fourth to a third of the total population (table 57).

Table 57. Metropolitan Manila[a]: urban population, percentage of total urban population, level of urbanization and average annual growth rate, 1903-1970

Census year	Urban population (in thousands)	Percentage of total urban population	Level of urbanization	Average growth rate (%)
1903	256.7	25.7	76.9	-
1918	371.1	28.7	87.1	2.36
1939	903.3	26.2	90.3	4.55
1948	1,526.1	29.4	97.1	5.51
1960	2,426.5	30.1	98.1	4.17
1970	3,952.6	32.8	100.0	4.90

Source: National Census and Statistics Office, census data for various years.

a Metropolitan Manila comprises the 4 chartered cities of Manila, Caloocan, Pasay and Quezon and 13 municipalities: Makati, Mandaluyong, Navotas, San Juan, Malabon, Marikina, Las Pinâs, Paranaque, Pateros, Pasig, Taguig, Meycauayan and Valenzuela.

Urbanization should also be viewed in terms of the components of urban population growth, namely, natural increase of the urban population, rural-urban migration, and reclassification (inclusion of new areas in the urban category or extending the boundary of existing urban places, or both). Table 58 shows the relative contribution of each of the three components to the total increase in urban population during the periods 1903-1939, 1939-1960 and 1960-1970. It will be seen from this table that during the first two periods reclassification of places contributed

33 By doing this, it is possible to ignore the 1918 and 1948 censuses which are not as good as the other four censuses. This procedure may also artificially erase existing variations.

34 Ernesto M. Pernia, "Urbanization and internal migration", Project Report, PREPF Phase I, University of the Philippines Population Institute, 1975. (PREPF is a programme entitled "Population, Resources, Environment and the Philippine Future".)

Table 58. Components of urban growth, 1903-1970

Components	Percentage contribution of each component during		
	1903-1939	1939-1960	1960-1970
Natural increase	35.7	39.1	54.2
Net migration	-3.4	15.5	17.6
Reclassification	67.7	45.4	28.2
Total	100.0	100.0	100.0

Source: Same as for table 57.

the major share of the increase in urban population but the relative contribution of the component has been diminishing over the years. The second most important component during these two periods has been the natural increase of existing urban population and the relative contribution of this component has been increasing over the years. During the decade 1960-1970, natural increase was the dominant component followed by the reclassification component. In all three periods, the contribution through rural-urban migration was the least and, in fact, during 1903-1939, this component contributed negatively to urban population growth. A decomposition of the reclassification portion of urban growth shows that pure reclassification, natural increase and net migration were of roughly equal magnitudes in 1903-1939; later migration dwindled in significance and became even negative in the 1960-1970 period (table 59). Thus, it may not be correct to equate Philippine urban growth with rural-urban migration.

The reclassification of the components of urban growth, shown in table 60, indicates percentage contributions which differ significantly from those given in table 59. Natural increase (including natural increase in new urban areas) during any period represents roughly 60 per cent of total urban growth. Pure reclassification amounts to only 20 to 25 per cent of the total, the remaining part being accounted for by net migration. There is no valid reason for preferring any one of these estimates; the true value of each component lies between these two estimates.

The distribution of urban places and urban population by size of place for all censuses from 1903 to 1970 is shown in table 61. It will be seen that, whereas in 1903 about 62 per cent of the urban places and 50 per cent of the urban population were concentrated in the 2,500-5,000 size class,

Table 59. Breakdown of the reclassification component of urban growth, 1903-1970

Components	Percentage contribution of each component during		
	1903-1939	1939-1960	1960-1970
Population of the new urban areas[a]	30.8	47.8	89.5
Narural increase	38.4	36.7	34.5
Net migration	30.8	15.4	-24.0
Total	100.0	100.0	100.0

Source: Same as for table 57.

a As estimated at the beginning of the period.

Table 60. Reclassified components of urban growth, 1903-1970

Components	Percentage contribution of each component during		
	1903-1939	1939-1960	1960-1970
Natural increase	61.7	55.8	63.9
Net migration	17.5	22.5	10.8
Pure reclassification[a]	20.9	21.7	25.2
Total	100.0	100.0	100.0

Source: Computed from tables 58 and 59.

a "Pure reclassification" is the population of the new urban areas, estimated at the beginning of the period, as a percentage of total urban growth during the period.

in 1970 only about 36 per cent of the urban places and 24 per cent of the urban population were in this size class. However, in 1970 three small size categories, viz., 1,000 to 10,000, together accounted for nearly three fourths of all urban places, while two thirds of the urban population was concentrated in cities with population sizes ranging from 2,500 to 20,000. This may be compared with the situation obtaining in 1903 when 83 per cent of urban places were in the size categories 1,000 to 10,000 and 85 per cent of the urban population was resident in urban areas ranging in population size from 2,500 to 20,000.

2. The regional pattern

Urbanization at the regional level can be conveniently and instructively presented by grouping regions into metropolitan, more urbanized and less

Table 61. Distribution of urban places and urban population by size of place, 1903-1970

Size category (persons)	1903		1918		1939		1948		1960		1970	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Urban places												
More than 500,000	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
250,000–499,999	0	0.0	0	0.0	0	0.0	1	0.1	2	0.1	2	0.1
125,000–249,999	0	0.0	0	0.0	1	0.1	2	0.2	1	0.1	2	0.1
100,000–124,999	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	2	0.1
50,000–99,999	0	0.0	1	0.3	4	0.6	2	0.2	9	0.6	9	0.4
25,000–49,999	3	1.2	5	1.4	5	0.7	10	0.9	13	0.9	28	1.2
20,000–24,999	0	0.0	0	0.0	6	0.9	7	0.6	23	1.5	17	0.7
10,000–19,999	11	4.6	8	2.2	28	4.0	49	4.5	77	5.1	163	6.9
5,000–9,999	29	12.0	35	9.5	117	16.6	180	16.5	252	16.6	422	17.9
2,500–4,999	149	61.8	161	43.8	362	51.5	463	42.4	692	45.6	837	35.5
1,000–2,499	23	9.5	68	18.5	136	19.3	174	16.0	297	19.6	496	21.0
500–999	16	6.6	40	10.9	28	4.0	81	7.0	85	5.6	209	8.9
Fewer than 500	10	4.1	50	13.6	15	2.1	122	11.2	66	4.4	169	7.2
Total	241	100.0	368	100.0	703	100.0	1,091	100.0	1,517	100.0	2,356	100.0
Urban population												
More than 500,000	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
250,000–499,999	0	0.0	0	0.0	0	0.0	283,384	5.5	639,635	7.9	788,774	6.5
125,000–249,999	0	0.0	0	0.0	160,958	4.7	373,662	7.2	127,708	1.6	265,704	2.2
100,000–124,999	0	0.0	0	0.0	111,995	3.2	0	0.0	0	0.0	232,339	1.9
50,000–99,999	0	0.0	71,905	5.6	275,232	8.0	126,158	2.4	622,217	7.7	522,395	4.3
25,000–49,999	103,128	10.3	173,414	13.4	156,835	4.5	360,337	7.0	458,624	5.7	889,504	7.4
20,000–24,999	0	0.0	0	0.0	129,892	3.8	155,623	3.0	513,725	6.4	393,883	3.3
10,000–19,999	153,459	15.3	117,785	9.1	374,354	10.8	642,372	12.4	1,049,016	13.0	2,153,525	17.8
5,000–9,999	188,668	18.9	221,216	17.1	753,043	21.8	1,255,580	24.2	1,706,267	21.1	2,884,678	23.9
2,500–4,999	503,923	50.4	547,732	42.3	1,241,956	36.0	1,597,103	30.8	2,386,004	29.6	2,900,881	24.0
1,000–2,499	35,000	3.5	116,539	9.0	224,303	6.5	295,972	5.7	487,683	6.0	825,159	6.8
500–999	12,330	1.2	30,030	2.3	18,680	0.5	60,699	1.2	63,018	0.8	160,025	1.3
Fewer than 500	3,669	0.4	15,552	1.2	3,423	0.1	32,797	0.6	18,588	0.2	51,934	0.4
Total	1,000,177	100.0	1,294,173	100.0	3,450,671	100.0	5,183,687	100.0	8,072,485	100.0	12,068,801	100.0

Source: Bureau of the Census and Statistics, census data from various years.

urbanized categories. The level that divides the more and the less urbanized categories is the 1970 national average excluding Metropolitan Manila, which is a separate category.[35] The urban population of each region and the regional level and tempo of urbanization for selected census years from 1903 to 1970 are given in table 62. It will be seen from this table that the distribution of the regions according to the more urbanized and less urbanized categories remained unchanged in 1960 and 1970. However, some regions which were less urbanized in 1960 and 1970 would have been included in the more urbanized category in the earlier years, and a few that are included in the more urbanized category in recent years should have been in the less urbanized category in 1903.

It will also be seen from table 62 that Metropolitan Manila which, compared to other regions, was already at a much higher level of urbanization in 1903, continued to urbanize rapidly and completed the process by 1970. Thus Manila has been an urban "island" in a predominantly rural "sea". It has been observed that: "The singularity of Metropolitan Manila can be accounted for by the fact that close to two thirds of the country's manufacturing activity is concentrated in this area, in addition to government offices, major educational institutions, and so forth. Not surprisingly, therefore, Metropolitan Manila has continuously drawn population from the other regions, including the more urbanized one."[36]

Table 62 also shows that the more urbanized regions were in 1903 at a level (10 per cent) lower than that of the less urbanized group, but urbanized rapidly, particularly after 1939, reading 30 per cent in 1970. During 1903-1939, some less urbanized regions (as of 1970), showed faster rates of urbanization than the more urbanized regions, again pointing to the different regional pattern obtained in the earlier period.

The interregional imbalance is also reflected in each regions proportionate share of the urban population given in table 63. It will be noted that Metropolitan Manila steadily increased its share from about 26 per cent in 1903 to about 33 per cent in 1970. The proportionate share of the more urbanized group of regions recorded a decline from 44.3 per cent in 1903 to 40.7 per cent in 1960 and remained more or less at that level till 1970. The less urbanized category, on the other hand, recorded a slight increase from 30 per cent in 1903 to 32 per cent in 1939 and thereafter a gradual decline to 26 per cent in 1970.

The varied levels and tempos of urbanization among the regions reflect: (a) differential rates of natural increase between regions and between rural and urban sectors within regions, and (b) differential rates of in- and out-migration, intraregional and interregional, in terms of both volume and rural/urban type. Underlying these differentials, of course, are differences over space and time in socio-economic conditions and development.

C. COMPARATIVE PERSPECTIVE

1. Past Western context

The trend of Philippine urbanization in the twentieth century may be seen in clearer perspective if contrasted with the historical experience of developed countries at a similar phase of urbanization.[37] For example, a comparison with the United States and Sweden (whose urban definitions are analogous to those of the Philippines) shows that what the Philippines accomplished in 67 years between 1903 and 1970, took the United States 42 years from about 1845 to 1887, and Sweden 60 years from 1870 to 1930.[38] In other words, if the Philippines had urbanized as speedily as the United States, for example, its level of urbanization in 1970 should have been 46.6 per cent, which was the United States level around 1912. The absolute growth of urban population in the Philippines, however, had been relatively brisk. During the intervals of comparable urbanization, while the urban population of the United States increased 636 per cent and Sweden's 270 per cent, that of the Philippines expanded 1,107 per cent. If Philippine urban population had grown at the same rate as in the United States or Sweden, it would have been only 61 or

35 When Metropolitan Manila is included in the computation, the national average becomes too high and virtually all regions fall below the average.

36 Ernesto M. Pernia, *Urbanization in the Philippines: Historical and Comparative Perspectives,* Papers of the East-West Population Institute, No. 40 (Honolulu, East-West Center, 1976).

37 Although definitions of "urban" vary between countries, they are similar enough to make meaningful comparisons. Moreover, the emphasis on change in the levels or rates of urbanization minimizes the effects of definitional bias. For the different urban definitions, see Kingsley Davis, *World Urbanization, 1950-1970.*

38 The estimates for the United States were derived by interpolation of 10-year data from *Historical Statistics of the United States: Colonial Times to 1957,* United States Bureau of the Census, Washington, DC, 1966. For Sweden, data are from Adna F. Weber, *The Growth of Cities in the Nineteenth Century: A Study in Statistics.*

Table 62. Urban population, level of urbanization and tempo of urbanization by regions, 1903-1970

Regions	Urban population				Level of urbanization				Tempo of urbanization		
	1903	1939	1960	1970	1903	1939	1960	1970	1903-1939	1939-1960	1960-1970
Metropolitan Manila	256,729	903,313	2,426,488	3,952,615	76.9	90.3	98.1	100.0	3.0	8.3	-
More urbanized	442,753	1,443,381	3,288,793	4,920,353	10.1	17.5	26.7	30.5	1.8	2.6	1.9
Central Luzon	140,795	379,562	958,954	1,574,089	11.1	16.5	26.5	31.8	1.3	2.9	2.6
Southern Tagalog	93,938	327,546	831,257	1,484,015	10.1	18.0	26.8	32.8	1.9	2.5	3.0
Western Visayas	143,733	467,688	937,788	997,588	13.3	21.5	30.5	27.6	1.7	2.3	-1.4
Central Visayas	64,287	268,585	560,794	864,661	5.7	13.7	22.2	28.5	2.8	2.8	3.4
Less urbanized	300,695	1,103,977	2,357,204	3,195,833	10.3	16.3	19.2	19.2	1.5	1.0	0.0
Ilocos	90,011	156,670	229,507	329,925	13.8	15.9	17.6	20.6	0.5	0.6	1.9
Cagayan Valley	9,941	82,408	169,825	242,262	3.4	11.5	14.1	14.3	3.8	1.1	0.2
Bicol	92,326	242,891	517,165	646,184	14.3	18.0	21.9	21.8	0.8	1.2	-0.1
Eastern Visayas	61,963	224,872	385,695	451,956	9.5	15.4	18.9	19.0	1.6	1.2	0.1
Western Mindanao	7,199	130,804	226,265	301,868	3.8	21.7	16.8	16.2	5.7	-1.6	-0.4
Northern Mindanao	36,238	159,384	427,330	562,969	12.5	12.5	20.2	18.7	0.7	1.7	-1.0
Southern Mindanao	3,017	106,948	401,417	660,669	1.6	18.1	20.9	21.5	7.8	0.9	0.4
Philippines (excluding Metropolitan Manila)	743,448	2,547,358	5,645,997	8,116,186	10.2	17.0	22.9	24.8	1.7	1.8	1.0
Total Philippines	1,000,177	3,450,671	8,072,485	12,068,801	13.1	21.6	29.8	32.9	1.7	2.1	1.5

Source: Ernesto M. Pernia, *Urbanization in the Philippines: Historical and Comparative Perspectives*, Papers of the East-West Population Institute, No. 40 (Honolulu, East-West Center, 1976), tables A1 and 6.

Table 63. Proportion of urban population by broad region, 1903-1970

Region	1903	1939	1960	1970
Metropolitan Manila	25.7	26.2	30.1	32.8
More urbanized	44.3	41.8	40.7	40.8
Less urbanized	30.0	32.0	29.2	26.4
All regions	100.0	100.0	100.0	100.0

Source: Computed from data in table 62.

31 per cent, respectively, of that observed in 1970. And yet the actual level of urbanization in 1970 could have been attained just the same.

Since Western nations are now highly urbanized, it will not be appropriate to compare their recent urbanization with the recent experience of the Philippines. It will, however, be more useful to go back to the past demographic history of those countries and identify the phases which correspond to the Philippines' urbanization between 1950 and 1970. In other words, the urbanization levels of Western countries corresponding to the 1950 Philippine level are first determined and then a comparison is made of the tempos for the two subsequent decades. The urbanization indices for the Philippines and a few selected Western countries are shown in table 64.

In 1831, the level of urbanization in the United Kingdom (England and Wales only) was 25 per cent, still below the Philippine level in 1950. But 20 years later, England and Wales surpassed the Philippines by urbanizing at an average tempo of 2.4 per cent per annum, almost double the Philippine rate from 1950 to 1970.[39]

The level of urbanization in France during the period 1856-1876 approximated recent Philippine experience. France exhibited faster urbanization during the first decade but slower in the second, averaging 1.2 per cent yearly compared to a rate of 1.3 for the Philippines.

Sweden's degree of urbanization in 1910 was far below the 1950 Philippine level. Twenty years later, however, Sweden was practically on a par with the Philippines' 1970 level.

Finally, United States urbanization between 1870 and 1890 was in marked contrast to that of the Philippines in recent years. Although the initial level for the United States was below that of the Philippines, its final level at the end of two decades was higher than the corresponding Philippine level owing to a faster pace, especially in the latter decade when it was more than double the Philippine rate.

Thus, the developed nations, except France perhaps, experienced faster urbanization in the past. If, for instance, the Philippines had been urbanizing as fast as England and Wales or the United States, its level in 1970 would have been about 38 instead of 33 per cent. Even if its rate had been just as moderate as Sweden's, the 1970 level would have been 36 per cent.

The rate of urban population growth, however, was materially higher in the Philippines in 1950-1970 than in selected Western countries during any comparable decade, except 1880-1890 in the United States, England and Wales, which urbanized relatively rapidly, experienced an average urban growth of 3.0 per cent per year compared to 4.0 per cent for the Philippines. France, which urbanized at about the same tempo as the Philippines, had an average urban growth of one fourth. This patently indicates that, contrary to common impression, rapid urban population growth does not necessarily generate correspondingly rapid urbanization.[40] If the Philippines had an urban growth similar to England and Wales, its urban population in 1970 would have been 17 per cent smaller; if similar to France, only a little more than half. Yet it could have urbanized as much or even more than it actually did during the past two decades.

The last column of table 64 shows the annual rates of rural population change. The Philippine rates are significantly higher than the rates for the Western countries except the United States. The contrast is very pronounced particularly in the later decade when the rural populations of France and Sweden were already declining.

Urbanization in terms of large cities (urban places with 100,000 or more persons) is shown in table 65 which also compares the Philippine levels with those of England and Wales and of the United States at corresponding periods. It will be seen that

39 It may be noted that urbanization rates for England and Wales are based on cities with 20,000 persons or more; if smaller towns are included, the rates may be faster.

40 Kingsley Davis, "The urbanization of the human population", *Scientific American*, No. 213, 1965, pp. 40-53.

Table 64. Urbanization indices for the Philippines and selected Western countries

Country and year	Population (in thousands)		Level (percentage urban)	Annual tempo (%)	Annual rate of population growth (%)	
	Urban	Rural			Urban	Rural
Philippines						
1950	5,469	14,418	27.5	na	na	na
1960	8,072	19,015	29.8	1.16	3.97	2.81
1970	12,069	24,615	32.9	1.46	4.02	2.56
France						
1856	9,845	26,217	27.3	na	na	na
1866	11,595	26,421	30.5	1.57	1.65	0.08
1876	11,977	24 989	32.4	0.88	0.32	-0.56
Sweden						
1910	1,370	4,154	24.8	na	na	na
1920	1,742	4,163	29.5	2.41	2.43	0.02
1930	1,996	4,146	32.5	1.41	1.37	-0.04
United Kingdom (England and Wales only)						
1831	3,467	10,401	25.0	na	na	na
1841	4,609	11,339	28.9	2.00	2.89	0.89
1851	6,265	11,635	35.0	2.86	3.12	0.26
United States						
1870	10,233	29,584	25.7	na	na	na
1880	14,144	36 012	28.2	1.31	3.29	1.98
1890	22,283	40 663	35.4	3.43	4.65	1.22

Source: Data for the Philippines are from the Bureau of the Census and Statistics; for the United Kingdom and France from Adna Weber, *The Growth of Cities in the Nineteenth Century; A Study in Statistics;* for Sweden from W.S. and E.S. Woytinsky, *World Population and Production Trends and Outlook;* for the United States, from *Statistical Abstract of the United States, 1972.*

Notes: For urban definitions in the Philippines, see page 98. Definitions for other countries are as follows: United Kingdom (England and Wales only), cities of 20,000 or more persons France, urban communes of 2,000 or more persons; Sweden, towns of 2,000 or more persons; and United States, places with 2,500 or more persons.

na = not applicable.

the 1950-1970 experience of the Philippines was approximated by the United Kingdom (England and Wales) in 1811-1831 and by the United States in 1880-1900. As in the case of over-all urbanization, the growth of large cities, or "citification", was slower in the case of the Philippines. The mean rates for England and Wales and the United States were 1.8 and 2.5 per cent respectively, while that of the Philippines was 1.3 per cent. However, the annual rate of growth of city and non-city population were higher for the Philippines.

2. Current Asian context

In view of their similarities in culture and development, it will be more meaningful to compare Philippine urbanization in recent decades with that of countries in the region. Table 66 shows that, in a southeast Asian context, the Philippines had the highest level of urbanization in 1950. But by 1970, Peninsular Malaysia, which was 3 percentage points below the Philippines in 1950, became the most urbanized with 45.3 per cent, or 12 percentage

Table 65. Citification indices for the Philippines and selected Western countries

Country and year	Level (percentage city)	Annual tempo (%)	City population (in thousands)	Annual rate of population growth (%)	
				City	Non-city
Philippines					
1950	13.5	na	2,692	na	na
1960	14.7	1.01	3,989	4.01	3.00
1970	16.7	1.55	6,140	4.32	2.77
United Kingdom (England and Wales only)					
1811	12.0	na	1,220	na	na
1821	13.5	1.37	1,619	2.87	1.50
1831	16.3	2.26	2,263	3.40	1.14
United States					
1880	12.4	na	6,219	na	na
1890	15.4	2.60	9,694	4.54	1.94
1900	18.7	2.40	14,211	3.90	1.50

Sources: Same as for table 64.

Notes: Citification refers to urbanization in large cities or urban places of 100,000 or more persons. The level of citification is the percentage of the total population in large cities.

na = not applicable.

points, above the Philippines. Thailand, Indonesia and Burma, which had markedly lower degrees of urbanization, also evinced more buoyant urbanization (except Burma's 1950-1960 experience), although they could not equal the Philippine level in 1970. The urban population of the Philippines was next in size to that of Indonesia, and its urban population growth was relatively moderate. However, its rural population increase was comparatively rapid, only slightly less than Thailand's, which was the fastest in the two decades.

It may be that the pace of urbanization in the Philippines was relatively slow because the initial level in 1950 was already high. This could be tested by contrasting the Philippines against east Asian countries which had been more advanced in terms of both urbanization and development. The data for the Republic of Korea and Japan presented in the table show that in 1950 the level of urbanization in Japan was already very much higher than in the Philippines, but Japan still urbanized much more rapidly in the subsequent periods than the Philippines. The two east Asian countries also exhibited faster urban population growth but slower rural growth.

Again, it may be that the urbanization differentials discussed above are due to different definitions of urban (although this aspect has already been commented upon in foot-note 37). Perhaps, urbanization in the Philippines might have been comparatively more rapid if a more standard definition were used for all countries compared. Also, the Philippines might have revealed faster urbanization with respect to large cities. As with the Western nations, a test for both definition and size can be carried out by looking into urbanization in terms of urban places with 100,000 or more inhabitants. Table 67 gives data on population living in cities of 100,000 persons or more, the proportion of this population to total population and other indices of urbanization in eight Asian countries for the decades 1950-1970. It will be noted that the Philippines had the highest proportion of city population in the southeast Asian region at the start of the period but was overtaken by Peninsular Malaysia at the end. But for Thailand and Burma during 1950-1960, the Philippines evinced the lowest rate of citification. The rates for the more advanced east Asian countries were significantly faster as well.

To sum up, in the context of a reasonably

Table 66. Urbanization indices for the Philippines and selected Asian countries, 1950-1970

Country and year	Urban population (in thousands)	Level (percentage urban)	Annual tempo (%)	Annual rate of population growth (%)	
				Urban	Rural
Southeast Asia					
Philippines					
1950	5,469	27.5	na	na	na
1960	8,072	29.8	1.16	3.97	2.81
1970	12,069	32.9	1.46	4.02	2.56
Thailand					
1950	2,060	10.5	na	na	na
1960	3,296	12.5	2.04	4.81	2.77
1970	5,351	14.8	2.04	4.96	2.92
Peninsular Malaysia					
1950	1,263	24.3	na	na	na
1960	2,410	34.9	5.30	6.67	1.37
1970	4,138	45.3	4.49	5.55	1.06
Indonesia					
1950	9,915	12.9	na	na	na
1960	13,729	14.6	1.42	3.31	1.89
1970	20,941	17.2	2.00	4.31	2.31
Burma					
1950	2,750	15.0	na	na	na
1960	3,500	15.8	0.60	2.44	1.84
1970	5,137	18.5	1.99	3.91	1.92
East Asia					
Republic of Korea					
1950	3,750	18.4	na	na	na
1960	6,997	28.3	5.80	6.44	0.64
1970	12,175	37.9	4.51	5.70	1.19
Japan					
1950	31,203	37.4	na	na	na
1960	59,333	63.5	10.81	6.64	-4.17
1970	85,509	83.2	10.30	3.72	-6.58

Sources: Data for the Philippines are from the Bureau of the Census and Statistics; for Japan, from Kingsley Davis, *World Urbanization, 1950-1970;* for other countries, from *Statistical Yearbook, 1972* (United Nations publication, Sales No. E/F.73.XVII.I).

Note: na = not applicable.

Table 67. Citification indices for the Philippines and selected Asian countries, 1950-1970

Country and year	Level (percentage city)	Annual tempo (%)	City population (in thousands)	Annual rate of population growth (%)	
				City	Non-city
Southeast Asia					
Philippines					
1950	13.5	na	2,692	na	na
1960	14.7	1.01	3,989	4.01	3.00
1970	16.7	1.55	6,140	4.32	2.77
Thailand					
1950	5.9	na	1,167	na	na
1960	6.5	0.97	1,705	3.86	2.89
1970	7.9	2.16	2,825	5.18	3.02
Peninsular Malaysia					
1950	7.9	na	409	na	na
1960	11.2	4.06	774	6.59	2.53
1970	17.1	5.13	1,600	7.53	2.40
Indonesia					
1950	6.1	na	4,637	na	na
1960	9.7	5.25	9,082	6.95	1.70
1970	12.0	2.58	14,340	4.67	2.09
Burma					
1950	5.2	na	977	na	na
1960	5.3	0.27	1,194	2.03	1.76
1970	6.8	2.73	1,880	4.64	1.91
East Asia					
Republic of Korea					
1950	15.2	na	3,124	na	na
1960	22.8	5.17	5,707	6.21	1.04
1970	32.4	5.02	10,439	6.22	1.20
Japan					
1950	26.6	na	22,218	na	na
1960	41.9	7.04	39,180	5.84	-1.20
1970	56.3	5.83	57,850	3.97	-1.86

Sources: *Urban population of the Philippines by Category, Region, Province, City and Municipality: Special Report No. 2* (Manila, Bureau of the Census and Statistics, 1971); Kingsley Davis, *World Urbanization 1950-1970,* vol. I Basic Data for Cities, Countries and Regions (Berkeley, University of California, Institute of International Studies, 1969).

Notes: Citification refers to urbanization of large cities or urban places of 100 000 or more persons. The level of citification is the percentage of the total population in large cities.

na = not applicable.

broad cross-section of countries (developing, newly developed, and long-developed), the Philippines has exhibited slow urbanization. Though the growth of the Philippines' urban population was quite rapid, its rural population growth was large enough to retard the increase in the urban proportion.

D. URBANIZATION AND ECONOMIC DEVELOPMENT

In this section an attempt is made to discuss the economic factors underlying the sluggish urbanization in the Philippines. Departing from the hypothesis that urbanization has been closely linked to economic development, a comparison is first made of Philippine economic transformation with that of other countries. Regional urbanization and development within the Philippines are then examined.

1. The Philippines and other countries

Table 68 presents the shares of labour force in the primary sector for the Philippines and selected industrialized countries (France, the United States and Sweden) at comparable phases of urbanization. In 1948, nearly 66 per cent of the labour force in the Philippines was engaged in primary activities. When the industrialized countries were nearly as urban, no more than 53 per cent of the labour force was employed in those activities. About two decades later, while 52 per cent remained in the primary sector in the Philippines, the corresponding proportion in the other countries was roughly 40 per cent, with the exception of France, which retained the agricultural character of its labour force along with a relatively sluggish urbanization, as observed earlier. Table 68 also shows that, while the primary fraction of the national product in the Philippines was still rising as late as 1965-1970, in the other countries

Table 68. Proportionate share of primary sector[a] in labour force and national product, Philippines and selected Western countries

Country and year	Level of urbanization (per cent urban)	Percentage of labour force in primary sector[a]	Year	Percentage share of primary sector[a] in national product
Philippines				
1948	27.0	65.7	1960	27.0
1960	29.8	60.5	1965	25.0
1970	32.9	51.5	1970	30.0
France				
1856	27.3	53.0	1859	45.0
1866	30.5	52.0	1872	43.0
1876	32.4	53.0	1882	41.0
United States				
1870	25.7	50.0	1869-1879	20.5
1880	28.2	50.0	1879-1889	16.1
1890	35.4	42.0	1889-1899	17.1
Sweden				
1910	24.8	49.0	1909-1911	26.1
1920	29.5	44.0	1919-1921	24.2
1930	32.5	39 0	1929-1931	15.4

Sources: *Yearbook of Labour Statistics, 1959* (Geneva, International Labour Organisation); *Demographic Year Book, 1964* (United Nations publication, Sales No. 65. XIII. 1); *Philippines 1970 Census ....;* and Simon Kuznets, "Quantitative aspects of the economic growth of nations, II: Industrial distribution of national product and labour force", *Economic Development and Cultural Change,* Supplement to vol. 5, No. 4, July 1957.

a Primary sector includes agriculture, forestry, hunting and fishing.

it was falling steadily, except in the United States in 1884-1894 where it was already very low.

A comparison with some southeast and east Asian countries (table 69) shows that while there was some intercountry comparability in the annual rates of change of total non-primary shares of the labour force, the final level of the Philippines lagged behind those of Peninsular Malaysia, the Republic of Korea, and Japan. Also, the Philippines experienced a decline in the male non-primary share between 1948 and 1960, and its 1970 level was even lower than Peninsular Malaysia's 1957 level. The movement of the female labour force away from the primary sector, however, was relatively rapid in the Philippines; the 1970 non-primary share of 69 per cent was next only to that of Japan. But this may be a misleading yardstick of industrialization because it largely represented female migration to the cities for employment in households.[41]

Table 70 shows the shares of gross domestic product originating in the non-primary sector for selected Asian countries during the 1960s. The Philippines and Burma experienced falling non-primary product shares even in the late 1960s. With the exception of the two extreme cases of Japan and Indonesia, there was a striking similarity in the non-primary product shares among the different

41 Ernesto M. Pernia, *Philippine Migration Streams: Demographic and Socio-economic Characteristics*, PREPF Research Note No. 11 (Manila, University of the Philippines Population Institute, 1975).

Table 69. Share of non-primary activities[a] in total economically active population, Philippines and selected Asian countries

Country and year	Both sexes		Males		Females	
	Per cent non-primary economically active	Annual change (%)	Per cent non-primary economically active	Annual change (%)	Per cent non-primary economically active	Annual change (%)
Philippines						
1948	34.3	-	36.4	-	31.1	-
1960	39.5	1.2	30.8	- 1.4	65.0	6.3
1970	48.5	2.1	39.0	2.4	68.6	0.6
Thailand						
1947	15.2	-	18.3	-	11.8	-
1960	18.1	1.4	22.0	1.4	14.0	1.3
Peninsular Malaysia						
1957	42.5	-	48.4	-	24.3	-
1967-1968	50.9	1.7	-	-	-	-
Indonesia						
1961	32.0	-	30.5	-	35.8	-
1964-1965	32.8	0 7	30.9	0.4	36.5	0.6
Republic of Korea						
1960	38.1	-	39.7	-	34.1	-
1971	53.4	3 1	57.4	3.4	46.4	2.8
Japan						
1955	59.0	-	66.3	-	47.5	-
1960	67.4	2.7	74.2	2.3	56.9	3.7
1970	80.9	1.8	85.3	1.4	74.1	2.7

Sources: Yearbook of Labour Statistics, 1959 and 1972 (Geneva, International Labour Organisation); *Demographic Yearbook, 1964* (United Nations publication, Sales No. 65. XIII.1); and *Philippines 1970 Census*.....

a Non-primary activities exclude agriculture, forestry, hunting and fishing.

Table 70. Share of non primary sectors[a] in total gross domestic product in selected Asian countries

Country and year	Non-primary product share (per cent)	Annual change (per cent)
Philippines		
1960	73	-
1965	75	0.5
1970	70	-1.4
Thailand		
1960	60	-
1965	65	1.6
1969	68	1.1
Peninsular Malaysia		
1960	66	-
1965	73	2.0
1967	74	0.7
Indonesia		
1960	46	-
1965	41	-2.3
1970	52	4.9
Burma		
1962	69	-
1965	68	-0.5
1967	66	-1.5
Republic of Korea		
1960	63	-
1965	61	-0.7
1970	72	3.4
Japan		
1960	87	-
1965	90	0.7
1970	93	0 7

Source: *Yearbook of National Accounts Statistics, 1971* (United Nations publication, Sales No. E.73.XVII.3) vol. III, table 3.

a Non-primary sectors exclude agriculture, forestry, hunting and fishing.

countries, especially towards 1970. This probably suggests that unlike the labour force, sectoral distribution of product is loosely associated with rural-urban population distribution.[42]

Further evidence on the sluggish performance of Philippine industrialization may be gleaned from comparative statistics on employment growth in manufacturing in the 1960s[43] as follows:

	1963	1967	1970
Philippines	100	105	109
Peninsular Malaysia	100	126	-
Republic of Korea	100	175	216
Japan	100	111	120

It will be seen that between 1963 and 1970 employment in the manufacturing sector increased by only 9 points in the Philippines while in the Republic of Korea it more than doubled.

The process of urbanization is undoubtedly also related to technological change in agriculture. In table 71 data are presented on cereal output for five southeast Asian countries. During the 1954-1963 period, the growth of population exceeded the increase in cereal output in the Philippines and Indonesia. Productivity was the lowest in the Philippines, contributing only 13 per cent to the total increase in output, the remaining 87 per cent being due to expansion in farm area. Malaysia's productivity was the highest in the region, and Indonesia's was scarcely better than the Philippines'. The implication of low agricultural productivity for urbanization and industrialization is clear. It means that farm workers had to keep increasing their numbers along with the expansion of farmlands to be able to furnish, if barely, food and fibres to a fast-growing population.

As was noted in the Introduction, there was in the Philippines an inordinate concern and drive for industrialization through import substitution during the post-war era. Industry was favoured to the extent of taking agriculture for granted. But industrialization policy turned out to be excessively capital-intensive or labour-saving[44] so that the urban sector could not generate the capacity to absorb the migrant labour force from the rural sector.

42 This may be because primary production was largely of the subsistence non-monetized type, which means that it was probably not properly accounted for in the gross domestic product. Hence its very small share in most countries.

43 Data obtained from *Statistical Yearbook, 1972* (United Nations publication, Sales No. E/F.73.XVII.1), table 23.

44 As has been observed: "An examination of the economic incentives in the Philippines which were adopted to assist the establishment of new industries shows that they have been tied largely towards cheapening the price of capital while ....the legislature was busy enacting laws which raised the price of labour. The law on tax exemption of new and necessary industries, the basic industries act, the investment incentives act, interest rate policy, and foreign exchange rate policy (in the days of controls) had all added to the bias against labour use in the Philippines", Gerardo Sicat, "Labour policies and Philippine economic development" (mimeo), Quezon City, University of the Philippines.

Table 71. Increase in the output of cereals in selected southeast Asian countries, 1952/56 to 1961/65

Country	Percentage change in population 1954-1963	Percentage change in cereal output 1952/56 to 1961/65	Percentage contribution to change in cereal output	
			Increase in area cultivated	Increase in yield
Burma	19	30	67	33
Indonesia	22	19	82	18
Peninsular Malaysia	32	52	41	59
Philippines	32	30	87	13
Thailand	31	39	54	46

Source: George L. Hicks and Geoffrey McNicoll, *Trade and Growth in the Philippines* (Ithaca, Cornell University Press, 1971).

Furthermore, as is evident from table 72, among southeast and east Asian countries there is a strong association between stages of economic growth and urbanization. The coefficient of correlation between gross national product (GNP) *per capita* and proportion of city population is 0.84, and that between GNP *per capita* and proportion of urban population is 0.83. The rank order is almost impeccable, especially for economic levels above $200 *per capita* and urbanization above 30 per cent.

In sum, there is some evidence that urbanization is intertwined with economic development. Countries that urbanized rapidly (Western countries except France, Malaysia, the Republic of Korea and Japan) also experienced relatively rapid rates of industrial transformation. Slow urbanization in other southeast Asian countries, especially in the Philippines, went hand in hand with sluggish transformation in both agriculture and industry.

Table 72. Levels of gross national product *per capita* and urbanization in selected Asian countries, 1970

Country	GNP *per capita* (US dollars)	Per cent city	Per cent urban
Japan	1,920	56.3	83.2
Peninsular Malaysia	380	17.1	45.3
Republic of Korea	250	32.5	37.9
Philippines	210	16.7	32.9
Thailand	200	7.9	14.8
Indonesia	80	12.1	17.2
Burma	80	6.8	18.5

Source: GNP figures are from *World Bank Atlas* (International Bank for Reconstruction and Development, 1972).

Note: Pearsonian correlation coefficients:
GNP *per capita* and per cent city = 0.839
GNP *per capita* and per cent urban = 0.825

2. The Philippine regions

Philippine regions were earlier classified as metropolitan, more urbanized, and less urbanized (table 62). The more urbanized regions, both as a group and individually, also evinced relatively rapid tempos of urbanisation not only in the last decade but also in earlier periods. Among the less urbanized regions, only Ilocos showed a tempo close to the more urbanized group.

The more urbanized regions, moreover, claimed larger shares of the total urban population (table 73). Two out of five urbanites were found in the more urbanized regions, and one out of three in Metropolitan Manila, as at 1970. Only one of four urbanites was living in the less urbanized group. This suggests that the more urbanized regions have also been attracting urban in-migrants because they have something to offer in the way of employment, education, and entertainment.

Similarly, it can be seen from table 73 that the more urbanized regions tend to have higher average family incomes and (though less clearly) better income distribution. Rural poverty tends to be more severe in less urbanized regions.[45] And, finally, life expectancy at birth (e_0^0) is found to be positively correlated (r = 0.42) and crude death rate (CDR)

45 K.C. Zachariah and Ernesto M. Pernia, *Migration in the Philippines with Particular Reference to Less Developed Regions in the Country*, paper prepared for the World Bank, Manila, 1975 (mimeo).

Table 73. Level and tempo of urbanization, urban population share, mean family income and Gini ratio

Regions	1970 Level (%)	1960-1970 Tempo (%)	1970 Urban share (%)	1971	
				Mean family income (per annum)	Gini ratio
Metropolitan Manila	100.0	-	32.8	7,785[a]	0.448[a]
More urbanized	30.5	1.9	40.8	-	-
III. Central Luzon	31.8	2.6	13.0	4,127	0.444
IV. Southern Luzon	32.8	3.0	12.3	4,332	0.476
VI. Western Visayas	27.6	-1.4	8.3	3,206	0.428
VII. Central Visayas	28.5	3.4	7.2	(2,548)[b]	(0.512)[b]
Less urbanized	19.2	0.0	26.4	-	-
I. Ilocos	20.6	1.9	2.7	3,299	0.538
II. Cagayan Valley	14.3	0.2	2.0	2,390	0.443
V. Bicol	21.8	-0.1	5.3	2,784	0.452
VIII. Eastern Visayas	19.0	0.1	3.7	(2,548)[b]	(0.512)[b]
IX. Western Mindanao	16.2	-0.4	2.5	(3,062)[c]	(0.453)[c]
X. Northern Mindanao	18.7	-1.0	4.7	(3,062)[c]	(0.453)[c]
XI. Southern Mindanao	21.5	0.4	5.5	3,577	0.444
Philippines (less Metropolitan Manila)	24.8	1.0	67.2	-	-
Total Philippines	32.9	1.5	100.0	3,736	0.490

Sources: Ernesto M. Pernia, *Indicators of Philippine Urbanization in the Twentieth Century*, PREPF Research Note No. 3 (Manila, University of the Philippines Population Institute, 1975); Mahar Mangahas, *Income Inequality in the Philippines: A Decomposition Analysis*, Population and Employment Working Paper No. 12 (Geneva, International Labour Organisation 1975).

a Income and Gini ratio pertain to "small" Metropolitan Manila consiting of 4 cities and 4 municipalities.

b Central and Eastern Visayas were one region in the Family Income and Expenditure Survey (FIES).

c Western and Northern Mindanao were one region in the FIES.

negatively correlated (r = -0.49) with level of urbanization.[46]

E. PROSPECTS TO THE YEARS 2000

Levels of urbanization have been generally observed to rise over time like a logistic curve. That is, they climb steadily, accelerate, decelerate, then eventually taper off. The over-all trend in the Philippines from 1903 to 1970 seems to depict an attenuated, low-sloping logistic curve. However, at 32.9 per cent level in 1970, it is not reasonable to conjecture that Philippine urbanization is about to taper off. It is probably more realistic to hypothesize that urbanization is once again about to start a logistic curve. Hence, in projecting levels of urbanization, the three urbanization tempos observed earlier (table 55) for slow, moderate and rapid projections have been adopted.

Using the urban-rural growth difference method[47], the following three sets of projected urbanization levels (per cent) were obtained:

Year	Slow	Moderate	Rapid
1970	32.9	32.9	32.9
1975	34.5	34.8	35.2
1980	36.1	36.6	37.5
1985	37.8	38.5	39.9
1990	39.4	40.4	42.3
1995	41.1	42.3	44.8
2000	42.8	44.3	47.2

46 Zelda C. Zablan, *Regional Differentials in Mortality: Philippines, 1973*, PREPF Research Note No. 26 (Manila, University of the Philippines Population Institute, 1975).

47 *Methods for Projections of Urban and Rural Population*, Manual VIII, Population Studies No. 55 (United Nations publication, Sales No. E.74.XIII.3).

Thus, in the year 2000, the level of urbanization would add from 10 to 15 points, compared to a 20-point gain during the preceding 70 years.

Applying the projected urban proportions to the medium series of the projected total population[48], the corresponding urban and rural populations (in thousands) were arrived at (table 74).

The "slow" and "mederate" projections suggest a near tripling of urban population in the year 2000, and the "rapid" projections imply more than a tripling; conversely, rural population may increase by 68 to 82 per cent. Assuming that the pace of urbanization would pick up after the slowing down between 1960 and 1970, the results shown by the "rapid" projection would probably be a realistic expectation. But the form urbanization policy will take and how effective it will be in the coming years will also have to be taken into account.

F. CONCLUSION

"Over-urbanization" is a label often used to describe the experience of developing countries over the past decade or two. It generally implies three things: (a) that developing countries have been urbanizing more rapidly in the post-war than in the pre-war era because of the acceleration in total population growth; (b) that they have been urbanizing more rapidly than did developed countries earlier in their history; and/or (c) that in developing countries urbanization has proceeded faster than economic transformation. In this chapter an analysis has been made of the trends and nature of Philippine urbanization in the twentieth century in order to find out whether any or all of these apply. Both the historical and comparative approaches were adopted for the purpose.

The historical analysis has revealed a number of noteworthy points. First, religious and political forces during the Spanish régime generated a relatively high urban proportion as early as the beginning of this century. Second, the post-war acceleration in total population growth was accompanied by a deceleration in the pace of urbanization because all the acceleration went to rural growth. Yet, third, while the proportion of urban population increased only two and a half times (from about one eighth to one third) in approximately 70 years, urban population multiplied at least twelvefold. And, fourth, urban

48 Dionisia dela Paz, *Philippines Population Projections, 1970-2000*, PREPF Research Note No. 22 (Manila, University of the Philippines Population Institute, 1975).

Table 74. Projections of urban and rural population, 1970-2000[a]

Year or period	Urban population (in thousands)			Rural population (in thousands)		
	Slow	Moderate	Rapid	Slow	Moderate	Rapid
1970	12,123	12,123	12,123	24,726	24,726	24,726
1975	14,561	14,688	14,856	27,645	27,518	27,349
1980	17,457	17,699	18,134	30,901	30,659	30,224
1985	20,893	21,280	22,054	34,379	33,992	33,218
1990	24,730	25,358	26,550	28,036	37,409	36,216
1995	29,031	29,878	31,644	41,603	40,756	38,990
2000	33,714	34,895	37,179	45,056	43,875	41,591
	Implied annual rates of growth (percentage)					
1970-1975	3.73	3.91	4.15	2.26	2.16	2.04
1975-1980	3.69	3.80	4.07	2.25	2.19	2.02
1980-1985	3.66	3.75	3.99	2.16	2.09	1.91
1985-1990	3.43	3.57	3.78	2.04	1.93	1.74
1990-1995	3.26	3.34	3.57	1.81	1.73	1.49
1995-2000	3.04	3.15	3.28	1.61	1.49	1.30

a Each set of projected urban and rural populations is referred to by the corresponding tempo of urbanization, viz. slow, moderate or rapid.

growth unremittingly gravitated towards Manila as shown by the continuous rise of the primary index. Thus, apart from the impact of large absolute increments to urban population, what appears to be forming the misconception of rapid urbanization has been the phenomenal expansion of Metropolitan Manila.[49] The dizzying growth of Manila has, in fact, been confounding experts as to how aptly to define the metropolitan area.

The comparative analysis, in turn, has corroborated the historical findings. First, the speed of urbanization in Western countries during the nineteenth and early twentieth centuries proved to be generally faster than in the Philippines during the last two decades. Second, other southeast and east Asian countries also evinced more rapid urbanization, particularly the fast-developing ones. And, third, there seems to be no support for the contention that urbanization has been faster than economic transformation in the Philippines and in other southeast Asian countries, as slow urbanization generally came along with slow industrial and agricultural development. While aggregate economic growth may have been more buoyant after than before the war[50], economic development in terms of structural or sectoral improvement seems to have lagged behind. Moreover, both intersectoral and intrasectoral distribution of income and welfare are shown to have deteriorated.[51] That is, not only has the gap between urban and rural incomes widened but income distribution within urban and rural sectors has also worsened, and more so in the rural sector. This condition must explain, at least partly, the soaring rate of rural population growth despite the outflow into urban areas.

A deficiency of population and development policy has been the excessive focus on the urban sector. No doubt this has been provoked by misperceptions about urbanization. Paradoxically, a good urbanization policy seems to be one that gives as much, if not more, attention to the overwhelming rural proportion.

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49 Manila has, of course, been the centre of all sorts of attention so that urbanization has become practically synonymous with Manila's growth. See also Gavin W. Jones, "Implications of prospective urbanization for development planning in southeast Asia".

50 Jesus P. Estanislao and Vaughn F. Montes, *Philippine Economic Structure from the 20s to the 70s* (Manila, Sinag-tala Publishers Inc., 1974).

51 Mahar Mangahas, "The measurement of Philippine national welfare", Social Indicators Project, Development Academy of the Philippines, 1975.

Chapter V

TRENDS AND DIFFERENTIAL IN MORTALITY

A. INTRODUCTION

Mortality as a component of population change historically has played a major role in determining population growth. However, in the Philippines a systematic analysis of the trends and differentials in mortality in severely handicapped by a lack of reliable and adequate data regarding this component. The direct measures of mortality rates derived from civil registration records are not reliable because of incomplete registration of events. Despite the existence of a law which makes registration of vital events compulsory, different studies carried out over the past three decades or so have revealed an incredible degree of under-registration of births and deaths. Recent assessments place the level of under-registration at around 30 per cent.[1] Not only are deaths under-registered, the extent of under-registration is also unevenly distributed across geographical areas and social sectors, thus minimizing the utility of data from this source.

The need for better mortality data may not have been felt in the past since mortality declines have been substantial and widespread. However, recent developments have emphasized the need for more detailed mortality statistics. First, there exists some evidence that the steady and rapid downward trend in mortality may have run its course. Second, growing concern over the health and well-being of the Filipino creates the need for more detailed information on mortality differentials and adequacy of the health care system in coping with that need. Third, attempts at assessing the impact of a specific amount of fertility decline on the growth rate would have to take into consideration the magnitude of the effect of mortality on the rate of population growth. Fourth, there exists renewed interest among social scientists and the medical profession in infant mortality reduction as an indirect means of reducing fertility.

The death of reliable mortality information is, however, assuaged by the recent emergence of indirect approaches to mortality measurement which makes it possible to work out estimates from data other than vital statistics and allows for the estimation of mortality differentials.[2] However, in the Philippines, investigators have utilized various techniques and often adopted various assumptions in their estimation procedures, with the result that variations in existing estimates of mortality levels depend not so much on the techniques utilized as on the nature of the assumptions made.

B. MORTALITY LEVELS AND TRENDS

1. General mortality

A number of studies have attempted to estimate the actual death rate in the Philippines at different points of time. From a regression line associating crude mortality rates with infant mortality rates about the world in 1948, Hawley estimated the crude death rate for the Philippines in that year to be 17 per thousand population.[3] The death rate was estimated to be 11.6 per thousand in 1956 by Morrison[4] while the United Nations estimated the 1958 death rate at 20 per thousand population, dropping from a level of 27 per thousand during the period 1918-1939 and 30 per thousand during the Second World War.[5]

The first attempt at estimating the death rate in the Philippines over a number of years was made by Aromin.[6] The procedure adopted by Aromin was to estimate the crude death rate for the period 1903-1960 on the basis of the estimated crude birth rate plus other known characteristics of the population. Utilizing the simple relationships among the crude

1 Tito A. Mijares, *The Development and Maintenance of a Sample Vital Registration System in the Philippines* (Manila, National Census and Statistics Office, September 1974).

2 See William Brass and others, *Demography of Tropical Africa* (Princeton, Princeton University Press, 1968); and William Brass, *Methods for Estimating Fertility and Mortality from Limited and Defective Data* (Poplab, University of North Carolina Press, October 1974).

3 Amos H. Hawley, "Philippine census of 1948", *Papers in Demography and Public Administration* (Diliman, Quezon City, University of the Philippines Press, 1954), p. 23.

4 Frank S. Morrison, "A study of vital statistics in the Philippines for 1956 and their relation to annual population increase" (Manila, International Co-operation Administration, 1957) (mimeo), p. 7.

5 Quoted in Basilio B. Aromin, "The demographic situation in the Philippines", *The Statistical Reporter*, vol. II, No. 3 (Manila, Office of Statistical Co-ordination and Standards, National Economic Council, July 1958), p. 3.

6 Basilio B. Aromin, "The trend of mortality in the Philippines: 1903 to 1960", *The Statistical Reporter*, vol. V, No. 3 (Manila, Office of Statistical Co-ordination and Standards, National Economic Council, July 1961), pp. 1-7.

birth rate (CBR), the crude death rate (CDR), and the crude rate of natural increase (CRNI), he proceeded to estimate intercensal death rates by subtracting from his assumed crude birth rate of 49 per thousand, the computed intercensal rate of increase. Dividing the reported intercensal CDR by the estimated intercensal CDR, he arrived at a percentage completeness of reported deaths for that period. By multiplying the reciprocal of the death completeness percentage and the number of reported deaths, he obtained the actual death rate for each year. The accuracy of his estimates hinged heavily on the assumption that the assumed crude birth rate truly reflected the existing fertility level[7], and less importantly, that the adjacent censuses on which the crude rates of natural increase were based are comparable.

For the period 1960 to 1970, Zablan estimated the crude death rates, infant mortality rate and life expectancy at birth[8] by applying the Brass methodology[9] to data on children ever born (CEB) and children still living (CSL) obtained in the population censuses of 1960 and 1970 and the National Demographic Surveys of 1968 and 1973. An estimate of the crude death rate in 1971 was made by Flieger on the basis of the Sample Vital Registration data for that year.[10] In 1973, Mijares published death rates estimated from the Sample Vital Registration System.[11] The various estimates of crude death rates for the period 1903 to 1973 are presented in table 75 and illustrated in figure 10.

In order to assess past trends in mortality, it is helpful to avoid comparisons between crisis and non-crisis periods. There was a severed cholera epidemic from 1902 to 1904, accounting for about 63,000 registered deaths in 1903 alone. A severe smallpox epidemic also contributed to the high mortality rate in that year. Similarly, the very high death rate observed during the years 1918-1919 is attributed to the terrible influenza epidemic which was responsible for about 89,000 registered deaths, and to the smallpox epidemic of that year which claimed about 17,400 lives. Again, the increase in the crude death rates during 1942-1945 must be explained largely in terms of the casualties of the Second World War.

With the exception of the epidemic and war years, it will be noted from table 75 that crude death rates declined by about 64 per cent from an estimated 27 per thousand of the population at the

Table 75. Demographic estimates of crude death rates, 1903-1973

Source	Period	Crude death rate
Aromin[a]	1903	58.0
	1904-1905	26.8
	1906-1910	26.9
	1911-1915	25.3
	1916-1917	27.8
	1918-1919	47.0
	1920-1925	25.7
	1926-1930	26.0
	1931-1935	23.5
	1936-1941	23.3
	1942-1945	31.9
	1946-1950	21.8
	1951-1955	17.9
	1956-1960	14.5
Zablan[b]	1960	13.7
	1965	12.6
	1970	11.8
Flieger[c]	1971	11.6
Mijares[d]	1973	9.6

a Basilio B. Aromin, "the trend of mortality in the Philippines: 1903-1960", *The Statistical Reporter*, vol. V, No. 3, July 1961.

b Zelda C. Zablan, "The evaluation of existing mortality estimates, Philippines 1902-1973", Research Note No. 82 (Manila, Population Institute, University of the Philippines, 1975).

c Wilhelm Flieger, *Some Comments on Current Mortality Information in the Philippines* (Makati, Population Center Foundation, 1974).

d Tito A Mijares, *The Development and Maintenance of a sample Vital Registration System in the Philippines* (Manila, National Census and Statistics Office, 1974).

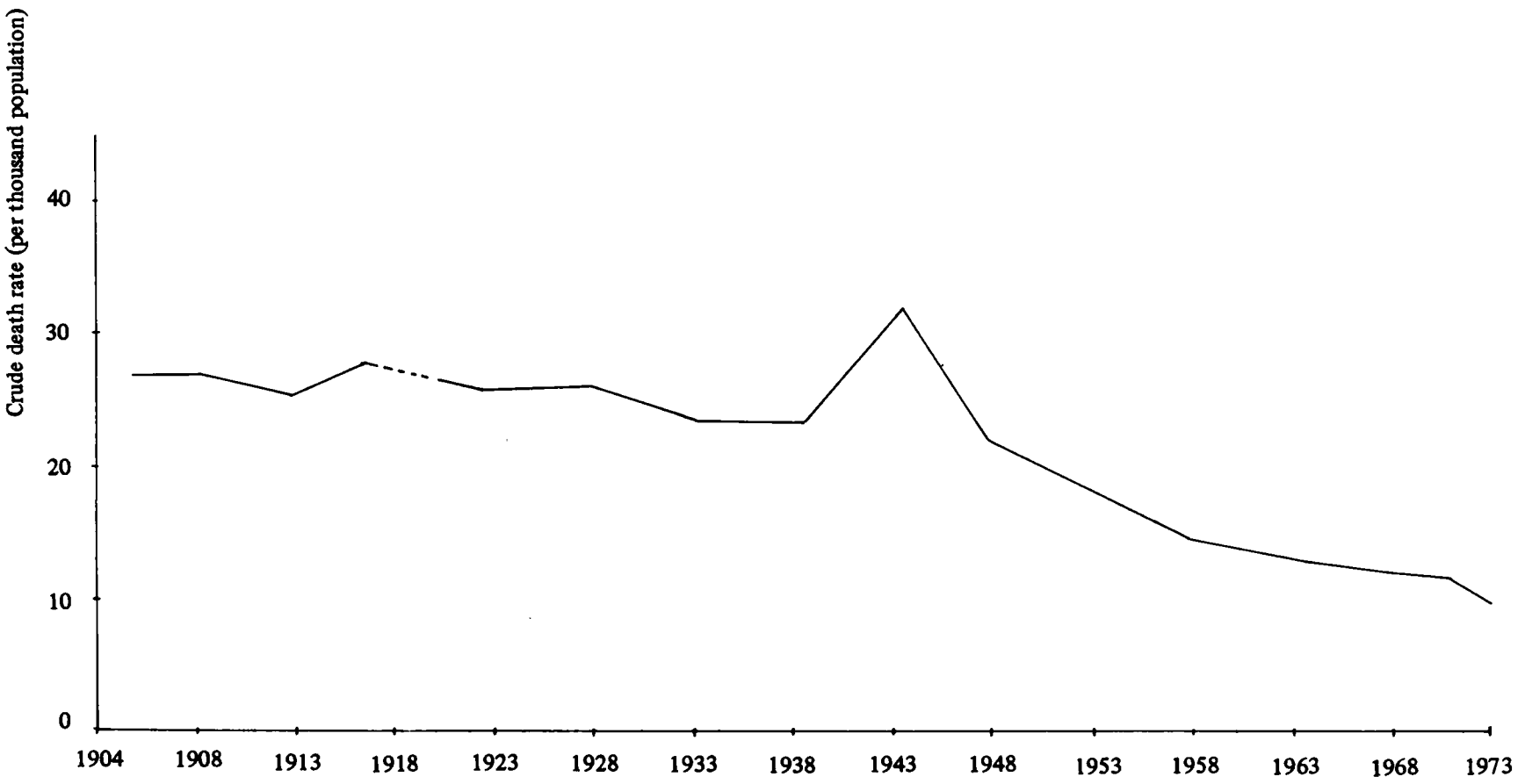
7 Ibid., p. 2. Aromin observed: "The methods that will be described are heavily dependent on the assumption that the crude birth rate of the country has not changed. An average crude birth rate of 49 births per thousand population during the latter part of the nineteenth century has been computed from available records. It has likewise been estimated that the average birth rate for the period 1939-1948 is also at this same level indicating that there has been no change in the level of fertility during the two periods. Various estimates of the birth rate ranging from 45 to 53 births per thousand for recent periods all seem to support the conclusion that the birth rate has not changed up to the present time".

8 Zelda C. Zablan, "The evaluation of existing mortality estimates, 1902-1973", Research Note No. 82 (Manila, Population Institute, University of the Philippines, 1975) (mimeo).

9 For details of the methodology, see William Brass and others, *op. cit.*

10 Wilhem Flieger, *"Some comments on current mortality information in the Philippines"*, paper presented to the Expert Meeting on Philippine Population Research, 10-12 October 1974, Population Centre Foundation, Makati.

11 Mijares, *op. cit.*



Source: Table 75.

Figure 10. Trend of crude death rate, 1904-1973

turn of the century to about 10 in 1973. However, this decline has not been uniform over the 70 years. In fact, up to about 1930 the death rate remained more or less constant. Between 1931 and 1941, the crude death rate dropped by 3 points, but during the quinquennial periods between 1946 and 1960 the decline averaged about 3.5 per thousand, or more than double the rate of decline observed during the 1931-1941 decade. Since 1960, there has been a steady but slow decline in the crude death rate.

The estimates of crude death rates based on vital registration records for the period 1920-1973 are given in table 76. It will be observed that these rates also show a declining trend from 19.2 in 1920 to 7.0 in 1973, or a decline of 64 per cent in 53 years. It will be observed that, while similar declines were demonstrated in tables 75 and 76, the levels of crude death rate estimates obtained from vital registration data were consistently lower than the estimates of demographers, based on census and sample survey data, by about 26 to 45 per cent.

The crude death rate is not a very reliable measure of mortality levels since it is affected by the age composition of the population. Hence a better picture of mortality levels and trends is obtained by examining another mortality measure, the expectancy of life at birth which summarizes the series of age-specific mortality rates and utilizes the life table stationary population as weights. The expectation of life at birth during the period 1902 to 1970 is shown in table 77. In general, the decline in mortality as evidenced by increasing expectation of life at birth was characterized by three stages: a period of moderate increase (1918-1939) when the annual increase averaged 0.42 years; a period of rapid increase (1948-1968) when the annual increase ranged from 0.71 to 0.82; and a period of slow increase (1968-1973) yielding increased life expectancies of 0.38 per annum.

Table 76. Deaths from all causes, number and rate, 1920-1973

Year	Death		Year	Death	
	Number	Rate		Number	Rate
1920	200,600	19.2	1951	237,937	11.4
1921	205,654	19.4	1952	241,020	11.1
1922	203237	18.9	1953	239,988	10.8
1923	202981	18.6	1954	217,650	9.5
1926	229,988	19.3	1955	215,798	9.0
1927	220,328	18.0	1956	219,719	9.0
1928	218,096	17.5	1957	218,186	9.5
1929	237,733	18.6	1958	218,186	8.4
1930	252,988	19.3	1959	197,423	7.3
1931	240,825	18.0	1960	212,688	7.7
1932	211,809	15.4	1961	213,587	7.4
1933	227,594	16.2	1962	213,439	7.2
1934	239,705	16.7	1963	215,743	7.0
1935	257,181	17.5	1964	214,904	6.9
1936	239,107	15.9	1965	241,305	7.5
1937	254,740	16.5	1966	240,865	7.2
1938	261,848	16.6	1967	241,548	7.0
1939	273,141	16.9	1968	253,841	7.1
1940	273,480	16.6	1969	255,785	6.9
1946	278,546	15.1	1970	248,251	6.7
1947	238,527	12.7	1971	250,139	6.6
1948	234,467	12.7	1972	285,761	7.3
1949	231,151	11.8	1973	283,475	7.0
1950	226,505	11.1			

Source: Philippines Health Statistics (Manila, Disease Intelligence Centre, Department of Health, 1975).

2. Age-specific mortality

The age-specific death rates (ASDRs) describe the specific component of the over-all crude death rate. It relates the events of death in a particular age group to the person-years at risk in that age group. The rates in respect of each age given in table 78 are probability figures calculated from life table $_nq_x$ values, and differ from ASDRs by their denominator. It will be seen that the $_nq_x$ values reflect the characteristic U-shaped curve, with higher risks for the very young and very old age groups and lower risks for age groups 10 through 45. A comparison of the respective values for the year 1948, 1960 and 1970 shows that the probabilities of dying at each age have lessened over the years, particularly for ages under 60 years (figure 11). This trend is consistent with the trends as indicated by the crude death rate and expectation of life at birth (^oe_o).

An analysis of the trends in infant mortality is important for two reasons. First, studies relating to trends in the improvement of general mortality have revealed that infant and/or child mortality declined much faster than adult mortality in a number of

Table 77. Expectation of life at birth ($^{o}e_{o}$), 1902-1970

Source	Period	$^{o}e_{o}$ (years)	Average annual increase (in years)
Bureau of Census and Statistics (BCS)	1902	12.7[a]	-
BCS (Lb); Aromin (Ub)	1918	25.6–37.5[b]	1.18
Aromin	1938	40.0	0.42
Madigan-Avancena (Lb); Aromin (Ub)	1948	42.5-45.0	0.38
Aromin; Lorimer; Zablan (Lb); Hizon de Castro (Ub)	1960	52.8–53.3	0.78
Zablan	1968	58.7	0.71
Engracia (Lb); Zablan (Ub)	1970	57.6–59.6	0.45[c]
Zablan	1973	60.6	0.33[d]

LB = lowerbound; Ub = upperbound.

a Severe cholera and smallpox epidemics hit the country in 1902.

b The influenza and cholera epidemics led to the Lb point estimate by the Bureau of the Census and Statistics. Ub, estimated by Aromin for 1904-1930, excluded crisis mortality years.

c Computed from 1968 and 1970 estimates by Zablan.

d Computed from 1970 and 1973 estimates by Zablan.

countries.[12] Hence a review of trends in infant mortality is necessary in order to find out if the observed trends in the expectation of life at birth have been accompanied by a corresponding decline in the infant mortality rate. Secondly, the level of infant mortality has always been of interest to social scientists and persons concerned with public health because the incidence of deaths during the first year of life has been considered one of the most sensitive indicators of the general level of living, being particularly responsive to changes in environmental and social conditions.

However, a systematic analysis of the levels and trends in infant mortality in the Philippines is hindered on the one hand by the existence of infant mortality estimates of varying degrees of accuracy and reliability, and on the other by a lack of methodological study on a national scale and the possible undercount of the existing estimates based on the vital registration data. Nevertheless, for purposes of the present discussions, data from the Disease Intelligence Centre (DIC) of the Department of Health are used since the data from this source date back to 1924, thus rendering possible the study of trends over a longer period of time. It is, however, to be noted that the Department of Health data is subject to undercounts, probably of a lesser magnitude than vital registration data. None the less, in the absence of any knowledge regarding the extent of undercount, the data could not be appropriately adjusted. It is therefore assumed that the magnitude and direction of error in the data were the same throughout the period covered, and that, though the levels may be low, the pattern established by the unadjusted figures is real.

12 For detailed discussion, see *The Determinants and Consequences of Population Trends: New Summary of Findings on Interaction of Demographic, Economic and Social Factors*, vol. I (United Nations publication, Sales No. E.71.XIII.5), pp. 107-158.

Table 78. Life table mortality rates for both sexes, 1948, 1960 and 1970[a]

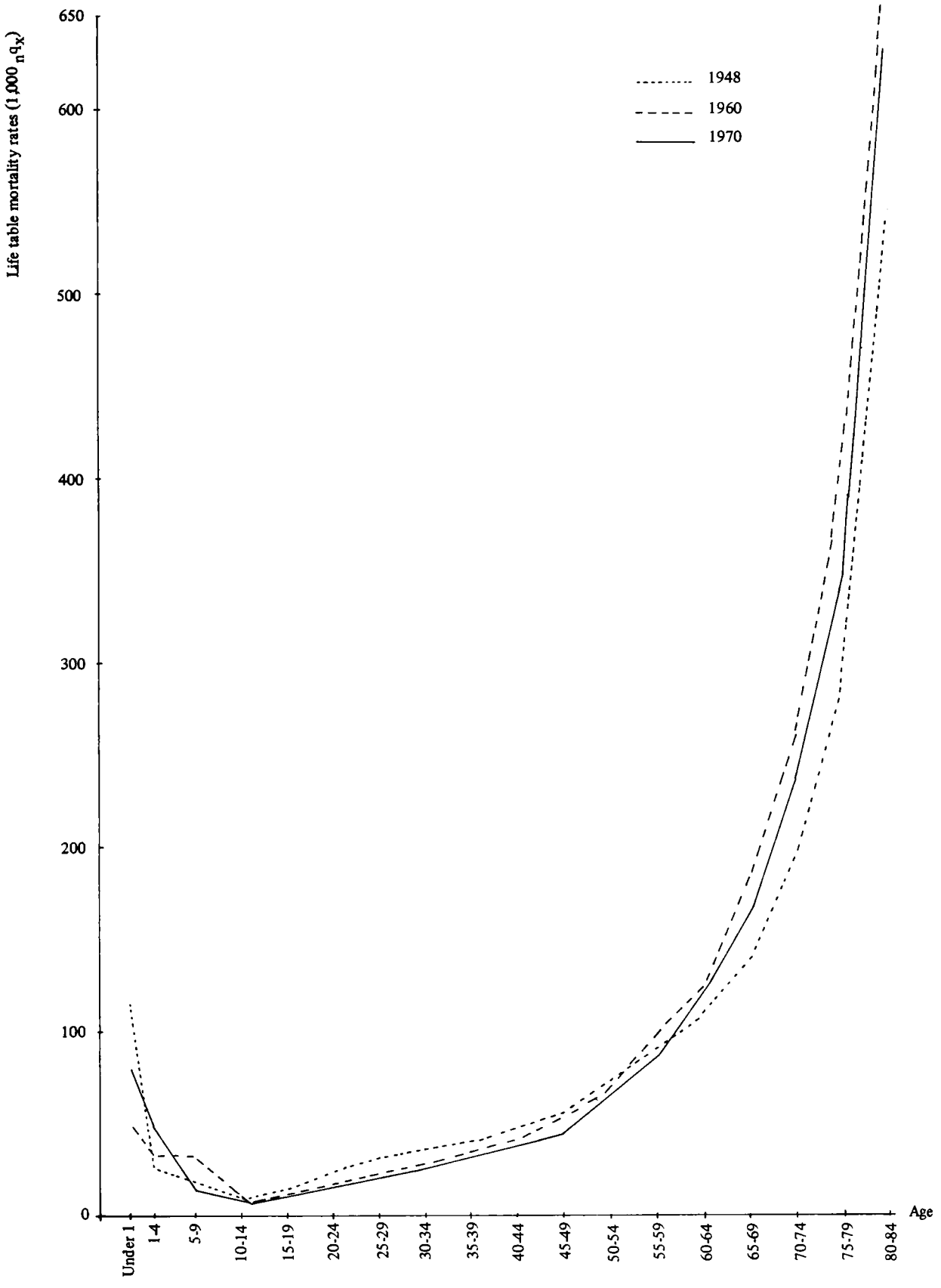
($1000\ {}_{n}q_{x}$)

Age (x)	Year			Percentage change	
	1948	1960	1970	1948-1960	1960-1970
0	116.26	48.79	79.62	-58.03	63.19
1	26.24	32.61	46.02	24.28	41.12
5	17.07	32.39	13.60	89.75	-58.01
10	9.90	8.96	7.29	- 9.49	-18.64
15	13.85	11.23	9.87	18.92	-12.11
20	23.32	17.23	16.07	-26.11	- 6.73
25	31.08	22.89	20.56	-26.36	-10.18
30	36.38	28.45	25.39	-21.80	-10.76
35	40.73	35.18	31.26	-13.63	-11.64
40	47.78	41.67	37.66	-12.79	- 9.62
45	56.54	53.66	45.58	- 5.09	-15.06
50	52.16	69.08	62.16	- 4.27	-10.02
55	90.79	99.33	85.55	9.41	-13.87
60	108.15	124.76	121.49	15.36	- 2.62
65	138.39	183.05	163.75	32.27	-10.54
70	193.12	258.47	237.11	33.84	- 8.26
75	284.64	383.71	346.65	34.80	- 9.66
80	528.35	654.84	631.11	23.94	- 3.62

Sources: Estimates of the Life Table Functions of the Philippines. 1970, Monograph No. 1, (Manila, National Census and Statistics Office, November 1974); M. Hizon and I. de. Castro., *1960 Population Mortality From Census Figures*, paper submitted to the Annual Conference of the Actuarial Society of the Philippines, November 1965; and Bureau of the Census and Statistics, "life table of 1948", unpublished.

a Abridged from complete life tables using the Reed-Merrel method.

The average infant mortality rates for the quinquennial periods from 1926 to 1972 are presented in table 79. Trends in infant mortality rates



Source: See table 78.

Figure 11. Life table mortality rates for both sexes, 1948. 1960 and 1970

Table 79. Five-year average infant mortality rates, 1926-1972

Period	Infant mortality rate	Average annual rate of decline (percentage)
1926-1930	157.3	-
1931-1935	150.5	-0.88
1936-1940	138.5	-1.65
1941-1947	-	-
1948-1952	106.2	-2.19
1953-1957	91.8	-2.87
1958-1962	73.0	-4.48
1963-1967	65.5	-2.14
1968-1972	63.7	-0.56

Source: Philippine Health Statistics series, (Manila, Disease Intelligence Centre, Department of Health).

depict a substantial decline, from 157 per thousand live births for the period 1926-1930 to 64 for the period 1968-1972. In other words, over a period of about 50 years, the infant mortality rate declined by about 60 per cent. It will also be noted that the pre-war decline was less dramatic than the post-war decline. While the infant mortality rate declined by about 12 per cent during the period 1926-1930 to 1936-1940, in the period 1948-1952 to 1968-1972 this rate declined by 40 per cent. It is also clear that the substantial decline (-2.71) in infant mortality began during the period 1953-1957 and continued until 1963-1967 with peak declines (-4.10) recorded during 1958-1962. It may be noted that the peak increase in expectation of life at birth ($^{o}e_{o}$) during the period 1948-1968 coincided with these substantial declines in infant mortality rates, pointing to these declines as the probable major contributor to improvement in the expectation of life at birth.

3. Life expectancy at birth by sex

The trend in expectation of life at birth for males and females over the years from 1902 to 1973 is shown in table 80. In 1902, the Bureau of Census and Statistics estimated the life expectancy at birth for both sexes to be 12.7 years. By any standard, this life expectancy at birth is very low, especially when compared to India's 24 years in 1891-1901 and around 20 years for some European countries in the thirteenth century.[13] This crisis mortality, resulting from the severe cholera and smallpox epidemics in

13 *Ibid.*

Table 80. Trends in life expectancy at birth for both sexes, males and females, 1902-1970

Year	Life expectancy at birth ($^{o}e_{o}$)			Difference
	Both sexes	Male	Female	
1902	12.70[a]	11.54[b]	13.92[b]	2.38
1918	25.61[a]	25.17	26.07	0.90
1938	46.22[a]	44.80[c]	47.72	2.92
1948	51.17	48.81	53.36	4.55
1960	53.30[d]	51.17	55.00	3.83
1970	57.60[a]	55.24[e]	60.89[e]	5.65

Source: Estimates from the Bureau of the Census and Statistics, now known as the National Census and Statistics Office under the National Economic Development Authority (NEDA).

a Estimated assuming a sex ratio at birth of 1.05.

b Estimated by Sison, Lara, Herbosa and Lazarro as cited by Jaramillo.

c Estimated by Dr. T.J. Jaramillo.

d Estimated by Manuel O. Hizon and Isagani de Castro.

e Estimated by Luisa T. Engracia.

1902-1904, may have resulted in low life expectancy at birth. The female life expectancy at birth was 2.38 years higher than that for males.

In 1918, the Philippine $^{o}e_{o}$ level was 25.61 years which was comparable to India's 26.75 years around that period, but lower than that of Sri Lanka with 31.7 years.[14] The Philippine population was in that year subjected to an influenza epidemic and to another smallpox epidemic. It should be noted that the sex differences in $^{o}e_{o}$ values was smallest for that year, with the female $^{o}e_{o}$ value being higher than that of the male by only 0.90 year.

In 1938, the level of life expectancy at birth had increased to 46.22, or by 80 per cent more than the 1918 level. Moreover, the value for females was 2.92 years more than that for males. Between 1938 and 1948, the life expectation at birth increased very modestly by a mere 11 per cent. However, the difference in the values for males and females widened considerably by 4 years, the value for females being 53 years and for males 49 years in 1948. This widening gap in the values for the two sexes may have been due in part to the devastating effects of the Second World War upon male mortality.

During the 12 years between 1948 and 1960, expectation of life at birth for both sexes combined increased very slightly from 51.2 in 1948 to 53.3

14 *Ibid.*

in 1960 or by about 4 per cent, and the difference between the value for males and females was 4 years, the same as in 1948. By 1970, the value for both sexes had increased to 57.6, the female value (60.9) being about 6 years higher than the male value (55.2). It would thus appear that, as further improvements in life expectancies are attained, females tend to benefit more than males.

4. Causes of deaths

A review of mortality trends by causes of death is essential for ascertaining whether the observed improvement in general mortality has been accompanied by a shift in the relative importance of some causes of death. Table 81 shows the percentage of each of the leading causes of death to total deaths, and table 82 shows the trends in the death rates from the 15 leading causes.

It will be noticed from these tables that, with the exception of pneumonia, there has been an observed decline in the proportionate share of deaths from the leading infectious and parasitic diseases and an increase in the share of deaths due to degenerative disorders. Pneumonia has almost always been the leading cause of death. Though there was a decline in its proportionate share of total deaths as well as in the death rate from this cause during the period following the Second World War, pneumonia has manifested an increasing mortality since the 1960s. Deaths from respiratory tuberculosis had undergone a drastic decline since the Second World War, but the decline slackened in the 1960s, which may have caused the slight though declining change in its proportionate share of total deaths from 12.26 per cent in 1952 to 10.02 per cent in 1972.

It may be noted that pneumonia and tuberculosis, the two major killers, accounted for 27.1 per cent of total deaths in 1972. The problem of eradicating these major disease killers lies not in the straightforward application of medical technology, such as spraying or mass innoculation, rather it depends on improvement in the general standards of living of the people and in their enlightment with regard to the preventive and environmental aspects of disease causation. Not only is the present health care system inadequate to meet these problems, there has also been maldistribution in health facilities.[15] The distribution of hospitals is concentrated in the Metropolitan Manila area. Evidences from the Department of Health statistics point to a declining rather than an increasing doctor: population ratio. The expenditure in health has shown a decreasing proportionate share of the total government budget.

Table 81. Percentage of each leading cause of death to total deaths, 1946, 1952, 1962 and 1972

Cause of death	Year			
	1946	1952	1962	1972
Phenumonia	13.06	12.04	14.38	17.09
Respiratory tuberculosis	11.06	12.26	11.06	10.02
Gastro-enteritis and colitis	3.89	6.34	7.07	6.01
Diseases of the heart	1.44[a]	1.84	3.85	5.94
Ill-defined disease of early infancy	-	-	3.96	5.46
Accident	-	1.88[b]	2.68	5.05
Diseases of the vascular system	-	1.06[c]	3.12	4.49
Avitaminosis and other nutritional deficiency states	9.64[d]	9.71[d]	5.82[d]	4.28
Malignant neoplasms	0.50[a]	0.91	2.97	3.59
Bronchitis	8.58	8.75	6.00	3.24
Tetanus	0.44	0.59	1.50	1.27
Influenza	3.40	2.58	0.93	1.14
Measles	2.29	0.64	0.80	0.73
Dysentery, all forms	0.78	0.38	0.35	0.31
Malaria	6.03	2.97	0.60	0.23

Source: *Philippine Health Statistics,* 1960 to 1972 (Manila, Disease Intelligence Centre, Department of Health).

a Percentage as of 1947.
b Percentage as of 1955.
c Percentage as of 1956.
d Percentage of beriberi only.

Gastro-enteritis mortality rates recorded substantial declines since 1960, but this was not reflected in its proportionate share of the total deaths which showed an increase from 3.89 per cent in 1946 to 7.07 per cent in 1962 but declined to 6.01 per cent in 1972. The proportionate share of deaths from bronchitis, influenza, measles and dysentery has shown substantial declines from the immediate postwar share. Death from malaria has almost disappeared and this is evident from the decline of its proportionate share from 6.03 per cent in 1946 to 0.23 per cent in 1972. All in all, the proportionate share

15 Cecilio L. Adorna, *"The distribution of health Resources in the Philippines"*, unpublished Master's thesis submitted to the School of Economics, University of the Philippines, 1976.

Table 82. Death rates by leading causes, 1946-1972

Cause of death	Death rate per 100,000 population						
	1946	1950	1955	1960	1965	1970	1972
Phenumonia	197.4	136.7	106.6	100.4	121.2	118.2	125.1
Respiratory tuberculosis	167.2	135.5	97.6	92.1	83.4	77.0	73.3
Gastro-enteritis	58.7	57.7	56.7	60.5	46.0	35.0	44.0
Heart disease	-	18.7	34.7	27.6	33.6	34.0	43.5
Ill-defined disease of early infancy	-	-	-	32.5	-	19.1	39.9
Accident	-	-	17.4	14.6	23.2	24.8	37.0
Disease of vascular system	-	-	-	20.6	27.9	35.8	32.9
Nutritional deficiency	145.7[a]	113.6[a]	92.8[a]	54.4[a]	49.9	25.5	31.4
Malignant neoplasms	-	8.6	11.7	18.2	22.2	25.6	26.3
Bronchitis	129.7	100.6	73.9	57.2	43.1	27.9	23.7
Tetanus	6.6	5.9	7.4	9.4	10.4	10.1	9.3
Influenza	51.3	26.1	14.1	7.1	7.3	7.2	8.4
Measles	91.0	38.3	15.6	3.7	8.7	4.5	5.3
Dysentery	34.7	7.0	3.9	1.4	3.7	2.4	2.2
Malaria	11.8	4.1	2.8	5.8	5.0	1.8	1.7
Others	615.9	457.2	364.8	264.5	264.4	221.1	226.0

Source: Same as for table 81.

a From beriberi only.

of the leading infectious and parasitic causes of death had declined from 49.53 per cent in 1946 to 40.04 per cent in 1972.

While the proportionate share of deaths from the leading parasitic and infectious diseases has shown a decline over the years, that of deaths from degenerative disorders has been steadily increasing. The proportionate share of deaths from heart diseases increased steadily from 1.44 per cent in 1947 to 5.94 per cent in 1972 – an increase of 312.5 per cent over a period of 25 years. The share of deaths from disorders of the vascular system increased more than fourfold, from 1.06 per cent in 1956 to 4.49 in 1972. The largest increase in the proportionate share to total deaths was recorded in respect of malignant neoplasms, which increased from 0.50 per cent in 1947 to 3.59 per cent in 1972 or by 618 per cent. The increases in the proportionate share in total deaths of heart diseases, disorders of the vascular system and malignant neoplasms were all due to increases in their mortality rates. Though deaths from degenerative disorders have been observed to increase steadily, their levels were considerably lower than those for communicable diseases.

5. International comparison

The mortality parameters of the Philippines are compared with those of selected countries in table 83. The Philippines' level of mortality as reflected by the crude death rate compares favourably with the levels obtaining in developed countries such as Austria, the Federal Republic of Germany and the United Kingdom. It has, however, to be noted that if the age structure of the population is taken into account, the mortality rates for the developed countries will, in general, be lower than those for developing countries such as the Philippines. This paradox is explained by the higher proportion of older persons in the populations of the developed countries.

As noted earlier, a more accurate measure of mortality levels is provided by life expectancy at birth. On the basis of this index, the mortality level in the Philippines is still higher than that of the developed countries but lower than that of some developing countries, such as Bangladesh, Bolivia, Ethiopia and Nepal. In general, developing countries whose *per capita* GNP is way below that of the Philippines with the exception, in the region, of

Table 83. Mortality parameters in selected countries of the world

Country	Period	Creude death rate (CDR)	Infant mortality rate (IMR)	Life expectancy at birth ($^{o}e_{o}$)	
				Male	Female
Argentina	1971-1975	8.8	-	65.2	74.4
Australia	1971-1974	8.6	17[a]	67.6[b]	72.2[b]
Austria	1971-1975	12.7	24	64.4[c]	74.7[c]
Bangladesh	1971-1975	28.1	-	35.8	35.8
Bolivia	1971-1975	18.0	-	45.7	47.9
Canada	1971-1974	7.4	16	69.3	76.4
Colombia	1971-1975	8.8	63[d]	59.2	62.7
Ethiopia	1970-1975	25.8	181	36.5	39.6
Germany, Federal Republic of	1971-1975	12.7	24	67.4[a]	74.7[a]
India	1971-1973	15.8	122[d]	-	-
Japan	1971-1974	6.6	12[e]	71.2[c]	76.3[c]
Nepal	1971-1975	20.3	-	42.2	45.5
Philippines	1970-1975	10.5	66[e]	56.9	60.0
Sri Lanka	1971-1974	8.1	47	64.2[d]	66.7
United Kingdom	1971-1974	11.9	17[e]	68.9[f]	75.1[f]
United States	1971-1975	9.3	18[e]	68.2[c]	75.9[c]

Source: Demographic Yearbook, 1975 (United Nations publication, Sales No. E/F.76..XIII.1).

a Average for the period 1971-1973.
b Average for the period 1965-1967.
c Refers to the year 1974 only.
d Refers to the year 1971 only.
e Average for the period 1971-1974.
f Average for the period 1970-1972.

Sri Lanka whose life expectancy is comparable with that of developed countries but whose *per capita* GNP is half that of the Philippines.

The inverse relationship between the level of life expectancy at birth and the crude death rate is manifested among the countries compared, except some of the developed countries. As noted earlier, this distortion may be due to the different age structure of the populations. The infant mortality rate of the Philippines is also lower than the rate for some developing countries, such as Ethiopia and India, but higher in comparison to the rates obtaining in the developed countries.

The international comparison of mortality only suggests that there is still a lot of room for improvement in mortality conditions in the Philippines considering that the value of life expectancy at birth and the infant mortality rate are still below the level of the developed and quasi-developed countries and that a greater proportion of the deaths occurring in the country are still attributable to infectious and parasitic causes. Further improvement, however, would need inputs from socio-economic well-being (improved personal hygiene, environmental sanitation and nutrition).

6. Summary

The review of trends in the crude death rate, infant mortality and causes of death appears to support the trends in life expectancies at birth. Prior to the Second World War, improvement in expectation of life was moderate and may have been due to some settlement in the general standards of living and to the virtual absence after 1918 of crisis mortality conditions such as wars and epidemics. The significant increase in expectation of life at birth ($^{o}e_{o}$) after the Second World War was generated by the availability of imported medical technology which greatly diminished the risk of death from infectious and parasitic diseases. The declines in infant and child mortality were substantial, parti-

cularly in the early 1960s, strongly suggesting that they may have contributed more to the acceleration in life expectancy at birth than did the decline in adult mortality. Moreover, the slow rate of gain in life expectancy at birth during 1968-1973 accompanied a slackening in infant and child mortality declines.

It would appear that a threshold in life expectancy has been reached at around 60 years and that further mortality improvements may depend more on the internationalization of personal health practices, on the effectiveness of the health care delivery system and on the up-grading of nutrition and environmental sanitation. These factors are more likely to come with sustained socio-economic development.

C. MORTALITY DIFFERENTIALS

As mentioned above, the recently developed indirect methods for estimating mortality levels make it possible to discuss mortality differentials during the 1960s and early 1970s. The Brass technique was utilized to reconstruct mortality from data on children ever born and children still living collected in the National Demographic Surveys of 1968 and 1973 and the 1970 Census of Population. By averaging the life expectancies estimated from each of the age groups of women 15-19 through 60-64, three mortality parameters, namely, expectation of life at birth ($^{o}e_{o}$); crude death rate (CDR); and infant mortality rates (IMR) were derived for various regions and socio-economic groups.

1. Regional differentials

It was observed in the preceding section that the average increment in the life expectancy at birth ($^{o}e_{o}$) for the five-year period 1968-1973 was 0.38 year. However, this increment was not uniform for all regions. As will be observed from table 84, higher-than-average increases of life expectancies at birth were reported for Southern Tagalog, Central Visayas, Central Luzon and Bicol over the period 1968-1973. Metropolitan Manila experienced an increase but was lower than the national average. In contrast, Southern and Northern Mindanao, Cagayan Valley and Batanese, Western and Eastern Visayas all recorded declines in the life expectancy at birth values.[16]

The estimates of crude death rates indicate that in 1973, 5 out of the 12 regions were in an

16 It has, however, to be noted that because sizes within regions are sometimes small, these estimates should be taken as approximations of general patterns.

Table 84. Estimates of life expectancy at birth, crude death rate and infant mortality rate by region, 1968 and 1973

Region[a]	Average life expectancy at birth ($^{o}e_{o}$) (in years)			Implied crude death rate (per 1,000 population)			Implied infant mortality rate ($_{1}q_{o}$ percentage 1,000)		
	1968	1973	Difference	1968	1973	Difference	1968	1973	Difference
Total Philippines	58.7	60.6	-1.9	10.1	9.2	.9	76.2	67.6	8.6
Iloeos and Mt. Province	65.2	61.4	3.8	7.8	9.4	1.6	47.6	64.1	-16.5
Cagayan Valley and Batanes	58.7	57.5	1.2	8.9	10.2	-1.3	76.2	81.9	- 5.7
Central Luzon	60.3	64.6	-4.3	9.4	7.6	1.8	69.1	50.3	18.8
Southern Tagalog	56.5	61.7	-5.2	11.0	8.1	2.9	86.9	62.9	24.0
Bicol	61.2	64.3	-3.1	9.2	6.8	2.4	64.8	51.6	13.2
Western Visayas	61.0	60.0	1.0	8.9	9.9	-1.0	65.9	70.2	- 4.3
Central Visayas	57.6	62.0	-4.4	10.9	9.3	1.6	81.7	61.6	20.1
Eastern Visayas	57.5	56.5	1.0	11.6	11.2	.4	82.1	86.9	- 4.0
Western Mindanao	-	57.6	-	-	9.4	-	-	81.5	-
Northern Mindanao	58.6	55.8	2.8	9.8	10.8	-1.0	76.8	90.3	-13.5
Southern Mindanao	65.5	60.7	4.8	5.1	8.0	-2.9	46.2	67.1	-20.9
Metropolitan Manila	61.3	62.8	-1.5	7.5	7.2	.3	64.7	57.8	6.9

Source: Indirect estimates prepared from the data collected in the national demographic surveys of 1968 and 1973 by applying the Brass method.
a See table 5 for provinces comprising each region.

advantageous situation in that their CDRs were lower than the average of 9.2 for the country as a whole. These regions, in ascending order, are Bicol (6.8), Metropolitan Manila (7.2) Central Luzon (7.6), Southern Tagalog (8.1) and Southern Mindanao (8.0). The levels of crude death rate in three regions were around that of the national average: Central Luzon (9.3), Western Mindanao (9.4) and Ilocos and Mt. Province (9.4). It will also be noted from the table that an appreciable decline in the crude death rate took place between 1968 and 1973 in Central Luzon, Southern Tagalog and Bicol while substantial increases in these rates occurred in Ilocos and Mt. Province, Cagayan Valley and Batanes, and Southern Mindanao.

In 1973, the infant mortality rate was lower than the national average of 67.6 in six regions: Central Luzon (50.3), Bicol (51.6), Metropolitan Manila (57.8), Central Visayas (61.6), Southern Tagalog (62.8) and Ilocos and Mt. Province (84.1). The rate for Southern Mindanao (67.1) was almost equal to the national average. In the other five regions, infant mortality rates were higher than the average national rate. It will also be noted that between 1968 and 1973 substantial declines in infant mortality rates took place in Central Luzon, Southern Tagalog, Bicol and Central Visayas, while notable increases were recorded in Ilocos and Mt. Province, Northern Mindanao and Southern Mindanao.

It will be clear from the foregoing that, in general, life expectancies declined in those regions from Luzon to the Visayas and Mindanao. It will also be observed that some disadvantaged regions in terms of life expectancy at birth improved their positions in regard to crude death rate because of their younger age structure. Also, some advantaged regions moved to disadvantageous positions owing to their relatively older age structures. With the exception of one region, infant mortality followed closely the pattern exhibited by life expectancy values. When all three mortality parameters are considered together, four regions (Central Luzon, Bicol, Metropolitan Manila and Southern Tagalog) stand out as holding advantageous positions, while three regions (Eastern and Western Visayas, and Nothern Mindanao) are in disadvantageous positions.

The analysis alao suggests that (a) efforts to bring to par disadvantageous regions require more emphasis in the Mindanao regions because their mortality levels are the highest and there has been little improvement in recent years; and (b) efforts further to improve mortality conditions in advantageous regions should be concentrated in the Ilocos and Mt. Province, Bicol and Visayas regions since there has been no appreciable reduction in their mortality levels in recent years.

2. Rural-urban differentials

Indirect estimates of crude death rates (CDR), infant mortality rates (IMR) and expectation of life at birth ($^{o}e_{o}$) for rural and urban areas have been prepared on the basis of the data derived from the 1960 and 1970 Censuses and the National Demographic Surveys of 1968 and 1973.[17] These mortality estimates have been divided into recent mortality [q(2) – q(3)], past mortality [q(5) – q(35)] and average mortality [q(1) – q(35)] experiences. The results of these calculations are summarized in table 85.

It will be noted from column (7) of table 85 that the average crude death rate based on the data of the 1968 National Demographic Survey was 9.33 per thousand population in rural areas, the corresponding rate for urban areas being 8.37. Thus the rural CDR was 11 per cent higher than the urban CDR. According to the estimates based on the 1973 National Demographic Survey, the rural rate was still higher than the urban rate, but the difference between the two narrowed slightly from 0.96 in 1968 to 0.92 in 1973.

It will be noted from column (8) of the table that there was an increase in rural CDR under recent mortality conditions between 1968 and 1973 while the urban CDR remained more or less constant. Data on past mortality experience shown in column (9) shows that there was an increase in the crude death rate in both the rural and the urban areas, rural CDR increasing by about 7 per cent and urban CDR by 9 per cent between 1968 and 1973. There was, however, a slight narrowing of the differential from 0.57 in 1968 to 0.38 in 1973.

The estimates of infant mortality rates indicate, according to recent mortality experience (column

17 Adelamar N. Alcantara, *Differential Mortality Among Population Subgroups*, Research Note No. 63 (Manila, Population Institute, University of the Philippines, July 1975) (mimeo). The Brass technique was used for estimating mortality by place of residence and socio-economic characteristics because vital registration data were considered to be inadequate and not appropriate correction factors for the variables under consideration were available.

Table 85. Estimates of mortality levels, infant mortality rates, crude death rates and life expectancies at birth for rural and urban areas, 1968, 1970 and 1973[a]

Year and place of residence	Mortality levels			Implied infant mortality based upon:[b]			Implied crude death rate based upon:[b c]			Life expectancy at birth based upon:		
	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1968												
Rural	17.013	18.604	17.202	78.49	61.00	76.40	9.33	7.66	9.43	58.22	62.10	58.22
Urban	18.049	19.909	17.584	65.64	47.33	72.22	8.37	7.18	8.86	60.75	65.28	59.62
1970												
Rural	17.917	19.218	17.503	68.48	54.33	73.10	8.80	7.36	9.31	60.43	63.60	59.42
Urban	18.742	20.112	18,297	59.46	45.17	63.39	7.69	6.29	8.19	62.44	65.79	61.36
1973												
Rural	17.687	18.603	17,091	71.01	61.00	77.61	9.29	9.08	10.10	59.87	62.10	56.41
Urban	18.698	19.733	18.351	59.90	49.03	63.75	8.47	7.16	9.72	62.33	64.86	61.48

Source: Adelamer N. Alcantara, *Differential Mortality Among Population Subgroups,* Research Note No. 63 (Manila, Population Institute, University of the Philippines, July 1975) (mimeo).

a Indirect estimates prepared from the data of the 1968 and 1973 National Demographic Surveys and the 1970 Population Census by applying the Brass method.

b Based on Coale and Demeny West Model Life Tables.

c Central death rates from model life tables were applied on interpolated 1968 age-sex structure, 1970 Census age structure, and extrapolated 1973 age-sex structure.

(5)), that the rural rate was approximately 30 per cent higher than the urban rate in 1968. By 1970, while the rural rate remained constant, the urban rate had increased somewhat resulting in a slight narrowing of the differential. Past mortality experience shown in column (6) showed a lesser but widening differential between the two areas.

Life expectancy estimates presented in columns (10), (11), and (12) indicate that urban residents expected to live longer than their rural counterparts by about 2.53 years on the average in 1968 and 2.43 years in 1973. During the five-year period 1968-1973, life expectancy increased by about 1.65 years in the rural areas and by 1.58 years in the urban areas. Estimates under recent mortality conditions (column (11)) show that, while there was no change in rural life expectancies, in the urban areas there was a slight decline from 65.28 years in 1968 to 64.86 years in 1973.

In the Philippines, as in most developing countries, rural mortality is higher than urban mortality. This is due, as noted earlier, to a greater concentration of medical facilities and public health services, as well as to better education, higher incomes, awareness of health problems, etc., in the urban areas.

3. Occupational differentials

The estimates of mortality levels, infant mortality rates, crude death rates and life expectancies at birth by wife's occupation for 1973 are shown in table 86. It will be observed that in 1973, those in professional, administrative and managerial occupations enjoyed more favourable mortality conditions than the other occupational groups. They could, on the average, expect to live 8.9 years longer than white collar workers, 8.4 years longer than blue collar workers and 13.2 years longer than farm workers (column(10)). Recent mortality experience, summarized in column (11), showed a diminishing differential among the first three occupational groups. The life expectancy at birth for white collarworkers was only 0.25 years less than that of the professional group, while the difference between professional and blue collar workers, had narrowed down to about 6 years. The differential between professionals and farm workers, however, had persisted.

It may also be noted that contrary to expectations, women without occupation appear to experience more favourable mortality conditions than some of the other groups. Their average life expectancy of 61.23 years is higher than that of the white collar, blue collar and farm workers. This is probably due to the fact that a majority of the women with no occupation are either housewives or students who may belong to the high socio-economic status groups and therefore experience the mortality conditions of these groups.[18] It may also be noted that the highest crude death rates and infant mortality rates and lowest life expectancies were recorded in respect of farm workers. This is to be expected because of greater occupational hazards and risks.

It has been argued by Kitagawa and Hauser that occupational differentials may partly be due to socio-economic difference.[19] This was also pointed out by Dublin, Lotka and Spiegelman when they posited, "the work a man does, the conditions under which his work is done, and the wages he receives for it determine, in great measure, the circumstances of his life, which in turn decide the state of his health and the length of his life".[20] Thus, the use of the "occupation" variable as an indicator of social class must be made in conjunction with other variables, such as education and income, when analysing its relationship with mortality.

4. Educational differential

The estimates of mortality parameters by level of educational attainment are shown in table 87, from which it will be seen that a linear positive relationships exists between educational attainment and life expectancy. A person with a college education could expect to live, on the average, for about 70 years, or 13 years more than a person with no schooling. On the other hand, one year of schooling lengthens one's life by about two years (59.3 years for those who have completed 1-4 grades as against 57.3 years for those with no schooling). Recent mortality conditions given in column (11) of the table emphasize the great advantage of having at least one year of education as against no education at all. The gain in life expectancy with just a year of schooling is approximately 11 years. This is a

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18 Ibid., p. 7.

19 Evelyn H. Kitagawa and Philip M. Hauser, "Methods used in a current study of social and economic differentials in mortality", *Emerging Techniques in Population Research*, 1962 Annual Conference, Milbank Memorial Fund, New York, 1963.

20 Louis I. Dublin, Alfred J. Lotka and Mortimer Spiegelman, *Length of Life: A Study of the Life Table* (Ronald, New York, 1949).

Table 86. Estimates of mortality levels, infant mortality rates, crude death rates and life expectancies at birth by major occupation, 1973[a]

Occupational Group	Mortality levels			Implied infant mortality based upon: *b*			Implied crude death rate based upon: *b c*			Life expectancy at birth based upon:		
	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Professional administrative, managerial	20.738	21.239	20.595	38.7	33.94	40.17	5.47	5.07	5.59	67.32	68.57	66.97
White collar	17.079	21.142	18.215	77.7	34.78	65.24	8.43	5.18	7.49	58.38	68.32	61.15
Blue collar	17.289	18.837	16.031	75.4	58.41	90.23	6.22	5.12	7.17	58.90	62.67	55.86
Farm	15.287	15.195	15.401	99.2	100.25	97.79	13.56	13.64	13.45	54.07	53.85	54.34
None	18.246	18.878	17.628	64.9	57.94	71.67	9.75	9.24	10.23	61.23	62.77	59.72

Source: Same as for table 85.

a Indirect estimates based on the data of the 1973 national demographic survey by applying the Brass method.

b Based on coale and Demeny West Model Life Table.

c Central death rates from model life table were applied on extrapolated 1973 age-sex structure.

Table 87. Estimates of mortality levels, infant mortality rates, crude death rates and life expectancies at birth by level of educational attainment, 1973[a]

Level of educational attainment	Mortality levels			Infant mortality rate based upon average of: *b*			Crude death rate based upon: *b c*			Life expectancy at birth ($^{o}e_{o}$)		
	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)	q(1)-q(35)	q(2)-q(3)	q(5)-q(35)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
None	16.639	14.057	16.468	82.94	115.06	84.96	26.93	30.07	27.14	57.32	51.09	56.91
Grades 1-4	17.465	18.584	16.831	73.48	61.22	80.64	12.53	11.53	13.09	59.33	62.05	57.78
Grades 5-7	18.319	18.707	17.804	64.09	59.79	69.80	7.03	6.75	7.42	61.41	62.35	60.15
High school, 1 1-4 years	19.670	19.730	19.923	49.49	49.08	47.12	4.28	4.26	4.13	64.76	64.85	65.33
College, 1 year +	21.991	21.284	22.048	27.28	33.59	26.97	3.67	4.39	3.60	70.48	68.68	70.63

Source: Same as for table 85.

a Indirect estimates based on the data of the 1973 national demographic survey by applying the Brass method.

b Based on Coale and Demeny West Model Life Table.

c Central death rates from model life table were applied on extrapolated 1973 age-sex structure.

Table 88. Standardized and unstandardized crude death rates[a] by sex and marital status, 1960 and 1970

Year	Single			Married			Widowed, separated, divorced		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
	Age-standardized rates[b]								
1960	40.7	13.1	26.8	7.9	6.8	7.3	25.3	7.5	16.3
1970	30.6	10.5	20.4	12.1	8.7	9.4	24.3	9.3	16.7
	Unstandardized rates								
1960	5.0	4.7	4.9	7.9	6.8	7.3	68.4	28.2	40.3
1970	5.6	3.8	4.7	12.1	6.7	9.4	67.3	40.1	47.4

Source: Same as for table 85.

a Deaths from vital registration data over five-year periods centreing in 1960 and 1970 for each marital status category were adjusted by multiplying the reciprocal of the vital registration completeness percentage (70 per cent). The adjusted number of deaths were divided into their respective marital status categories obtained from the 1960 and 1970 Censuses.

b Population of "marrieds" was taken as standard.

Table 89. Estimated life expectancy at age x, by sex and marital status, 1960 and 1970

Exact age (x)	Life expectancy ($^{o}e_{x}$)											
	Singale				Married				Divorced			
	Female		Male		Female		Male		Female		Male	
	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970	1960	1970
15	45.96	48.28	38.16	37.20	54.37	54.73	52.04	50.41	53.32	50.69	40.24	40.02
20	42.16	44.29	34.56	33 67	49.89	50.22	47.58	46.06	48.92	46.49	36.52	36.32
25	38.55	40.48	31.39	30.57	45.52	45.82	43.29	42.06	44.65	42.47	33.19	33.00
30	34.99	36.71	28.23	27.48	41.20	41.46	38.94	37.69	40.41	38.48	29.86	30.24
35	31.46	32.98	25.14	24 46	36.90	37.13	34.62	33.51	36.21	34.52	26.59	26.44
40	27.93	29.25	22.14	21.49	32.64	32.85	30.36	29.40	32.03	30.57	23.40	23.27
45	24.37	25.51	19.26	18.76	28.43	28.61	26.22	25.40	27.90	26.64	20.34	20.25
50	20.79	21.78	16.43	16 01	24.33	26.96	22.27	21.57	23.86	22.76	17.35	17.25
55	17.38	18.22	13.80	13.46	20.39	20.53	18.54	17.98	20.00	19.06	14.55	16.80
60	14.14	14.84	11.28	10.99	16.65	16.77	15.11	14.65	16.32	15.53	11.88	11.82
65		11.80		8.84		13.32		11.67		12.34		9.48
70		9.06		6.91		10.22		8.99		9.47		7.38
65+	11.26		9.06		13.24		12.02		12.97		9.53	
75+		6.70		5.25		7.59		6.72		7.02		5.57

Source: Same as for table 85.

tremendous increase, especially when compared to the increment of only 0.87 year for the same category under past mortality conditions [column (12)].

The crude death rates and infant mortality rates also showed a strong linear but inverse relationship with education. The lowest implied crude death rate was observed for those who had been to college. The difference by educational level was most pronounced for those with no schooling, the CDR for this group being over seven times the CDR for those with college education. The smallest difference, however, existed between those with high school education and those with college education. Nevertheless, the crude death rate differentials should be interpreted with caution, since the changing age distribution by educational sectors favouring those who are younger and more highly educated would tend to exaggerate the differences.

It is nevertheless clear that an increase in educational attainment results in considerable improvement in mortality. This is to be expected since improvement in general levels of education would be likely to lead to improvement in family and personal health practices, environmental sanitation and nutritional habits. Further, higher education invariably assures higher income and occupational status, both of which are conducive to low mortality conditions.

Table 90. Estimated and projected crude death rate, 1900-2000

Period	Crude death rate
Estimated	
1900-1905	38
1905-1910	27
1910-1915	25
1915-1920	28
1920-1925	26
1925-1930	26
1930-1935	24
1935-1940	23
1940-1945	32
1945-1950	22
1950-1955	18
1955-1960	14
1960-1965	13
1965-1970	12
Projected	
1970-1975	10
1975-1980	9
1980-1985	8
1985-1990	7
1990-1995	7
1995-2000	6

5. Marital status differentials

The standardized and unstandardized crude death ratio by sex and marital status based on vital registration data are given in table 88. It is clear from this table that, on the basis of age standardized rates, married persons have more favourable mortality conditions than those who are not married. Single, widowed or divorced males seemed to be more disadvantaged relative to their female counterparts.

The life expectancies for 1960 and 1970 given in table 89 show that, in 1960, female expectancy at all ages was 20 per cent higher than for males, and this difference increased to 25 per cent in 1970. The disparity between men and women in the married state was not large but still in favour of females. The table also shows that in 1960 married females aged 15-19 years expected to live about 8 years longer than divorced ones. In 1970, there was a slight decrease in the differential between married and single women. Married males in the same age group had a 14-year lead in their life expectancy over single males. These differentials continued to, but narrowed down in, the older age groups.

On balance, mortality risks were least for Filipinos who were married and stayed married. Empirical evidence from elsewhere, too, has shown that marital status has an important bearing on mortality. It has been noted that married persons have lower death rates than those who are not married (single, widowed, divorced or separated). In a study conducted in the United Kingdom, it was found that the tendency for a widowed person to die within six months after the death of a spouse occurs with a frequency greater than that which would be associated with chance alone.[21]

6. Summary

The analyses in the previous subsections have shown that: (a) on the basis of mortality estimates implied by recent and past mortality experience, no

21 Michael Young and others, "The mortality of widowers", *The Lancet*, No. 7305, 1963.

evidence of systematic narrowing of the differential between urban and rural areas was apparent; (b) cross-sectional data on socio-economic differentials revealed a strong positive relationship between life expectancy and socio-economic status, particularly education. Occupation showed a similar but weaker relationship. Trend analysis of estimates of mortality parameters based on recent and past mortality showed a narrowing of the differentials among the socio-economic statuses; and (c) marital status differentials showed the advantage of being married and staying married. Unmarried persons of either sex, more so the males, experience higher mortality risks at every age group, except in the 15-19 group. A narrowing of differential was also noted.

D. FUTURE MORTALITY TRENDS

The review of past mortality trends, patterns and differentials provides a basis for estimating the course of mortality over the next 25 years or so. While there has been substantial improvement in the level of mortality compared to the level at the turn of the century, there is some evidence that there has been a slackening in the rate of improvement in recent years. Table 90 shows that if the current pace of decline continues, then the crude death rate of the Philippines, estimated at about 10 per thousand population during 1970-1975, will reach a low level of 6 by the end of this century.

The responsibility of the Government in the control of disease and reduction of mortality rests largely on the structure and performance of the nation's health services, in both the public and private sectors. Initial steps have been taken in selected areas through expansion and improvement of certain hospital facilities and through a community-based health care delivery system staffed by paramedics. Nutrition has received government attention in recent years and some programmes have recently been launched in priority areas. The solution now hinges on the ability of the Government to carry out reforms throughout the entire nation, and on its ability to increase the receptivity of the population to such programmes initiated for their welfare. To ensure the success of any government programme for reform, consultation with the people is essential.

Chapter VI

TRENDS AND DIFFERENTIALS IN FERTILITY

A. INTRODUCTION

As noted in chapter I, the rapid growth of the population of the Philippines in recent decades is the consequence of dramatic declines in mortality while fertility continued to remain at a traditionally high level – well above the level of pre-industrial Europe and probably above that of many Asian countries. However, the determination of fertility trends in the Philippines is seriously handicapped by the inadequacy of data. Despite efforts of government agencies to improve birth registration, estimates of crude birth rates prepared on the basis of vital registration data have been spuriously low.[1] Several studies covering various localities in the country point to an acute under-registration of births in the past, ranging from 35 to 55 per cent.[2]

Since deficiencies in the country's civil registration system do not permit an accurate assessment of national or regional fertility levels, recourse has been had to assessing these levels indirectly on the basis of data collected from censuses and sample surveys. Seven censuses of the total population have been carried out since 1903, the last one being taken in 1975.[3] Application of indirect methods of fertility estimation to the data on age distribution and children ever born yielded national and regional estimates of the crude birth rate and age-specific fertility rates. The National Demographic Surveys conducted in 1968 and 1973 contain data which make it possible to analyse in greater detail fertility levels and trends nationally, regionally or by subgroups of the population. The surveys collected fertility information in the form of pregnancy rosters which describe the fertility history of women by listing their dates of birth and marriage and the type and date of all their pregnancy terminations in chronological order. The discussions in the sections that follow are based on the analysis of relevant data from censuses and sample surveys.

B. NATIONAL FERTILITY LEVELS AND TRENDS

1. Crude birth rate

The estimates of the crude birth rate presented in table 91 indicate that in the Philippines, the crude birth rate was fairly constant during the first half of the century, ranging from 50 to about 56 per thousand of the population. During the 1950s, an apparent decline in the crude birth rate seemed to have been initiated. Estimates show that the crude birth rate during the mid-1950s was around 49 to 52 per thousand, suggesting a decline from previous levels by about 6 to 7 per cent. For the 1960s, the estimated birth rates range from a low of 42 to a high of about 46 per thousand. Estimates for 1970 are still lower, 40 to about 43 per thousand, and the average for the period 1970-1975 is placed at 37.4.

Table 91. Estimates of the crude birth rate, 1903-1975

Source	Period	Crude birth rate
de Guzman	1903-1948	50.0 - 55.8
Adams	1939-1948	45.6 - 52.7
de Guzman	1948-1960	46.8 - 51.9
Madigan - Avancena	1954-1960	44.2
Lorimer	1960	45.6
Smith	1960	42.0 - 43.4
de Guzman	1960	42.7 - 44.0
	1960-1970	40.8 - 45.2
	1970	40.0 - 42.7
UPPI[a]	1970-1975	37.4

Sources: Edith Adams, "New population estimates for the Philippines, 1948-1962", *The Philippines Statistician*, No. 7, 1968, pp. 134-166; Frank C. Madigan, "Some recent vital rates and trends in the Philippines: Estimates and evaluation", *Demography*, vol. 2, 1965, pp. 309-316; Eliseo A. de Guzman, *Estimates of the Philippine Birth rate: A Census Analysis*, Research Note No. 58, (Manila, Population Institute, University of the Philippines, 1975); Frank Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population, 1965*, Quezon City, University of the Philippines Press, 1966); Peter C. Smith, "Philippine regional and provincial differentials in marriage and family building: 1960", *Philippine Sociological Review*, vol. 19, Nos. 3-4, 1971, pp. 159-181; and *Institutional Report*, PREPF Project, Phase I (Manila, Population Institute, University of the Philippines, September 1975).

a University of the Philippines Population Institute.

1 For instance, the crude birth rate for 1968 reported by the Disease Intelligence Centre, Department of Health, was 26.8 per thousand population, and the preliminary estimate for 1971 made by the Bureau of the Census and Statistics, on the basis of data for the first half of the year collected through a nation-wide sample registration system, falls in the same range.

2 Mercedes B. Concepcion, "110 millions by the years 2001", *Philippines Sociological Review*, vol. 18, Nos. 3 and 4, 1970, pp. 211-255.

3 At the time of preparing this chapter, the results of the 1975 census had not become available.

The decline in the crude birth rate can be viewed against the positive evidence of the tendency towards postponement of marriage during the 1950s and thereafter.[4] The proportions married among women aged 15-19 years and 20-24 years in 1939 were 19.7 per cent and 63.8 per cent respectively. These declined to 14.9 per cent and 59.3 per cent respectively in 1948 and to 12.7 per cent and 55.7 per cent respectively in 1960. Also, the mean age at marriage for females rose by some 2.5 years between 1903 and 1973. "...fertility has been falling in the Philippines since the turn of the century. The decline has been primarily the product of delayed marriage. Offsetting that has been a probable slight increase in marital fertility, apparently as a result of improved health and the resulting shortening of inter-birth intervals".[5]

2. Age-specific fertility rates

The average age-specific fertility rates and the average age-specific marital fertility rates for the five-year periods 1958-1962, 1963-1967 and 1968-1972, estimated on the basis of the pregnancy history data from the 1973 National Demographic Survey[6], are presented in tables 92 and 93 respectively. It will be noted that for the country as a whole there was a decline in all age-specific fertility rates between 1958-1962 through 1968-1972. There was a substantial reduction in the birth rates throughout the childbearing ages, except for the last two age groups, 40-44 and 45-49 years. The largest absolute declines were recorded in respect of the two youngest age groups, viz. 15-19 and 20-24. In general, greater declines in the age-specific birth rates both in absolute and relative terms were recorded from 1965 to 1970 then from 1960 to 1965.

The total fertility rate, or completed family size, for the period 1958-1962 was 6.5 children, the corresponding rate for the subsequent quinquennial, 1963-1976, being 6.3. There was thus a decline of 2.5 per cent in the completed family size over the two five-year periods. During the next quinquennial, 1968-1972, there was a further reduction in the completed family to 5.9 children – a decline of 6.5 per cent.

The age-specific marital fertility rates given in table 93 show that, while the rates for women in the age groups 25 through 49 declined during the 10-year interval, increases were recorded in the rates for women aged 15 to 24 years. The marital fertility rate for the 15-19 age group increased by 13 per cent while that of those aged 20-24 years rose by 4 per cent during this period. A comparison of the rates for the last two periods, 1963-1967 and 1968-1972, show that all age groups from 25 to 44 showed small declines in marital fertility, while the age groups 15-19, 20-24 and 45-49 manifested slight increases. However, the increases shown by these age groups are not overly significant since under current fertility patterns more than two thirds of all childbearing involves women aged 25-44 years.

The marital fertility rates show that fertility was still rising as late as the mid-1960s. However, the trend was reversed around 1965. Total marital fertility increased by 1.15 per cent between 1958-1962 and 1963-1967, but declined by 0.41 per cent during the subsequent quinquennium.

3. Cumulative fertility and survivorship

The average number of children ever born to ever-married women of various ages for recent years is shown in table 94. A pattern of rising cumulative fertility between ages 15 and 44 is discernible in all the four years for which the analysis was carried out. Beyond age 44, the data show progressive recall lapse with advancing age of the mother.

If it is rightly assumed that the cumulative fertility rate for the age group 40-44 years very nearly represents completed fertility, then in the Philippines a woman has accomplished about one fourth of completed fertility at ages 15-24 years. By ages 15-34, cumulative fertility is over two thirds of completed fertility. Very slight changes are observed in the rates over the years 1956 to 1973. On balance, the data offer no evidence of fertility decline in recent decades. Such evidence, however is not expected to appear in cumulative fertility distributions until a downward trend is well under way.

The cumulative fertility rates for urban and rural areas in 1968 and 1973 are shown in table 95. It will be noted that in 1968 the over-all urban cumulative fertility rate of 4.95 was slightly less than

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4 Frank W. Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population 1965*, (Quezon City, University of the Philippines Press, 1966).

5 *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines* (Geneva, International Labour Organisation, 1974), p. 401.

6 Mercedes B. Concepcion *Changes in Period Fertility as Gleaned from the 1973 NDS*, Research Note No. 13 (Manila, Population Institute, University of the Philippines, 1975).

Table 92. Age-specific fertility rates per thousand women, 1958/1962 to 1968/1972

Period	Births per thousand women aged							Total fertility rate (per woman)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
				Rates				
1958-1962	84	260	313	290	211	107	27	6.46
1963-1967	74	254	313	281	216	101	20	6.30
1968-1972	56	227	302	272	199	100	22	5.89
				Change				
1960-1965								
Amount	-10	- 6	0	- 9	+ 5	- 6	- 7	-0.16
Percentage	-12	- 2	0	- 3	+ 2	- 6	-26	-2.48
1965-1970								
Amount	-18	-27	-11	- 9	-17	- 1	+ 2	-0.41
Percentage	-24	-11	- 4	- 3	- 8	- 1	+10	-6.59
1960-1970								
Amount	-20	-33	-11	-18	-12	- 7	- 5	-0.57
Percentage	-33	-13	- 4	- 6	- 6	- 7	-19	-8.82

Source: Mercedes B. Concepcion, *Changes in Period Fertility Gleaned from the 1973 NDS,* Research Note No. 13 (Manila, Population Institute, University of the Philippines, 1975).

Table 93. Age-specific marital fertility rates per thousand married women, 1958/1962 to 1968/1972

Period	Births per thousand married women aged							Total marital fertility rate (per woman)
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
				Rates				
1958-1962	396	428	348	325	233	117	29	9.56
1963-1967	430	434	388	314	237	110	21	9.67
1968-1972	449	443	378	307	217	108	24	9.63
				Change				
1960-1965								
Amount	+34	+ 6	+ 4	-11	+ 4	- 7	- 8	+0.11
Percentage	+ 9	+ 1	+ 1	- 3	+ 2	- 6	-28	+1.15
1965-1970								
Amount	+19	+ 9	-10	- 7	-20	- 2	+ 3	- 0.04
Percentage	+ 4	+ 2	- 3	- 2	- 8	- 2	+14	- 0.41
1960-1970								
Amount	+53	+15	- 6	-18	-16	- 9	- 5	+0.07
Percentage	+13	+ 4	- 2	- 6	- 7	- 8	-17	+0.73

Source: Same as for table 92.

Table 94. Average number of children ever born per ever-married woman, 1956, 1960, 1968 and 1973

Age group	Year			
	1956	1960	1968	1973
15-19		0.87	1.11	0 85
20-24		1.87	1.84	1.85
25-29	3.44	3.27	3.18	3.14
30-34	4.76	4.68	4.58	4.48
35-39	6.02	5.69	5.68	5.68
40-44	6.93	6.45	6.24	6.54
45-49)	7.30	6.38	6.22	6.41
50-54)		6.18	5.85	5.98
55-59)	7.22	5.93	5.83	6.36
60-64)		5.99	6.06	5.77
65+	6.87			5.89

Sources: For 1956: Frank Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population, 1965* (Quezon City, University of the Philippines Press, 1966); for 1960: Bureau of the Census and Statistics; for 1968: *National Demographic Survey, 1968;* for 1973: *National Demographic Survey, 1973.*

Table 95. Children ever born per ever-married woman by age group and urban-rural residence, 1968 and 1973

Age group	Year and residence					
	1968			1973		
	Urban	Rural	Urban/ rural	Urban	Rural	Urban/ rural
15-19	0.66	1.13	58	0.70	0.89	79
20-24	1.76	1.86	95	1.55	1.95	79
25-29	2.90	3.27	89	2.77	3.31	84
30-34	4.23	4.74	89	3.89	4.75	82
35-39	5.24	6.02	87	4.74	6.13	77
40-44	6.25	6.62	94	5.79	6.86	84
45-49	6.57	6.46	102	5.88	6.62	89
50-54				5.83	6.04	97
55-59				5.86	6.58	89
60-64				5.63	5.85	96
65+				5.18	6.32	82
All ages	4.95	5.06	98	4.44	5.11	87

Sources: 1968 and 1973 National Demographic Surveys.

the rural rate of 5.06. But in 1973, the over-all cumulative rate for rural areas was 5.11 compared to the urban rate of 4.44. Thus the urban-rural differential was greater in 1973 than in 1968. The differential was greatest (42 per cent) at ages 15-19 in 1968, and in 1973 at ages 35-39 years (33 per cent). In 1973, the urban cumulative fertility rates were consistently lower than the rural rates. The same pattern was shown by the 1968 rates, except for the ages 45-49 where the urban rate was higher than the rural rate. This may have been due either to better reporting in urban areas or to greater recall lapse in the rural areas.

Table 96 shows the proportion still living among children born by broad age groups of the mothers in 1973. It will be noted that of all the children whose births were reported retrospectively in the 1973 National Demographic Survey, about 12 per cent had died by the time of the Survey in May 1973. The proportion surviving varied with the age of the mother since, under prevailing age patterns of childbearing, the mothers' ages reflected the mean ages of their children as at survey date. Thus, mothers under age 25 in May 1973 had lost only 6.4 per cent of their children while mothers aged 45 years and over reported having lost 16.6 per cent of their children.

The urban-rural differential in the proportion surviving show that while mothers in Metropolitan Manila had lost only 8.9 per cent of their children, urban and rural mothers had lost 10.4 and 13.0 per cent respectively. At all ages, the urban proportion surviving exceeded the rural, though the urban-rural difference was not always large.

4. Cohort fertility rates

An attempt is made in this section to discuss the patterns of fertility during the 40-year period from 1913-1917 to 1953-1957 based on the cohort analysis of the data obtained from the 1973 National

Table 96. Proportion still living among children born by broad age group of mothers, 1973

Age group	Philippines	Metropolitan Manila	Urban	Rural
All ages	.8773	.9110	.8965	.8698
15-24	.9355	.9418	.9437	.9329
25-34	.9270	.9475	.9432	.9208
35-44	.8939	.9252	.9231	.8833
45+	.8343	.8810	.8540	.8259

Source: Estimated from data in the 1973 National Demographic Survey.

Demographic Survey. While conventional indices such as birth rates and age-specific birth rates refer to the fertility performance of cross sections of the population at particular points in time, the cohort analysis will indicate the fertility performance of individual cohorts through time and their contributions to population growth.

The age-specific marital fertility rates for birth cohorts of women aged 15 to 59 years at the time of the 1973 National Demographic Survey are shown in table 97. It will be observed from this table that, with the exception of women aged 45-49 in 1973, the fertility rate declined with increased age from ages 20-24 onward. In two cases there was also a decline in the fertility rate from ages 15-19 to 20-24. It will also be noted that the trend displayed by the age-specific marital fertility rates of women born after 1933 was generally toward an increase from the older to the younger birth cohorts. However insignificant declines were recorded for women who had not yet completed their fertility at ages 25-29, 30-34 and 40-44. Further, the outstanding historical event which could have affected Philippine fertility was the Second World War. All rates for war years (marked with an asterisk) are considerably lower than the post-war age-specific rates.

By cumulating the age-specific marital fertility rates given in table 97 up to any given age and year, it will be possible to (a) compare the fertility of various cohorts of women up to a given age in the childbearing period; and (b) evaluate the extent to which differences between cohorts in birth rates at younger ages have been balanced by differences in the opposite direction at older ages.

The age-specific fertility rates of three cohorts of women with completed fertility are shown graphically in figure 12. These women were born during the periods 1913-1917, 1918-1922 and 1923-1927. The effect of the Second World War on the fertility of the oldest cohort is demonstrated by the depression in the rate at ages 30-34. During the years following the war, women belonging to the oldest cohort experienced a minor baby boom as evidenced by rates higher than those for the younger cohorts at ages 35-49.

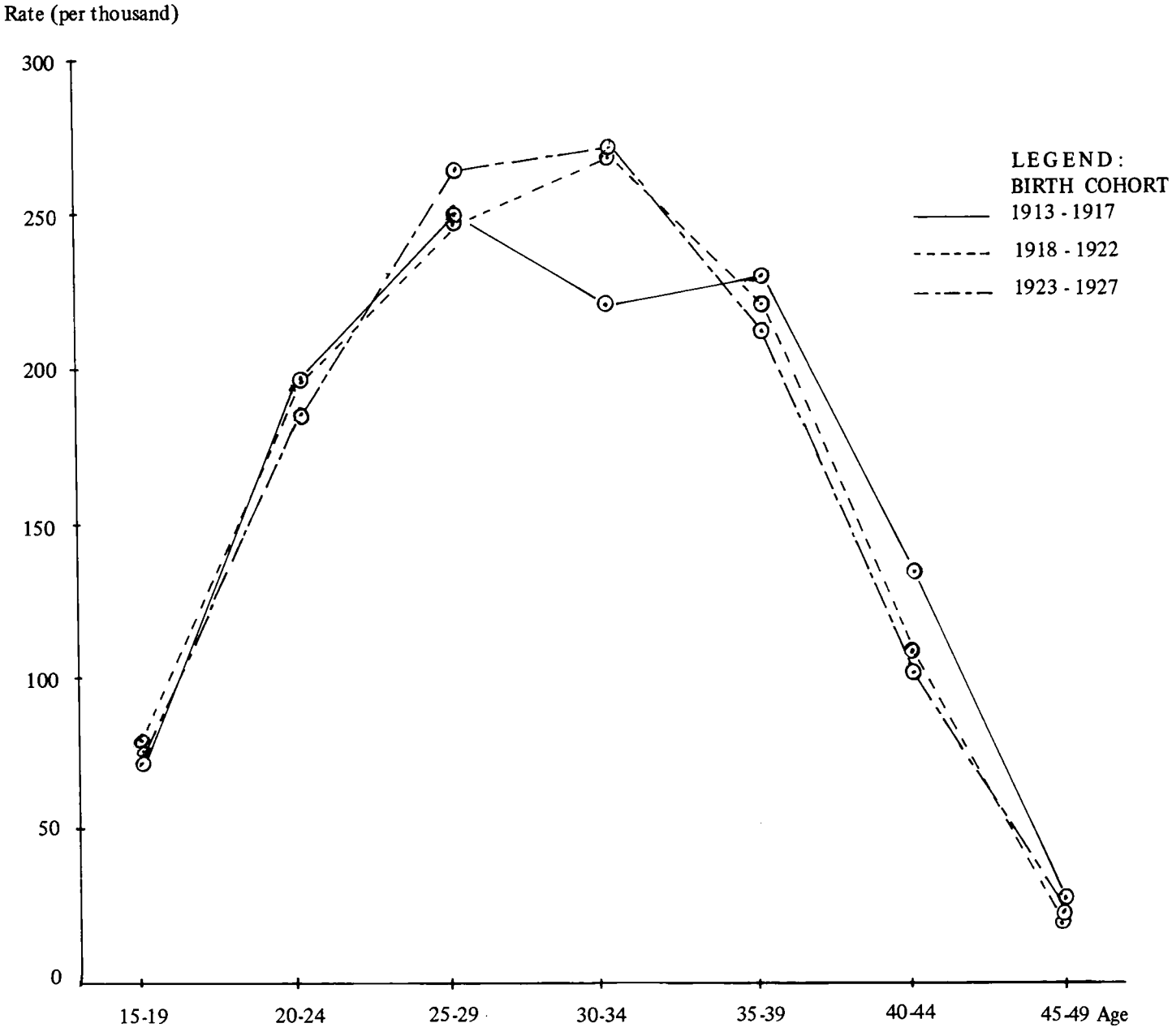
The cumulative rates of the same birth cohorts of women with completed fertility as at 1973 are shown in table 98. The total marital fertility rate per woman was 8.55 for those women who started bearing children during 1928-1932, 8.54 for the 1933-1937 cohort and 8.32 for the 1938-1942 cohort. The 2.58 per cent decline in total marital fertility rate experienced by the youngest cohort who married during 1938-1942 was due to the reduction in the cumulative fertility rates for all age groups; the greatest being recorded when the women were young, 15 to 24 years old. In contrast, the two older cohorts manifested almost equal total marital fertility rates. Substantial increases in the average number of children ever born were recorded for the cohort that married during 1933-1937 at ages 19, 34 and 39.

The cumulative marital fertility rates given in table 99 show a general upward trend in these rates for all age groups. This trend was interrupted only by women born during 1923-1927, in respect of whom declines were recorded in the rates for all age groups, their fertility having been greatly affected by the Second World War. By age 24, there had been 3.48 births per women in the 1928-1932 cohort compared to 4.36 births per woman belonging to the 1948-1952 cohort. This meant an increase of more than 25 per cent over a 20-year period, or at the rate of 1.25 per cent per annum. At age 19, married women born during 1933-1937 had on the average 1.88 children or about 20 per cent less than the number born to women belonging to the 1953-1957 birth cohort.

C. REGIONAL FERTILITY LEVELS AND TRENDS

1. Age-specific fertility rates

The age-specific fertility rates by regions for two quinquennia, 1963-1967 and 1968-1972, derived from the data of the 1973 National Demographic Survey, are given in table 100. It will be seen from the table that between 1963-1967 and 1968-1972 generally greater downward changes in these rates occurred among regions in Luzon (Regions I-VI) than in the Visayas (Regions VII and VIII) and Mindanao (Regions IX and X). All regions in Luzon experienced reduction in fertility rates in age groups 15-44 with the exception of some regions which had increases in certain age groups. Central Luzon (25-29), Ilocos-Mt. Province (35-39), and the Bicol Region (30-34). Increases in rates in the broad age group 15-44 were noted for Western Visayas, Eastern Visayas, and Northeastern Mindanao. An increase in the rates for the peak childbearing (25-29 years) and late childbearing (40-44 years) periods was



Source: National Demographic Survey, 1973.

Figure 12. Age- and cohort-specific fertility rates for women with completed fertility as at 1973

Table 97. Age-specific marital fertility rates[a] for all women of various birth cohorts, 1913-1957

Year of birth of woman	Age of mother at time of survey	Age of mother at birth-event						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
1953-1957	15-19	449						
1948-1952	20-24	430	443					
1943-1947	25-29	396	434	378				
1938-1942	30-34	394	428	388	307			
1933-1937	35-39	376	403	384	314	217		
1928-1932	40-44	316	381	369	325	237	108	
1923-1927	45-59	333	332*	332	309	233	110	24
1918-1922	50-54	360	344*	315*	307	243	117	21
1913-1917	55-59	336	365	324*	258*	254	144	29

Source: Derived from data in the 1973 National Demographic Survey

a Per thousand married women as at 1973.

* Rates for the Second World War Years.

Table 98. Cumulative marital fertility rates (cohorts) for women with completed fertility as at 1973

Rates cumulated through age	Cumulative marital fertility rates for women who started bearing children in			Percentage change	
	1928-1932	1933-1937	1938-1942	1930-1935	1935-1940
19	1.680	1.800	1.665	+ 7.14	- 7.50
24	3.505	3.520	3.275	+ 0.43	- 6.96
29	5.125	5.095	4.935	- 0.59	- 3.14
34	6.415	6.630	6.480	+ 3.35	- 2.26
39	7.685	7.845	7.645	+ 2.08	- 2.55
44	8.405	8.430	8.195	+ 0.30	- 2.79
49	8.550	8.535	8.315	- 0.18	- 2.58
Total marital fortility rate	8.550	8.535	8.315	- 0.18	- 2.58

Source: Derived from data in the 1973 National Demographic Survey.

Table 99. Cumulative marital fertility rates (cohorts) per married woman as at 1973

Year of birth of woman	Age of mother at time of survey	Fertility rates cumulated through age						
		19	24	29	34	39	44	49
1953-1957	15-19	2.25						
1948-1952	20-24	2.15	4.37					
1943-1947	25-29	1.98	4.15	6.04				
1938-1942	30-34	1.97	4.11	6.05	7.59			
1933-1937	35-39	1.88	3.90	5.82	7.39	8.47		
1928-1932	40-44	1.58	3.49	5.33	6.96	8.14	8.68	
1923-1927	45-49	1.67	3.28	4.94	6.48	7.65	8.20	8.32
1918-1922	50-54	1.80	3.52	5.10	6.63	7.85	8.43	8.54
1913-1917	55-59	1.68	3.51	5.13	6.42	7.67	8.41	8.55

Source: Derived from data in the 1973 National Demographic Survey.

Table 100. Age-specific fertility rates per thousand women, by region, 1963-1967 and 1968-1972

Region and period	Age of women						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Total Philippines							
1963-1967	74	254	313	281	216	101	20
1968-1972	56	227	302	272	199	100	22
I. Greater Manila							
1963-1967	26	184	243	218	149	47	13
1968-1972	17	156	234	199	124	77	10
II. Ilocos-Mt. Province							
1963-1967	65	247	315	300	215	140	6
1968-1972	57	204	272	217	263	81	9
III. Cagayan Valley							
1963-1967	122	350	380	276	243	56	9
1968-1972	57	240	267	270	185	135	43
IV. Central Luzon							
1963-1967	59	226	276	280	219	107	21
1968-1972	41	218	304	258	213	91	26
V. Southern Luzon							
1963-1967	81	241	306	255	179	194	28
1968-1972	63	203	280	226	156	97	21
VI. Bicol							
1963-1967	132	282	341	303	237	187	20
1968-1972	41	256	289	321	204	120	19
VII. Western Visayas							
1963-1967	46	202	336	296	194	100	0
1968-1972	58	207	287	304	226	91	9
VIII. Eastern Visayas							
1963-1967	88	243	321	285	229	91	18
1968-1972	55	248	309	330	223	84	18
IX. Northeastern Mindanao							
1963-1967	79	325	334	291	290	188	45
1968-1972	82	295	371	310	242	118	61
X. Southwestern Mindanao							
1963-1967	101	329	342	317	241	106	24
1968-1972	95	293	372	286	197	134	26

Source: Same as for table 92.

recorded in respect of Southwestern Mindanao. Almost all regions showed a rising trend in fertility rates in the oldest age group (45-49). The three exceptions were greater Manila, Southern Luzon and the Bicol region, with the rate in the latter declining by only 5 per cent.

In sum, fertility patterns evolving in all Luzon regions plus Southwestern Mindanao were characterized by decreases in fertility rates in the early as well as the late childbearing ages. These apparent declines presage a clear break from the traditionally high fertility levels in some regions. On the other hand, in the Visayas and North-eastern Mindanao fertility for women under 35 is still increasing in most age groups.

The 1968-1972 regional age-specific fertility rates expressed as a ratio of the national rates are shown in table 101. It will be seen from this table that regional differentials in age-specific fertility rates are not very pronounced except for Manila, Ilocos-Mt. Province, Northeastern Mindanao, and Southwestern Mindanao. In all ages, the rates for Manila were lower than the national rates, the difference varying from 23 per cent to 70 per cent. On the other hand, both the Mindanao regions recorded rates above the national level, with Northeastern Mindanao displaying the greatest variations. Rates lower than the national average rates were recorded for ages 20-34 and 40-49 in the Ilocos-Mt. Province.

The patterns of difference varied across age groups. All in all, the greatest differentials were observed in the youngest (15-19) and oldest (40-49) age groups.

2. Total fertility rates

In general, the variations in age-specific fertility rates among regions are consistent with the differences depicted in table 102 in regard to total fertility rates and total marital fertility rates. For the period 1968-1972, the total fertility rates (completed family size) ranged from a low of 4.08 children for greater Manila to a high of 7.40 for Northeastern Mindanao. Manila's total fertility rate was 31 per cent lower than the national level while that of Northeastern Mindanao was 25 per cent higher. Total fertility rates higher than the national average of 5.89 were recorded for Southwestern Mindanao (7.01), Eastern Visayas (6.33), and Bicol (6.25), while lower rates prevailed in Ilocos-Mt. Province (5.52) and Southern Luzon (5.23). Central Luzon, Cagayan Valley, and Western Visayas had rates almost equal to that of the nation as a whole.

An examination of the total marital fertility rates showed that Greater Manila and Northeastern Mindanao occupied the bottommost and topmost positions with 8.51 and 10.61 children respectively. All regions located in the Visayas and Mindanao recorded total marital fertility rates that were higher

Table 101. Ratio of regional to national age-specific fertility rates, 1968-1972

Region	Age group						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Total Philippines	100	100	100	100	100	100	100
Greater Manila	30	69	77	73	62	77	45
Ilocos- Mt. Province	102	90	90	80	132	81	41
Cagayan Valley	102	106	88	99	93	135	195
Central Luzon	73	96	101	95	107	91	118
Southern Luzon	113	89	93	83	78	97	95
Bicol	23	113	96	118	103	120	86
Western Visayas	104	91	95	112	114	91	41
Eastern Visayas	98	109	102	121	112	84	82
Northeastern Mindanao	146	130	123	114	122	118	277
Southwestern Mindanao	170	129	123	105	99	134	118

Source: Computed from the data in table 100.

Table 102. Period total fertility rates and total marital fertility rates (per woman), by region, 1968-1972

Region	Total fertility rate	Ratio of regional to national rate	Total marital fertility rate	Ratio of regional to national rate
Total Philippines	5.89	100	9.63	100
Greater Manila	4.08	69	8.51	88
Ilocos and Mt. Province	5.52	94	8.68	90
Cagayan Valley	5.98	102	8.74	91
Central Luzon	5.75	98	9.80	102
Southern Luzon	5.23	89	9.02	94
Bicol	6.25	106	9.52	99
Western Visayas	5.91	100	10.10	105
Eastern Visayas	6.33	107	9.85	102
Northeastern Mindanao	7.40	126	10.61	110
Southwestern Mindanao	7.01	119	10.30	107

Source: Same as for table 92.

than the national average. Rates lower than the national average obtained in all the regions of Luzon except Central Luzon. It must be noted that the Visayas is a prime out-migration area while the Mindanao regions are heavy in-migration areas.[7] Apart from Manila, relatively low fertility was found in the two remotest regions in the north, Ilocos Provinces and Cagayan Valley. Apparently, however, regional variations were not substantial: the differentials ranged from 1 per cent to 12 per cent, with only three regions deviating by 10 per cent or more.

The changes in total and marital fertility rates between 1963-1967 and 1968-1972 in the Philippines and its major regions are shown in table 103. An examination of the total fertility rates showed that except for Western Visayas, which showed an increase (0.68 per cent), the completed family size (the average total number of children born to women by age 49) in all regions declined during the period 1963-1967 to 1968-1972. The largest declines were experienced by Cagayan Valley (17 per cent) and Ilocos and Mt. Province (14 per cent). Very slight decreases were recorded for Central Luzon (3 per cent), Southwestern Mindanao (4 per cent), and Eastern Visayas (less than 1 per cent).

The total marital fertility rates give a somewhat different picture of regional changes in fertility between the two quinquennia; 1963-1972. There was an increase in these rates in all the Visayan and Mindanao regions, while a decline was noted in all Luzon regions except Central Luzon. The increases somewhat offset the decreases resulting in a slight increase in the over-all Philippine total marital fertility rate from 9.86 to 10.30. Decreases in marital fertility were largest in Cagayan Valley. It is interesting to note that during the 1950s Cagayan Valley was a heavy in-migration area; large in-migration streams from Central Luzon and from the Ilocos region had filled the open vast tracts of lands in the Cagayan Valley. Flieger observed that this heavy in-migration was related to the high fertility level in the region.[8] However, during the 1960s Cagayan Valley displayed the lowest net in-migration rate of all regions in the country. It is probable that this slackening in the influx of migrants has also affected recent and current levels of fertility in the area.

The Ilocos region has had traditionally low fertility levels. During the period 1963-1967, marital fertility in the region was 5 per cent higher than that of greater Manila, the lowest fertility region. By 1968-1972, the difference had narrowed down to only 2 per cent. The main reasons for the low fertility level in the Ilocos region are the patterns of

7 Ernesto M. Pernia, *Patterns of Philippines Internal Migration*, Research Note No. 36 (Manila, Population Institute, University of the Philippines, 1975).

8 Wilhelm Flieger, "Fertility levels and fertility trends" in Wilheim Flieger and Peter C. Smith, eds., *A Demographic Path to Modernity* (Manila, Population Institute, University of the Philippines, 1975).

Table 103. Changes in total fertility rates and total marital fertility rates, by region, 1963-1967 to 1968-1972

Region	Total fertility rate		Percentage change	Total maritial fertility rate		Percentage change
	1963-1967	1968-1972		1963-1967	1968-1972	
Total Philippines	6.50	5.83	- 6.51	9.67	9.63	- 0.41
Greater Manila	4.40	4.08	- 7.27	8.92	8.51	- 4.60
Ilocos and Mt. Province	6.44	5.52	-14.29	9.41	8.68	- 7.76
Cagayan Valley	7.18	5.98	-16.71	10.23	8.74	-14.51
Central Luzon	5.94	5.75	- 3.20	9.64	9.80	+ 1.66
Southern Luzon	5.92	5.23	-11.66	9.43	9.02	- 4.35
Bicol Region	7.01	6.25	-10.84	9.93	9.52	- 4.13
Western Visayas	5.87	5.91	+ 0.68	9.49	10.10	+ 6.43
Eastern Visayas	6.38	6.33	- 0.78	9.59	9.85	+ 2.71
Northeastern Mindanao	7.76	7.40	- 4.64	10.46	10.61	+ 1.43
Southwestern Mindanao	7.30	7.01	- 3.97	9.86	10.30	+ 4.46

Source: Same as for table 92.

population movement and nuptiality since the turn of the twentieth century.[9] The very heavy outmigration dominated by males resulted in marked declines in the sex ratio and by 1970, the region still had the lowest sex ratio. The natural consequences were delayed age at marriage among females and increases in the proportion remaining single. On the basis of an index of marriage pattern (I_m), Smith discovered that the I_m for the Ilocos regions increased only during the period 1939-1960 but decreased very rapidly during the 1960s, and by 1970 was below the national average as had been the case prior to 1940.[10]

The Mindanao regions had consistently higher indexes of marriage pattern than the national average. Concepcion[11] found that the mean ages at marriage in Northeastern and Southwestern Mindanao were among the lowest in the Philippines, 22.3 years and 22.5 years, respectively. In Southwestern Mindanao, a little over two fifths (42 per cent) of females in their early twenties were still unmarried by 1973. Three per cent of all females aged 45-54 years were spinsters. While a little over one half (52 per cent) remained single in their early twenties, almost all other Northeastern Mindanao women were married. Only 1 per cent of women aged 45-54 years in this region remained single as at 1973.

In general, regional nuptiality patterns corresponded closely with regional fertility levels; where marriage was early and/or nearly universal, fertility was high, and where marriage was late and/or less than universal, fertility was low.

An attempts was made by Fileger to determine the influence of socio-economic status and health conditions on the level of regional fertility by using the 1968 National Demographic Survey data.[12] Quantifying socio-economic status in terms of income, he did not find any systematic pattern of relationship between the level of fertility and socio-economic level. The regional data did not "confirm the traditional hypothesis linking low income to high fertility".

Using the level of infant mortality as an indicator of the health conditions in the regions, Flieger observed a slight direct relationship between regional fertility and health condition.[13] Regions with low fertility had low incidences of infant deaths while those with high fertility generally had high infant mortality. This positive relationship could be explained by the "shortened lactation period of mothers who lost infants and who, consequently, were exposed to higher risks of pregnancy rather than in national considerations to make up for incurred losses".

9 See chapter VII.

10 Peter C. Smith, *Evidence of Continuing Nuptiality Change: New National Data on Marital Status from the 1970 Census and the 1973 NDS*, Research Note No. 11 (Manila, University of the Philippines Population Institute, 1974).

11 Conception, *op. cit.*

12 Flieger, *op. cit.*,

13 *Ibid.*

D. FERTILITY DIFFERENTIALS

1. Introduction

The analysis of fertility differences by associated factors has become increasingly important in view of efforts to reduce the high rate of population growth in the country. The identification of variations in the reproductive behaviour among subgroups of the population serves to establish target populations for the current family planning programme. The study of fertility differences is also useful in assessing the mechanisms underlying the differentials and the prospects for changes in fertility levels.

The main source of data for the investigation of the relationship between reproductive behaviour and the demographic, social, and economic factors are the 1968 and 1973 National Demographic Surveys. A trend analysis of the fertility differentials was made possible by utilizing the results of a study by Concepcion[14] on the basis of the information collected at the 1956 and 1958 rounds of the Philippine Statistical Survey of Households (PSSH). The average number of children ever born (CEB) is used as a measure of fertility.

Fertility differences of married women in relation to education, occupation, work status, type of household, income, residence, and age at marriage were analysed.

2. Educational differentials

The average number of children per women in the age group 45-64 years in 1956, 1968 and 1973 is given in table 104. The data given support the inverse relationship between fertility and education. The pattern of differences is one of decreasing fertility with increasing education[15] (table 105). For example, in 1956 women who reported having received some college education had about a third fewer children (4.30) than persons with no schooling (7.15) or those with primary school education alone (7.56). The same observation of decreasing fertility with increasing education held true for women of childbearing ages in 1956, 1968 and 1973 (table 105).

It is also evident from table 104 that while the total number of children for women with high school education increased gradually from 5.60 in 1956 to 6.00 in 1973, women who completed 5-7 grades of schooling showed a decline from 6.80 to 6.07, thus narrowing the differentials between the two categories of women. A consistent finding is the generally higher fertility among women with a modicum of elementary schooling than women with no schooling. According to Smith, a later age at marriage provides a partial explanation. The results of his study showed that in 1973 relatively small proportions of women in the "no-schooling" category married under age 20.[16]

In general, the fertility ratios within each age group and by any educational status declined as one moved from the rural areas to Manila. For instance, in 1973, Metropolitan Manila women aged 45-64 with 5-7 years of schooling had 5.42 children, on the average, compared with "other urban", rural women of the same ages and educational status who reported 5.90 and 6.40 children per woman, respectively.

3. Occupational differentials

Occupation is one of the most frequently used indexes of socio-economic status in the analysis of differential fertility. Relatively high fertility has been associated with farming and other low-ranking occupations while lower rates of fertility have been associated with the professional and white collar occupations.

Data from the 1958 Philippine Statistical Survey of Households and the 1968 and 1973 National Demographic Surveys given in table 106 generally show the inverse relationship which existed between fertility and wife's occupational categories, although there were important exceptions. Fertility ratios calculated from the 1958 data showed a decline from one occupational level to the next higher level. In the case of the 1968 data, blue collar workers had a higher fertility rate than the farmers, while in 1973, the average number of children born to women who were proprietors and saleswomen was higher than for women in other occupational categories, except among women aged 55-64 years in other urban areas.

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14 Mercedes B. Concepcion, "Fertility differences among married women in the Philippines", Ph.D. dissertation, University of Chicago, 1963.

15 On the basis of the analysis of the 1960 census data, it was concluded: "Excluding the unschooled group, fertility starts at a high level for women with little education and declines over the entire educational range at about the same rate". See Elvira M. Pascul, "Differential fertility in the Philippines", *Sociological Dimensions of Population Growth in the Philippines* (Manila, Population Institute, University of the Philippines, 1971), p. 219.

16 Peter C. Smith, *Educational Differentials in Over-all and Marital Fertility, 1968-1973,* Research Note No. 46 (Manila, Population Institute, Uniyersity of the Philippines, 1975).

Table 104. Fertility ratios of women aged 45-64 years by group, level of education and residence, 1956, 1968 and 1973

Level of schooling	Residence											
	Philippines			Metropolitan Manila			Other urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
						1956						
All levels	7.15	7.22	7.00	6.23	6.06	6.60	6.54	6.66	6.34	7.51	7.60	7.35
College 1-4 years and more	4.30	4.13	5.70	3.56	2.17	6.33	4.24	4.25	4.00	5.25	5.25	-
High school 1-4 years	5.60	5.60	5.58	5.26	5.09	7.00	5.54	5.70	4.86	6.15	6.15	-
Grades 5-7	6.80	6.79	6.83	6.72	6.72	6.69	6.43	6.50	6.24	7.16	7.07	7.40
Grades 1-4	7.56	7.68	7.27	6.81	7.24	6.05	6.93	7.17	6.82	7.92	7.95	7.86
No schooling	7.15	7.37	7.04	6.38	5.61	7.00	6.63	6.72	6.54	7.44	7.58	7.25
						1968						
All levels	6.03	6.09	5.92	5.88	5.91	5.80	6.21	6.30	6.07	5.98	6.04	5.89
College 1-4 years and more	4.60	4.78	4.24	5.00	5.00	5.00	4.52	4.68	4.26	3.75	4.00	3.60
High school 1-4 years	5.63	5.76	5.38	5.49	5.39	5.75	5.93	6.23	5.28	5.26	5.29	5.23
Grades 5-7	6.32	6.40	6.13	6.08	6.15	5.92	6.22	6.28	6.12	6.45	6.53	6.22
Grades 1-4	6.31	6.46	6.03	6.69	7.21	5.97	6.53	6.53	6.53	6.22	6.40	5.87
No schooling	5.77	5.59	5.99	6.03	6.29	5.86	6.51	6.69	6.29	5.64	5.39	5.95
						1973						
All levels	6.17	6.23	6.06	5.66	5.74	5.52	5.94	5.99	5.86	6.34	6.39	6.26
College 1-4 years and more	4.56	4.65	4.32	4.37	4.59	3.40	4.44	4.45	4.43	5.04	5.00	5.43
High school 1-4 years	6.00	6.22	5.50	5.37	5.46	5.14	6.04	6.09	5.96	6.51	6.92	3.97
Grades 5-7	6.07	6.27	5.74	5.42	5.80	4.91	5.90	5.80	5.90	6.40	6.67	5.93
Grades 1-4	6.61	6.69	6.45	6.65	6.81	6.49	6.35	6.61	5.98	6.68	6.71	6.61
No schooling	5.95	5.75	6.17	6.54	6.35	6.72	6.17	6.15	6.18	5.84	5.64	6.14

Source: Eliseo A. de Guzman, *Trends in Differential Fertility in the Philippines*, Research Note No. 81 (Manila, Population Institute, University of the Philippines, August 1975).

4. Work status differentials

The fertility ratios of women aged 45-64 years by labour force status and residence are given in table 107. It will be noted that irrespective of the residence, working wives had a smaller average number of children than their non-working counterparts, except in 1973 when non-working mothers in other urban areas had slightly fewer children than working mothers. The differential between working and non-working mother was more marked in Metropolitan Manila than in other areas. In 1973, the completed fertility of a non-working mother in Metropolitan Manila was about 14 per cent more than her working counterpart, the corresponding proportion in rural areas being only 5.2 per cent.

As in the case of education and occupation, the average number of children ever born declined from rural, to other urban, to Manila, both for working and non-working women. However, in 1973 working women in the childbearing ages exhibited a lower rate of decline in fertility for any shift in residence than non-working women in the same ages.

5. Income group differentials

The fertility ratios of women aged 45-64 years by income level of family and residence are shown

Table 105. Average number of children born per mother in specific age groups by level of education, 1956, 1968 and 1973

Level of education	Average number of children per mother aged					
	15-19	20-24	25-29	30-34	35-39	40-44
			1956			
All levels	0.79	1.89	3.41	4.73	5.98	6.87
High school and over	0.73	1.42	2.29	3.73	4.76	5.58
Grades 5-7	0.74	1.74	3.09	4.63	5.69	6.27
Below grade 5	0.83	2.10	3.89	4.98	6.24	7.19
			1968			
All levels	1.09	1.83	3.17	4.58	5.68	6.26
College	0.54	1.31	2.14	3.41	4.13	4.27
High school	0.60	1.64	3.14	4.45	5.68	5.93
Grades 5-7	0.97	1.88	3.22	4.75	5.75	6.77
Grades 1-4	1.69	2.08	3.45	4.82	6.29	6.49
No schooling	1.30	1.62	3.00	4.48	5.04	6.11
			1973			
All levels	0.85	1.85	3.14	4.48	5.69	6.54
College	0.45	1.09	1.93	2.91	3.55	4.57
High school	0.69	1.52	2.99	4.26	4.82	6.09
Grades 5-7	0.71	1.99	3.32	4.68	6.08	6.75
Grades 1-4	1.40	2.36	3.55	5.02	6.41	7.04
No schooling	0.30	2.19	4.35	4.73	5.92	6.85

Source: Same as for table 104.

in table 108. In general, fertility was negatively associated with income level. Women aged 45 and over who reported family incomes of ₱ 5,000 or more had had in general the fewest children. In the other income groups, the pattern of differential was not consistent. For the country as a whole as well as other areas the completed fertility was higher for women in the ₱ 1,000-2,999 income group than for the lower income group in 1956 and 1968. In 1973, mothers from families with annual incomes ranging from ₱ 3,000 to ₱ 4,999 in Metropolitan Manila and in rural areas had higher fertility ratios than mothers from families in the next lower income brackets.

6. Age-at-marriage differentials

Age at marriage is one of the important determinants of fertility levels. The fertility ratios for women aged 45-64 years by their age at marriage and residence for the years 1956, 1968 and 1972 are shown in table 109. It will be noted that the mean number of children per woman decreased systematically with increasing age at marriage. In all cases, women who married before their fifteenth birthday produced the greatest number of children. For example, the data for 1956 revealed that for women aged 45-64, those who married at ages below 15 years had over three times the number of children as those who married at ages 30-34 years. In 1968 and 1973 this differential had narrowed down but was still substantial.

It will also be noted that for women aged 45-54 in 1973, deferring marriage by 10 years (15-19 to 25-29) resulted in a difference of almost three children. A 15-year postponement (15-19 to 30-34) meant a total reduction of 4.06 in the average number of children.[17]

17 On the basis of the analysis of the data from the 1960 Census and the 1968 National Demographic Survey, it was observed that "wives of completed fertility who married before age 18 have 11 per cent more births than those who married at ages 18 and 19; about 38 per cent more births than the 25-29 marriage group, and 55 per cent more than those who married at age 30 or later. The depressing effect that later marriage has on fertility is also visible when various characteristics are considered separately". See Elvira M. Pascul, *op. cit.*, p. 217.

Table 106. Fertility ratios of women aged 45-64 years by age group, own occupation and residence, 1958, 1968 and 1973

Occupation	Residence											
	Philippines			Metropolitan Manila			Other urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
						1958						
All occupations	7.20	7.25	7.10	6.06	6.24	5.56	6.75	7.04	6.07	7.52	7.47	7.63
White collar	4.15	4.43	3.17	5.11	5.25	4.00	3.72	4.11	3.00	3.50	3.50	-
Proprietors and saleswomen	7.08	7.12	7.00	6.01	6.13	5.69	6.78	7.06	6.20	7.42	7.33	7.57
Blue collar	7.48	7.48	7.36	6.53	7.21	-	7.47	4.68	7.67	7.52	7.59	7.38
Farmers	7.62	7.65	7.50	12.0	12.0	-	6.52	7.14	4.93	7.77	7.70	8.03
						1968						
All Occupations	6.06	6.21	5.78	5.46	5.56	5.14	6.13	6.35	5.67	6.10	6.24	5.85
White collar	5.19	5.29	4 94	6.24	5.91	9.00	4.79	5.06	4.25	4.44	4.40	4.50
Proprietors and saleswomen	6.01	6.32	5.33	4.53	4.89	3.90	5.96	6.35	5.00	6.34	6.56	5.87
Blue collar	6.65	6.64	6.66	5.88	5.88	5.92	6.54	6.57	6.47	6.87	6.91	6.83
Farmers	5.94	6.09	5.66	-	-	-	6.86	6.91	6.78	5.87	6.03	5.57
						1973						
All occupations	5.79	5.88	5.60	5.06	5.12	4.86	5.59	5.72	5.36	5.98	6.06	5.81
White collar	4.66	4.44	5.51	4.20	4.37	2.89	4.62	4.02	6.03	4.98	4.97	5.04
Proprietors and saleswomen	6.03	6.44	5.40	5.70	5.95	5.27	5.19	6.11	3.72	6.82	6.90	6.70
Blue collar	5.81	6.00	5.39	4.50	4.56	4.16	5.99	5.96	6.05	5.93	6.29	5.20
Farmers	5.94	5.94	5.94	-	-	-	7.28	7.19	7.38	5.78	5.84	5.61

Source: Same as for table 104.

Table 107. Fertility ratios of women aged 45-64 years by age group, labour force status and residence, 1958, 1968 and 1973

Labour force status	Residence											
	Philippines			Metropolitan Manila			Other urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
						1958						
All statuses	7.20	7.25	7.10	6.06	6.24	5.56	6.75	7.04	6.07	7.52	7.47	7.63
In the labour force	7.20	7.29	6.92	5.54	5.76	4.50	6.47	7.11	5.01	7.56	7.45	7.89
Not in the labour force	7.21	7.21	7.23	6.35	6.32	6.42	6.98	6.99	6.94	7.48	7.50	7.44
						1968						
All statuses	6.01	6.07	5.93	5.88	5.92	5.80	6.21	6.29	6.07	5.97	6.01	5.89
In the labour force	5.96	6.10	5.70	5.37	5.36	5.39	6.18	6.31	5.92	5.95	6.12	5.65
Not in the labour force	6.07	6.08	6.05	6.08	6.17	5.93	6.21	6.27	6.14	6.01	5.99	6.03
						1973						
All statuses	5.87	5.94	5.74	5.23	5.24	5.20	5.57	5.74	5.33	6.09	6.12	6.02
In the labour force	5.84	5.88	5.75	5.00	5.02	4.94	5.61	5.78	5.35	6.04	6.04	6.06
Not in the labour force	5.94	6.14	5.31	5.69	5.37	5.53	5.26	5.65	4.70	6.21	6.36	6.00

Source: Same as for table 104.

Table 108. Fertility ratios of women aged 45-64 years by age group, level of family income and residence, 1956, 1968 and 1973

Income level	Residence											
	Philippines			Metropolitan Manila			Other urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
						1956						
All levels of income	6.69	6.77	6.55	6.14	5.98	6.53	6.37	6.47	6.19	7.36	7.64	6.92
₱5,000 and over	5.97	6.10	5.71	5.58	5.28	6.27	6.35	6.76	5.56	6.14	7.00	5.00
3,000 - 4,999	6.88	6.80	7.05	6.13	5.94	6.50	6.64	6.48	6.94	8.32	8.47	8.00
1,000 - 2,999	6.89	7.24	6.10	6.77	7.03	5.89	6.27	6.80	5.30	7.57	7.74	7.15
500 - 999	6.81	6.57	7.27	7.27	7.58	6.90	6.12	6.30	5.68	7.69	6.69	9.30
Less than ₱500	6.51	6.62	6.35	5.44	4.90	7.05	6.41	6.17	6.73	6.87	7.72	6.00
						1968						
All levels of income	6.04	6.09	5.96	5.86	5.94	5.71	6.29	6.29	6.29	5.99	6.05	5.88
₱5,000 and over	6.51	6.58	6.39	6.04	5.93	6.33	6.50	6.52	6.45	6.66	6.84	6.37
3,000 - 4,999	6.45	6.54	6.29	6.10	6.48	6.32	6.38	6.41	6.33	6.50	6.58	6.35
1,000 - 2,999	5.74	5.90	5.48	6.05	5.67	6.63	6.21	6.00	6.46	5.64	5.89	5.22
Less than ₱1,000	5.32	4.98	5.72	4.63	4.88	4.39	5.49	5.32	5.66	5.33	4.94	5.81
						1973						
All levels of income	6.22	6.25	6.15	5.80	5.87	5.68	5.97	6.00	5.94	6.38	6.40	6.33
₱5,000 and over	3.41	3.37	3.59	4.56	4.26	5.42	1.40	1.23	2.24	5.07	5.84	1.00
3,000 - 4,999	5.32	5.22	5.60	5.57	5.66	5.44	4.36	3.89	5.14	6.31	6.14	8.31
1,000 - 2,999	5.93	6.36	5.14	4.92	4.78	5.14	6.09	6.79	4.92	6.06	6.40	5.34
Less than ₱1,000	6.34	6.37	6.29	6.03	6.17	5.79	6.27	6.30	6.22	6.41	6.42	6.40

Source: Same as for table 104.

Table 109. Fertility ratios for women aged 45-64 years by age group, age at marriage and residence, 1956, 1968 and 1973

Age at marriage	Residence								
	Philippines			Urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
					1956				
All groups	7.27	7.30	7.22	6.59	6.57	6.63	7.62	7.68	7.52
Under 15	9.10	9.65	8.09	8.56	8.96	7.90	9.25	9.85	8.14
15-19	8.26	8.30	8.18	7.68	7.71	7.62	8.53	8.59	8.42
20-24	7.21	7.20	7.23	6.74	6.77	6.69	7.45	7.41	7.53
25-29	5.68	5.24	5.68	5.96	5.16	7.54	5.43	5.32	5.64
30-34	2.68	2.65	2.74	2.69	2.46	3.08	2.68	2.79	2.47
					1968				
All groups	6.20	6.20	6.21	6.24	6.27	6.19	6.18	6.16	6.22
Under 15	7.60	7.90	7.24	7.05	7.54	6.41	7.80	8.03	7.52
15-19	7.21	7.09	7.43	7.22	7.28	7.37	7.16	7.00	7.46
20-24	6.03	6.05	6.01	6.23	6.31	6.04	5.93	5.88	6.00
25-29	4.48	4.68	4.09	4.84	4.85	4.81	4.28	4.59	3.67
30-34	3.74	3.83	3.60	3.20	3.17	3.23	4.04	4.18	3.81
					1973				
All groups	6.33	6.36	6.27	5.96	6.02	5.87	6.49	6.50	6.48
Under 15	7.52	7.84	6.99	7.23	7.80	6.67	7.60	7.85	7.12
15-19	7.33	7.25	7.48	7.06	6.86	7.39	7.45	7.41	7.53
20-24	6.23	6.24	6.20	6.24	6.44	5.89	6.22	6.15	6.36
25-29	4.56	4.60	4.47	3.77	3.76	3.78	4.97	4.99	3.93
30-34	3.14	3.19	3.06	2.59	2.22	2.90	3.41	3.55	3.18

Source: Same as for table 104.

Table 110. Fertility ratios of married women aged 45-64 years by age group type of household and residence, 1956, 1968 and 1973

Type of household	Residence											
	Philippines			Metropolitan Manila			Other urban			Rural		
	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64	Total	45-54	55-64
						1956						
Total	7.15	7.22	7.00	6.23	6.05	6.60	6.54	6.66	6.34	7.51	7.60	7.35
Farm household	7.69	7.69	7.68	7.50	8.00	6.33	7.43	7.41	7.46	7.74	7.74	7.73
Non-farm household	6.69	6.67	6.65	6.14	5.98	6.53	6.37	6.47	6.19	7.36	7.64	6.92
						1968						
Total	6.01	6.07	5.93	5.88	5.92	5.80	6.21	6.29	6.07	5.97	6.01	5.89
Farm household	5.98	6.13	5.72	7.00	9.00	5.00	6.30	6.39	6.19	5.95	6.10	5.66
Non-farm household	6.05	5.99	6.13	5.87	5.89	5.81	6.18	6.26	6.03	6.01	5.79	6.32
						1973						
Total	6.18	6.23	6.07	5.67	5.76	5.52	5.94	5.99	5.88	6.35	6.39	6.26
Farm household	6.30	6.34	6.24	5.85	5.38	6.55	5.85	5.92	5.72	6.39	6.41	6.35
Non-farm household	5.86	5.94	5.74	5.67	5.77	5.52	6.01	6.00	6.03	5.80	6.16	5.26

Source: Same as for table 104.

Table 111. Fertility ratios of women aged 15-64 years by age group and residence, 1968 and 1973

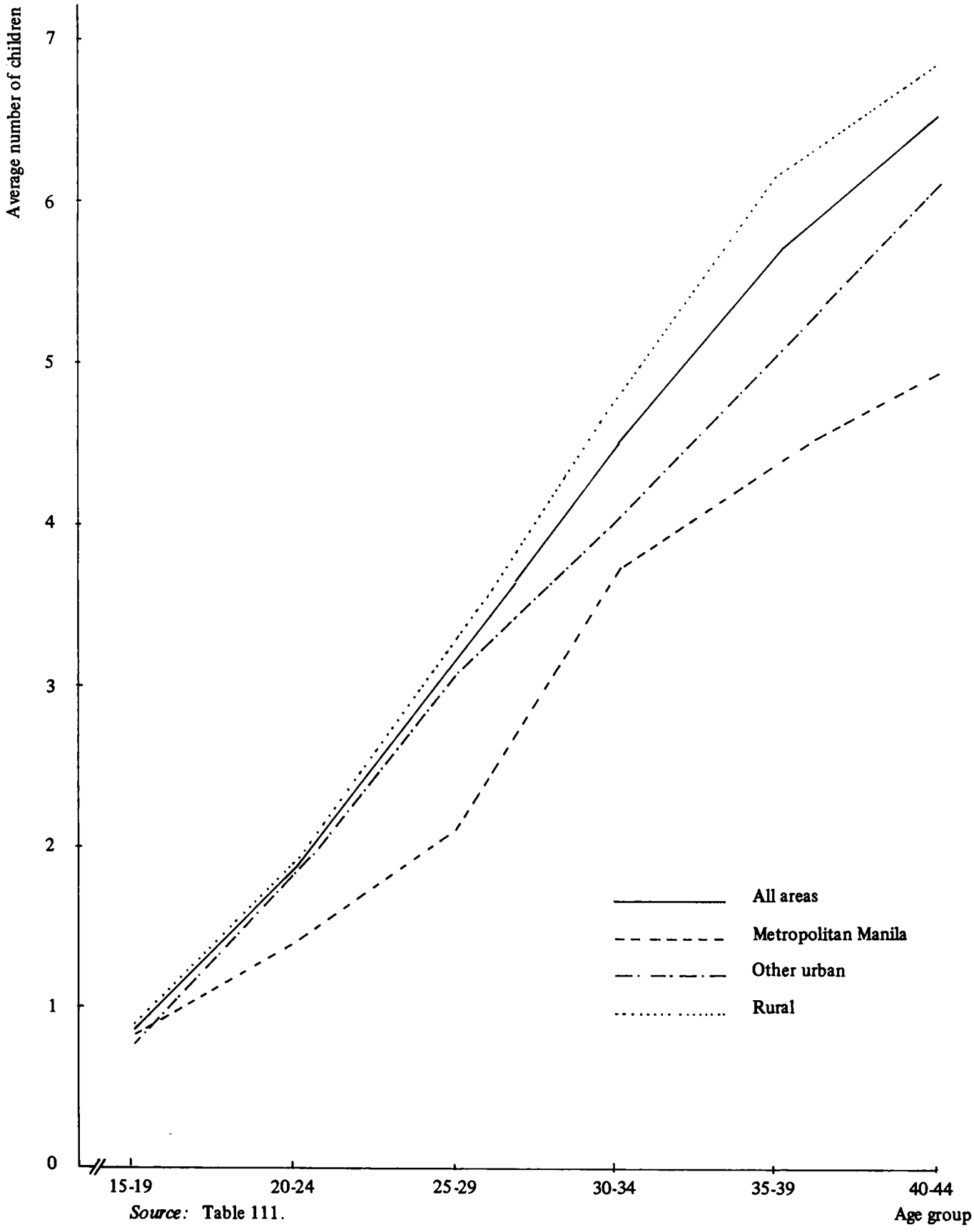
Age group	1968				1973			
	All areas	Metropolitan Manila	Other urban	Rural	All areas	Metropolitan Manila	Other urban	Rural
15-19	1.09	0.56	0.70	1.29	0.85	0.83	0.76	0.88
20-24	1.83	1.62	1.79	1.87	1.85	1.40	1.79	1.89
25-29	3.17	2.89	2.91	3.27	3.14	2.10	3.05	3.25
30-34	4.58	3.42	4.36	4.75	4.48	3.70	4.02	4.79
35-39	5.68	5.37	5.14	5.94	5.69	4.38	5.05	6.17
40-44	6.26	5.71	6.09	6.37	6.54	4.94	6.10	6.86
45-54	6.09	5.91	6.30	6.04	6.23	5.74	5.99	6.39
55-64	5.92	5.80	6.07	5.89	6.06	5.52	5.86	6.26

Source: Same as for table 104.

7. Household type differentials

The fertility ratios of married women aged 45-64 years by farm and non-farm households for 1956, 1960 and 1973 are shown in table 110. In almost all cases, the women in farm households had more children than women belonging to the non-farm households. However in 1968, the fertility of women aged 55-64 years was higher in the non-farm household.

The effect of nuclear and non-nuclear types of households on fertility in the Philippines has not been well documented. It is usually argued that the



Source: Table 111.

Figure 13. Average number of children born per women, by age group and area of residence, 1973

non-nuclear or extended family system is conducive to high fertility. However, analysis of the data from the 1968 National Demographic Survey does not seem to support this contention.

> "Regardless of the type of residence and age of woman, the number of children ever born is higher for nuclear than for non-nuclear households. The reason for this difference is not yet clear. A further understanding of the household-type differentials will most probably require a detailed examination of amount and degree of wives' and couples' involvement in kin networks and of fertility pressures exerted on couples by kin or friendship groups living in close physical proximity".[18]

8. Urban-rural differentials

It has been noted in the earlier sections that whatever the characteristics considered, the difference between urban and rural fertility in the Philippines was generally substantial, being higher in the rural areas. It will also be seen from table 111 that in 1968 and 1973, fertility was higher among rural women than urban in all ages except in the age group 45-54 in 1968 where fertility of women in other urban areas was slightly more than rural women of the same age group. It will also be noted that the difference between rural and urban fertility for the age group 35-44 years is substantial.

The higher fertility among rural women (see figure 13) could partly be explained by the fact that rural women tend to marry at an earlier age than urban women. The Philippines data indicate that in 1968, nearly 45 per cent of the rural married women had married before age 20 while among the urban married women only 39 per cent had married before they were 20 years old. Thus, difference in age at marriage could explain part of the observed residence differential in fertility.

18 Ibid., p. 225.

Chapter VII

TRENDS AND DIFFERENTIALS IN NUPTIALITY[1]

A. INTRODUCTION

The principal demographic responses to economic and social change in twentieth century Philippines have been in two areas: (a) redistribution of the population (the patterns of which are discussed in chapters I and III); and (b) shifting patterns of marriage. This chapter offers a description and analysis of important trends and differentials in nuptiality. Social scientists have warned against attempts to treat demographic processes in isolation[2]; in general these processes are reflexive and multiphasic elements of a social system in interaction and are best understood in these terms. In consonance with this view, it is shown in this chapter that nuptiality change in the Philippines has been areally diverse and temporally vairable, but always in ways linked to the entire matrix of social development.

1. The sources of nuptiality change

It is helpful to classify social forces which bear upon marriage patterns in the Philippines into two types. One set grows out of the country's underlying areal diversity in environment and resources, and from social and cultural responses to this diversity, including migration. The Philippines is characterized by a considerable spatial variation, in part because of ethno-linguistic differences across sub-areas, and in part because the island environment provides an especially wide range of ecosystems.[3] One result is areal variation in the timing and prevalence of marriage.

Cross-cutting these geographic differentials are emerging forms of differentiation across social categories and strata, responses to the confluence of processes termed "modernization". The most important of these social processes in the Philippines, at least from the standpoint of nuptiality, seem to be (a) urbanization, and the expanded role of females in rural-to-urban transfers; (b) the rise of mass education, and the increased participation of females therein; and (c) the growth of the non-agricultural labour force, in which females have also had an increasingly important role. Thus, school attendance rates have been rising throughout the strata of society among men and women alike, but traditional preferences for educating sons over daughters have diminished sharply; the growing urban sector has attracted both men and women, but rural-to-urban flows increasingly have come to be dominated by females seeking jobs and education; finally, the modern labour force has drawn from all segments of society, but women have come to increase their share of urban and high-level jobs. In this chapter it is argued that the three process just outlined have been leading processes of change, and that marriage patterns have been modified significantly in rcent decades largely because females have had an expanding role in each of these leading processes.

The patterns reported below are considered on the basis of two kinds of information regarding marriage patterns: (a) marital status distributions by age for males and females obtained in the censuses of 1903, 1939, 1948, 1960 and 1970. Disaggregation to regions and provinces is provided in these data for every year except 1948, and consideration of certain local-area (municipal) patterns is possible for 1939 and 1970; and (b) the National Demographic Survey of 1973. In addition to women's ages at first marriage, this survey provides extensive socio-economic and fertility information describing the economic backgrounds and social origins, current attainments and economic circumstances of Filipino couples.

The chapter is organized in the following manner. A brief introductory section describes the national marriage pattern changes which have occurred. The discussion then turns to regional, provincial and local trends and differentials, emphasizing the range of forces at work across these geographic areas. This is followed by a selective examination of the most important social and economic differentials in marriage behaviour. In a final section an attempt is made to provide a perspective on the future of Philippine nuptiality, including some projections and a speculative outline of the emerging marriage régime.

1 Most of the research related to this chapter was carried out while the author was on the staff of the Population Institute University of the Philippines. Acknowledgement is due to Ms. Enna Pangan and Ms. Nellie Mangubat of the Institute staff who were responsible, respectively, for statistical support and data processing.

2 See, for example, Kingsley Davis, "The theory of change and response in modern demographic history", *Population Index*, vol. 29, pp. 345-366.

3 Frederick Wernstedt and Joseph E. Spencer, *The Philippine Island World: A Physical, Cultural and Regional Geography* (Berkely, University of California Press, 1967).

2. Marriage patterns before the twentieth century

Although the primary concern in this chapter is with the forces operating upon marriage behaviour after 1903, it is important to point out that momentous changes had occurred long before, in the time between the Spanish arrival in the sixteenth century and the beginning of the twentieth century. The scattered evidence available, none of it quantitative, indicates the following pre-Spanish customs with respect to marriage: (a) pre-arrangement by parents, "...even when they are only children..."[4]; (b) a dowry, paid to the bride's family[5]; (c) bride service and divorce as a response to childlessness or infidelity[6]; (d) little emphasis on virginity[7]. Polygamy was a recent arrival from the Moslem cultures in the south.[8]

These customs clashed sharply with the Spanish missionary's moral framework for marriage: one wife, permanent union, no sexual activity before union, no extramarital activity afterwards. Phelan has outlined the experience of the early missionaries as they laboured to transform these customs into a more acceptable pattern.[9]

No firm evidence is available in regard to the mean age at marriage of females during the pre-Spanish and early colonial periods, though there is reason to presume that sexual activity came quite young for a large proportion of each female generation. The major economic and social changes of the nineteenth century may well have resulted in delayed marriage during the last hundred years of Spanish rule. Alternatively, early marriage may have prevailed on into the turbulent period after 1872.[10] Whatever the precise timing of the transition, it is clear that by the end of the nineteenth century the age at marriage of Filipino females had risen dramatically from its earlier levels. This is manifest in the turn-of-the-century patterns seen in table 112. This table, based upon marital status information from the 1903 Census, presents indices of male and female nuptiality for broad racial-cultural categories in the city of Manila and the nation as a whole. A considerable shift in the age pattern of female entrance to marriage during the Spanish era is readily apparent. By 1903, the mean age[11] was around 20, a relatively advanced age for a traditional, agrarian society.[12]

Indigenous Malays, who of course constituted the bulk of the colonial population, had a mean age at marriage nation-wide of just over 20 for females and almost 25 for males; in Manila, it was a year later for males, a year earlier for females. This is a reversal of the common urban-rural differential and no doubt reflects the relative availability of single males in the metropolis (compare the sex ratios given in table 112).

The mestizo or mixed group[13] married somewhat later, with urban mestizas marrying 1.5 years earlier than their rural counterparts (but later than the Malay population nevertheless).

The Chinese at this time were an interesting group. They came from China largely as single males,

4 Placencia, 1589, in Emma H. Blair and James A. Robertson, *The Philippine Islands, 1493-1803* (Cleveland, The Arthur H. Clark Company, 1903), p. 184.

5 Pedro Chirino, "The Philippines in 1600", *Historical Conservation Society Series*, vol. XV (Manila, Historical Conservation Society, 1969), p. 320; and Antonio de Morga, *1609 Historical Events of the Philippine Islands* (Manila, Jose Rizal National Centennial Commission, 1962), p. 282.

6 John Leddy Phelan, *The Hispanization of the Philippines: Spanish Aims and Filipino Responses, 1465-1700* (Madison, The University of Wisconsin Press, 1959), pp. 18-19; and Pedro Chirino, *op. cit.*, p. 321.

7 Antonio de Morga, *op. cit.*, p. 288; and Pedro Chirino, *op. cit.*, p. 287.

8 John Leddy Phelan, *op. cit.*, p. 61; and Pedro Chirino, *op. cit.*, p. 319.

9 John Leddy Phelan, *op. cit.*, p. 61.

10 The Cavity Mutiny in 1872 marked the beginning of the end for Spanish political domination. The last quarter of the nineteenth century is strewn with political events and violent incidents which seem to have affected Filipinos at all levels. The disruption of civil (Spanish) authority and economic activity probably accounted in part for the sequence of epidemics which beset the colony in the 1870s and thereafter. See *Censo de las Islas Filipinas, 1903*, vol. III, 1905, pp. 11-17.

11 This is the Singulate Mean Age at Marriage, or SMAM, computed from proportions single in successive age groups. This index takes advantages of the fact that the mean age at marriage is the mean duration of single (never married) life: Where s_x is the proportion single in the age group x to x + 5, and s the average $(s_{45} + s_{50})/2$,

$$SMAM = (5 \times \sum_{x=0}^{45} s_x - 50s) / (1-s)$$

For other applications, see John Hajnal "Age at marriage and proportions marrying", *Population Studies*, Vol. 7, 1953, pp. 111-136; and Ruth B. Dixon, "Explaining Cross-cultural variations in age at marriage and proportions never marrying" *Population Studies*, vol. 25, No. 2, 1971, pp. 215-233. For a population with a sustained, positive rate of growth the SMAM overstates the true cross-section mean somewhat.

12 See Moni Nag, *Factors Affecting Human Fertility in Non-Industrial Societies: A Cross-cultural Study*, Yale University Publications in Anthropology No. 66 (New Haven, HRAF Press, 1968), especially pp. 86-92 and table 45. Of the 48 non-industrial societies Nag examines (those with the relevant information), 37 have an average age at entry to sexual unions of under 18 years.

13 The 1903 Census category is meant to be strictly racial, not social. The "mixtures" include "...that of brown people with the Chinese, Spaniards, and, in recent years, to a trifling extent with Americans", though the Malay-Chinese mestizo predominates. The mixed group, though ambiguously defined, includes a large stable element: "Much of this mixture, however, dates back to past generations..."(*Censo de las Islas Filipinas, 1903*, vol. II, 1905, p. 44).

Table 112. Marriage indices by colour (race), city of Manila and entire Philippines, males and females 1903

Marriage index and geographic area	Colour[a]			
	Indio	Mestizo	Chinese	White
		Female		
Singulate mean age at marriage				
Philippines	20.8	23.1	23.2	18.8
City of Manila	19.7	21.6	20.4	22.0
Percentage ever married				
Philippines	92.2	84.1	73.8	76.3
City of Manila	92.0	82.3	73.8	75.0
		Male		
Singulate mean age at marriage				
Philippines	24.3	27.0	28.4	29.3
City of Manila	25.3	26.5	27.4	30.7
Percentage ever married				
Philippines	95.3	95.6	51.9	60.0
City of Manila	91.8	91.4	31.0	56.6
Sex ratio (persons aged 15-54)				
Philippines	937	837	50,214	5,142
City of Manila	1,325	750	36,030	4,312
Distribution by colour	98.5	0.1	1.0	0.3

Source: *Censo de las Islas Filippinas, 1903,* vol. II, 1905, tables 31 and 32.

a Indio = native Malay; Mestizo = mixed Malay–Spanish or Malay–Chinese.

and single they (and their male offspring) usually remained. In 1903 one in every two Chinese of advanced age had never married (not surprising – there were 50 marriageable men for every woman), while only three of 10 urban Chinese males had managed to find spouses. Mean ages at marriage for Chinese men and women differed by five years over-all, and by seven years in Manila where females, in short supply and more likely to be recently-arrived, married early.

The white population in 1903 was a combination of remnant Spanish and newly-arrived Americans. In general, apparently, females in this stratum married quite early, though there was some delay in the urban area. Again, the artificial sex ratio encouraged early marriage over-all, while educational and other opportunities may have been a force in the city.

These are the only marriage data for social strata and rural/urban groups available for 1903, but they provide some indication of the behaviour of certain groups – in some cases rather important ones – in turn-of-the-century colonial society. In the remainder of this chapter, the evolution over this century of geographic, urban-rural and social strata differentials within Filipino society will be examined.

B. SEVEN DECADES OF CHANGING NUPTIALITY

A long-run perspective on Filipino nuptiality after 1903 is provided by census and survey distributions on marital status. A significant long-term trend for females and a less pronounced one for males are immediately evident in table 113, which shows percentages never married by sex and age, and sin-

gulate mean ages at marriage for available census years from 1903 to 1970. Among women, the percentage never married increased steadily over the period for the youngest age groups. It rose by 15.6 points, or by one fifth of its 1903 level, at age 15-19 and by one half of its initial level at ages 20-24. Among men, the increases have been smaller but still substantial.

The timing of these changes for men and women is significant. More than four tenths of the shift in the youngest age group of women occurred before 1939; nearly three fourths had taken place by 1948. In contrast, the shift among women aged 20-24 years occurred later; only one fifth by 1939, and two thirds since 1948. The singulate mean age at marriage among women rose by 1.9 years over the seven decades, with half this increase occurring before the Second World War. Among the men, the shifts which have occurred took place largely in the pre-war period.

The pattern of change for both sexes is persistent across the intercensal periods, and the tempo and age pattern of the changes clearly suggest the gradual diffusion of a later-marriage norm from younger to older age groups. The absolute magnitude of the changes seems especially significant in light of the relatively advanced age already achieved among both men and women by 1903.

C. AREAL VARIATIONS IN MARRIAGE PATTERNS: REGIONAL AND PROVINCIAL

1. National versus provincial

This section examines the manner in which Filipinos in the twentieth century have responded to areal variations in economic and social opportunity, principally through pioneering migration. An overview is presented of variations in the marriage pattern across areas, with special attention given to ways in which population movement, as a response to areal variations, has had complex and important effects on national nuptiality patterns.

Table 113. The trend in marriage timing and non-marriage, females and males, 1903-1970

Indicator	1903	1939[a]	1948[a]	1960	1970
			Female		
Percentage single at 15-19	73.6	80.3	85.1	87.3	89.2
20-24	33.3	36.2	40.7	44.3	50.3
25-29)	15.6	15.7	18.8	19.5	21.5
30-34)			12.6	11.6	11.7
35-39)	9.4	7.4	9.5	8.1	8.0
40-44)			8.7	7.6	7.3
Percentage never marrying[b]	7.8	5.4	6.9	7.0	6.7
Singulate mean age at marriage	20.9	21.9	22.1	22.3	22.8
			Male		
Percentage single at 15-19	92.3	96.2	97.0	97.0	97.6
20-24	56.9	62.5	64.8	65.5	69.3
Percentage never marrying[b]	5.8	3.2	3.5	3.1	3.5
Singulate mean age at marriage	24.9	25.1	25.0	25.0	25.4

Source: Computed from census reports.

a Women and men with marital status not reported have been removed from the total.

b Percentage single at 45-49 (years 1948, 1960 and 1970) or 45-54 (years 1903 and 1939).

The changing provincial levels[14] on an index of marriage pattern – a variation on Coale's I_m[15] – are shown in table 114. Over the 1903-1939 period, 20 provinces out of 45 experienced declining female ages at marriage (rising I_{em}), a sharp contrast to the upward national trend. In the post-war period until 1960, on the other hand, all provinces except four experienced delayed marriage. In the decade of the 1960s every province experienced at least some delay, and there were some quite substantial shifts, especially for those areas which had lagged behind prior to 1960.

In 1903, when the average national I_{em} was .770, the value for the provinces ranged from .907 in Nueva Vizeaya to .625 in Bohol. In 18 provinces I_{em} exceeded .800 while in only 4 was I_{em} below .700. In the pre-war period before 1939, I_{em} for the country as a whole declined by 8 per cent, while, relative to that, the provincial trends were quite diverse. Of 20 downward shifts, the largest was 22 per cent (Ilocos Norte), while the greatest upward change was 11 per cent (Marinduque). By 1939 the national average was .705, with provinces ranging from .869 in Davao to .603 in Ilocos Norte. The three decades from 1939 to 1970 saw a further 13 per cent decline in national I_{em}. Around the 1970 national level of .614, the highest provincial value was .728 (Isabela) and the lowest .470 (Manila). By that time only four provinces were above .700 and 17 were below .600.

Over a total period of seven decades, the national level of I_{em} had declined by 20 per cent. Five provinces had experienced downward shifts of 30 per cent or more, while the provinces which had shifted downward by much smaller margins (under 10 per cent) were mostly those which had moved (temporarily) toward earlier marriage in the pre-war period.

Nationally and in all provinces the urban sector took the lead in these changes. The 1970 (urban) I_{em} over-all was 31 per cent below the 1903 (total) level, and Manila, which was characterized by early marriage in 1903, emerged with the lowest index in the set by 1970, fully 29 per cent below the 1970 rural value and 39 per cent below the 1903 national value.

Another important aspect of the declines in I_{em} given in table 114 is their recency in many instances. In 10 provinces, three fourths or more of the total decline came after 1960; in 25 provinces the 1960s accounted for at least half the decline. It may be noted, however, that these recent declines were often preceded by increases in earlier periods and that the average national I_{em} showed a steady declining trend from 1903 to 1970.

2. The timing of the declines

The differences across areas in the timing of the nuptiality decline are indicated by columns (7) through (9) of table 114, which show the highest I_{em} level recorded for each province, the absolute change from this level to that in 1970 (the lowest I_{em} for all areas), and an interpolated estimate of the year in which an I_{em} level of .670 was reached. This arbitrarily selected cut-off level is that which characterized the city of Manila in 1939.[16]

In the pre-war period, only four areas (in addition to Manila) had achieved an I_{em} of about .670 or lower: Bulacan, just to the north of Manila, and the three Ilocos provinces. The next group of provinces to achieve that level were in the Western and

14 There were 50 provinces in 1903 (including nine *comandancia*, excluding Manila). Political reorganization has eliminated four of these while creating a number of new ones. The 45 units examined here differ from the contemporary provinces as follows. In 1903: Mountain Province combined Benguet and Lepanto-Bontoc; Palawan combined Paragua and Paragua Sur; Sulu combined Basilan, Jolo, Siassi and Tawi-Tawi; Camarines was called Ambos Camarines; Misamis Occidental was Misamis; Misamis Oriental was Dapitan; Quezon was Tayabas. In 1939: Cotabato combined Cotabato, Bukidnon and Lanao; Quezon was called Tayabas. In 1939 and 1960: Cagayan combined Cagayan and Batanes; Camarines combined Camarines Norte and Camarines Sur; Surigao combined Surigao and Agusan. In 1960: Albay combined Albay and Catanduanes; Capiz combined Capiz and Aklan; Cotabato combined Catabato, Bukidnon, Lanao del Norte and Lanao del Sur; Mindoro combined Occidental Mindoro and Oriental Mindoro; Zamboanga combined Zamboanga del Norte and Zamboanga del Sur. Throughout this chapter the term province refers to these units rather than contemporary administrative divisions.

15 I_m is based upon cross-section information for females on age and marital status and is readily obtained from census data for geographic areas. The values of I_m compare the over-all fertility resulting from a given marriage pattern with that derived from a pattern of universal marriage from age 15 onwards. Specifically, $I_m = \varepsilon m_i.F_i / \varepsilon w_i.F_i$, where m_i, w_i and F_i are, respectively, married women, all women, and standard marital fertility levels (Hutterites, 1921-1930), all in five-year age groups from 15 to 50. For description of I_m, see Ansley J. Coale, "Factors associated with the development of low fertility: an historic summary" in *Proceedings of the World Population Conference, 1965* vol. II (New York, United Nations, 1969), and "The decline of fertility in Europe from the French Revolution to World War II" in S.J. Behrman, Leslie Corsa and Ronald Freedman, eds., *Fertility and Family Planning: A World View* (Ann Arbor, University of Michigan Press, 1969). The index used here, I_m, substitutes ever-married for currently married women in Coale's I_m. I_m indexes the pattern of *first* marriage and is not affected by marital dissolution.

16 This arbitrary cut-off clearly distinguishes early and late changing provinces. All estimated dates are linear interpolations between censal estimates. Nine provinces had not achieved an I_m of .670 or lower by 1970. For a similar treatment of data of this kind, see John E. Knodel, *The Decline of Fertility in Germany, 1871-1939* (Princeton, Princeton University Press, 1974).

Table 114. Indices of first marriage pattern for females, 1903, 1939, 1960 and 1970 (total, urban and rural) and indicators of the timing and pace of change, by province

Province	Index of first marriage pattern (I_{em})[a]						Highest level	Absolute change from highest level to 1970	Year reached .670 (Manila in 1939)	Proportion of total change occurring in the 1960s
	1903	1939	1960	1970						
				Total	Urban	Rural				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
									Pre-war	
1. Ilocos Sur	.726	.593	.629	.587	.498	.607	.726	.139	1918	.30
2. La Union	.755	.609	.667	.572	.475	.587	.755	.183	1924	.52
3. Ilocos Norte	.773	.603	.633	.581	.489	.614	.773	.192	1925	.27
4. Manila	.797	.670	.492	.470	.470	-	.797	.327	1939	.07
5. Bulacan	.755	.675	.614	.576	.562	.589	.755	.179	1941	.21
6. Iloilo	.776	.691	.606	.538	.451	.578	.776	.238	1944	.29
7. Bohol	.625	.678	.651	.572	.466	.590	.678	.106	1945	1.49[b]
8. Cebu	.670	.683	.632	.572	.516	.615	.683	.111	1945	.61
9. Rizal	.812	.727	.574	.533	.528	.635	.812	.279	1947	.15
									early 1950s	
10. Antique	.745	.713	.635	.574	.465	.594	.745	.171	1951	.36
11. Pampanga	.761	.704	.659	.595	.572	.606	.761	.166	1955	.39
									late 1950s and early 1960s	
12. Cavite	.809	.758	.651	.575	.539	.615	.809	.234	1956	.32
13. Pangasinan	.873	.722	.676	.592	.509	.614	.873	.281	1957	.30
14. Negros Occ.	.860	.798	.683	.599	.510	.649	.860	.261	1958	.32
15. Batangas	.760	.697	.669	.575	.487	.591	.760	.185	1960	.51
16. Misamis Occ.	.743	.790	.669	.578	.444	.607	.790	.212	1960	.55
17. Albay	.735	.751	.683	.621	.490	.646	.751	.130	1962	.54
18. Zambales	.844	.785	.688	.603	.570	.641	.844	.241	1962	.35
19. Capiz	.721	.724	.698	.608	.473	.631	.724	.116	1963	.80
20. Laguna	.811	.773	.702	.599	.567	.633	.811	.212	1963	.49
21. Negros Oriental	.699	.753	.694	.625	.486	.650	.753	.128	1963	.93
22. Tarlac	.873	.748	.700	.616	.525	.636	.873	.257	1963	.33
23. Abra	.755	.731	.719	.599	.497	.623	.755	.156	1964	.77
24. Misamis Or.	.792	.785	.705	.606	.507	.637	.792	.186	1964	.53
25. Nueva Ecija	.840	.761	.695	.631	.556	.654	.840	.209	1964	.31
									late 1960s	
26. Bataan	.809	.765	.760	.616	.540	.639	.809	.193	1966	.75
27. Canarines	.788	.791	.717	.634	.518	.688	.791	.157	1966	.54
28. Romblon	.804	.772	.728	.660	.525	.682	.804	.144	1968	.47
29. Sorsogon	.783	.807	.734	.649	.525	.693	.807	.158	1968	.63
30. Sulu	.827	.853	.746	.648	.603	.658	.853	.205	1968	.55
31. Cagayan	.868	.756	.750	.665	.544	.687	.868	.203	1969	.42
32. Davao	.832	.869	.771	.662	.555	.706	.869	.207	1969	.64
33. Leyte	.713	.768	.737	.661	.538	.696	.768	.107	1969	1.46[b]
34. Marinduque	.688	.766	.747	.663	.499	.690	.766	.103	1969	3.36[b]
35. Mt. Province	.813	.858	.763	.662	.517	.700	.858	.196	1969	.67
36. Surigao	.765	.805	.724	.669	.580	.707	.805	.136	1970	.57
									after 1970[c]	
37. Cotabato	.847	.867	.758	.680	.553	.704	.867	.187	-	.47
38. Isabela	.893	.801	.802	.728	.648	.741	.893	.165	-	.45[b]
39. Masbate	.782	.862	.787	.716	.559	.749	.862	.146	-	1.08
40. Mindoro	.845	.834	.800	.696	.591	.724	.845	.149	-	.70
41. Nueva Vizcaya	.907	.820	.782	.678	.569	.714	.907	.229	-	.45
42. Palawan	.758	.837	.817	.724	.622	.750	.837	.113	-	2.73[b]
43. Quezon	.815	.827	.772	.681	.573	.730	.827	.146	-	.68
44. Samar	.796	.806	.772	.712	.585	.711	.806	.094	-	.71
45. Zamboanga	.768	.830	.761	.681	.555	.707	.830	.149	-	.92
Philippines	.770	.705	.647	.614	.528	.662	.770	.156	1952	.21

a Defined in foot-note *15*.
b Earlier changes were in opposite direction.
c According to projections.

Central Visayas, plus Rizal, encompassing the suburbs of Manila. By the early 1950s the late-marrying provinces by this criterion were (a) on the Ilocos Coast; (b) in the metropolitan region; and (c) in the Western and Central Visayas. The average dates of attainment of the .670 level of I_{em} for these areas were 1922, 1943, and 1945, respectively.[17] By that time all of the Western and Central Visayas had reached .670, except the island of Negros and Capiz on the island of Panay.

The late 1950s and early 1960s saw the movement to below the .670 level of a large number of Luzon provinces (three before and seven after 1960), as well as the island of Negros (Occidental and Oriental), Capiz in the Visayas, and the northern coast of Mindanao (Misamis Occidental and Oriental). By that time Luzon was largely (all but eight provinces) below the cut-off level, Western and Central Visayas entirely so, and the most advanced parts of Mindanao had crossed the line.

Three kinds of area achieved the .670 level in the late 1960s: (a) the remaining frontier regions of Luzon; (b) the northern and eastern islands of the Visayas; and (c) additional parts of Mindanao. By 1970, the same three types of area contained provinces of very late nuptiality. Three contiguous frontier provinces of Luzon had yet to cross the .670 line (Isabela, Nueva Viscaya and Quezon), as had Cotabato and Zamboanga in Mindanao, and four additional areas in the northern and eastern parts of the Visayas: Masbate, Mindoro, Palawan, Samar.

Of the last four listed, only Samar is in the Visayan language area. And, of the nine provinces yet to cross the line as of 1970, six were frontier areas of the Tagalog islands or Luzon itself, two were on Mindanao (those areas most populated by Moslem minorities), and one, Samar, was perhaps the poorest island in the Eastern Visayas.

With significant exceptions, the diffusion of the late marriage pattern has been from north to south. This is seen when the mean dates at crossing to low nuptiality for broad groups of provinces are considered[18]: lowland Luzon excluding the Bicol Peninsula (1949, for 15 provinces), the Visayas (1958, for 10 provinces), and Mindanao (1966, for 5 provinces).

17 Unweighted averages of provincial dates of attainment.

18 Only core provinces of each broad region are included; provinces above .670 in 1970 are excluded.

3. Regional patterns

The forces underlying these diverse provincial patterns come into better focus when the more homogeneous experiences of a few broad regions are examined, as in table 115.

Marriage patterns on the island of Mindanao derive for the most part from two unique characteristics. First is the island's history as the national frontier, the traditional (in this century) land of opportunity for open land and for jobs. The population of the island grew by 3.8 per cent annually over the 1903-1970 period, a large proportion of that growth being due to in-migration. In 1970, fully 26 per cent of the Mindanao population was living outside the province of birth, and most of that number had been born outside of Mindanao. Second is the very high prevalence in Mindnao of minority populations, especially Moslem minorities whose characteristics are very different from those of other Filipinos, and whose integration into Filipino society remains, to this day, incomplete.

The major part of the flow of population to Mindanao has been from the central Philippines (the Visayas). The influx of Christian Filipinos has both reduced the minority percentage in Mindanao over the decades and at the same time, exacerbated the religious and ethno-linguistic frictions which have long characterized the area. In 1970, 65 per cent of Mindanao's residents were speakers of Visayan languages (Cebuano, Boholano or Hiligaynon) as against a minority percentage in 1903, while the non-Visayans had declined to less than one third of Mindanao's population by 1970. The percentage of Christians rose from 58 to 79 between the 1939 Census and that of 1970.

The entire island of Mindanao, especially its southern part, was characterized by relatively early marriage in 1903, in part a reflection of the very early marriage which prevailed among the minority groups, and in part because of the frontier sex ratios which had already begun to prevail at that early date. A distinction must be drawn, however, between Southern Mindanao, where those characteristics were sharply in evidence, and Northern Mindanao (the coastal areas of Misamis Occidental and Oriental) which had been dominated by Christian settlers for some time.

These migrations seem to have been linked closely to marriage patterns. Apparently, pre-war

Table 115. Sex ratios, rates of intercensal population change and indexes of first marriage pattern (I_{em}) by broad geographic areas[a], 1903-1970

Area	Sex ratio						Annual population change[b]			Index of first marriage pattern						Year reached .670 (Manila in 1939)	Proportion of total occurring in the 1960s
	1903	1939	1960	1970			1903-1939	1939-1960	1960-1970	1903	1939	1960	1970				
				Total	Urban	Rural							Total	Urban	Rural		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Northern Mindanao	1055	1035	1038	1008	948	1026	3.12	2.54	3.41	.770	.795	.707	.634	.544	.666	1965	.54
Southern Mindanao	1342	1120	1098	1030	966	1044	3.57	4.94	3.95	.822	.856	.761	.674	.557	.702	n.a.	.59
Northeast Luzon	1136	1018	1032	1012	956	1023	2.35	2.39	3.24	.856	.806	.772	.684	.567	.711	n.a.	.51
Bicol Penninsula	999	1044	1047	1018	938	1039	1.86	2.68	1.95	.766	.780	.709	.632	.513	.678	1965	.57
Ilocos Coast	936	896	961	952	861	1010	1.02	1.20	1.84	.751	.615	.651	.582	.490	.604	1924	.41
Manila and environs	1094	1034	963	952	936	990	2.10	3.50	4.31	.783	.700	.576	.534	.518	.605	1944	.17
Central Luzon	1007	992	1000	987	924	1006	1.91	2.13	2.81	.862	.743	.691	.609	.538	.632	1963	.32
Panay Island	915	961	978	956	884	968	1.54	1.24	1.87	.754	.704	.638	.564	.456	.599	1950	.39
Cebu and Bohol	974	944	962	953	930	965	1.47	1.01	0.96	.657	.681	.638	.572	.509	.606	1944	.78
Negros Island	1070	1102	1042	985	910	1013	2.45	2.21	1.37	.796	.783	.686	.607	.506	.649	1962	.42
Philippines	1002	1016	1018	990	934	1015	2.08	2.52	2.97	.770	.705	.647	.614	.528	.662	1952	.21

a The provinces included in each group are detailed in *A Demographic Path to Modernity*, edited by W. Flieger and Peter C. Smith, 1975, p. 60. A few provinces do not fall into any of the groups.

b. Exponential rate.

movement to Mindanao was dominated by single males and, to a lesser extent, by early-marrying settler females, while the post-war period saw three developments: (a) family migration to areas which had been tamed by the earlier settlers; (b) the importation of brides by older Visayan men, who could now afford to consider marriage (preferably to Visayan women); and (c) the growth of in-movement to urban areas in Mindanao, especially by young single females.[19]

These long-term migration patterns have combined to create the nuptiality trends evident in table 115. During the frontier period of male in-migration, female age at marriage declined. By 1939, I_{em} had risen somewhat throughout Mindanao. In the subsequent period of stabilization, approximated by the post-war intercensal period, marriage was delayed; by 1960 I_{em} was well below the level in 1903.

Mindanao developed rapidly in the post-war period.[20] As its frontier characteristics disappeared, urbanization and non-agricultural activities expanded. These developments, as well as the disappearance of the frontier, have had continuing effects on nuptiality.

In a similar manner, Northeast Luzon (the Cagayan Valley) has been characterized by an early but rising age at marriage, again because of initial frontier conditions (including high sex ratios) into which families (married women) and older single women have recently been migrating. The total downward shift in I_{em} in this area has also been about one fifth, a third or so of which, in contrast to Mindanao, occurred before 1939. The major source of migrants to the Cagayan Valley has been the Ilocos Coast. Ilocano speakers comprised 64 per cent of the Cagayan Valley population in 1970. The Ilocano migration to the Cagayan Valley, and especially the impact of this flow on the sending and destination areas, will be considered in more detail in a later section.

In the Bicol Peninsula the trend over-all has been towards late marriage, but this has been a post-1939 movement following upon a downward shift in female age at marriage in the pre-war period. Data on interregional lifetime population flows by age and sex suggest that nuptiality patterns in the Bicol area also are closely related to migration. In the early decades of this century the Bicol Peninsula was both a sending region, supplying migrants to Southern Luzon, and a frontier, receiving migrants from the islands to the south. Apparently, I_{em} rose in the pre-war period as a response to out-migration of married men and women and in-migration of single men. Later on, single women have been leaving the region and consequently I_{em} has declined.

In the 1960s, the pattern of regional net migration was quite different. To the net out-migration of males was added an in-movement of (probably single) females, leading to a decline in the regional sex ratio and to accelerated declines in I_{em}. The marriage pattern index fell by 10 per cent, from well above the national level in 1960 to roughly equal the national level in 1970.

The Ilocos coast is a complex and fascinating region with respect to both population movement and nuptiality, and will be discussed in detail below. Broadly, the heavy out-movement of males before 1939 (note the declining sex ratios) caused delays in female age at marriage, but the predominantly female out-movement (largely among the single) since then led to a rising I_{em} over 1939-1960. This contrary trend was reversed again in the 1960s. The I_{em} for Ilocos declined very rapidly over 1960-1970 and by 1970 was again below the national average.

The Manila region (including Manila, Rizal, Bulacan, Pampanga and Cavite) and Central Luzon as a whole are extremely interesting areas – they carry the brunt of the national trend towards later marriage. The index of first marriage pattern has declined sizably and steadily in both areas, by 32 per cent in the metropolitan zone and by 29 per cent in the central plain. The long-term decline in I_{em} in these zones is no doubt the direct consequence of rapid economic and social change in the urban area and beyond.[21] Sex-selective migration has also played a role. Central Luzon has sent some males to other regions, and the Manila sex ratio has de-

19 Support for these statements is found in the unpublished 1970 Census data on provinces of residence at birth in 1960 and 1970. Analysis of these data is now in progress at the University of the Philippines Population Institute.

20 Gerardo P. Sicat, *Economic Policy and Philippine Development* (Quezon City, University of the Philippines Press, 1972).

21 See Roland J. Fuchs and Telesforo W. Luna Jr., "Spatial patterns of Socio-economic structure and change in the Philippines, 1939-1960", Working Papers of the East-West Population Institute No. 26, East-West Center, Honolulu 1972, pp. 37-39; and Peter C. Smith, "Areal differentiation and the urbanization process in lowland Luzon", unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, 1970.

clines markedly since the turn of the century. Also, Manila increasingly has been the destination of young and single female migrants. In 1970, fully 28 per cent of all women aged 15-19 in Manila and neighbouring Rizal province had resided elsewhere in 1965.

The islands of the Visayas fall into several groups. Panay Island and Cebu and Bohol have had a similar experience: persistent out-movement of males throughout the century (as indicated by their growth rates and sex ratios) and an over-all shift toward later marriage. This trend probably reflects the relative development of these provinces (except for Bohol) as well as the effects of migration: Panay (with Iloilo City) and Cebu (with Cebu City) are the regional foci of the Visayan cultural area, and have been centres of economic change as well.[27] The I_{em} index for the island of Panay has declined by one fourth since 1903, much of this decline occurring since 1960.

The island of Negros has had a quite different history. The sugar industry opened Negros to rapid colonization over the second half of the nineteenth century,[23] before which it was not heavily populated. Early in-movement was to both the eastern and western halves, while the 1903-1939 period saw continued in-movement to western Negros. There has been net out-movement from both halves since 1939. Negros Oriental received most of its migrants from Cebu whereas the flow to Negros Occidental originated largely in Panay.[24]

Negros Occidental has had higher sex ratios and rates of growth throughout this century. As a consequence of these divergencies in ethnicity and migration experience, Negros has seen continuing marriage delay in this century as it has moved from frontier to more normal conditions. Thus, although Negros Occidental exceeded the national level of I_m in 1903 and Negros Oriental was well below it, in 1970 both provinces were close to the national average.

These regional diversities can be summarized with a few general statements. First, it is evident from the data presented so far that population movement has a complex impact upon nuptiality in receiving and sending places, depending upon the marital status differences between early and late migration streams.

Second, the areas of heavy in-movement saw increases in I_{em} (movements to earlier marriage) before 1939 and delayed marriage afterwards. The large pre-war frontier movements introduced complexity into the national situation and tended to counterbalance what would otherwise have been a widespread, pre-war shift towards late marriage.

Third, the Philippines' core region – defined here as (a) the Manila region (five provinces), and (b) the remainder of Central Luzon (five additional provinces) – has shown a major, sustained shift toward later marriage. It is tempting to suggest that delayed marriage to a degree has substituted for out-migration as a response to rural population pressure in the *barrios* on the central plain, since the Tagalogs of Central Luzon are popularly known for their reluctance to migrate.[25] Clearly, however, two important forces are at work: rural densification with attendant rising tenancy rates and declining farm sizes,[26] and urbanization, with all its ramifications.[27] The latter is the dominant factor close to Manila – say within 50 kilometres[28] – while rural population densities may be the major force further away.

Two other areas, the islands of Panay and Cebu, also show shifts of substantial magnitude toward later marriage, though sex ratios seem to play a more important role than rising pressure on resources.

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22 Gerardo P. Sicat, *op. cit.*, p. 366.

23 The principal event was the opening of the port of Iloilo to foreign shipping. See also Frederick Wernstedt and Joseph E. Spencer, *op. cit.*

24 Of the migrant population of Negros Occidental in 1960, 52 per cent were born on the island of Panay, only 28 per cent on the islands of Cebu or Bohol. In contrast, Panay contributed 8 per cent of the migrants to Negros Oriental while Cebu and Bohol contributed 46 per cent. In 1960, 75 per cent of Negros Occidental was Ilongo-speaking, while Cebuano was the mother tongue of 94 per cent of Negros Oriental's population.

25 This image is well founded. Despite its very high rural population densities and severe tenancy problem, only 13.8 per cent of the population born in the central plain did not reside there in 1960. Many of those who had moved, went only a short distance to Manila or to Southern Luzon.

26 By 1939, about 53 per cent of the farms on the central plain were operated by tenants, and the average farm was 3.2 hectares. The national tenancy rate was 33.5 per cent, the average farm 4.09 hectares. By 1960, national tenancy was still under 40 per cent compared with 63.9 per cent in the central plain. Farm size in the area averaged 2.77 hectares in 1960.

27 The region's urbanizations level in 1903 was roughly equal to the national level of 13.1 per cent. By 1960, the area was 51.3 per cent urban as against 29.8 per cent for the country as a whole. In 1970, while the level of urbanization in the region was 62.8 per cent, that for the country was 32.9 per cent. See Ernesto M. Pernia, *Trends and Patterns of Philippine Urbanization in the Twentieth Century*, Research Note, Population Institute, University of the Philippines.

28 Peter C. Smith, *op. cit.*

Of several leading areas of late marriage, easily the most important – because it apparently reflects the joint impact of rural population pressure and urbanizing economic change – is the Manila-central plain region.

One final issue should be considered briefly in connexion with these regional patterns. It is evident from table 113 above that the percentage of Filipino females never marrying has been high – around 7 per cent – throughout the twentieth century, while among males marriage is more nearly universal. Is a high percentage never marrying among females an enduring feature of Philippine nuptiality, or a transient phenomenon?

There is some evidence that this phenomenon is a temporary one, the result of heavy frontier migrations in the early decades of this century and of the resultant severe sex ratio distortions. The high percentages of females single around age 50 are for the most part concentrated in areas of heavy male out-movement; in contrast, traditional receiving areas are generally characterized by a low percentage of single female. These differences are evident in the following provincial data:

	Percentage single	
Source areas	1903	1960
Bohol and Cebu	15.2	11.6
Ilocos provinces (3)	9.4	12.2
Frontier areas		
Mindanao provinces (7)	4.1	2.6
Cagayan Valley provinces (3)	3.8	5.5

As the frontier phenomenon disappears the associated pattern of stay-behind celibacy should disappear as well.

4. Migration, nuptiality and celibacy: the Ilocano experience

Comprising about 11.0 per cent of the total, the Ilocanos are one of eight major ethno-linguistic groups in the Filipino population. The Ilocano homeland is the narrow strip of coastal land between the South China Sea and the great Cordillera directly to the east. This coastal respite affords at best a meagre basis for existence. Only two river valleys of any size are available for cultivation, and at some points the flatland between mountain and sea extends for 500 yards or less. The physiological density in the Ilocos provinces had by 1903 reached 3.5 persons per hectare, compared to 2.7 nation-wide. And, in the absence of primogeniture or some alternative system for keeping farm plots intact, average farm size in 1903 had reached 1.2 hectares compared to the national average of 3.5. On the Cagayan and Mindanao frontiers at that time average farm sizes were 6.9 and 3.9 hectares, respectively.[29]

For reasons which are readily apparent, then, Ilocanos have been expanding their territory for at least two centuries: first, southward into present-day La Union, and then eastward into the territories of the Tingians and other upland peoples. By the end of the Spanish period, Ilocanos had complete dominance over much of Abra, parts of Pangsinan, and, encouraged by the labour requirements of the colonial tobacco monopoly, had begun to move in large numbers to the Cagayan Valley on the far side of the Cordillera. The out-migration intensified in this century and Ilocanos have come to dominate numerically in a large part of the central plain, throughout the Cagayan Valley, and even in certain localities in Mindanao. A large majority of the Filipino labour migration to Hawaii in the 1920s consisted of Ilocanos. In 1970, altogether 196 local areas were numerically Ilocano, of which only 88 were in the traditional home territory. Ninety-three towns had been colonized in the pre-war period, and 15 since 1939.

It is apparent from table 115 (see "Ilocos Coast") that the early out-migration from Ilocos was dominated by males. The sex ratio was low in 1903 as it had been since at least 1850. In 1939, males were in even shorter relative supply. In contrast, the important Ilocano destination areas had quite high sex ratios.

This very heavy out-migration has been one of four demographic responses to population pressure on the part of Ilocanos; the others being reduced marital fertility, delayed marriage, and increased celibacy. Evidence for the former pertains only to the 1950s and 1960s[30], although the pattern may well have emerged much earlier. The related matters of delayed marriage and increased non-marriage are now considered in more detail.

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29 Henry T. Lewis, *Ilocano Rice Farmers: A Comparative Study of Two Philippine Barrios* (Honolulu, University of Hawaii Press, 1971), p. 86.

30 Peter C. Smith, "The new nuptiality: recent evidence of delayed marriage and a projection to 2000', *Philippine Sociology Review* (forthcoming).

Marriage pattern indexes for the region (table 115) indicate that a measure of delay had been instituted even by the turn of the century, when I_{em} was .751 compared to .817 in other areas of Luzon. There was considerable marriage delay in the period up to 1939. While the national I_{em} moved downward by 8.4 per cent below the national level, the lowest of all the regional levels at that time.

The sharp contrast between this nuptiality pattern and that of the adjacent upland peoples in the pre-war period is shown in figure 14. The upland zone (the "Mountain Province") is inhabited by so-called "cultural minorities" whose traditional ways of life, including marriage patterns, were little disturbed by either Spanish or American colonial policy.

An even more interesting contrast is between the Ilocos Coast pattern in 1939 and that which prevailed in the Cagayan Valley at the same time. With a largely Ilocano population, I_{em} for the Cagayan area was a relatively high .856. Home and frontier Ilocanos had I_{em} levels which differed substantially. It is not clear whether the differences in behaviour were due to frontier economic conditions (e.g. easy availability of land – the average farm size was still 5 hectares at that time), to the psychological atmosphere of the frontier, or were simply an involuntary response to demographic constraints – the scarcity of young men in the coastal homeland and their abundance on the frontier.

The post-war period has seen a mixture of patterns. As the national I_{em} was declining steadily by 12.9 per cent between 1939 and 1970, the I_{em} for the Ilocos Coast increased somewhat before 1960 and then declined again, rather rapidly, in the 1960-1970 period. Meanwhile, Ilocanos in the Cagayan Valley were watching their frontier become a placid and rather crowded "homeland". The average farm covered only 3.4 hectares by 1960, and by 1970 the traditional frontier had become a net source of migrants to other parts of the nation. The taming of the frontier and the stabilization of the sex ratio have operated to delay unions; between 1939 and 1970 I_{em} declined by 15 per cent to .684 (still, however, for above the national level in 1970).

The diffusion outwards of the Ilocano frontier pattern of early marriage is captured in the following areal cross-sections for 1939 and 1970:

Zone	Average I_{em} in 1939	Average I_{em} in 1970	Percentage decline
Home region (88 localities)	.633	.556	12.2
1903-1939 frontier (93 localities)	.708	.658	7.1
1939-1970 frontier (15 localities)	.784	.736	6.1

In both years, I_{em} rose with the recency of the Ilocano intrusion. Yet throughout the frontier areas as well as in the home territory I_{em} has declined with time, most rapidly in the oldest Ilocano areas.

One can only speculate as to why the Ilocos Coast I_{em} moved upward before rejoining the national downward trend after 1960 (table 115 above). The pattern very likely is tied to changes in the regional sex ratio which rose sharply to near-normal levels by 1960. There is also the possibility that control over marital fertility among Ilocanos emerged during this period as a substitute for delayed marriage. Finally, there is the growing new option for females – increasingly taken in the post-war period – of migration to urban areas in other regions in search of jobs and education. To be sure, the Ilocos Coast continues to be an area of great population pressure on ressources, but the data show that multiple responses to this problem have evolved, including, in addition to delayed marriage, heightened celibacy and partial control over marital fertility, not only frontier migration but female rural-to-urban migration as well. There can be little doubt that these responses are linked in diverse ways which can only be understood ultimately by detailed studies within the region.[31]

The combined effects of these numerous trends and changes in the northern Philippines by 1970 are illustrated in figure 15. Comparing the 1939 and 1970 local-area patterns in figures 14 and 15, the following observations seem pertinent: (a) the Ilocos Coast marriage pattern has expanded, southward into Pangasinan (and areas to the south not shown), and eastward into the Abra Valley and beyond. Whether this eastward expansion represents continued Ilocano colonization of the uplands nearby, or the conversion of upland peoples to Ilocano-like marriage patterns cannot be determined with the data at hand; (b) the marriage behaviours of "frontier" and Ilocos Coast Ilocanos have converged to a considerable degree, just as social and economic

31 For example, see Henry T. Lewis, *op. cit.*

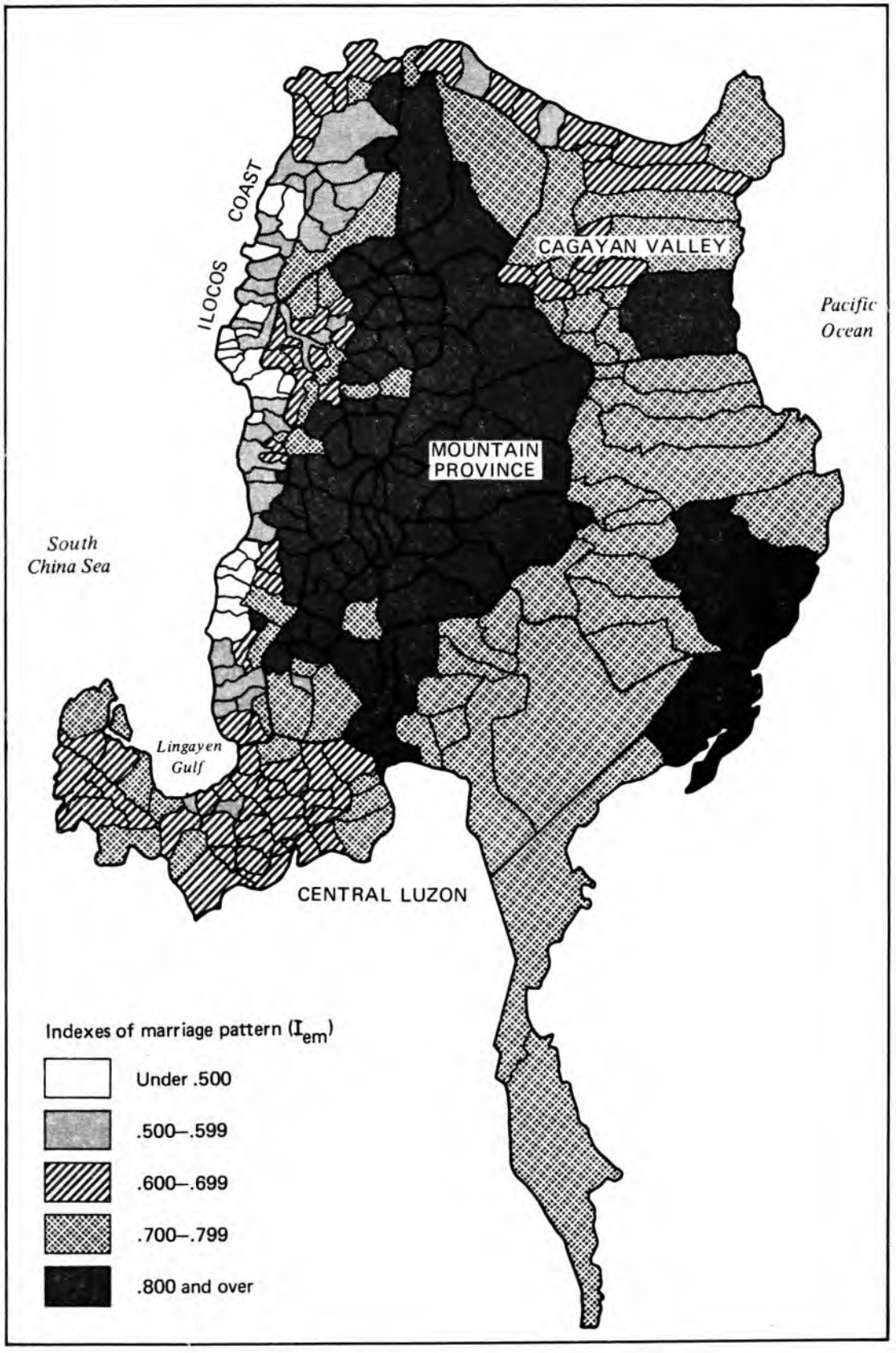


Figure 14. Indexes of first marriage pattern (I_{em}), municipalities of Northern Luzon, 1939

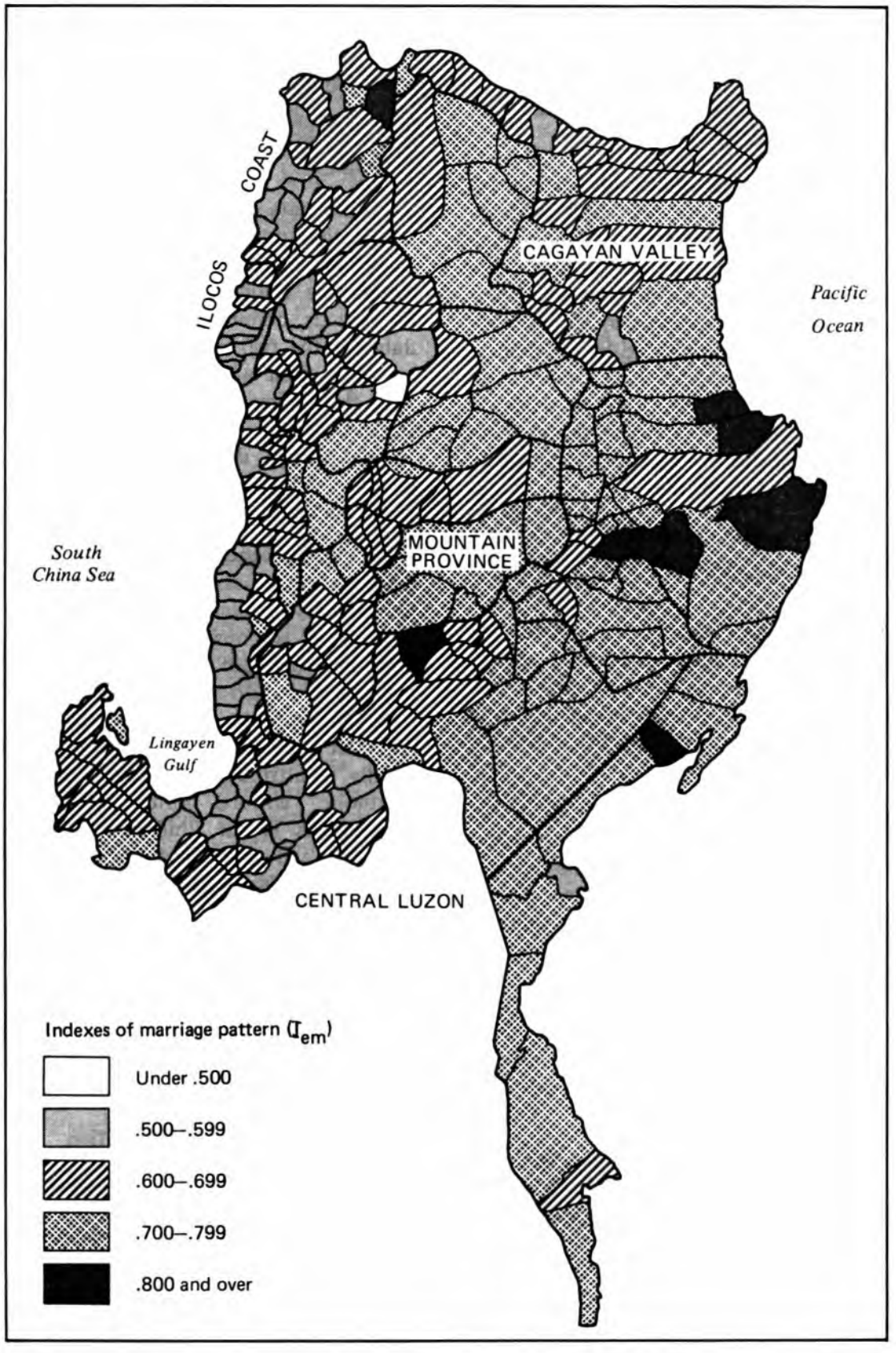


Figure 15. Indexes of first marriage pattern (I_{em}), municipalities of Northern Luzon, 1970

conditions and sex ratios have been converging; (c) the traditional upland areas seem to be modernizing their nuptiality very rapidly.

D. MODERNIZATION AND DELAYED MARRIAGE

The areal variations in marriage pattern reviewed above and the behaviour exhibited by Ilocanos ought to warn analysts against dealing exclusively with national nuptiality trends. On the other hand, areal disaggregations fail to uncover important diversities in marriage pattern across social and class boundaries – the kinds often induced by modernization and economic development. This section considers the effects upon nuptiality of a series of on-going social and economic transformation – in the realms of urbanization, educational expansion and the diversification of adult roles.

1. Some traditional cleavages

Differences in behaviour across the eight major ethno-linguistic groups reflect a mixture of genuine cultural differences among these groups and their varied environmental, economic and historical experiences. It has already been seen how, in the case of Ilocanos, members of the same linguistic group can exhibit quite different behaviours in contrasting environmental circumstances.

In general, ethno-linguistic differences in age at marriage (data not shown) are not great except for numerically minor groups, such as native speakers of English who marry quite late. The two largest language groups, the Tagalog and the Cebuano, account for more than half the population and differ in mean age at marriage by only 0.6 years. An analysis of geographic in relation to ethno-linguistic differentials suggests that if ethnicity bears upon nuptiality in any important manner it is probably a consequence of ethnic variations in migration behaviour.

Religious affiliation is another traditional axis of social taxonomy. Some 85 per cent of the population is Catholic by self-declaration, although active attendance at religious services is confined for many to baptism, an occasional mass, and the final rites. The minority religions include a range of protestant sects; Moslems, who predominate in a large part of Mindanao; and "other non-Christian" which includes, largely, the minority cultural groups of the Cordillera of Northern Luzon and other mountainous zones of Luzon and the Visayas. Protestant and Aglipayan Filipinos do not differ in cultural fundamentals from Catholics, although Protestants do tend to come from higher socio-economic levels. In contrast, Moslem and other non-Christian adherents are members of distinct cultural groups within the national community.

The data in table 116 suggest that Catholics and "other non-Christians" marry somewhat earlier than the remaining groups, while the Moslems and Aglipayans (Philippine Independent Church) marry late. It is commonly assumed that demographic data for the two non-Christian groups are deficient, and that their actual ages at first union are lower than the figures shown. However, there is no reason to suspect the data for Aglipayans, and the Aglipayan-Catholic difference (0.8 years) is probably genuine. This is especially interesting given the lower-strata background of Aglipayans.[32]

One hypothesis – the existence of an early-marriage norm associated with Catholicism – is immediately challenged by the data on religiosity (frequency of observance). While there is little difference between those who never attend services and those who do so irregularly, regular churchgoers (four or more times per month) had married one full year later than others. This phenomenon cannot readily be attributed to Catholic doctrine or even to "Catholic" cultural norms, however, since regular churchgoers in the Philippines tend to be urban, educated, and of relatively high income; all attributes conducive to late marriage.

One balance, we do not see important ethno-linguistic or religious differentials in the data. The major nuptiality variations in the Philippines are not formed on the traditional sociological dimensions which we have examined.[33] The following sections consider three non-traditional dimensions which do exhibit significant marriage pattern differences.

2. Urbanization

The migration of individuals and families to urban places from rural areas has been a persistent phenomenon throughout the twentieth century. The composition of the rural-to-urban flow, and changes in its composition in recent decades, are of great

32 Pedro S. de Achuteque and Miguel A. Bernard, *Religious Revolution in the Philippines*, 2nd ed. (Manila, Ateneo de Manila, 1961).

33 A number of directions for investigation remain: for example, such determinants as degree and nature of parental control could not be examined with the available data.

Table 116. Indicators of marriage pattern for ever-married women aged 30-59, by religion and religious activity, 1973

	Number in sample	Percentage married[a]			Median age at union	Mean age at union
		Under 18	Under 20	Over 26		
All women	5,778[b]	27.6	46.4	12.0	19.4	20.8
Religion						
Catholic	4,897	28.0	47.3	11.8	19.4	20.7
Aglipayan (Christian)	190	22.9	40.5	14.8	20.2	21.5
Moslem	160	22.2	36.9	13.5	20.6	21.4
Other non-Christian	255	26.6	43.4	12.7	19.6	20.9
Religious activity[c]						
None	1,769	31.0	49.0	10.3	19.2	20.5
1-3	2,586	27.7	47.7	10.9	19.3	20.6
4 and over	1,248	21.2	39.4	16.9	20.2	21.6

Source: National Demographic Survey, 1973.

a Base is number of every-married women who married under age 40.

b The shortfalls between frequencies and the total number of women (5,778) reflect cases of no information on one or more characteristics.

c Frequency of attendance at religious services (number of times per month).

significance for nuptiality patterns. Pre-war urban migrants tended to be male and married, and since most, eventually, either brought their families to the towns and cities or themselves returned home, the impact on marriage timing may not have been substantial. In any case it is difficult to assess. More recently, however, the rural-to-urban flow has been dominated by single females, in many instances seeking urban jobs or educational opportunities.

These patterns are especially evident among migrants to the city of Manila. The sex ratio among pre-war migrants shows little sex selectivity, whereas migrants since 1960 were predominantly female.[34] In 1970, the sex ratio among 1960-1970 migrants at ages 15-24 was a very low 557. Lifetime migrants in 1970 constituted 40.4 per cent of Manila's population, and 42.6 per cent of its female population. At ages 15-24, 51.8 per cent of all females in Manila in 1970 were born elsewhere; 36.4 per cent had moved to the city since 1960.

Information in regard to urban-rural nuptiality differentials before 1970 is not available except for the city of Manila (shown as a province in the early data; cf. tables 115 and 116 above), which shifts very rapidly from relatively early to relatively late marriage between 1903 and 1970. Over-all, I_{em} declined by more than 40 per cent in the period. For certain other cities and urban zones data are available for 1939 and 1970 (see table 117). For all the sets of urban places shown, I_{em} declined between 1939 and 1970, always more rapidly than did the national average. While the national I_{em} was declining by 12.9 per cent, in the city of Manila I_{em} was declining by 29.9 per cent and in chartered cities and provincial capitals by 15.7 and 13.6 per cent respectively. Within the metropolitan region there is a gradient across zones from the city proper to the region's outer fringe. In 1939 the urban I_{em} values ranged from 91 to 95 per cent of the national level, but by 1970 they had fallen to below 90 per cent of the national level except for the outer fringe of the metropolitan region and the provincial capitals.

The urban-rural contrast in nuptiality patterns is also eveident in recent survey data on age at first union. Table 118 indicates that the mean age forms a regular gradient across areas from metropolitan to remote-rural. The difference between these extremes is 2.3 years. Unfortunately, data are not available for urban and rural zones in the pre-war period, hence it is not possible to infer whether the substantial differentials noted above are a recent (post-war) development or a long-standing difference between urban and rural sectors. Data on the composition of rural-to-urban migrants suggests that the selective influx of (single) females is largely a post-war phenomenon.

34 The sex ratio among lifetime migrants (all ages) to Manila in 1970 was 975; that among 1960-1970 migrants was 922.

Table 117. Index of first marriage pattern in urban communities in 1939 and 1970

Area	Index of first marriage pattern			Ratio (x 100) to total Philippines	
	1939	1970	Percentage decline 1939-1970	1939	1970
Philippines	.705	.614	12.9	100	100
Rural	-	.662	-	-	108
Urban	-	.528	-	-	86
City of Manila	.670	.470	29.9	95	77
Suburban inner zone[a]	.646	.520	19.5	92	85
Suburban outer zone[b]	.667	.574	13.9	95	93
Metropolitan region[c]	.658	.542	17.6	93	88
Chartered cities[d]	.642	.541	15.7	91	88
Provincial capitals[e]	.661	.571	13.6	94	93

Source: National censuses.

a Towns located within a 20-kilometre radius of Manila.
b Towns located 20-39 kilometres from Manila.
c Encompasses 32 municipalities and 4 chartered cities.
d Includes 59 localities so defined by the Administrative Code.
e Includes one town in each of the 66 provinces outside Manila.

Table 118. Indicators of marriage pattern of ever-married women 30-59 for selected urban classification, 1973

	Number in sample	Percentage married[a]			Median age at union	Mean age at union
		Under 18	Under 20	Over 26		
All women	5,778	27.6	46.4	12.0	19.4	20.8
Residence						
Metropolitan	702	18.4	36.3	16.8	20.8	22.0
All urban	2,170	19 5	39.4	15.5	20.3	21.6
Rural	3,608	31.1	49.6	10.5	19.1	20.4
Neighbourhood at birth						
Non-agricultural	1,745	21.0	40.9	15.2	20.2	21.5
Agricultural	285	29 3	47.9	11.2	19.3	20.6
Size of municipality						
20,000 persons and over	4,717	27.1	36.8	12.5	19.5	20.8
Under 20,000 persons	1,061	28.8	37.9	10.5	19.3	20.7
Distance to town						
0 - 5 km	3,579	24.9	44.5	12.9	19.7	21.0
6 - 10 km	879	32.9	48.4	10.2	19.2	20.3
11 - 20 km	586	32.8	51.7	9.7	18.8	20.2
21 km and over	259	35.3	56.9	8.1	18.5	19.7

Source: National Demographic Survey, 1973.

a Base is number of ever-married women who married under age 40.

3. Education

The literacy rate for the country as a whole rose from 20.2 per cent in 1903 to 43.8 per cent in 1939 and then to 72.0 per cent in 1960 and 83.4 per cent in 1970. The over-all changes in literacy rates are shown below for males and females aged 10 and over, in Manila and nation-wide.

	1903	1960	1970
Philippines	20.2	72.0	83.4
Male	29.7	73.6	84.5
Female	10.7	70.6	82.2
Manila	50.6	91.5	96.4
Male	60.7	92.8	97.1
Female	34.4	90.2	95.8

There were three times as many literate males as females nation-wide in 1903, a clear reflection of preference for the education of sons over daughters. By 1970 the literacy rate had risen dramatically; just as important, however, was the dramatic near-elimination of the literacy differential between the sexes. In turn-of-the-century Manila literacy levels were higher, and less unequal between the sexes, than in the remainder of the country. For both sexes, metropolitan literacy was almost universal by 1970.

Educational advancement influences female marriage timing in a number of ways. Most obvious is the direct time constraint – to continue schooling into high school and more advanced levels requires, for most women, that they remain unmarried. Clearly, however, the time demands implied by continued education only begin to lead directly to marriage delay among women who have reached college entrance, at around age 17. In 1973 this group was only 8.6 per cent of the population aged 15 and over.

Another effect of education on marriage timing is individual-level attitude change. The Philippine educational system is highly centralized, and its content reflects heavily Western subjects and teaching materials prepared centrally. Certainly it is true that, for many young girls, going to school is their first (and in many cases their last) opportunity to know the world outside the *barrio*. There is no evidence that late-marriage norms are being promulgated deliberately in the classroom – almost certainly they are not – but the transmission of knowledge, or at least curiosity, about life and lifestyles in the nation's urban areas and in other societies cannot but have some impact on individual and peer-group thinking.

Lastly, educational attainment makes feasible new and profitable ways of spending one's teenage and young adult years, especially among urban residents. The opportunity costs of marriage and immediate childbearing can be high for a girl who has a high school diploma.

The relationship between education experience and marriage based on the data of the 1973 National Demographic Survey is shown in table 119. It is possible to distinguish the effects of educational attainment, acquired literacy, and exposure to Catholic *versus* other kinds of education.

Only 13 per cent of the women included in the sample had no schooling. Elementary schooling had been received by 60 per cent, while 16 per cent had at least some high school. One woman in 10 had some college experience and 7 per cent were college graduates.

Relatively early marriage prevailed among women who had not at least entered high school. Among those who had, marriage occurred a full year later than for all women combined. Those with some or complete college experience married quite late; two years later for those with some college, and nearly four and a half years later for those who completed a college programme.

The mean age for the latter group is not merely the result of delay in order to devote full time to school (the time constraint), since the typical four-year programme is completed by age 20 or 21. The additional years no doubt reflect, at least in part, deliberate delay, perhaps associated with work experience after college and before marriage.

In respect of literacy, about 80 per cent of the sample could both read and write, while the remaining 20 per cent married 0.5 years earlier than the national average. Lastly, women who had some exposure to Catholic education married 0.8 years later than those who had not (note also the religious differentials described above).

The prevalence of early marriage varies sharply across the subgroups in table 119. More than 30 per cent of the women in the two lowest educational levels had married at age 17 or younger – nearly one fourth the total sample. The percentage marrying

Table 119. Indicators of marriage pattern of ever-married women aged 30-59, for selected educational classifications, 1973

	Number in sample	Percentage married[a]			Median age at union	mean age at union
		Under 18	Under 20	Over 26		
All women	5,778	27.6	46.4	12.0	19.4	20.8
Educational level						
No schooling	745	31.9	46.1	12.1	19.7	20.7
Elementary 1-7 years	3,454	31.7	53.2	9.2	18.7	20.1
High school 1-3 years	508	23.3	42.6	9.6	19.6	21.5
High school 4 years or more	439	12.7	30.5	14.1	21.3	
College 1-3 years	180	5.9	18.6	17.1	21.5	22.8
College 4 years or more	431	4.3	10.1	40.1	24.9	25.4
Ability to read and write						
Read only, or none	1,021	33.7	49.8	11.6	19.1	21.3
Read and write	4,682	26.1	45.7	12.0	19.5	20.8
Source of education						
Catholic	1,264	22.8	39.9	14.9	20.2	21.4
Other (public or other private)	4,487	28.7	48.1	11.3	19.3	20.6

Source: National Demographic Survey, 1973.

a Base is number of every-married women who married under age 40.

very early is much lower for other educational groups.

There are several factors underlying these educational differentials in marriage timing. Thus, educational attainment and attitudes towards marriage are both, in some measure, imparted by socio-economic background. Suitable controls would probably reduce the educational differentials directly caused by woman's educational experience.

The fact that marriage delay is observed only for the one fourth or so of the sample which had moved beyond the elementary grades also suggests that it may in fact be the lifestyle changes which were necessary to acquire the education which are being assessed. Many young girls from *barrio* and more remote residential backgrounds have to move to the *poblaciones* (rural towns), often boarding with extended kin, in order to continue into high school. Perhaps it is this opportunity for new experiences and relative freedom from familial control among high school girls which leads to delayed marriage among them. Probably there are complex relationships between educational experience, urban *versus* rural background, migration experience in connexion with education, and working and migration experience after schooling which need to be spelt out on the basis of further investigation.

In any case, it seems clear that early marriage is concentrated among girls who live in rural *barrios* and who do not continue their education beyond the elementary level. Distinctly late marriage occurs only among those who have at least entered high school.

4. Expanding range of adult roles

The gradual transfer of the labour force out of agriculture and into manufacturing and service industries, linked of course to the rural-urban and educational transformations described earlier, has created new kinds of adult notes. By 1970, 48 per cent of the economically active household population aged 10 and over (12.3 million persons) was non-agricultural.[35] Even the rural labour force was 31.5 per cent non-agricultural. The share both of single

35 Bureau of the Census and Statistics, *1970 Census of Population and Housing*, Provincial Reports, 67 volumes.

and of married females in this activity was substantial. They comprised 32 per cent of the total economically active population (30 per cent of the rural; 38 per cent of the urban), and in urban areas comprised disproportionately the manufacturing, commerce and service occupations.

Census data for 1960 and 1970 indicate that the quality as well as the quantity of female labour force participation is changing. Professional and clerical categories have expanded while manual categories have declined correspondingly. The urban sector was relatively advanced in these directions, except for the expected preponderance there of female workers in service occupations.

These developments will be related to nuptiality by indicating two kinds of change: (a) the growth of new statuses (other than that of "married housekeeper") among women under age 25; and (b) the emergence of seemingly lifelong single-adult roles associated with certain occupational pursuits.

The manner in which young adult roles for women vary areally with level of development is indicated in table 120. Three geographic areas are described. "Low" developmental levels are exemplified by the Bicol Peninsula, a relatively isolated area dominated by two crops, abaca and coconut, and a traditional social structure. "Moderate" development characterizes the central plain of Luzon, with its intensive wet rice agriculture and relatively high level of urbanization. The city of Manila reflects a "High" development level. These three areas together encompass about one third of the nation's population.

In the 15-19 age group, the over-all percentage single does not shift significantly with development level. It is very high throughout. However, within the dominant single group, "High" development is associated with (a) a prevalence of continued schooling and (b) a decline in the percentage who are single housekeepers. The former status has been shown to be a source of delayed marriage, while the latter is probably a temporary role among girls for whom courtship and marriage are imminent. It is also interesting that development is not associated with the formal sector employment of girls in this group. Instead, the informal sector expands with development.

Table 120. Type of activity of women aged 15-19 and 10-24 in selected regions, by marital status and level of development

Marital status and type of activity[a]	Level of development[b]					
	Low	Moderate	High	Low	Moderate	High
	15-19 years			20-24 years		
Single						
Formal sector	30.6	28.8	29.7	19.2	25.0	31.8
Informal sector	15.8	21.4	21.9	5.5	7.2	7.7
Housekeeping	31.8	23.1	20.4	12.9	10.0	10.9
Student	8.9	14.2	19.2	3.5	5.3	8.5
All	87.1	87.5	91.2	41.1	47.5	58.9
Ever-married						
Formal sector	2.9	2.0	1.3	14.8	10.8	9.7
Informal sector	1.1	1.1	0.4	3.3	3.0	2.3
Housekeeping	8.9	9.3	6.9	40.6	38.3	28.7
Student	0.0	0.1	0.2	0.2	0.3	0.4
All	12.9	12.5	8.8	58.9	52.4	41.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

a The "informal" sector includes the self-employed and unpaid family workers; "formal" sector activity includes work for wages and salaries and proprietorship in an own-business.

b See text for definition of "low", "moderate" and "high" development areas.

These patterns are in contrast to those for age group 20-24. Among these women there is a clear relationship between level of development and percentage single (41.1 per cent in the "Low" versus 58.9 in the "High" area). The expanded single-status group in developed areas is absorbed largely by formal sector employment, and education.

Percentages still single and employed in the formal sector increase from 19 to 32 as we move from the selected areas of low to high development. The percentage of women 20-24 who are single and still in school rises from 4 to 9 per cent, while the percentage aged 20-24 classified in the traditional role of "married housekeeper" declines from 41 to 29 per cent (as a result of delayed marriage).

In both age groups the majority of the married are engaged in housekeeping. There have been changes in these numbers with level of development, indicating that the major changes are taking place in the trade-off between single-worker and married-housekeeper lifestyles.

There are a number of elements to this pattern: delayed marriage; changing opportunities in the labour force; rising educational levels; and the concentration of all these in urban areas. It is probably a moot point whether delayed marriage is generating new young adult roles, or the reverse. Interacting, they are creating new and probably permanent components of social structure.

Related to these changes are emerging concentrations of celibacy within the female labour force. The following illustrative percentages never-married are for women aged 45 years and over in selected occupations in 1970 (the data combine information for the three areas in table 120):

Occupational group	Urban	Rural	Manila
Professional, administrative	20.0	11.0	23.9
Clerical	16.6	3.8	22.5
Farmers, miners	3.6	5.8	-
Services	18.8	13.7	13.7
All, including others	14.7	8.6	14.6

The spinster role is fairly common among professional women, especially in urban areas, as well as among other white collar categories, but is very rare among those in extractive occupations. The services category also includes many single women of advanced age. Further examination of these recently available census data should be productive in indicating the sources of these patterns. Thus, for example, while celibacy among professional women aged 45 years and over may well be a matter of having chosen careers over marriage, the process is less clear in the case of the clerical and services categories.

Table 121 presents the little direct evidence that is available on work experience in relation to age at marriage. In the 1973 National Demographic Survey sample, about 30 per cent of the ever-married women interviewed were currently working, and they had married 0.7 years later than those who were currently engaged in housekeeping. A relatively high percentage of the working women had been married at age 27 or older, and a somewhat smaller percentage had married young. A very similar differential is evident for those who had some work experience since marriage. Finally, data from the 1968 Survey (not shown in table 121) indicate that work experience before marriage influences marriage timing, the differential being nearly two years.[36] These work-experience differentials are consistent with the patterns of work *versus* marriage outlined on the basis of census data above.

E. SUMMARY

Our approach in this chapter has been to examine data for geographic areas over time, and also to explore the impact of selected social processes by means of cross-sectional differentials. This concluding section summarizes the results and discusses nuptiality prospects for the future.

The traditional dimensions of Filipino social structure – ethno-linguistic and religious – do not seem to have induced nuptiality differentials of any moment. The religious and ethnic associations with marriage timing which do exist seem on inspection to reflect social class and/or migration experience differences.

Some of the most sizable nuptiality differentials are areal differences growing out of regional histories, especially with respect to age, sex and marital status-selective migration. Many of these differentials are likely to diminish sharply or disappear in the future;

36 Peter C. Smith, "Changing patterns of nuptiality" in Wilhelm Flieger and Peter Smith, eds., *A Demographic Path to Modernity: Patterns of Early Transition in the Philippines* (Quezon City, University of the Philippines Press, 1975).

Table 121. Indicators of marriage pattern of ever-married women aged 30-59, for selected work experience classifications, 1973

	Number in sample	Percentage married[a]			Median age at union	Mean age at union
		Under 18	Under 20	Over 26		
All women	5,778	27.6	46.4	12.0	19.4	20.8
Main activity						
Working	1,777	24.1	41.3	15.7	20.1	21.3
Housekeeping and other	3,999	28.9	48.5	10.5	19.2	20.6
Work experience since marriage						
Some	2,613	26.2	43.6	14.5	19.8	21.1
None	3,159	28.6	48.7	10.1	19.2	20.5

Source: National Demographic Survey, 1973.

a Base is number of ever-married women who married under age 40.

in particular, sex ratios are already normalizing in most areas of heavy long-run gain or loss, and "home-frontier" nuptiality differentials are rapidly diminishing.

On the other hand, new kinds of areal differentials are emerging and are likely to grow in the future. These are (a) responses to regional variations in level of economic development; and (b) areal variations between urban and rural sectors. Regional development levels and nuptiality patterns are clearly associated; in table 115, for example, some relatively backward regions are catching up (e.g. Mountain Province, Bicol), while some are falling further behind (e.g. Eastern Visayas), with implications for regional nuptiality.

The importance of urbanization, education, and the diversification of adult roles have been emphasized. The most interesting aspect of these three interrelated changes is that within each of them, the role of females has been expanding, a fact which may be as important for nuptiality change among females as are the social processes themselves.

Some of the influences on nuptiality that have been identified here are essentially negative ones, others positive. Population pressure in Cebu, Bohol, Ilocos and other areas, for example, clearly has induced marriage delay, within the terms of prevailing culture and behavioural norms, by disallowing early marriage (the demographic constraint imposed by low sex ratios is also classified as a negative kind of inducement to delay). In constrast, urbanization, education and the diversification of adult roles together constitute a revolution in female expectations. The expansion of options represented by these processes can only be described as a positive inducement to later marriage.

Thus, for example, the varied path of Ilocano nuptiality in recent times is intelligible when cast in these terms. The inducements were largely negative before the Second World War, as is indicated by declining farm sizes and rising density levels. The post-war period saw relaxation of these pressures (or the accommodation of social structure to them) as well as more normal sex ratios, and the age at marriage declined, this at a time when virtually every other area was experiencing delay. When positive inducements emerged in the 1960s, in the form of female opportunities for out-migration and rurral-urban migration within the region, the long-term rise in age at marriage resumed.

Historically, family formation strategies have been complex, and the role of nuptiality problematic. In northwestern Europe, the transition in fertility involved first a shift to later marriage and higher levels of celibacy, then a shift downward in the schedule of marital fertility. Once marital fertility was low and under substantial control, early marriage became possible again. With appropriate phasing, these changes could occur without deleteriously affecting over-all fertility levels. In essence, the recent shift back to early marriage in northwestern Europe has not been a shift to traditionalism, but

rather the emergence of a truly modern marriage pattern under modern demographic conditions of low mortality and controlled marital fertility. The situation in Eastern Europe has been quite different. Marital fertility has declined, sometimes to extremely low levels, while nuptiality patterns have changed but little.

The prognosis for nuptiality in the Philippines depends upon the strategy of family building[37] which is assumed. The central issue for the future is whether the control of marital fertility which seems imminent will in fact lead to earlier marriage, how rapidly this will occur, and with what effects on the social structure and on over-all fertility levels.

On the basis of the evidence which is currently available it seems reasonably safe to conclude that a transformation in nuptiality patterns is under way and that it will continue for some time. Three of the principal behavioural elements making up the emerging "modern" nuptiality pattern should be emphasized again. These are:

(a) A sharp decline in the prevalence of very early marriage. The marriage of girls under 18 is all but disappearing in the more advanced sectors and marriage under 20 is becoming infrequent as well;

(b) A substantial increase in median and means ages at marriage. The entire first-marriage distribution by age is shifting upward as "modern" characteristics are acquired;

(c) A very graphic increase in the prevalence of non-marriage by age 50. The urban prevalence, for example, at slightly over 10 per cent, is nearly double the rural, while one metropolitan female in eight at age 50 has never married. On another dimension, educational attainment, high school and college experience is having a significant impact on non-marriage prevalence.

This chapter concludes with a set of projections of female marital status by age group which has been generated on the basis of the 70 years' experience summarized in table 113 and a three-parameter model of age patterns in the percentage age married developed by Coale.[38] Coale's three parameters, a_0, k and C, reflect in a general way the three elements of the modern nuptiality pattern just outlined: the age at which marriage first begins to occur; the time span over which females continue to enter first unions; and the proportion of women who ever marry. These parameters have been estimated for 1903 and 1960, to wit:

	1903	1960
a_0	12.69	14.20
k	.655	.696
C	.887	.908

The value of a_0 increased by 1.51 years or 12 per cent between 1903 and 1960. The time span of marriage entrance broadened somewhat (that is, the tempo slowed down), reaching 70 per cent of the standard value by 1960. The C value remained essentially unchanged.

The nuptiality assumptions employed for the projections are couched in terms of these three substantively interesting parameters rather than in terms of the percentage single directly. As one alternative, it was assumed that the two timing parameters would continue to shift at the same annual pace over the 1960-2000 period, while C held its 1960 level. Under this assumption a_0 and k would be 15.39 and .727, respectively, on the terminal date. Marriage entrance would begin some three years (21 per cent) later in 2000 than in 1903. The tempo of nuptiality would have slowed by some 11 per cent over the century.

On the other hand, it can be argued readily that the on-going shift in nuptiality is due to accelerate that the forces which have prompted marriage delay in the past should gather momentum in the coming decades. The three parameters for the year 2000 given above might therefore be viewed as a "moderate" projection reflecting merely a continued trend. As a "low" configuration, reflecting accelerated marriage delay over the 1970-2000 period, terminal values of 17.00, .750 and .85, respectively were assumed. This "low" value for a_0 is just below the Irish figure in 1961 (17.16) – certainly an example of a late-marrying population.[39] The k value of .750 represents half again the change reflected in the "moderate" projection. This is a fairly high level for k, reflecting a rather slow tempo of cohort marriage-entrance.

37 Judah Matras, "The social strategy of family formation: Some variations in time and space", *Demography*, vol. 2, 1965, pp. 349-362.

38 Ansley J. Coale, "Age patterns of marriage", *Population Studies*, vol. 25, No. 2, pp. 193-214.

39 R. Lesthaeghe, "Nuptiality and population growth", *Population Studies*, vol. 25, No. 3, pp. 415-432.

The "low" C value was set at .85, incorporating an assumed decline in the proportion ever marrying. The current value of C is already rather low relative to traditional societies on record. It did not seem advisable to assume non-marriage proportions in excess of 15 per cent or so, although non-familial adult roles for females could emerge in the coming decades and render this assumption conservative.

Resulting moderate and low projections of female percentages ever married by age are shown in table 122. Because these projections were completed before the 1970 census data on marital status had become available, it was necessary to project forward to 1970 using available data.[40] Comparisons between the 1970 projections in table 122 and the 1970 census figure in table 113 above reveal only small differences. The magnitudes of these differences offer some indication that the projection methodology used here is a reasonable one. A more detailed report[41] shows percentages currently married, based upon assumptions regarding the survivorship of females by age and that of their spouses.

The implications of these past and prospective nuptiality trends extend beyond their effect upon absolute numbers. One important consequence for social structure is the emergence of the single female adult as a common social type. In individual life cycle terms, another major implication is a lengthening of the period of time between physical and emotional maturity and the decison to marry. The lengthening of this vital period can offer a chance for additional education, for work activity outside the parental home – in general, for a broader range of personal experience and a better basis for life-choices. The accumulation of education and work experience can have the effect of heightening a woman's opportunity costs, both of marriage and childbearing, because her earning power is increased. These processes can lead, on the one hand, to a greater prevalence of lifelong celibacy (especially if alternative adult roles emerge) and, on the other, to increasingly sophisticated mate-selection among the majority of women who do eventually marry.

Other ramifications for social structure include changes in intergenerational relations (including, for example, the parental role in mate selection), changed role relationships within marriage, the heightened aggregate use of human resources which results from prolonged female labour force participation, modification to rules of residence and modal behaviour in this regard, and changes in rules of inheritance.

Whatever the future trend in nuptiality, it is clear that marriage institutions in Philippine society have been highly flexible in adjusting to environmental pressures upon the social system from without. It can only be assumed that marriage patterns will continue to be responsive in the future.

Table 122. Projected[a] ever-married percentages 1970-2000

Age group	Year[b]			
	1970	1980	1990	2000
	Moderate			
15-19	10.40	8.49	6.82	5.48
20-24	51.96	48.84	45.73	42.66
25-29	78.30	76.93	75.32	73.87
45-49	90.80	90.80	90.80	90.80
	Low			
15-19	10.40	5.74	2.78	1.13
20-24	52.00	42.92	33.72	25.18
25-29	78.22	73.04	67.16	60.75
45-49	90.80	88.90	86.90	85.00

a In addition to the "moderate" and "low" series shown in this table, a "high" series was also prepared. For this series, it was assumed that the 1970 "moderate" levels would remain constant throughout the projection period.

b All intermediate values are based on linear interpolations on a_0, k, and C (see definitions in text)

40 Jose Encarnacion Jr. and others, "An economic-demographic model of the Philippines", *Studies in Philippine Economic-Demographic Relationships* (Quezon City, University of the Philippines, 1974).

41 Ibid.

Chapter VIII

THE VALUE OF A FILIPINO CHILD: PLEASURE AND PROFIT AGAINST COST AND CONCERN

A. INTRODUCTION

From the smallest Philippine community to the swollen Manila metropolis, it is hard to get away from children. Out of 42.5 million Filipinos, over 7 million are children 0 to 4 years old and well over 6 million are children 5 to 9 years old. Every third Filipino is a child under 10, and who is to say that the vast majority of these children are not wanted and do not provide some joy, satisfaction and even material benefit to their parents? This large number is more than a historical accident: Philippine society values children very highly, and parents have internalized a variety of different values attached to children. What these values are, as well as the accompanying disvalues experienced by a parent in the childbearing and child-rearing process, is the subject of this chapter.

The usual micro-economic approach to the utility of children attempts to infer the monetary cost and eventual financial contribution of each child to the family from various external indicators, such as prevailing wage rates. This chapter is concerned not only with such economic quantities but also with the psychological and social satisfactions that are expected from having children. The focus is not on values and disvalues as inferred from external measures but on values and disvalues as perceived and reported by parents. The understanding of these values should provide significant insights into fertility behaviour as well as guide a humane approach to population control that reckons with and, where possible, compensates for the values that may be lost as families inevitably shrink in size.

A few impressionistic or ethnographic studies in the Philippines have attempted to identify important values and disvalues attached to children. Out of an extensive study of child-rearing practices, Guthrie[1] extracted several values provided by large families: children are a sign of God's blessing, they are a source of delight in the home, they provide "a mystical feeling of continuity" ("one survives or one is fulfilled through his children, and his life work is well done if he has provided for them so that they reach adulthood"), and children are a hedge against want in old age. From an anthropolotical view point, Jocano reports a similar set of deeply held, pervasive values. He writes:

> "In all communities studies, children are much desired and enjoyed...Children are fondled whenever possible. Informants are agreed that *"isang halik ng bata, ang pagod ay nawawala"* (one kiss from a child wipes away tiredness or fatique)...Most informants in all communities studied never tire of children..."[2]

Children are not only a source of happiness but also a divine blessing, the evidence of an upright life. Their presence cements the marriage relationship and reduces the likelihood of marital infidelity. They preserve the family line and expand the family's influence. And they are a good investment. Jacano quotes one informant thus, "In order to increase your probability of winning a game, you either bet on several cards or roosters (as in a cockfight) or you play several times. Chances are you will win". As with cards and roosters, so with children.

Such values of children as these as well as some of the costs have also been mentioned in a few other studies.[3] These accounts, and even Jacano's, suffer from at least three deficiencies: (a) there is no analysis of meaning, content, and interrelationships among the values; (b) there is little, if any, systematic presentation of data on the prevalence of each value; and (c) no attempt is made to provide evidence

1 George M. Guthrie, "Psychological factors and preferred family size", *Saint Louis Quarterly*, No. 6, 1968, pp. 391-398.

2 F. Landa Jacano, "Cultural imperatives in population education: A case study from the Philippines", Data Paper No. 5, Quezon City, Department of Anthropology, University of the Philippines, 1974, pp. 69-70.

3 For instance, see Francis C. Madigan, "Population and levels of living in the rural Philippines", in Francis C. Madigan, ed., *Human Factors in Philippine Rural Development* (Cagayan de Oro, Xavier University, 1967), pp. 130-149; Gelia T. Castillo, "Some sociological considerations in promoting family planning programmes", *Solidarity*, No. 5, 1970, pp. 12-16; Alvin J. Harman, Fertility and Economic Behaviour of Families in the Philippines (Santa Monica, Rand Corporation, 1970); Mercedes B. Concepcion and F. Landa Jocano, "Demographic factors influencing the family cycle", paper prepared for the Symposium on Population and the Family, East-West Center, Honolulu, August 1973; and Gloria D. Feliciano, "KAP survey findings in the Philippines: Implications for training and developing family planning communications materials" in *Communications Status, Problems and Prospects in Family Planning*, Monograph Series No. 4, UP/IMC-UNESCO-UNFPA Family Planning Communication Project, Quezon City, pp. 17-51.

to relate the values identified to fertility behaviour or preferences. A survey specifically on perceived values and disvalues of children to parents in greater Manila[4] and Bulacan was conducted in 1972-1973. The report on that survey[5] attempted to fill some of those deficiencies, as well as to relate the values experienced or expected by Filipino parents to general theoretical frameworks for the study of child-related values[6] and to values reported in other countries. The several topics covered in that report cannot be adequately dealt with here; instead, the discussions will be limited to some limited findings from a later national survey on the same topic.

B. DATA SOURCES

The data for the chapter come from interviews conducted mostly in September and October 1975 with a national sample of 1,691 wives and 382 of their husbands. The sample was representative of the entire country, with the exception of western provinces on Mindanao, where peace-and-order conditions at that time were hazardous to interviewers, and the smaller islands of the archipelago, such as Siquijor, Camiguin, and the Batanes.[7] The sample was stratified into the city of Manila, other urban areas, and rural areas. For Manila, four *barangays* were selected and households sampled within those *barangays*. For the urban and the rural areas, municipalities throughout the islands were grouped into 790 contiguous "clusters", with approximately 6,500 households each, by the 1970 Census. Systematic random sampling from among those gave 30 sample clusters. Within each cluster, both urban *barangays* and rural *barrios* were selected (*poblaciones* were assumed to be urban), and households sampled within them. The over-all sampling fraction for households, in every case, was 1/1738. In those households, all currently married women aged 39 years or less whose husbands were living with them (or, if absent, were expected to return within six months) were interviewed. A quarter of the sample households were selected randomly, and in those the husbands of all eligible women were also interviewed.

Rural women outnumbered urban women in the sample by 58 to 42 per cent. Region by region, the sample distribution differed from census figures in two respects: (a) Mindanao was underrepresented because of the provinces deliberately excluded, and, (b) Southern Tagalog (which included, for these purposes, the surburbs of Manila) was somewhat overrepresented. The median education of women in the sample was 6.3 years and of men 7.7 years. Only 22 per cent of the women and 26 per cent of the men had completed high school. Income varied considerably: median annual household income for all women was ₱2,300, but 9 per cent had less than ₱500 and 1 per cent had more than ₱20,000. Slightly more than a quarter of the women had been married less than five years, about the same number had been married five to nine years, slighly less than a quarter had been married 10 to 14 years, and the remaining quarter had been married 15 years or more. Number of living children ranged from 0 to 13, with the median at 3.2 children.[8]

The interviews with these men and women covered a variety of related topics: (a) general advantages and disadvantages of having children; (b) the importance of different values and disvalues, both in general and in relation to future childbearing; (c) ratings and rankings of particular costs of children; (d) general values in life and alternatives to children in satisfying them; (e) qualities desired in children; (f) fertility preferences, by number and by sex; (g) attitudes towards and practice of family limitation; (h) family decision-making and role segregation in the family; (i) personal efficacy; and (j) demographic and social classifiers – occupation, education, income, parents' education, ethnicity, religion, media exposure, number of siblings, etc.

C. MAJOR FINDINGS

The most direct measure of values attached to children comes from asking respondents the advantages of having children, compared to having no children. It will be seen from table 123 that, of the wives interviewed, 83 per cent[9] cited the help they

4 "Greater Manila" refers to eight contiguous cities or municipalities. The official designation "Metropolitan Manila" refers to a much wider area, many sections of which cannot really be considered urban.

5 Rudolfo A. Bulatao, "Philippines" in *The Value of Children: A Cross-National Study*, vol. 2 (Honolulu, East-West Population Institute, 1975).

6 Lois W. Hoffman and Martin L. Hoffman, "The value of children to parents" in James T. Fawcett, ed., *Psychological Perspectives on Population* (New York, Basic Books, 1973), pp. 19-76.

7 The sample was designed by Cristina P. Parel. Field work was conducted by the Philippine Social Science Council research network.

8 For further information on the sample, see Rudolfo A. Bulatao, *Values and Disvalues of Children as Perceived by Filipino Parents: Preliminary Report* (Quezon City, Social Research Laboratory, University of the Philippines, 1976).

9 See table 123. Multiple answers were allowed, so that this percentage is less than the sum of the first three categories in the table.

expected children to provide. That help was classified into three general categories: financial or practical help, assistance in old age, and help with housework or with caring for children. Between a third and a half of the wives mentioned help of each kind. The husbands put the same stress on children's help (82 per cent cited one or the other category), and did not neglect to mention housework. On the other hand, socio-emotional values also appeared salient. Such values as children providing companionship for the parents, bringing love and happiness, and providing play, fun, and distraction from worries were mentioned by 64 per cent of the wives and 63 per cent of the husbands.

The distinctions among these socio-emotional values were occasionally difficult to make, but the most common of these responses revolved around the concept of happiness. Interaction with children, or simply their presence, was clearly rewarding to most spouses. The psychic satisfaction from interaction at a deeper level, where more complex psychological motives come into play, was less salient. Such values as children improving one's character and making one more responsible, furnishing an incentive for success, satisfying a drive for achievement or power directly or vicariously, and providing a sense of fulfilment or meaningfulness in one's life all involve an appreciation of psychological causation that is less common and less easily evoked in a short interview. All told, these "psychological appreciation" values were cited by only 14 per cent of the wives and 17 per cent of the husbands.

Two other classes of values were each mentioned by about 10 per cent of the respondents: children to cement the marital bond and children to preserve the family name. At the very bottom in salience (1 per cent) were social pressures to have children, whether resulting from the desire for adult status or from a sense of religious obligation. Respondents did not readily admit social pressures from any source as a reason for wanting children.

Wives and husbands generally saw similar advantages in children. The only important difference appeared in the concern for the family name, which was, perhaps predictably, greater among husbands. Between urban and rural residents, value differences were larger. Urban residents more often mentioned socio-emotional rewards such as happiness and distraction from worries. Rural residents more often mentioned housework and financial help, but not the third category of help; it was among urban residents that old-age support was more salient. A higher proportion of urban than rural residents mentioned the salutary effect of children on the relationship between the spouses (marital bond, home life) and a very small proportion of urbanites also mentioned social pressures to have children.[10]

Such urban-rural differences appear consistent across the countries that have been studied so far[11],

10 Extended comparisons of male and female, urban and rural responses in the Philippines appear in Rudolfo A. Bulatao, *loc. cit.*

11 Fred Arnold and others, *The Value of Children: A Cross-National Study*, vol. 1, *Introduction and Comparative Analysis* (Honolulu, East-West Population Institute, 1975).

Table 123. Advantages[a] of having children, by sex and residence of respondent

Advantage	Wives			Husbands		
	Urban	Rural	Combined	Urban	Rural	Combined
Help in housework, with children	22	42	34	18	37	30
Help in old age	49	38	42	41	36	38
Financial and practical help	37	51	45	45	47	46
Family name	7	8	8	14	12	13
Marital bond, home life	16	4	9	14	8	10
Adult status, social norms	1	0	1	3	0	1
Companionship, love	11	14	12	12	13	13
Happiness	52	44	47	48	45	46
Play, fun, distraction	21	15	18	18	14	15
Character, fulfilment	14	14	14	16	17	17
(Number of respondents)	(704)	(987)	(1,691)	(152)	(230)	(382)

a Percentage of respondents mentioning each class of advantage. Multiple answers allowed.

except for the difference in the importance of old-age support, which runs counter to the usual findings. Perhaps the more limited time horizon of rural respondents makes them less likely to verbalize such a value, or makes them assimilate it to expectations of general economic assistance. This factor aside, urban-rural differences may be traced to differences in the economic roles of children as well as to the greater sophistication about human relationships that education provides in urban areas.

The categorization of the values of children is naturally more complex than this. Respondent's answers were coded using not these general classes but 192 detailed categories of values, later combined to provide the general advantages listed in table 123. It is worth noting that this detailed scheme was useful cross-culturally, in other Asian countries (such as Thailand and the Republic of Korea), in a Western country (the United States), and in the Middle East (Turkey). Direct comparisons with these other countries cannot be made at this time, since the data are not available. Although similar tabulations were reported by Arnold and others[12], these were for restricted samples. Among those samples, Philippine respondents seemed to value children more highly than other Asian respondents, to have slightly higher expectations of financial assistance from children (this contrast was sharpest across urban areas in different countries), and also to mention help in housework more often.[13] The data in table 123 give no reason to doubt these generalizations.

The great interest in children was balanced to some extent by awareness of their costs. Asked about the disadvantages of having children, respondents often cited the financial costs, but even more often mentioned non-economic difficulties in childbearing (table 124). Of the wives 35 per cent and of the husbands 38 per cent mentioned problems of paying children's expenses. A subsequent question determined that half of the respondents considered food and clothing the most expensive items and over a third considered education most expensive. Child rearing problems, on the other hand, were mentioned by 56 per cent of the wives and 59 per cent of the husbands. Discipline problems were the most frequently mentioned of these (over 40 per cent of each sex), with children falling sick coming next. This was qualified, by many respondents, by the observation that sickness nevertheless caused more worry than discipline. General emotional and physical stress was another class of disvalues mentioned by 24 per cent of the wives and 22 per cent of the husbands. Two final disvalues given much importance in the modern urban milieu proved very low in salience. The restrictions that having children impose on parents were mentioned by only 7 per cent, and a combined category including the strains children create in a marriage and societal strain or over-population was mentioned by only 2 per cent.

The large difference between urban and rural respondents was not in either of these last two disvalues, but in the greater concern rural respondents showed about children falling ill. This probably reflects actual differences in morbidity rates and availability of resources and facilities for coping with disease rather than greater sensitivity to illness. Possibly as a consequence, rural respondents more often mentioned emotional and physical stress caused by children. One other difference was interesting: a greater proportion of urban husbands than rural mentioned being tied down by children, but among wives the difference was small and in the opposite direction. Either husbands play a greater role in child rearing in urban areas or their leisure activities outside the home are more seriously curtailed by children.

These results for a national sample contrast with the results for a greater Manila-Bulacan sample reported by Bulatao.[14] In Manila and Bulacan, the financial costs of children were mentioned much more frequently; the percentage of wives citing educational costs, for instance, was twice as great. Restrictions on parents because of children were also very much more important. The percentage mentioning job restrictions was five times as large. Similar contrasts did not appear within the national sample when urban and rural respondents were compared, nor when the sample was broken down by region. In fact, financial costs were slightly more salient for rural respondents. Although the data are not entirely consistent, it is possible to speculate that financial costs and opportunity costs assume greater importance not at low or moderate levels of urbanization but only at the high levels represented by major metropolitan areas.

As in the case of the advantages, the disadvantages of children were initially sorted into 172

12 *Ibid.*

13 Rudolfo A. Bulatao, *loc. cit.*

14 *Ibid.*

Table 124. Disadvantages[a] of having children, by sex and residence of respondent

Disadvantage	Wives			Husbands		
	Urban	Rural	Combined	Urban	Rural	Combined
Cost of food and clothing	5	8	7	5	8	7
Cost of education	12	11	11	10	12	11
Cost of medical care	4	2	3	3	5	4
Financial costs in general	20	23	22	21	26	24
Emotional and physical stress	21	27	24	20	24	22
Discipline	41	41	41	43	41	42
Sickness of children	12	15	14	13	19	17
Other child-rearing problems	15	16	15	14	17	16
Tied down	5	6	5	7	4	5
Can't work	3	2	2	1	3	2
Marital strains, overpopulation	2	1	2	1	2	2

a Percentage of respondents mentioning each class of disadvantage. Multiple answers allowed.

detailed categories, a scheme which proved to be useful cross-culturally. Comparisons in Arnold[15] and Bulatao[16] indicate that Philippine parents emphasize emotional costs slightly more than parents in the other Asian countries studied. In particular, the concern with problems related to discipline was unique; in none of the other countries were discipline problems rated as high in importance as in the Philippines. Where restrictions on parents were concerned, Philippine parents and Thai parents paid little attention to this factor, in contrast to their counterparts in, for instance, Japan and the Republic of Korea.

The characteristic of values and disvalues of children that has been discussed so far is their salience, the frequency and ease with which they spring to mind and are therefore mentioned. Salience is not the same thing as centrality in one's concerns – values that are often mentioned may be glibly mouthed rather than deeply felt. When parents are asked which among the values are most important to them, those most frequently mentioned do not always rank highest. The most central values, those closest to a person's basic value commitments, are more easily determined through structured rather than open-ended questions. One structured question used in this survey was a list of 19 reasons for having children that respondents were asked to rate as very important, somewhat important, or not important to them. As will be seen from table 125, for both husbands and wives, the most important values in this set were children to strengthen the marital bond, children to bring love, and children to depend on in old age. These values are not identical with the most frequently mentioned advantages of children.

Various statistical analyses, such as canonical correlation and factor analysis, were applied in an attempt to resolve the difference between value salience and value centrality and to determine the basic structure underlying various responses to questions on the value of children. These analyses are complex and not always parallel: when different value items are included in the battery, the value structure changes in various ways.[17] Still, the analyses generally indicate that salience and centrality are separate characteristics of values, sometimes parallel but occasionally not. They also indicate that values can be treated in particular clusters or domains, values in each domain sharing specific characteristics without necessarily being identical. Abstracting from the different analyses and ignoring the details, one may identify the major domains of child-related values for Philippine parents as follows:

(a) Instrumental-assistance values, including financial help expected from children, old-age security, help with household chores, and caring for other children. These values, as a group, were highly

15 Fred Arnold and others, *op. cit.*

16 Rudolfo A. Bulatao, *loc. cit.*

17 For instance, see Rudolfo A. Bulatao, *loc. cit.*

Table 125. Centrality[a] of values attached to children, by sex and residence of respondent

Reason	Wives			Husbands		
	Urban	Rural	Combined	Urban	Rural	Combined
So that you will not be lonely	81	82	81	79	73	75
Because children are needed to complete the family	83	80	81	83	80	81
Because children are fun	81	84	83	80	81	81
Because children can work and help the family	77	84	81	76	82	80
Because of your religion	45	48	47	43	40	41
To watch them grow and develop	82	73	77	77	73	75
To feel that you are doing something	63	59	61	62	61	62
Because it would be odd not to have children	73	72	72	72	73	73
Because it's part of being (woman/man)	74	65	69	72	65	68
To have someone to depend on when you are old	87	91	89	84	87	86
So that you will be remembered after you are gone	72	74	74	68	76	73
Because children will look up to you	76	76	76	68	72	70
To please your parents or other relatives	66	60	62	57	58	58
To strengthen the bond between you and your spouse	88	88	88	88	89	88
Because children can make you feel proud of them	79	71	74	78	71	74
Because children bring you love	89	88	88	84	88	86
So that the family line will continue	80	72	75	78	83	81
To become a better person	73	76	75	70	78	75
To have someone who needs you	69	64	66	64	65	65

[a] Percentage of respondents rating specified reasons for having children as very important.

salient as well as among the most central values. They generally appeared linked in factor analysis, indicating that respondents who attached importance to one of these values were likely also to attach importance to the others;

(b) Values derived from interactions with children that are rewarding to the parents, such as the companionship children provide, the opportunity to give and receive love and affection, happiness from being with children, play, fun and stimulation, and distraction from work and from worries. Rewarding-interactions values were, over-all, about equal in salience to instrumental-assistance values and perhaps marginally ahead in centrality. As a group, these socio-emotional rewards were considered by the respondents as basic, important reasons for wanting children. These values also appeared as an identifiable dimension in factor analysis;

(c) Psychological-appreciation values, such as children carrying out parents' aspirations, the satisfaction of achievement and power motives, children providing incentives to succeed or to reform one's life, and self-fulfilment through having children. These values were low in salience and generally low in centrality. They did not form a cohesive set, either because they really are diverse or because respondents had little feeling for such values and distributed them almost randomly across clusters;

(d) Social pressures as values, including pressures caused by religious obligations, the desire to

please relatives, and the wish for adult status. All the empirical results agree that these values were the least salient and the least central. However, they were recognized as a distinct class of reasons for having children, and thus appeared as another independent cluster of values. The low ratings these values uniformly received do not mean that social pressures exert little influence; merely that people do not recognize or do not acknowledge whatever influence such pressures have;

(e) The enhancing of the marital bond through children. This value was low on salience but high on centrality. It did not generally form an independent dimension, being usually assimilated into the rewarding-interactions cluster. There were, however, exceptions to this, and the value also had a distinctive relationship to social status measures (consistently increasing in salience and centrality as status rose) that indicated it should be separately treated;

(f) Carrying on the family name or extending the family line. This value was also relatively low on salience but higher on centrality among husbands. It was the male-female contrast regarding this value that indicated it should be treated separately. Among the wives, the family name was part of the social pressures cluster, suggesting that pressure from their husbands or in-laws created concern with the family name. For the husbands, on the other hand, this value was part of a factor having to do with family continuity, which also included pride in children, the pleasure of watching children grow, and some other values from the rewarding-interactions cluster.

The complexity of the value clusters contrast with relatively simple and straightforward clustering among the disvalues. The four major groups of disvalues were: the emotional strains of having children, including worries about child rearing; financial problems caused or aggravated by children; restrictions on parents' activities and limitations on time for oneself or one's spouse; and concern about overpopulation. Whereas the first two of these were easily identified and clearly independent dimensions, the latter two appeared much less frequently and received less importance, and were to some extent subsumed under the other two clusters. The distinction between salience and centrality also holds in the case of disvalues. Between the two major disvalue clusters, financial costs were less salient than the worries of child rearing, but appeared more central and ranked first in importance among the disvalues (table 126). Between the two minor disvalue clusters, overpopulation was less salient but managed barely to outrank restrictions on parents in importance. The importance of each disvalue is further indicated by the other data in table 126; two out of three respondents felt children caused socio-emotional strain, three out of four wives (but fewer husbands) felt they restricted parents' activities, and three out of four considered overpopulation a serious problem that could motivate them to have fewer children. On the other hand, financial problems were considered to begin when parents had about three children and to become severe when the number of children increased to five.

Table 126. Centrality of disvalues attached to children by sex of respondent

Disvalue	Wives	Husbands
Relative importance of disvalues		
Mean rank (out of four disvalues) assigned to:		
Financial problems	1.30	1.35
Worry and emotional strain	2.57	2.60
Keeping you from other things	3.19	3.11
Problem of overpopulation	2.93	3.00
Financial costs		
Mean response for the largest number of children that is fairly easy to raise economically	2.56	2.94
Mean response for the largest number of children that is somewhat difficult financially but not yet a heavy burden	4.08	4.53
Emotional strain		
Percentage who say children cause a moderate amount or a lot of worry and emotional strain	67	63
Restrictions on parents		
Percentage who say having children prevents them from doing other things sometimes or very often	74	65
Overpopulation		
Percentage who say overpopulation is a serious problem	74	70
Percentage who consider overpopulation a reason to have fewer children themselves	74	71

The values and disvalues discussed so far apply to children in general. When spoken in terms of sons and daughters, or older children and younger children, or many children and few children, the values and disvalues are not always the same. The contrast between values attached to sons and daughters, for instance, is dramatic, over 80 per cent of both wives and husbands wanted daughters in order to help with the housework, but only 10 per cent wanted sons for that reason (table 127). Sons were desired mainly to help support the family (about half the respondents) and to preserve the family name (about a quarter of the respondents). Daughters, besides being seen as household help, were valued slightly more than sons, by both husbands and wives, in regard to the companionship, fun and happiness they provided. These contrasts involve salience and are not necessarily supported by responses to structured questions; when respondents were asked whether they expected household help from daughters or sons the percentages saying yes were much closer (at 94 to 83 per cent, respectively, among wives).[18]

Table 127. Values[a] attached to sons and daughters, by sex of respondent

Reason	Sons		Daughters	
	Wives	Husbands	Wives	Husbands
Help in housework	10	11	81	82
Caring for other children	5	2	2	2
Help in old age	2	3	2	*b*
Financial and practical help	55	45	7	4
Family name, family line	21	29	*b*	0
Marital bond, home life	2	1	1	2
Companionship, happiness, play	2	2	5	7
Less trouble	1	0	1	1
Other	2	6	1	1
Total	100	100	100	100

a Percentage of respondents mentioning each class of reason for wanting sons or daughters. Only the first answer given is tabulated.

b Less than 1 per cent.

The contrast between few children and many children is also an important one. Many children do not necessarily mean greater utility, even among those who value children highly. Some values, such as attaining adult status, may be quite adequately satisfied with a single child. Other values, such as bringing husband and wife closer, may in fact become more difficult to achieve with more children. This point is illustrated in table 128. Respondents were asked to choose which among nine general values (such as being financially secure, having a happy family, and being close to one's spouse) was most basic in their lives. Regardless of their choice, most respondents thought that children contributed to this basic value, indicating that children might be seen as generalized reinforcers. Nevertheless, the number of respondents who felt that a small number of children would contribute more to their most basic value was more than twice the number who thought that a large number of children would contribute more. Most respondents apparently desired a balance between what they considered few and what they considered many children: few thought it was good to have an only child, and most agreed that a child needed brothers and sisters for companionship. However, more respondents thought it was better for a child to come from a small than from a large family.

Some precisions can be introduced into the assessment of the relationship between values and disvalues, on the one hand, and number of children, on the other, through regressions to predict family-size preferences from values.[19] Regressions previously reported indicated that ratings of the importance of values and disvalues did explain some of the variance in size preferences, even when socio-economic factors such as education and income were controlled.[20] Importance ratings that had specific reference to one's own situation, taking into account the number of children one already had, were more

18 The latter percentages may reflect perceptions of roles actually assigned to sons and daughters. Although there is differentiation, both sons and daughters generally have some household tasks assigned to them (see Anna Miren Gonzalez and Mary Racelis Hollnsteiner, *Filipino Women as Partners of Men in Progress and Development* (Quezon City, Institute of Philippine Culture, Abeneo de Manila University, 1976). The difference in salience, which comes from a more general question rather than one specifically about one's current sons and daughters, may reflect the ideal order, in which it is considered demeaning for a man to manage the house. (See Pas Policarpio Mendey and F. Landa Jacano, *The Filipino Family in its Rural and Urban Orientation: Two Case Studies* (Manila, Research and Development Centre, Centro Escolar University, 1974).

19 Although it would be preferable to predict actual family size, the data so far available are synchronic and do not allow such analyses.

20 Rudolfo A. Bulatao, *loc. cit.*

Table 128. The importance of children and the important of number of children, by sex of respondent

Index	Wives	Husbands
Importance of children generally		
Percentage for whom children contribute to:		
- the basic value they chose as most important in their lives	93	95
- the basic value they chose as second most important in their lives	96	97
Percentage who consider becoming a parent the most important thing in their lives	77	78
Importance of number of children		
Percentage who expect a larger contribution to the basic value they chose as most important in their lives from:		
- a large number of children	17	14
- a small number of children	35	39
Percentage who expect a larger contribution to the basic value they chose as second most important in their lives from:		
- a large number of children	17	34
- a small number of children	17	17
Percentage who think it is better for a child if he comes from		
- a large family	19	20
- a small family	71	68
Percentage who think it is not good to have only one child	78	78
Percentage who think it is very important for a child to have brothers and sisters for companionship	86	87

predictive of behavioural intentions than were ratings of general importance. Value and disvalue ratings seemed to predict the number of additional children wanted, but no such global measures as ideal family size. One particular value that was strongly predictive was the desire that one's children should have additional comparisons; one disvalue similarly predictive was the financial costs of children.

These regressions probably underestimated the impact of values. They identified only those values that had a strong, uniform effect across all parity levels. The values attained in having the first child are not necessarily the same as those attained from the second child, nor the same as those from the third child and later children. To illustrate, a couple may want to validate their status as adults with the first child, then seek a second child to provide the first with a companion, then, when the first two are older, desire a third child to provide again the enjoyment of caring for a baby. Similarly, disvalues change: the marginal costs of having a child depend partly on how many one already has. Regressions that treat couples at all parities together miss these interactions between values and parity.[21]

We may look at each parity level separately and determine which values separate those who wish to continue and those who wish to stop childbearing. Table 129 presents the differences in mean ratings given to 12 values and 10 disvalues between these two groups. These differences are given separately for wives and for husbands with different numbers of living children. No figures are given for those with no children, because all of these respondents wanted a child. It is evident that the values relating to childbearing differed depending on the number of children the respondent already had. Respondents with one child who wanted a second were distinguished from those who did not want a second chiefly for reasons of providing a companion for the first child or for having a daughter or a son, whichever they did not have. They also had slightly more confidence that another child would provide an incentive to work harder, and tended significantly more often to discount the financial burden of another child and the child's interference with the wife's working. With two children, those who wanted a third still emphasized sibling companionship, the desire for a child of a specific sex, and the incentive value of a child. For those who did not want a third child, financial constraint was not as important a reason as the feeling that one was too old to have another child or that another child would limit one's freedom. Those considering their fourth child put less emphasis on sibling companionship: apparently three children were considered to provide sufficient companionship among themselves. Their argument for a fourth child was based more on wanting another baby to love and care for, on seeking the pleasure of watching children

21 See Rudolfo A. Bulatao and Fred Arnold, "Relationships between the value and cost of children and fertility: cross-cultural evidence" paper presented at the XVIIIth General Conference of the International Union for the Scientific Study of Population, Mexico City, August 1977.

Table 129. Value and disvalue differences[a] associated with wanting additional children, by number of living children and sex of respondent

Value or disvalue	Wives Number of living children				Husbands Number of living children			
	1	2	3	4 or more	1	2	3	4 or more
Values								
To have someone to love and care for	.26 (3.30)[b]	.20 (2.68)	.41 (4.55)	.38 (4.26)	.31 (1.43)	.04 (0.24)	.52 (2.86)	.24 (1.13)
So that there will be one more person to help your family economically	.09 (0.87)	.17 (2.14)	.26 (2.71)	.38 (4.38)	.46 (1.54)	.23 (1.48)	.40 (2.21)	.07 (0.34)
Because you want to have another/a boy	.44 (4.01)	.39 (4.35)	45 (4.11)	.39 (3.93)	.04 (0.19)	.59 (2.95)	.44 (2.25)	.15 (0.66)
To provide a companion for your children/child	.49 (5.93)	.33 (4.38)	.58 (5.63)	.41 (4.22)	.25 (0.92)	.64 (3.98)	.49 (2.64)	.24 (1.07)
Because another child would give your husband/you more reason to succeed in his/your work	.30 (3.26)	.35 (4.25)	.58 (5.72)	.39 (4.24)	.59 (2.28)	.64 (3.85)	.39 (1.93)	.16 (0.70)
To be sure that in your old age you will have someone to help you	.15 (1.99)	.16 (2.43)	.39 (4.29)	.28 (3.42)	-.02 (-0.09)	.23 (1.71)	.40 (2.52)	.15 (0.76)
To have a child to help around the house	.08 (0.91)	.16 (2.21)	.38 (4.13)	.29 (3.32)	.21 (0.84)	.35 (2.36)	.42 (2.36)	.16 (0.79)
Because of the pleasure you get out of watching children grow	.15 (1.87)	.19 (2.74)	.35 (3.98)	.31 (3.78)	-.10 (-0.41)	.52 (3.31)	.44 (2.69)	.29 (.151)
To bring your spouse and yourself closer together	.24 (3.42)	.18 (2.55)	.33 (3.54)	.31 (3.69)	.23 (1.31)	.47 (3.28)	.21 (1.27)	.12 (0.60)
Because you want to have another/a girl	.40 (3.59)	.36 (4.07)	.37 (3.21)	.45 (4.47)	.81 (2.93)	.77 (3.96)	.22 (1.05)	.36 (1.59)
To help carry on your family name	.30 (2.81)	.21 (2.49)	.43 (4.17)	.24 (2.46)	.00 (-0.02)	.60 (4.19)	.30 (1.65)	.24 (1.18)
Because it is fun to have young children around the house	.20 (2.38)	.23 (3.18)	.39 (4.06)	.34 (3.86)	.43 (1.70)	.33 (2.13)	.42 (2.43)	.25 (1.22)
Disvalues								
Because having another child would be a financial burden for your family	-.40 (-3.12)	-.28 (-3.40)	-.33 (-3.48)	-.33 (-1.54)	-.12 (-2.21)	-.30 (-1.71)	-.20 (-1.26)	-.21 (-1.18)
Because you could't spend as much time with your spouse	-.22 (-1.71)	-.17 (-1.85)	-.20 (-1.88)	-.09 (-0.97)	-.48 (-1.37)	.08 (0.40)	-.27 (-1.39)	-.20 (-0.97)
Because you would not be as free to do what you want to do	-.15 (-1.17)	-.36 (-4.17)	-.17 (-1.72)	-.29 (-3.24)	-.57 (-1.53)	-.23 (-1.20)	-.23 (-1.47)	-.51 (-2.44)
Because you are concerned about the problem of overpopulation	-.07 (-0.56)	-.13 (-1.61)	-.23 (-2.40)	-.13 (-1.52)	-.48 (-1.37)	-.04 (-0.24)	-.15 (-0.91)	-.10 (-0.50)
Because it would be harder for you/your wife to have a job	-.18 (-1.43)	-.27 (-3.49)	-.20 (-2.19)	-.14 (-1.83)	-.71 (-2.07)	-.19 (-1.01)	-.23 (-1.29)	-.54 (-3.07)
Because of the worries children cause when they are sick	-.08 (-0.67)	-.17 (-2.71)	-.19 (-2.44)	-.16 (-2.98)	-.59 (-1.94)	-.28 (-1.84)	-.37 (-2.99)	-.19 (-1.41)
Because another child would be a lot of work and bother for you	-.16 (-1.23)	-.26 (-3.24)	-.30 (-3.15)	-.33 (-4.17)	-.42 (-1.19)	-.17 (-0.93)	-.40 (-2.21)	-.83 (-4.34)
Because your spouse and you are too old for another child	-.04 (-0.31)	-.35 (-3.66)	-.28 (-2.53)	-.29 (-2.90)	-.31 (0.88)	-.38 (-1.72)	-.35 (-1.67)	-.63 (-2.78)
Because you could not be able to give enough care and attention to all your children	-.13 (-1.30)	-.26 (-3.41)	-.13 (-1.44)	-.28 (-4.02)	-.19 (-0.55)	-.16 (-0.87)	-.47 (-2.79)	-.79 (-4.49)
Because children would be hard to discipline and control	-.12 (-0.92)	-.19 (-2.56)	-.22 (-2.56)	-.16 (-2.25)	-.09 (0.27)	-.33 (-1.81)	-.47 (-2.55)	-.69 (-3.86)
Number who want another child	47	179	217	674	6	27	46	146
Number who do not want another child	187	145	74	84	59	42	25	15

a Differences between mean ratings on a three-point scale: (1) not important, (2) somewhat important, (3) very important, by respondents who want and who do not want another child.

b t - statistics in parentheses.

grow, and on providing additional security for old age. Wives continued to emphasize the effect children had on making husbands work harder, but husbands seemed to feel that three children provided enough incentive for working harder. Those who wished to stop at the three children they had, wanted to do so because of the work and bother of child rearing, all the problems of controlling and disciplining children, the difficulties of providing enough care and attention, and other similar worries. All respondents with more than three children were treated together. In this group, the most prominent reason for wanting another child was the desire for another daughter. The pleasure of watching children grow also persuaded some to try for another child, and wives still emphasized the incentive value of the next child. The predominant reasons for not having another child were the work and bother and the difficulty of providing care and attention.

It appears that children of different birth orders provide different values and entail different costs. There is no information available on the first child for the present analysis, but from other questions it may be determined that the first child provides companionship for the parents and brings love and happiness, and that the most prominent disvalue connected with it, aside from the financial costs, is the difficulties of pregnancy and childbirth.[22] The second child becomes a companion for the first and, if of the appropriate sex, provides balance in the family. The second child, however, also increases the financial burden. The third child is a companion for the first two and, like the second, is an additional reason for working harder. The fourth child provides more socio-emotional rewards for the parents, and entails costs that are more socio-emotional than financial. The pleasures of child rearing as well as its pains are much more prominent when later children are considered.

D. CONCLUSION

The discussion so far has not indicated how much a Filipino child is actually worth. In a sense, that was not the objective of the analysis. The assignment of a numerical value to a child assumes several things: that the various domains in which the child provides utility have been identified; that measures of the child's contribution in each domain can be taken, can be converted to a uniform scale, and can be summed in some fashion; and that this scale allows comparisons between the child and other consumption or investment goods. Parallel assumptions would be necessary in assigning a number to the costs or disvalues attached to having a child. The purpose of the analysis has been modest: merely to identify the various domains in which the Filipino child is perceived to provide some utility, and to determine whether the degree of a person's concern with these domaines relates to childbearing preferences.

It has been found that the value domains within which children are considered are several: the domain of instrumental assistance or practical help; the domain of interactions that are socio-emotionally rewarding; the domain of psychological motives and effects of children; the domain of coping with social pressures; the domain of marital security and closeness; and the domain of family or kin preservation. Where satisfying psychological motives and coping with social pressures are concerned, children make a minimal contribution, partly because these domains are not considered important in themselves. With regard to disvalues, children are assessed for their economic cost and the child rearing worries they occasion. Few respondents see a child in the context of opportunity costs or the social costs of overpopulation.

It has been shown that the contribution of a child in each value domain depends on at least two factors, its sex and its birth order. Childbearing intentions are influenced by different considerations as a family grows, some considerations basic and deeply rooted (such as the desire for the happiness and companionship the first child provides), others internal in the sense that they are generated by the process itself (such as the need for a companion for the first child), still others external, dictated by social roles and relationships (such as wives' desire for additional children to provide further work incentive for their husbands). No attempt has been made to construct a metric that will encompass these diverse contributions of succeeding children; that may be the next step for further research.

The analysis has shown that Filipino parents value children for largely individualistic persons. The respondents gave short shrift to pressures from relatives, from the community, or from religion as reasons for childbearing. Such pressures may operate,

22 *Ibid.*

nevertheless, through the values themselves, through couples internalizing and identifying as their own personal motives the dominant cultural patterns relating to valuing children. From this perspective, the values and disvalues described represent a particular cultural solution to the environmental and institutional demands on Philippine society. As modernization proceeds, the utility derived from children may change in various ways: particular value domains may become more important and others less important, new values or disvalues may emerge, the degree to which children provide satisfaction in each domain may vary with changing tastes, preferences, and lifestyles, other sources of satisfaction may supplant children or reduce their importance, the cultural definition of childhood and the characteristics of children may themselves change and produce adjustments in utility. Some of these potential changes can be seen in the contrasts between values of rural and urban respondents. Many such value changes will occur in the natural order of development, but some intervention to smooth the necessary transition may help accelerate population change as well as avoid unnecessary deprivation among those who consider children their only wealth and their sole treasure.

Chapter IX

POPULATION POLICY AND FAMILY PLANNING

A. HISTORY OF POPULATION CONCERN

In the Philippines, the official stand on population in the past was by and large pro-natalist. This is evident from the tax exemptions for large families, tax structures on unmarried earners and maternity leave benefits. This pro-natalist attitude was promoted on the one hand by the availability of vast extents of uninhabited but cultivable land, and on the other by a lack of reliable information on the size and rate of growth of the country's population and its implication for socio-economic development.

A joint study by the United Nations and the Government of the Philippines on manpower growth indicated a much higher rate of population growth in the Philippines in 1957 than that evident from the 1948 population census.[1] This result was later confirmed by the 1960 enumeration results. However, in response, economic and social development plans did not do more than acknowledge the high rate of population growth.

It was in late 1962 that a population and development mission visited Manila under the auspices of the Ford Foundation. The mission has as one of its objectives the establishment of national institutes to study population in all its aspects. Negotiations between the University of the Philippines and the Ford Foundation resulted in the establishment in 1964 of a Population Institute at the University with initial support from the Foundation. The main objectives of the Institute are: (a) the training of demographers; (b) the production of a comprehensive analysis of population characteristics and trends; and (c) undertaking research on population matters significant for planning and administrative purposes. Currently, the Institute also serves as a focal point for population data and analyses.

In 1965, the first Conference on Population was held under the joint auspices of the University of the Philippines Population Institute and the National Science Development Board. The Conference discussed the findings of a study by Dr. Frank W. Lorimer of UPPI which indicated that maintaining the current fertility rate until the end of the century would result in a total Filipino population of about 111 million persons.[2] It was not until October 1968, however, that the Government of the Philippines set up a Project Office for Maternal and Child Health in the Department of Health with over-all responsibility for administering a population programme.[3]

In December 1968, the then Executive Secretary to the President, Mr. Rafael Salas[4], at a meeting with interested persons, proposed the establishment of a Commission on Population to study the population situation in all its aspects and to recommend policies and programmes in conjunction with economic and social development plans. In February 1969, President Marcos signed an Executive Order establishing the Commission on Population with the following objectives:

(a) To undertake, promote and publish studies and investigations on the Philippine population in all its aspects;

(b) To assemble and disseminate technical and scientific information relating to medical, social, economic and cultural phenomena as these affect or are affected by population;

(c) To formulate policy and programme recommendations on population as it relates to economic and social development;

(d) To formulate research and study programmes and projects and assign them to such individuals and organizations as the Commission may deem appropriate;

(e) To perform such other duties as proper authorities may from time to time direct the Commission to undertake.

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1 Population Growth and Manpower in the Philippines (United Nations publication, Sales No. 61.XIII.2), p. 2. The report observed "...but in mid-year 1957 the population was estimated on the basis of the data from the Philippines Statistical Survey of Households at 23,322,000. This estimate implies an average annual increase of 2.2 per cent during 1948-1957. There is good reason to believe that the rate of population growth has been higher during the latter part of this period than it was during the years immediately after 1948 and it is likely that the rate of increase is now nearer 3 per cent per annum".

2 Frank W. Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population, 1965,* Quezon City, 1965.

3 The establishment of the Project Office was the result of an agreement between the National Economic Council and the United States Agency for International Development (USAID).

4 Currently, Executive Director of the United Nations Fund for Population Activities (UNFPA).

The Commission concluded that a reduction in the high rate of population growth was in the vital interest of the nation and recommended the following to President Marcos in September 1969:

(a) Establishment and adoption of specific and quantitative population goals on the basis of reliable demographic data and expected demographic trends;

(b) Promotion of the broadest understanding of the adverse effects on family life and national welfare of unlimited population growth and provision of the means by which couples could safely, effectively and freely determine the proper size of their families;

(c) Family planning to be made part of a broad educational programme oriented towards the harmonious development of the individual personality, the family and the nation;

(d) Examination of the legal and administrative policies and measures affecting family size, and, if deemed essential, revision of such policies and measures to bring about a balance between family size and social and economic goals;

(e) Continued efforts towards the further reduction of still high rates of morbidity and mortality;

(f) Adoption of policies and establishment of programmes guiding and regulating the flow of internal migration, and influencing spatial distributions in the interest of development progress;

(g) Establishment and maintenance of regular contact with international, public and private organizations concerned with population problems.

On 6 December 1969, President Marcos approved the Commission's recommended statement of population policy and programme.

It may also be noted that in June 1969, during the Ninth Special Session of the Sixth Congress of the Philippines, the Speaker presented and the House approved a resolution establishing basic policies to achieve economic development and attain social justice. This resolution contained the following policy statement on population:

> "A high rate of population growth poses grave social and economic challenges. The State shall meet these challenges both by positive social and economic measures that will increase the productivity of human work, so as to promote economic growth, and by programmes of family planning which respect the religious beliefs of the individuals involved, so as to increase the share of each Filipino in the fruits of economic development".

In his state-of-the-nation message at the opening of the Seventh Congress on 26 January 1970, President Marcos stated:

> "...I have decided to propose legislation making family planning an official policy of my Administration. The task of government in the control of population is threefold. The first is education, in order to impress on the people the urgent need for controlling the population. The second is the dissemination of knowledge on the techniques of birth control sanctioned by scientific and medical practice. The third is the provision of facilities, especially in the rural areas, where assistance in the use of birth control methods may be extended to the poor".

By Executive Order No. 233 of May 1970, the President empowered the Commission on Population to co-ordinate and direct the national population programme as an integral part of the national development strategy. An Executive Director was appointed in June 1970 with responsibility for programme operation. The Population Act (Republic Act No. 6365) was signed into law on 15 August 1971 establishing a national policy on population. The Act also authorized the appropriation of P 4.5 million as operating funds for the Commission. The Philippine Congress declared "that for the purpose of furthering national development, increasing the share of each Filipino in the fruits of economic progress and meeting the grave social and economic challenge of a high rate of population growth, a national programme of family planning which respects the religious beliefs of the individuals involved shall be undertaken".

With the proclamation of martial law in September 1972, the Population Act was revised in December 1972 by Presidential Decree No. 79 which explicitly involved public and private sectors in the national family planning programme. The role of the Commission was also expanded by authorizing it to distribute contraceptives through commercial channels and paramedical personnel. Presidential Decrees Nos. 166 (March, 1973) and 803 (September, 1975) recognized the private sector's role in the formulation

and implementation of population policy by granting them representation on the Commission's Board of Commissioners.

Since the promulgation of the Population Act of 1971 and its amendment in 1972, the following measures have been adopted: (a) family planning became an important part of the Four-Year Development Plan; (b) the Government's share in the family planning budget increased from nothing in financial year 1971 to 61 per cent in financial year 1977; (c) more government agencies became involved in the family planning programme; (d) a population education programme was initiated at the elementary and secondary school levels; (e) family planning and population dynamics were integrated into the curricula of all schools of medicine, nursing, midwifery, allied medical professions, and social work; (f) tax exemptions for dependants was limited to four dependants; (g) maternity leave benefits applied to the first four deliveries only; (h) establishments required by law to maintain a clinic or infirmary were decreed to provide free family planning services to their employees; (i) importation of contraceptives was legalized and, subsequently, distribution of contraceptives was allowed not only at duly licensed drugstores and pharmacies but through all other commercial channels of distribution; (j) all collective bargaining agreements were required to contain a provision for family planning services to all workers covered by such agreements before these could be certified; and (k) modern surgical techniques of contraception were deemed acceptable provided those methods did not involve abortion.

B. FAMILY PLANNING MOVEMENT

In the Philippines, widespread adoption of family planning is a recent development. Although the practice of family planning had been quietly promoted since the 1920s by Protestant missionaries,[5] "it has been a hush-hush affair in the fifties and the early sixties when any publication on family planning and birth control was censured and not allowed to enter the country through the mails. Family planning was also an untouchable topic for discussion. But gradually, civic and religious leaders began to feel strongly the need for family planning services. And they came out in the open, forming groups geared towards this in 1965".[6]

Prior to the formation of the Family Planning Organization of the Philippines (FPOP), there were two main organizations involved in family planning activities in the country, namely, the Planned Parenthood Movement of the Philippines (PPMP) composed of Protestant leaders, and the Family Planning Association of the Philippines (FPAP), composed of Catholic leaders. The Planned Parenthood Movement had its beginning in the former Family Relation Centre, a service agency of the National Council of Churches in the Philippines. Quietly, the Centre promoted family planning through its educational and service programme as early as 1957, mainly in the greater Manila area. Because of the increasing demand for information as well as service from many parts of the country, the Management Commitee of the Centre decided to expand the programme on a national scale. In the early 1960s, the programme received a boost with a $US 2,000 grant from the International Planned Parenthood Federation (IPPF). To give further emphasis to its nation-wide programme, the Centre was reorganized in 1965 to form the PPMP. PPMP was incorporated as a national, civic, voluntary family planning organization on 12 April 1967.

The activities of the Planned Parenthood Movement of the Philippines had two main components: training and services. The training programme was the first and only organized programme when it was started in August 1966. It was aimed at training medical and allied professionals to provide clinical services and lay workers to be educators and motivators. Participants, recruited from almost all levels, included physicians, nurses, social workers, midwives, community workers, health educators and others. Until its merger with the Family Planning Association in 1969, PPMP had approximately 200 clinics. While emphasizing staff training and service, PPMP also distributed literature, posters and audio-visual materials as part of its educational efforts.

The Family Planning Association of the Philippines (FPAP) was formally organized on 4 April 1965 as a civic, non-sectarian, non-profit, private organization, and incorporated under the laws of the Republic. FPAP was immediately reorganized as an affi-

5 A Methodist missionary, Rev. Housely, who was then assigned to one of the provinces in Central Luzon, discussed the planning of families with the mothers whom he encountered in the course of his work. From 1939-1948, Presbyterian and Congregational ministers and other non-Catholic lay leaders individually disseminated information on family limitation.

6 Family Planning Organization of the Philippines, *Annual Report, 1970*, p. 32.

liate member of IPPF. With financial support from IPPF, the Association opened family planning clinics in the greater Manila area and in the provinces of Bulacan, Laguna, Pampanga and Tarlac. In its educational and motivational campaign, FPAP organized series of lectures and seminars for diverse groups throughout the country using the mass media.

The Association also conducted five-day courses on family planning for general practitioners in addition to providing continuous in-service training to private and public health personnel. Clinical demonstrations followed bi-weekly lectures to medical interns of the Far Eastern University's Institute of Medicine.

The Planned Parenthood Movement of the Philippines and the Family Planning Association of the Philippines became more active in the 1960s with financial help from foreign agencies. Until 1965, financial assistance for the PPMP programme came primarily from IPPF, amounting to approximately $US 6,000 annually. Subsequently, other agencies contributed. IPPF increased its aid from $ 16,000 in 1966 to $ 35,000 in 1968. This was a little less than half of total outside support, the other donors being World Neighbours, USAID, Church World Service and Pathfinder Fund. Assistance from within the Philippines came from membership fees, nominal registration fees from patients and donations.

Because of their similar objectives, the Planned Parenthood Movement and the Family Planning Association merged in February 1969 to form the Family Planning Organization of the Philippines (FPOP). In August that year, FPOP was incorporated and in November became a full member of the Inaternational Planned Parenthood Federation. The objectives of FPOP are:

(a) To gather information and engage in educational activities relevant to family planning; to advance the educational campaign for family planning and to prepare the grounds for it through sex education and marriage counselling;

(b) To encourage the training of physicians, nurses, midwives, health educators, social workers and lay people in the practical and scientific implementation of family planning services through morally and medically accepted methods and practices;

(c) To help establish and operate family planning and fertility clinics and services for sex education, marriage counselling and birth spacing anywhere in the Philippines;

(d) To stimulate and, whenever possible, to underwrite scientific research in biological, demographic, social, economic, eugenic, and physiological aspects of human fertility; and to collate, evaluate and publish the findings of such research;

(e) To seek financial assistance/support in any form to attain its objectives;

(f) To co-ordinate and establish a working relationship with local and international organizations, agencies and individuals that promote family planning and undertake demographic studies.

FPOP membership is drawn from members of the community, different societies and organizations, community and church leaders, past participants in its training programme who are physicians, nurses, midwives, social, community and rural development workers, and government and private agencies and institutions. Financial assistance comes from IPPF in the form of an annual grant. In addition, FPOP receives financial and/or commodity assistance from the Population Council and USAID. It also obtains additional income from donations from patients and friends and from annual membership fees.

In addition to the Family Planning Organization of the Philippines, there are about 25 other private and semi-private groups engaged in programmes designed to encourage fertility decline. Notable among those private agencies which carried out pioneering work in the field are the Institute of Maternal and Child Health and the Responsible Parenthood Council. These agencies and groups mostly operate in the urban areas and their current activities are officially co-ordinated by the Population Commission (known as POPCOM) which took over these functions from the Project Office for Maternal and Child Health.

C. THE NATIONAL FAMILY PLANNING PROGRAMME

1. Objectives

The national family planning programme operates from a broad and multisectoral base. It has identified four major areas of activity: (a) delivery of family planning services through clinics situated all over the country; (b) training of all types and levels of personnel in the programme; (c) information, education and communication; and (d) research and evaluation.

The original goal was to reduce the annual population growth rate from 3.01 per cent in the financial year 1970-1971 to 2.47 per cent in the financial year 1976-1977 by the phased involvement of family planning clinics and by recruiting an average of 50,000 acceptors monthly. The programme is a voluntary, non-coercive one featuring a selection of contraceptive methods.

The primary role of the Commission on Population is that of central co-ordinator, orchestrating the development and administration of individual programmes. As the policy-making, planning and funding agency of the Government for population matters, it refrains from direct implementation of projects.

In fulfilling its role, the Commission follows a strategy of "integration" and "multi-agency participation". Aware that the population problem cannot be isolated from other problems of development, it has integrated family planning into existing programmes in health, education, social welfare, and community development. To make full use of existing resources, it has drawn a good number of public and private agencies into its programme.

In all its activities, the Commission recognizes the right of every couple to choose their own method of family planning, according to their moral convictions and religious beliefs.

2. Organizational structure

(a) Commission on Population (POPCOM)

As noted earlier, family planning activities in the Philippines are conducted by about 25 different organizations with varying degrees of participation. This is the result of the progressive involvement of private organizations, local authorities, external agencies and, recently, the Government. The Government and the private agencies have made significant contributions to the total national effort, but an urgent need was felt for co-ordination and direction of activities. The establishment of the POPCOM was in response to this need.

The functions and powers of the Commission are exercised by a Board of Commissioners composed of the Secretary of Education and Culture, the Secretary of Health, the Secretary of Social Welfare, the Dean of the University of the Philippines' Population Institute, the Director-General of the National Economic and Development Authority, and three representatives from the private sector.

The Commission's position in the Office of the President and the representation of major government departments enable it to perform effectively its function of co-ordination and planning. The representation of the National Economic and Development Authority through its Director-General puts the Commission in constant touch with the highest level of national development planning.

The Board of Commissioners plays an active role in proposing studies and policies related to specific population goals. To help it evaluate project proposals at the planning stage, five standing committees have been established:

I. Research Committee
II. Information/Education/Communication Committee
III. Training Committee
IV. Clinic Services Committee
V. Project Development Committee

These five committees formulate guidelines and policies in their respective fields. In addition, they provide technical assistance to the Commission in evaluating project proposals at the planning stage.

(b) Commission on Population secretariat

The Executive Director heads the working secretariat of the Commission. As the action officer of POPCOM, he is responsible for the day-to-day operations of the office staff and of the national population programme.

The Executive Director is assisted by a Deputy Director and Associate Directors for Administration, Finance, Logistics, Clinic Services, Planning, Training and Information/Education and Communication (IEC).

The relationships among the Divisions can be defined in this manner:

(i) The Commission's operating Divisions – IEC, Training and Clinic Services – are supported by the Administrative, Finance and Logistics Divisions;

(ii) The Planning Division is responsible for (a) the preparation of long-range and annual plans; (b) the development of a management information system that will provide management at all programme levels with information appropriate to its requirements; and (c) research that will guide the Commission in the formulation of policy and ope-

rating procedures. Close co-ordination with the other Divisions and the regional offices is essential in all these activities;

(iii) While the Planning Division strives to achieve a proper balance of activities in attaining nation-wide programme goals, the substantive content and strategy in each area of the national population programme are worked out by the division concerned.

The Training Division was created to enable POPCOM effectively to exercise its responsibilities in the co-ordination and improvement of all population-related pre-serve and in-service training. This Division is responsible for ensuring that existing and planned training programmes meet the priority needs of the national population programme at any given time.

The Information, Education and Communication Division was set up to review on-going projects in the light of a total programme; respond to the Planning Division's call for an integrated IEC component supportive of the total programme; and respond to the need to attume IEC activities to local conditions. The functions of the Division include the identification of IEC long- and short-term policy, with the corresponding objectives to fulfill that policy.

(c) Regional offices

In order to improve the co-ordination and supervisory functions of the Commission and its visibility at the regional and provincial levels, regional offices have been set up in the new established 11 regions of the country. The main functions of these offices are:

(i) To monitor existing projects of participating agencies and synthesize observations and experiences for information and action by the participating agencies;

(ii) To serve as an administrative body and clearing house for requests, information, problems, resources and needs of participating agencies at the regional level;

(iii) To observe projects and programmes at the regional level, whether government or private, to assess the feasibility of integrating family planning into the programmes and, based on this assessment, to transmit to the central office their recommendations on the matter;

(iv) To observe, monitor and evaluate the present methods or systems practised by participating agencies in promoting the national population programme with respect to clinic services, training, IEC, or research, and, whenever feasible, after consulting with the appropriate agency, recommend to the central office measures to improve programme performance.

The organizational and functional charts appears in figures 16 and 17.

The process of planning and project development outlines the relationship of the Commission with donor agencies, governmental and private implementing agencies and POPCOM's own organizational units. This process is shown in the Project Development Flow Chart, figure 18.

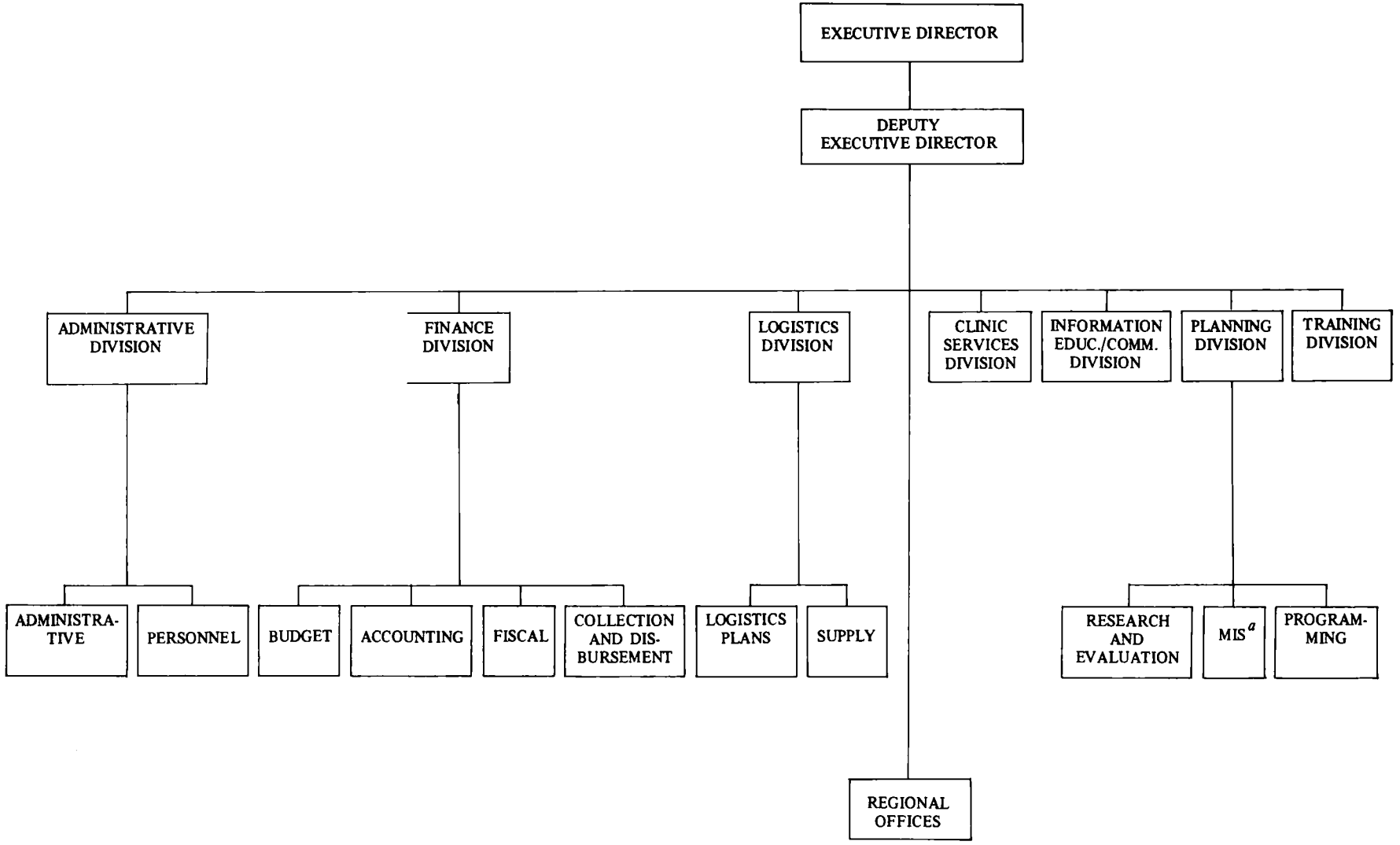
3. Delivery of services

In the Philippines, the family planning programme is essentially clinic based. POPCOM did not establish its own clinics but instead elected to integrate family planning into existing structures. There are basically four clinic models in the programme. The first is the rural health clinic (RHU) of the Department of Health which consists of one doctor, one nurse, two midwives and two lay motivators. The medical and paramedical staff continue to receive their salaries from the Department while the lay motivators receive a monthly honorarium of ₱130 each on the understanding that they each recruit 15 new acceptors monthly. In addition, contraceptive supplies are given to these clinics which are then distributed free to acceptors.

The second model is a private clinic consisting of a doctor, nurse, midwife and a lay motivator. Most of these clinics are puericulture centers. In contrast to the first model, they are administered by the Institute of Maternal and Child Health (a private organization), although the personnel involved in family planning activities and contraceptive supplies are fully supported by POPCOM.

The third model is the agro-industrial clinic and health programme. POPCOM trains the company doctor and nurse at one of its training centres. They, in turn, provide family planning services to labourers.

Finally, the fourth model consists of physicians in private practice. These physicians are trained in family planning by one of the training institutions



a Management Information System.

Figure 16. Commission on Population organizational chart, fiscal year 1974/75

Names of agencies

1.	APMC	–	Association of Philippine Medical Colleges
2.	ASI	–	Asian Social Institute
3.	DCHD	–	Davao City Health Department
4.	DND	–	Department of National Defense
5.	DOE	–	Department of Education
6.	DOH	–	Department of Health
7.	DSW	–	Department of Social Welfare
8	FPOP	–	Family Planning Organization of the Philippines
9.	IMCH	–	Institute of Maternal and Child Health
10.	IPPP	–	International Post Partum Program (PGH/Fabella)
11.	MCHD	–	Manila City Health Department
12.	NCSO	–	National Census and Statistics Office
13.	NMPC	–	National Media Production Center
14.	OHEPT	–	Office of Health Education and Personnel Training
15.	DLGCD	–	Department of Local Government and Community Development
16.	PMA	–	Philippine Medical Association
17.	POB	–	Province of Bulacan
18.	POL	–	Province of Laguna
19.	PONE	–	Province of Nueva Ecija
20.	RMAF	–	Ramon Magsaysay Award Foundation
21.	SUMC	–	Silliman University Medical Center
22.	TFPMP	–	Tulungan Family Planning Mothercraft Project
23.	UPCM	–	University of the Philippines, College of Medicine
24.	UPCM/RRM	–	University of the Philippines, College of Medicine/Research in Reproductive Medicine
25.	RPC	–	Responsible Parenthood Council
26.	NCC	–	National Computer Center
27.	UPPI	–	University of the Philippines Population Institute
28.	SGV	–	Sycip, Gorres and Velayo
29.	XU	–	Xavier University
30.	DOE-PEP	–	Department of Education – Population Education Program
31.	UP-IMC	–	University of the Philippines – Institute of Mass Communication
32.	UP-IPH	–	University of the Philippines – Institute of Public Health
33.	BMC-MCH	–	Bureau of Medical Services – Maternity Centered Hospital
34.	BOH	–	Bureau of Hospitals
35.	FPIA	–	Family Planning International Assistance
36.	ICCMC	–	Inter Church Commission on Medical Care
37.	PF	–	Pathfinder Fund
38.	UST	–	University of Santo Tomas
39.	WN	–	World Neighbors
40.	CAC	–	Commodity Assisted Clinics
41.	IPC	–	Institute of Philippine Culture
42.	UPCM-RBC	–	University of the Philippines College of Medicine Reproductive Biology Center
43.	VMH	–	Veterans Memorial Hospital

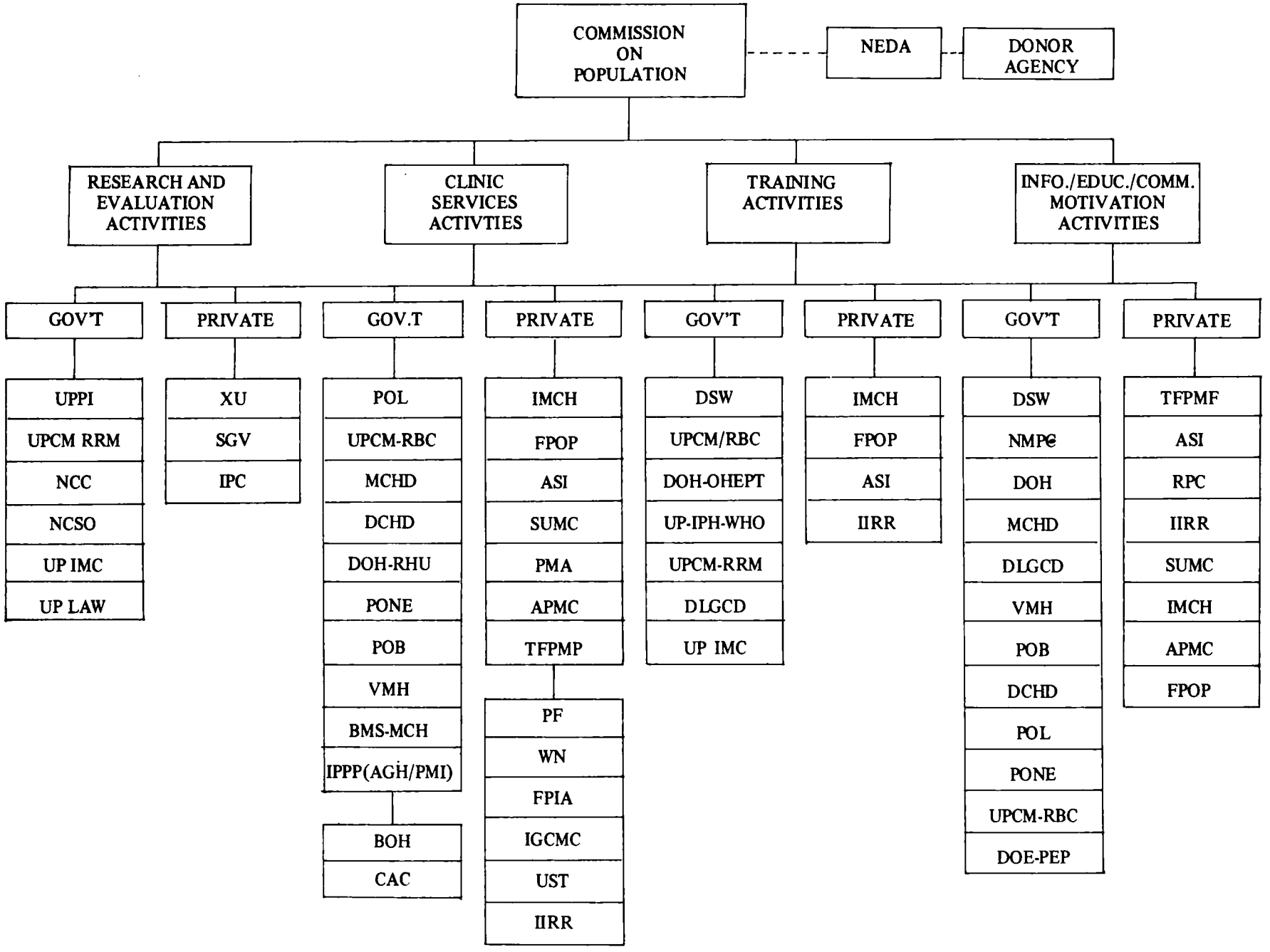
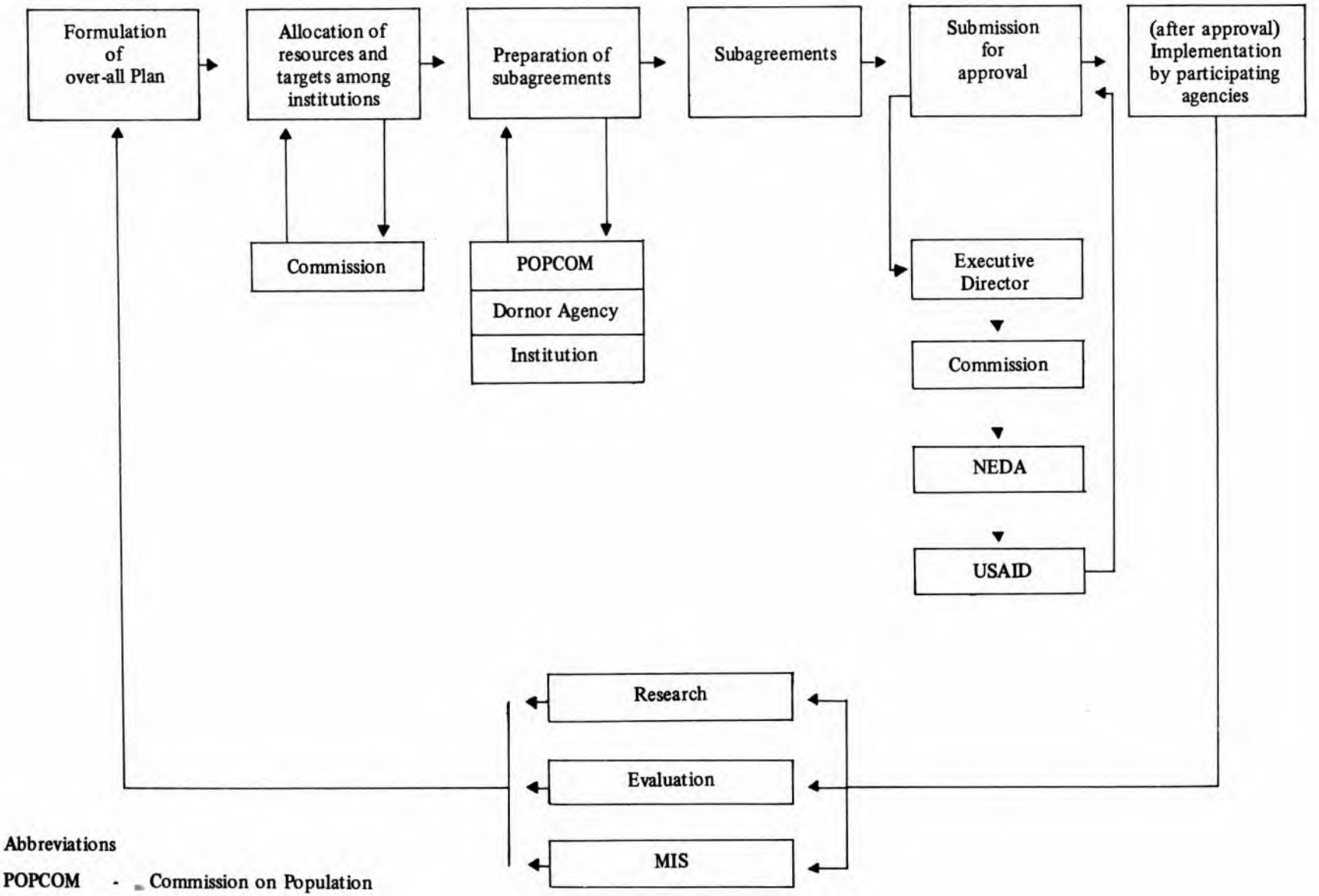


Figure 17. Commission on Population interagency functional relationships, fiscal year 1974/75



Abbreviations

POPCOM - Commission on Population
NEDA - National Economic and Development Authority
USAID - United States Agency for International Development
MIS - Management Information System

Figure 18. Project development flow chart of the Commission on Population

supported by POPCOM which then gives these private physicians a continuing supply of contraceptives. Since no compensation or incentive is given, they are allowed to charge their clients their usual fee.

Aside from the Department of Health, two other instrumentalities of the Government play important roles in the implementation of the population programme. The National Media Centre, through its Population Information and Education Office, carried out the mass media aspect of population information and education; the Department of Education and Culture executes the population education programme that was launched by POPCOM in 1972 with the financial assistance of UNFPA.

4. Education: motivational activities

The approaches utilized to create the need for family planning include the following activities:

1. Interpersonal motivation. In the past, the Commission has heavily supported the use of motivators in face-to-face communication. The current strategy is to use mobile information and motivation teams to provide audio-visual support to clinic services and to the personal approach of field motivators. Population messages are integrated into the existing structure and regular programme activities of development agencies such as the Department of Social Welfare, the Department of Local Government and Community Development and the Bureau of Agricultural Extension. To support this movement towards integration, other forms of group dynamics were tested in the rural areas. Satisfied users' clubs, family planning health clubs, male acceptors' clubs, female welfare auxiliaries, and volunteer couple informants were organized. Pre-marital counselling was provided in those areas where such counselling is a prerequisite for obtaining a marriage license.

2. Mass communication. Manuals, flipcharts, brochures and comic books continue to be produced and distributed, while radio dramas and jingles are regularly aired on local and national radio and television stations. The potential of folk media was tapped by chronicling known indigenous forms of communication throughout the country. The *balagtasan* (poetic debate), *zarzuela* (native operetta) and mobile theatre group as means of communicating family planning were tested and found useful. A two-hour full-length movie entitled *Batingaw* (Bells) was shown using commercial resources and distribution channels. Audience evaluation showed a high degree of recognition of the movie's population content. Mobile teams expanded and diversified their activities to include group discussions, film strip and slide presentations, cassette tape broadcasts, displays and exhibits.

3. Population education. To ensure that family planning becomes a way of life, in fiscal year 1972 POPCOM launched a five-year population education programme with an appropriate of ₱10 million. The chief objective of this programme is to integrate population education concepts into the curricula of the elementary and secondary grades throughout the entire educational system of the Philippines. An initial 1,320 teachers were trained in 1972 and an integrated curriculum has been developed for the elementary and secondary levels of education. The programme has so far trained 151 Supervisory Training Teams, which in turn trained 35,800 teachers and principals. The syllabus produced for the integrated curriculum has been revised to make it more sensitive to existing conditions.

A large segment of Filipino youth today are out of school. Recognizing the serious need to educate this section of the population on the importance and benefits of family planning, POPCOM, in collaboration with the Department of Social Welfare, has launched a project on population education for out-of-school youth. These youths are provided opportunities to gain knowledge and understanding of family life, human sexuality, planning, and decision-making through the Human Resources Development Programme of the Department of Social Welfare.

5. Training

There are four major institutions for training doctors, nurses, midwives and motivators in family planning. Two of the major training institutions, the Institute of Maternal and Child Health (IMCH) and the Family Planning Organisation of the Philippines (FPOP), are private institutions. The other two, the Office of Health, Education and Personnel Training of the Department of Health and the University of the Philippines' College of Medicine, are government institutions. In addition, there are five agencies that undertake specialized training of their own personnel. Training activities of these agencies consist mainly in preparing their personnel as family planning motivators.

IMCH established its National Training Centre for Maternal Health Services in mid-1967 in terms of an agreement with the National Economic Council and USAID. Its objectives are:

(a) To assist in providing to the faculty and students of medical, nursing and midwifery schools knowledge and education relative to population problems and family planning;

(b) To provide comparable education to all health and paramedical personnel in the Philippines.

The training centre conducts courses of three weeks' duration with (ideally) 30 participants per course. The number of persons who participated in the IMCH training programme from its inception to early 1973 were as follows:

Fiscal year	Physicians	Nurses	Midwives	Others	Total
1968	536	407	389	148	1,489
1969	298	183	260	-	741
1970	420	447	354	508	1,729
1971	451	339	434	1,347	2,571
1972	448	216	417	977	2,058
1973[a]	67	100	172	155	494
Total	2,220	1,692	2,035	3,135	9,082

a 1 July 1972 through 28 February 1973.

In addition, the centre gives one- or half-day orientation courses to interested groups on request.

The training activities of IMCH have been an important part of the country's efforts in family planning. They constituted the first large-scale training programme and many of the present trainers in family planning were trained at the IMCH National Training Centre. Since many organizations, and especially the Department of Health, have started their own training programmes, the activity of the IMCH Training Centre is decreasing. For instance, its target for fiscal year 1973 was to train 480 physicians and paramedical personnel and to conduct refresher courses for 200 persons – a target that was significantly below its past achievements.

FPOP started its training programme in family planning in 1966. The programme was first oriented towards training FPOP's own staff, although some staff of other organizations (e.g. the Presidential Arm of Community Development) also attend the courses. The duration of the courses ranges from two to four weeks and a greater part of the training activities are funded by IPPF. The training activities of FPOP from 1970 were as follows:

Fiscal year	Physicians	Nurses	Midwives	Others	Total
1970	146	112		224	482
1971	112	99	61	139	411
1972	50	46	36	283	415
1973[a]	26	23	7	38	94

a Up to 20 March 1973.

The Department of Health, through its Office of Health Education and Personnel Training, commenced training in family planning at the end of fiscal year 1972 with the in-service training of 225 members of its own staff. The number of persons in various categories trained in family planning over the years is as follows:

Fiscal year	Physicians	Nurses	Midwives	Motivators	Others	Total
1971	227	497	292	805	-	1,821
1972	445	444	785	-	165	1,839
1973[a]	196	185	585	726	32	1,692

a 1 July 1972 through 28 February 1973.

Apart from the organizations mentioned, a variety of other organizations are currently involved in training in family planning. Mostly they train only lay personnel in short courses. The only notable exception is the University of the Philippines, where, in co-operation with other organizations, over 250 physicians have been trained annually over the past few years. The largest numbers of non-medical personnel are trained by the Department of Social Welfare (volunteer couple informants) and the Responsible Parenthood Council (opinion leaders). The ultimate aim of the Council training programme is to train couples in the rural areas to practice the rhythm method. Because this method requires a relatively complicated effort on the part of acceptors, the Council has built up an elaborate training system, in which the Training Division of the National Project Staff is responsible for training provincial teams, which in turn train the *barrio* teams. The *barrio* teams are responsible for the recruiting and training of acceptors. As the Council tries to staff its organization at the provincial, municipal and *barrio* levels with people who are regarded as opinion leaders in their respective communities, it does an important

job in increasing the awareness of the population problem in rural areas.

A total of 46,504 population programme personnel underwent training in various operations of the programme for fiscal years 1975, a figure almost equal to the 50,000 trained in the previous three years. Of the 46,504 participants, four fifths were involved in education-motivational work, about 1 in 14 were local government officials, around 6 per cent were engaged in service delivery, some 3 per cent were medical personnel, and the remainder were administrative service staff.

Paramedical personnel were given training in comprehensive family planning services so that nurses and midwives could deliver a wider range of services, and administer all conventional contraceptive methods including pill dispensation and IUD insertion.

Traditional birth attendants were also trained in some pilot areas. In this way, the Commission hopes to utilize the experimental findings to develop a comprehensive service programme using the service of this type of paraprofessional.

Four vasectomy training centres were established throughout the country to train physicians in vasectomy procedures. Training for the sterilization programme continues to be closely monitored by POPCOM, enabling it to develop more practical implementing guidelines in the future.

An important feature of the training programme has been fellowship training abroad. Most of this training has been in specialized areas where local capabilities have been inadequate. However, as more comprehensive in-country training programmes have been developed, overseas training has been gradually reduced.

6. Programme performance

As noted earlier, although organized family planning services had been provided by various agencies since 1964, it was not until July 1970 that a nation-wide family planning programme was started as a result of the establishment of a new Commission on Population. Since that, there has been a considerable expansion of the programme in the country.

At the end of fiscal year 1970, there were only 248 clinics providing family planning services and those were mostly concentrated in large cities. Currently, there are about 2,750 clinics spread all over the country with variations in the types of services offered – from full-time, single-purpose family planning clinics to those providing only one-afternoon-a-week clinic sessions.

The expansion in the number of clinics resulted in an increase in the annual number of new acceptors from an adjusted[7] figure of 56,100 in fiscal year 1970 to 546,300 in fiscal year 1975. Correspondingly, adjusted cumulative acceptors increased from 56,100 in 1970 to 2.4 million at the end of fiscal year 1975. It will be seen from table 130 that in fiscal year 1975, there were some 728,400 reported new acceptors; of these, however, 30 per cent are estimated to be cases of over-reporting and transferees. The adjusted number of acceptors recruited for 1975, therefore, is much less than the target of 889,400 for that year. Assuming the adjusted number to be correct and allowing for a 4 per cent mortality and sterility annual rate, the number of cumulative users at the end of fiscal year 1975 would appear to be of the order of 1,122,300. This is around 21 per cent of all eligible women, defined as all currently married women in the age group 15-44 years.

The success of the programme depends to a large extent on the types of contraceptive method used, and on the continuation and pregnancy rates. These rates should, therefore, be given in any description and assessment of family planning programmes. Table 131 shows estimates of these rates made by Philips and Zablan on the basis of the 1974 National Acceptor Survey (NAS).[8]

Two types of continuation rates are given in this table. the first method continuation rate refers to the proportion of women who initially accepted a method and continued using the same after a stated length of time (say, 12 or 24 months) after acceptance. The all-method continuation rate, on the other hand, is the proportion of acceptors who continued using any contraceptive method after a stated length of time following acceptance.

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7 Recent auditings and reviews of the service statistics of the family planning programme have revealed serious deficiences in the system caused by over-reporting of acceptors by clinics and reporting of women transferring from one clinic to another as new acceptors.

8 J.F. Philips and Z.C. Zablan, *Trends in First Method Continuation and Pregnancy Rates for the Philippine Programme over the 1970-1972 Period*, Research Note No. 28; and *Trends in All-method Continuation and Pregnancy Rates for Women Who Accepted over the 1970-1972 Period, 1974 NAS*, Research Note No. 30 (Manila, University of the Philippines Population Institute, 1975).

Table 130. Eligible population, number of acceptors and users of family planning, 1970-1977
(In thousands)

Period[a]	Eligible population[b]	Actual number of new acceptors[c]	Adjusted number acceptors[d]	Target number of acceptors[e]	Adjusted target number of acceptors[f]	Number of continuing users[g]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1970	4,339.3	72.2	56.1	-	-	47.6
1971	4,471.6	298.5	237.0	345.0	-	226.9
1972	4,640.6	536.1	428.4	576.0	-	505.4
1973	4,805.3	701.3	552.6	665.3	439.1	786.9
1974	4,976.5	802.4	619.5	804.7	515.0	1013.4
1975	5,154.3	728.4	546.3	889.4	551.4	1122.3
1976	5,380.7	-	-	1224.0	911.2	1259.2
1977	5,614.3	-	-	816	607.5	1316.5

a 1970 : covering the period January-June
1971-1975 : covering the fiscal year (July-June) period
1976 : 1 July 1975 to 31 December 1976
1977 : calendar year

b Currently-married woman aged 15-44. The proportions married (Smith, 1974, Projected Median Series) were applied to the projected population (National Census and Statistics Office (NCSO) Median Series, Monograph No. 2).

c Data taken from POPCOM report. 1976 and 1977 were based on the assumption of 68,000 per month turnout; June 1975 method mix was assumed to prevail until 1977.

d Adjusted for over-reporting and transferees (rates from National Acceptor Survey (NAS), 1974) as well as for 4 per cent mortality and sterility.

e 1971 to 1975 figures were obtained from the "Four-year development plan, fiscal year 1974" prepared by the National Economic Development Authorities (NEDA). 1976 and 1977 figures were based on assumed 68,000 monthly turnout of new acceptors and June 1975 method mix presumed to prevail until 1977.

f Adjusted for over-reporting and transferees (rates from NAS, 1974).

g UPPI estimates of prevalence were utilized. First and all-method continuation rates were applied to adjusted number of acceptors. For period subsequent to 1972, continuation rates for the year were applied.

It will thus be seen that two years after acceptance (in 1970), 53 per cent of the women who initially accepted the pills were still using some form of contraception, although only 42 per cent continued with the pills. Expectedly, the IUD had the highest first method and all-method continuation rates, followed by the pill, rhythm, and other methods. It is encouraging to note that, at least in comparison with other family planning programmes in Asia, the first method continuation rates of IUD and pill acceptors in the Philippines appear favourable. This should not be taken to mean, however, that improvement in continuation rates is unnecessary.

Two measures of effectiveness are also given in the same table: the first method and the all-method pregnancy rates. The former, which can also be termed as method failure, rate refers to the proportion of acceptors who become pregnant while the method is in use; the latter refers to the proportion of acceptors who become pregnant, whether voluntarily or involuntarily.

It is important to remember that the failure rates in table 131 are not the same as clinical failure rates. The rates in the table were estimated from the experience of family planners under actual conditions, while clinical failure rates are empirical estimates under ideal conditions.

Thus, while the pill is clinically superior to the IUD, under actual social conditions in the Philippines both have practically the same effectiveness. The reason is that factors such as motivation, negligence, and forgetfulness affect the actual effectiveness of the pill. The IUD, on the other hand, once in use is very much less affected by these factors. It is clear from the table that the IUD and the pill are the most effective methods, with a 24-month failure rate of about 7 per cent. As is to be expected, the worst method is rhythm with a 31 per cent two-year failure rate.

Table 131. Two-year first method and all-method continuation rates and failure rates, 1970-1972

Method	Year of acceptance	Two-year continuation rates		Two-year failure rates	
		First method	All methods	First method	All methods
Pill	1970	42	53.0	4.7	10.6
	1971	37	43.7	5.2	11.9
	1972	32	40.8	8.8	18.6
	All years	35	43.7	6.8	15.0
IUD	1970	65	78.1	4.8	8.1
	1971	57	68.5	6.1	7.1
	1972	53	67.8	6.8	9.4
	All years	58	70.3	*a*	8.4
Rhythm	1970	(51)[b]	-	28.4	(28.4)
	1971	(38)	42.3	35.9	36.1
	1972	(36)	45.9	27.8	27.9
	All years	41	46.9	30.5	31.3
Condom	1970	-	-	-	-
	1971	-	-	-	-
	1972	(11)	24.7	15.0	(29.3)
	All years	(15)	29.9	15.0	(27.8)

Sources: J.F. Phillips and Z.C. Zablan, *Trends in First Method Continuation and Pregnancy Rates for the Philippine Programme over the 1970-1972 Period*, Research Note No. 28, University of the Philippines Population Institute, 1974 and, *Trends in All-method Continuation and Pregnancy Rates for Women Who Accepted over the 1970-1972 Period, 1974 NAS*, Research Note No. 30, University of the Philippines Population Institute, 1975.

a Weighted data not available.

b Figures within parentheses denote rates based on more than 10 but less than 50 cases.

Because of differential failure rates among contraceptive methods, the effectiveness of the family planning programme in reducing births will depend, among other things, on the method distribution of acceptors. It will be seen from table 132 that in the fiscal year 1975, pills accounted for about 58 per cent of all family planning acceptors. It will also be seen that as far as new acceptors are concerned, the method mix clearly favours the highly effective ones. However, over the years there has been a gradual decline in the proportion of total acceptors adopting the IUD, and until very recently the proportion of new pill acceptors has also declined slightly. The table also clearly indicates a net movement towards less effective methods. Studies made by the University of the Philippines Population Institute (UPPI) have shown that the choice of method appeared to be determined more by clinic policy and procedures than by individual characteristics of the acceptors.

It may also be noted that an analysis of the clinic data undertaken by the Family Planning Evaluation Office of UPPI showed that although the absolute number of women with lower educational attainment was larger than the number with more than primary education in the total population in 1970, the more highly educated women were over-represented among acceptors. For instance, women with at least one year of high school constituted 22 per cent of the general population but 45 per cent of the acceptors. Also, in a national acceptor survey carried out by UPPI[9] it was found that about one third of the acceptors in the sample lived in *barrios* or rural communites. Since more than two thirds of the eligible Filipino women lived in rural areas in 1970, the result of the survey indicated that rural women were under-represented in the programme.

9 John E. Laing, *Selected Response Distributions from the 1972 National Acceptor Survey* (Manila, February 1973).

Table 132. Trend in contraceptive method mix, fiscal years 1971-1975[a]

Fiscal year	Pills	IUD	Rhythm	Condom	Others
1971	59.9	25.5	8.8	2.9	2.9
1972	64.0	19.0	6.8	8.1	2.1
1973	60.6	16.3	6.1	15.0	2.0
1974	57.7	13.6	5.4	19.7	3.6
1975	57.8	9.6	5.3	20.5	6.8

Source: Commission on Population.
a Adjusted figures (percentages).

Table 133. Age-specific fertility and marital fertility rates, 1958-1972

Period	Age of women							Total fertility
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
	Fertility rates (per thousand women)							
1958-1962	84	260	313	290	211	107	27	6,460
1963-1967	74	254	313	281	216	101	20	6,295
1968-1972	56	227	302	272	199	100	22	5,890
	Marital fertility rates (per thousand married women)							
1958-1962	396	428	384	325	233	117	29	9,560
1963-1967	430	434	388	314	237	110	21	9,670
1968-1972	449	443	378	307	217	108	24	9,630

Source: National Demographic Survey, 1973.

7. Programme financing

The rapid expansion of family planning activities is not without its cost. But data required to fully cost the programme are not readily available except for fiscal years 1970 and 1971, which are themselves not very reliable. However, it has been estimated that the total cost for these two years amounted to ₱ 24,800,400. Including earlier expenditures made in fiscal years 1966 to 1971, total cost was estimated to be ₱ 28,075,992. USAID financed more than 50 per cent of these costs while IPPF and the Pathfinder Fund shouldered 19.1 and 12.0 per cent of this amount, respectively.

In fiscal year 1972, the cost of the family planning programme was ₱ 18,898,900. This figure does not include in-kind contributions and the dollar costs of contracts and participants. This amount has been estimated to cover only one third of the total programme cost. Assuming that to be correct, the total programme cost in fiscal year 1972 would then have been somewhere around ₱ 56.7 million.

The total cost of the population programme for fiscal year 1972 was approximately ₱79.5 million. This figure includes all peso costs as well as in-kind contributions of counterpart agencies, dollar costs of commodities, technical contracts and participants training, but excludes the direct funding of some activities by a few foreign and local private donors.

The programme relies substantially on external funds. POPCOM, together with the National Economic Development Authority is responsible for allocating all bilateral and multilateral funds from officials sources for family planning. The main external agency involved is USAID, which has pro-

vided assistance to the programme from its early stages. It provided $US 32 million in the period covered by fiscal years 1967 to 1974. In January 1972, UNFPA signed a $US 3.3 million agreement with the Government of the Philippines covering both on-going and planned projects. A new agreement was signed in December 1973 by which UNFPA committed an additional $US 6 million for programmes in the subsequent five years.

There are other donors involved in financing smaller programmes. As noted earlier, the Food Foundation has assisted in research for several years and initially supported the University of the Philippines Population Institute. The Population Council has given support to the Manila City Health Department for clinics and for post partum programmes at two hospitals. It has also provided funds for information and research to the Silliman University Medical Center and UPPI. The Pathfinder Fund has assisted with commodities to clinics and health centres and with various smaller projects. IPPF has been the source of funds for the Family Planning Organization of the Philippines with contributions of about $US 300,000 annually. The Rockerfeller Foundation has supported biomedical research and has committed $US 1.5 million over a period of 10 years to finance the programme costs of the Population Center Foundation Inc. Furthermore, World Neighbours has assisted with training programmes and Church World Service has given support to hospitals.

The Philippine Government has rapidly assumed a greater share of the local peso costs. In 1970, all local costs were being financed through foreign assistance. However, in 1971, Congress appropriated 4.5 million pesos for the population programme. In December 1973, President Marcos, by Presidential Decree No. 79, increased the Commission's budget to 15 million pesos per annum in addition to the 10 million pesos appropriation for population activities of the National Economic and Development Authority.

8. Evaluation and research

A nation-wide demographic survey conducted in May and June 1973 provides trend data on completed family size for recent five-year periods. Table 133 shows that there was a gradual decline in the reported national completed family size from 6.46 children in 1958-1962 to 5.89 in 1968-1972 – a drop of 0.57 children or 9 per cent in the fertility level since 1958-1962. The trends in total marital fertility, however, showed an increase of 1.15 per cent from 9.56 children in 1958 to 9.67 children in 1963-1967, thereafter declining by 0.41 per cent to 9.63 children in 1968-1972.

When fertility rates pertaining to the period 1958-1962 through 1968-1972 were contrasted, all age groups from 15 years onward showed consistent declines for the nation as a whole. The largest declines (as much as 33 per cent for the 15-19 age group) were manifested by the two youngest age groups, 15-19 and 20-24 years. The age-specific marital fertility rates showed a declining trend only for age groups above 25 years for the period 1963-1967 to 1968-1972. However, births to married women below 25 years reflected steady increases over the 15-year interval – 13 per cent for wives in their late teens and 4 per cent for married women in their early twenties.

In general, the peak childbearing ages were 25-34 years. Nearly half (49 per cent) of the average number of children born to all women by the end of their childbearing period was contributed by these age groups. Although women marry later, they have their children early in the marriage.

Findings from this survey, taken in conjunction with an earlier one undertaken in 1968 and the programme statistics, revealed that the early years of the programme affected attitudes towards contraception and family size, knowledge about high quality methods and use of contraception, especially pills. However, none of these effects was large enough. The median number of children desired in 1973 was still about four, nearly twice what it should be to reduce population growth to the replacement level by voluntary means alone. Unconditional approval for contraception was expressed by only 60 per cent of married women of reproductive age, although unconditional disapproval had declined markedly. Nearly three fourths (72 per cent) of married women of reproductive age reported that they had not yet tried any method of contraception, and less than one fifth (18 per cent) reported they were using a method at the time of the survey. Only 10 per cent were using the most highly effective programme methods (pills and IUD). The changes in prevalence and method mix were estimated to have reduced marital fertility by about five per cent, although the decline in over-all fertility was probably somewhat greater.

The extent of the programme's influence by 1973 was more clearly seen in the urban areas, where two thirds to three fourths of respondents knew of a family planning clinic. The effect of programme clinics on current practice varied slightly across all places of residence.

A positive association existed between educational level and knowledge of a family planning clinic. Spectacular increases in knowledge were recorded for women with primary education as compared to those wives who had not gone to school. While no direct relationship could be traced between current use of a clinic method and educational attainment, it was very evident that current use of a clinic method was nearly double among married women with college education compared to the unschooled wives. These findings point to the need for a change in programme strategy to overcome increasing resistance to the recruitment of new acceptors and to motivate couples who are unwilling to practice family planning.

In June 1974, a survey of programme acceptors for the years 1970-1972 showed that there were four factors which hampered the effectiveness of the programme: (a) acceptance was levelling off, particularly for those clinics in operation for a long period of time; (b) greater proportions of acceptors were choosing the less effective methods; (c) women who switched methods chose methods less effective than the first method; and (d) continuation rates for the effective methods were declining.

The study also disclosed that women who accepted early in the programme were likely to be more highly motivated to practise family planning than women accepting after the programme had been functioning for several years. The performance of any family planning programme is a function of the numbers of women who accept, and of the continuation and failure rates of the methods adopted. Although numbers of acceptors increased, the mean performance of clinics declined with each year. Moreover, the proportionate distribution of the acceptors enrolled in the programme in the first quarters of fiscal years 1970 to 1975 indicated that increasing proportions accepted condoms, while declining proportions accepted the IUD. Therefore, the decline in the protection afforded to acceptors was more serious than the decline in absolute numbers of acceptors.

9. Outlook for the future

The combination of an organized family planning programme and increasing social and economic development in the past five years have resulted in a significant increase in the number of contraceptive users and a decline in fertility. Despite the rise in continuing users and the perceived declines in the birth rates, a further increase in population is almost inevitable because:

(a) The fertility of the younger women remains high. It still exceeded 300 per thousand for women in their late twenties and for married women was as high as 449 per thousand women in the age group 15-19 and 443 for age group 20-24 in 1973. One of the main reasons for high fertility among younger married women is the increasingly younger are at childbearing and shorter birth interval;

(b) The number of women in the younger ages of childbearing has been increasing as is evident in the differences between 1968 and 1973 age distributions. Wives aged 20-24 years increased by 2.6 percentage points (from 13.5 per cent to 16.1 per cent) while those aged 15-29 years increased 1.1 points from 1968 to 1973. It is estimated that the number of women in their early twenties will increase 16 per cent from 2.1 million in 1975 to 2.4 million in 1980, while the number of women in their late twenties will increase 28 per cent, from 1.6 million to 2.0 million, during the same period. The increments to these age groups imply a significant increase in the number of births;

(c) The preferred family size fell from 5.2 in 1968 to 4.1 in 1973 but the Coombs number preference scales used in 1974 indicate that more than half (54 per cent) of women are really more biased toward larger family size (IN5-IN7) than they express at a first choice.

A review of past programme activities reveals the following shortcomings:

(a) Too little emphasis on younger women. So far, the average family planning acceptor is 31 years old with intermediate schooling, resident in communities of more than 50,000 inhabitants with a mean of 3.6 living children. Acceptances among women below age 25 was about one fifth of the total reported acceptors;

(b) Limited outreach of service delivery points. On the whole, the clinics reach women living

within a radius of 3 to 5 kilometres. The services have not penetrated into the remote areas which are the ones needing these services most and deserving greater attention;

(c) Ineffective information, education and motivation campaigns. Too often, information reaching the clients is inadequate and insufficient to combat rumours concerning the different family planning methods. Motivators must accelerate their home visits and make sure couples understand the merits and demerits of all contraceptive measures;

(d) Inadequate administrative support at the local level. Despite national commitment to family planning, the programme receives scant attention at the village level. The community is not involved in the family planning effort and all too often is bewildered by a barrage of information and programmes designed to improve the lot of the common *tao* (people). The result is distrust and apathy.

It is thus clear that declines in the birth rate could be accelerated only through: (a) further reduction of preferred family size, (b) wider spacing of births, (c) later marriage, (d) effective communication on the more efficient contraceptive measures, and (e) greater involvement at all levels of the administrative structure.

In an attempt to overcome these shortcomings, the following activities have been initiated:

(a) *Barrio* resupply points have been established in a number of communities to bring the supplies closer to the acceptors and thus reduce the drop-out rate resulting from limited clinic outreach;

(b) The Department of Education is actively involved in the promotion of population education and has authorized all educational institutions whose faculty members have received population education training to offer a three-unit undergraduate course in population starting from school year 1975-1976. All other educational institutions in the country have been enjoined to encourage members of their faculty to undergo proper training in population education to maximize the teaching of the course which will eventually be made a required subject in all degree and non-degree courses;

(c) A new programme orientation – the Total Integrated Development Approach (TIDA) – was put into effect in seven provinces in July 1975. As a development philosophy, TIDA involves two major areas of concern:

(i) Integration down to community level of all POPCOM-funded and co-ordinated population programme-related services;

(ii) Participation by the implementing agencies and the communities themselves in the planning, organization, management, funding and provision of these services;

This approach marks a shift from the hitherto "clinical" or contraceptive approach to a development-oriented programme calling for the internalization of a small family norm rather than the emphasis on technology and numbers;

(d) Feasibility studies on local manufacture of pills and IUDs has revealed that, with proper governmental support, these two contraceptives can be manufactured in commercial quantities, paving the way for the eventual phase-out of commodity assistance from abroad;

(e) Commercial distribution of condoms has been successfully tried in the greater Manila area and it was planned to start a scheme to promote pills in the same manner;

(f) Several experimental studies – combined food production, nutrition and family planning project; study on the value of children; incentive schemes of various kinds; rural outreach programme; institutional development programme – are being carried out to accelerate programme impact.

To what extent the crude birth rate in the Philippines can be reduced significantly by these efforts is still not known. It is, however, clear that provision of services is insufficient to reduce the nation's still high rate of increase. The country has been tackling the task of serving the highly motivated and ready-to-accept group. But what remains is the task of reducing total family size and of spacing births at longer intervals. The task is formidable but not impossible.

Chapter X

POPULATION PROJECTIONS

A. INTRODUCTION

Population projections may be defined as mathematical models which try to estimate the population at a given future date on the basis of assumed trends in the various components of population growth, namely, fertility, mortality and migration.

> "The projections provide quantitative measures of the potentialities of the present demographic situation and of the demographic processes which are under way and those which are foreseen in the light of present experience. Since the projections are prepared on the basis of assumed trends in the components of population growth, the results present the net outcome of the interactions among these trends. For instance, given certain fertility and mortality assumptions, the projection technique makes it possible to determine the effect of different age structures on the numbers of births and deaths and hence on the growth of population. Similarly, projections provide a means of studying the effects of changes in birth and death rates on the age structure, dependency ratios etc. Because of this essential role in demographic analysis, projections and demography are now almost inseparable".[1]

The importance of demographic projections in development planning need not be emphasized. A clear understanding of the causes of population changes and the probable consequences of population growth is a prerequisite for future national planning. The essential needs of the people, such as food, education, health, housing, recreation and other social and cultural amenities which the national development programmes aim to provide, cannot be realized without taking into account the expected size, composition and distribution of the population. Almost every known discipline finds increasing need for estimates of the size, composition and distribution of the future population.[2]

In recent decades there has been increasing interest among public and private sectors in the Philippines in the size and rate of growth of the population. As noted in chapter I, there was an acceleration in the rate of growth of the population during the years following the Second World War caused largely by the drastic reduction in mortality. The past three decades have witnessed unprecedented high rates of increase of the Philippines population and it was rightly feared that that alarmingly large increase would have serious economic, social and political consequences. The need for a correct assessment of the dynamics of population growth thus assumed great importance, particularly in the context of the need for expanding the activities of the public and private sectors in the field of social and economic development.

Several attempts have been made to project the future population of the Philippines. Prior to the Philippines Statistical Survey of Households, the first rounds of which began in 1956, population estimates and projections were prepared on the basis of past observations regarding rates of population growth. For instance, between 1948 and 1956, estimates of the population were made annually by the Bureau of Census and Statistics by assuming a steady increase over the 1948 census figure at the annual rate of 1.9 per cent, which was the average shown by the censuses for the period 1939-1948. The rate of growth between the censuses of 1939 and 1948, though high, was probably affected by temporarily increased mortality – because of unusual wartime and post-war conditions – and possibly by a temporary decrease of fertility. However, it came to be recognized subsequently that the average annual rate of growth of 1.9 for the period 1939-1948 did not reflect the true demographic conditions[3] during the subsequent period and was an underestimation. The data obtained in the Philippine Statistical Survey of Households made it possible to estimate the population on

1 *The Determinants and Consequences of Population Trends: New Summary of Findings on Interaction of Demographic, Economic and Social Factors*, vol. I (United Nations publication, Sales No. E.71. XIII.5), p. 557.

2 For detailed discussion on this aspect, see "Report of the Expert Group Meeting on Population Projections" (E/CN.11/1250).

3 In fact, mortality has probably decreased very considerably as a result of public health activities in the 1950s, while fertility, according to available evidence, has returned to the very high pre-war level. The fact that the Statistical Survey of Households showed hardly any difference of fertility among the various socio-economic groups, or between the rural and urban population, suggested that an appreciable decline in fertility was quite unlikely to occur over the subsequent few years. On the other hand, further progress in public health was likely to occur resulting in further reductions in mortality. Thus the indications were towards a more rapid rate of population growth.

a more realistic basis.[4] Projections prepared in recent years have relied on census counts, vital statistics (particularly from the legal civil registration and the sample vital registration), and the National Demographic Surveys.

The important characteristics of the various projections prepared for the Philippines in the past are discussed in the following sections. It will be noted that most of these projections were prepared before 1970; only three were prepared during the 1970s.

B. PRE-1970 PROJECTIONS

1. Inter-Agency Committee on Demography

Early in 1958, the Government convened the Inter-Agency Committee reviewed the available data and prepared a new series of population estimates by age group and sex for each year from 1957 to 1962. These estimates were based on the results of the Philippines Statistical Survey of Households after adjustment for an estimated 200,000 persons living outside of private households and therefore not included in the survey sample. On this basis, the population of the Philippines as at mid-1957 was estimated at 23.3 million. The Survey results were also used to determine the age composition of the population.

From the convergence of various evidence, the Committee decided to adopt an average annual rate of increase of 2.95 per cent for the period 1957-1962.[5] The resultant estimates are summarized in table 134.

2. United Nations

In 1958, the United Nations published a series of projections for countries of Southeast Asia,[6] including the Philippines, covering the 30-year period 1950-1980. Those projections placed more reliance on the totals obtained in the 1948 census, which may have been more accurate than the totals obtained in the sample surveys, while accepting the data on age composition according to the surveys where it was considered that statements concerning age were more accurrate than at the census. The following three sets of projections were prepared for the Philippines:

(a) *"Conservative" projection.* For this set, it was assumed that mortality would continue to decline while fertility would remain constant and hence population would grow at accelerating rates. This assumption was considered "most likely" as, at the time the projections were prepared, constant fertility and declining mortality characterized the trend in a majority of the world's populations. Specifically, it was assumed that the sex-age adjusted birth rate would remain constant at 53.07 and that life expectancy at birth would increase by two and a half years every five years;

(b) *"Low mortality" projection.* It was assumed that the average life expectancy at birth would increase by about five years in each successive five year period until it reached 60 years; after that point, which it was estimated would be reached in the late 1960s, further progress would, it was assumed, be at the "normal" rate. This assumption was based on the experience of countries such as Sri Lanka where it was noted that in the early stages, the decline in mortality corresponded to a gain in life expectancy at birth of one year per annum, and once mortality levels reached low levels, its decline thereafter was at a "normal" rate. As in the case of the "conservative" projection, it was assumed that fertility would remain constant during the projection period;

(c) *"Declining fertility" projection.* Though at the time of preparing the projections there was no

Table 134. Projected population of the Philippines, 1957-1962

Projection year	Projected population (in thousands)
1957	23,322
1958	24,010
1959	24,718
1960	25,448
1961	26,198
1962	26,971

Source: Edith Adams, "New population estimates for the Philippines, 1948-1962", *The Philippine Statistician*, vol. VII, No. 3, September 1958, pp. 134-166.

4 It is also possible that the estimates derived from the Statistical Survey of Households were in some degree understated because of the gaps in the Survey enumeration or an insufficient correction for the population outside private households.

5 For detailed discussion on the methods used by the Committee, see Edith Adams, "New population estimates for the Philippines, 1948-1962", *The Philippine Statistician*, vol. VII, No. 3, September 1958, pp. 134-166.

6 *The Population of South-East Asia (Including Ceylon and China: Taiwan), 1950-1980* (United Nations publication, Sales No. 59. XIII.2).

indication of any significant decline in the Filipino fertility, yet it was considered interesting to calculate for illustrative purposes what the likely effects on the size and characteristics of the population would be if such a decline were to take place. For this purpose it was assumed that after 1960 fertility would decline continuously by an annual amount equal to 1 per cent of its pre-1960 level. Thus the sex-age adjusted birth rate would fall from 53.1 in 1960 to 43.7 during the late 1970s.

The results of the three sets of projections are summarized in table 135.

Table 135. Three alternative series of population projections, 1950-1980

Projection year	Projected population (in thousands)		
	Conservative projection	Low mortality projection	Declining fertility projection
1950	20,150	20,150	20,150
1955	23,024	23,236	23,236
1960	26,605	27,280	27,280
1965	30,989	32,422	30,844
1970	36,320	38,957	35,672
1975	42,832	47,009	41,201
1980	50,840	57,032	47,569

Source: The Population of South-East Asia (including Ceylon and China: Taiwan), 1950-1980 (United Nations publication, Sales No. 59. XIII. 2).

3. Government of the Philippines/United Nations projections

In 1959, a study of population and manpower problems of the Philippines was carried out jointly by the Government of the Philippines and the United Nations Secretariat.[7] As part of that study projections of the population of the Philippines were prepared for the 20-year period 1957-1977. The projections were made by the "component" method, and used as the starting point the mid-1957 population estimated from the Philippines Survey of Households.

For purposes of the projection, it was assumed that the sex-age adjusted birth rate would remain constant at 53.07 (the level estimated for 1957) throughout the period to 1977, and that mortality would decline in such a way that an increase of two and a half years in the life expectancy at birth would be realized every five years. In the initial projection period, 1957-1962, a model life table with life expectancy at birth of 45 years was chosen to represent mortality conditions in the Philippines as far as they could be assessed on the basis of the available but unsatisfactory data. It was also assumed that migration would not play any significant role in the growth of the population during the period covered by the projections. The results of the projections are summarized in table 136.

Table 136. Projected population of the Philippines, 1957-1977

Projection year	Projected population (in thousands)		
	Males	Females	Both sexes
1957	11,707	11,615	23,322
1962	13,558	13,413	26,971
1967	15,834	15,628	31,462
1972	18,609	18,326	36,935
1977	21,978	21,596	43,574

Source: Population Growth and Manpower in the Philippines (United Nations publication, Sales No. 61. XII. 2).

4. Lorimer's projections

As part of his study of the demographic trends and situation in the Philippines, Frank Lorimer prepared three sets of population projections for the Philippines based on three alternative assumptions regarding fertility and one assumption in regard to mortality.[8] The projections covered the 40-year period, 1960 to 2000.

The 'age-specific maternity rates' for the period 1960-1965 were estimated on the basis of the 1960 rates with certain modifications. Three alternative assumptions were then made in regard to these rates during the subsequent quinquennia as follows:

Assumption A: Constant fertility as in 1960-1965.

7 *Population Growth and Manpower in the Philippines* (United Nations publication, Sales No. 61.XIII.2).

8 For details regarding these assumptions, see Frank W. Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population, 1965* (Quezon City, University of the Philippines Press, 1966).

Assumption B: Progressive decline in fertility beginning in 1965, with an accelerated downward trend during the years 1975-1995.

Assumption C: The age-specific fertility rates in each five-year period after 1965 are the arithmetic means of the rates in assumptions A and B, so that the total fertility and gross reproduction ratios are halfway between those of the other two assumptions.

In regard to mortality, the model life tables' values prepared by the United Nations were adopted, with suitable modification to reflect probable developments in the Philippines. The survival ratios by sex and age during the years 1960-1965 were assumed to be halfway between Level 65 (as in 1960) and Level 70 (as in 1965). It was assumed that Level 90 would be in effect during the last quinquennium of the century. Values were then interpolated between adjacent levels in the United Nations models and the age-specific survival ratios at those interpolated levels were applied to obtain the expected numbers of survivors during each five-year period.

The projected total population by sex as at 15 February in successive years is shown in table 137.

5. Bureau of the Census and Statistics

In 1969, the Bureau of the Census and Statistics prepared a set of three projections of the population covering the 15-year period 1960-1975, by the component method.[9]

In regard to the future course of mortality, the high and medium projections assumed an annual gain in life expectancy of 0.5 years per annum wherever the expectation is less than 55 years, and a slight acceleration in gains until the expectation approaches 65 years. It was also assumed that the rate of gain slows down and becomes slight when the expectation has risen substantially higher than 70 years. The low projections assumed "a double gain to the gains made by the medium and high series".

In regard to fertility, the high and medium projections assumed a constant birth rate of 53.91 throughout the projection period. For the low projection it was assumed that fertility would decline by 0.5 per cent annually starting in 1965.

It was also assumed that international migration would not play a very important part in the growth

9 Bureau of the Census and Statistics, *Population Projections of the Philippines, 1960-1975*, Manila, September 1966 (unpublished).

Table 137. Population projections for the period 1960-2000 based on three alternative assumptions

Projection year	Projected population (in thousands) according to								
	Assumption A[a]			Assumption B[b]			Assumption C[c]		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1960	13,663	13,425	27,088	13,663	13,425	27,088	13,663	13,425	27,088
1965	16,073	15,774	31,847	16,073	15,774	31,847	16,073	15,774	31,847
1970	19,023	18,648	37,671	18,750	18,384	37,134	18,886	18,516	37,402
1975	22,624	22,152	44,776	21,732	21,291	43,023	22,164	21,708	43,872
1980	27,006	26,409	53,415	24,747	24,231	48,978	25,984	25,423	51,407
1985	32,329	31,577	63,906	27,794	27,207	55,001	30,414	29,731	60,145
1990	38,800	37,854	76,654	30,826	30,175	61,001	35,308	34,492	69,300
1995	46,679	45,491	92,170	33,748	33,046	66,794	40,620	39,662	80,282
2000	56,315	54,823	111,138	36,739	35,993	72,732	46,397	45,287	91,684

Source: Frank W. Lorimer, "Analysis and projections of the population of the Philippines", *First Conference on Population 1965* (Quezon City, University of the Philippines Press, 1966).

a Constant 1960-1965 fertility.

b Progressive decline in fertility beginning in 1965.

c Fertility rates during each quinquennium after 1965 will be the average of *a* and *b*.

of the Philippines population during the period covered by the projections.

The results of these projections are summarized in table 138.

C. POST-1970 PROJECTIONS

1. Frejka's projections

Tomas Frejka of the Population Council has recently computed five projections covering the period 1970-2150:

> "The variations of fertility assumptions constitute the basic analytical framework of the whole study. With the aim of illustrating the various population-growth consequences of extremely fast and varying degrees of moderate fertility decline that would ultimately lead to non-growing populations, it was decided to compute five different projections for each population unit. One projection differs from another by length of period of fertility decline (0, 10, 30, 50 or 70 years) and therefore also by speed of fertility decline. In the main set, or standard series, of projections fertility is assumed to decline from its current level to a level that corresponds to a net reproduction rate (NRR) of 1.0. Once an NRR of 1.0 is reached, it is assumed to remain at this level throughout the rest of the projection".[10]

The different assumptions in regard to fertility are as follows:

Projection	Description of fertility decline	Year in which NRR = 1 and remains constant thereafter
1	Immediate	1970
2	Precipitous	1980
3	Rapid	2000
4	Moderate	2020
5	Low	2040

In all five projections, the same trend of future mortality has been assumed. Female expectation of life is expected ultimately to reach 75 years. Each projection begins with a set of age-specific survival rates based on an estimate of current mortality. Beyond 1970, appropriate Coale-Demany life tables[11] are applied.

The projected total population for various years from 1970 to 2150 is given in table 139. A highly significant finding is that even if a transition to replacement fertility (i.e. NRR=1) were to occur immediately, as in the case of projection 1, the total population of the Philippines would increase to about 55 million by the year 2000, and to about 65 million in 2030. A rapid decline in fertility is a more likely event and under this assumption (projection 3), the total population will be about 79 million at the end of this century, 108 million in 2030, and about 119 million in the year 2050.

2. NCSO projections

In 1974, the National Census and Statistics Office published a set of population projections for the Philippines and its provinces.[12] These projections were the outcome of a research programme undertaken by NCSO with financial assistance from UNFPA. The projections which cover the 30-year period 1970-2000 are based on the final tabulations of the 1970 Census and the advance results of the 1972 KAP Fertility Survey and the 1973 National Demographic Survey.

The NCSO projections were based on one assumption regarding the future course of mortality and three assumptions regarding future fertility trends. In all three sets of projections, mortality was assumed to decline moderately. The estimated expectations of life at birth for the period 1970-1975 were 60.87 for females and 57.11 years for males. In the next two quinquennia, 1975-1980 and 1980-1985, it was assumed that life expectancy would increase further by about two years in five years, or an estimated annual increment of 0.4 years. After 1985, it was assumed that increases in life expectancy would be slower on an average of one year for every five years or 0.2 years per annum.

Regarding the future course of fertility, it was assumed for purposes of the high variant that the estimated fertility rates for 1970-1975, indicating an average number of 5.83 children born per woman during the reproductive period, would remain cons-

10 Tomas Frejka, *The Future of Population Growth: Alternative Paths to Equilibrium* (New York, The Population Council, 1972), pp. 37-38.

11 Ansley J. Coale and Paul Demeny, *Regional Model Life Tables and Stable Populations* (Princeton, Princeton University Press, 1966).

12 Age and Sex Population Projections for the Philippines by Province, 1970-2000, UNFPA-NCSO Population Research Project, Monograph No. 2 (Manila, National Census and Statistics Office, 1974).

Table 138. Projected population by sex, 1960-1975

Projection year	Projected population (in thousands) according to								
	High projection			Medium projection			Low projection		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1960	13,663	13,425	27,088	13,663	13,425	27,088	13,663	13,425	27,088
1965	16,224	15,946	32,170	16,109	15,830	31,939	16,109	15,830	31,939
1970	19,570	19,222	38,792	19,158	18,827	37,985	19,065	18,737	37,802
1975	23,909	23,431	47,340	22,965	22,562	45,527	22,653	22,259	44,912

Source: Bureau of the Census and Statistics, *Population Projections of the Philippines, 1960-1975*, Manila, 1966 (unpublished).

Table 139. Total population (in millions) and indices[a] of population size, 1970-2150

Year	Period in which net reproduction rate of one is reached				
	1970-1975 Projection 1	1980-1985 Projection 2	2000-2005 Projection 3	2020-2025 Projection 4	2040-2045 Projection 5
1970	37.8	37.8	37.8	37.8	37.8
	100	100	100	100	100
1975	39.6	43.0	44.0	44.2	44.4
	104	113	116	116	117
1980	41.9	47.2	50.6	51.5	52.0
	110	124	133	136	137
1985	44.8	50.1	57.8	59.9	60.9
	118	132	152	158	161
1990	48.2	53.5	65.1	69.2	71.2
	127	141	172	183	188
1995	51.7	57.4	72.3	79.3	82.6
	136	151	191	209	218
2000	54.6	61.4	78.6	89.8	95.2
	144	162	207	237	291
2010	58.9	68.0	88.8	111.0	123.4
	155	179	234	293	326
2020	62.3	72.7	99.4	130.4	155.0
	164	192	262	344	409
2030	64.7	76.3	108.1	146.0	187.2
	171	201	285	385	495
2040	65.3	78.3	114.1	160.9	216.0
	172	206	301	425	571
2050	66.6	79.3	118.6	173.1	239.7
	176	209	313	457	633
2075	67.9	81.2	121.9	186.8	282.0
	179	214	322	493	745
2100	68.1	81.4	122.5	188.6	293.7
	180	215	323	498	776
2125	68.1	81.3	122.5	188.6	294.9
	179	215	323	498	779
2150	67.9	81.2	122.3	188.4	294.6
	179	214	323	498	779

Source: Tomas Frejka, *Reference Tables to the Future of Population Growth: Alternative Paths to Equilibrium* (New York, The Population Council, 1973), p. 434.

a Base 100 in 1970.

tant throughout the projection period. The constant fertility assumption presupposed "that government efforts to reduce the birth rate as soon as possible to an acceptable level would fail completely and that the population would increase at about the present rate".[13] The medium variant assumed a moderate decline in fertility, from an average of 5.83 children per woman to 4.22 during the period 1995-2000. "This assumption may reflect most likely the course of fertility trend, assuming that the government programme will be moderately successfull".[14] The low variant assumes a more rapid decline in fertility resulting in an average total fertility rate of 2.62 during the period 1995-2000.

> "This assumption was introduced to reflect the situation that the population programme of the Government will be highly successful so that the population of the Philippines will reach the fertility cose to the replacement level by the period 1995-2000, with the net reproduction rate hovering around 1.13."[15]

The sex ratio at birth was assumed to be 106 male births for every 100 female births. It was further assumed that net international migration would remain negligible throughout the projection period.

On the basis of the above assumptions regarding mortality, fertility and international migration, projections of the population by age and sex were prepared using the component method. The results of these projections are summarized in table 140. Under the high series, which assumed constant fertility, the population is expected to reach about 97.3 million by the year 2000. This represents an increase of 60 million or 164 per cent over the 1970 population. According to the medium and low variants, the total population of the Philippines will be 83.4 million and 70.0 million respectively by the end of this century.

Some of the growth patterns implied by the population projections presented above are shown in figure 19.

3. UPPI projections

For purposes of this chapter, the University of the Philippines Population Institute prepared a set of three projections covering the 30-year period 1970-2000 by the component method.[16] The final tabulations of the data from the 1970 census and the 1973 National Demographic Survey formed the main source of data for these projections.

The base time for the projection was 1 July 1970, and the population of the base year was projected from the adjusted age-sex data of the 1970 Census using the exponential growth formula.

As noted in chapter V ("Trends and differentials in mortality"), information on mortality in the Philippines as obtained from registration data is incomplete and cannot therefore be used for computing the age-sex specific death rates required for projecting the population. To meet this need, model life tables based on the mortality experience of other countries were used. On the basis of an estimated average expectation of life at birth of 58 years in 1970, the probabilities of surviving were computed using the "West" family of model life tables. The pattern of improvement in life expectancy was assumed to occur uniformly throughout the projection period with five-year increments of 1.9 years or annual increments of 0.38 years. This assumption is based on the results of the analysis made in regard to the trends in mortality since 1918.[17] The estimated expectations of life at birth for the projection period are as follows:

1970 - 1975	58.00
1975 - 1980	59.90
1980 - 1985	61.80
1985 - 1990	63.70
1990 - 1995	65.60
1995 - 2000	67.50

The computed probabilities of survival used for the projections are shown in table 141.

As in the case of deaths, the registration of births is also deficient in the Philippines, and hence

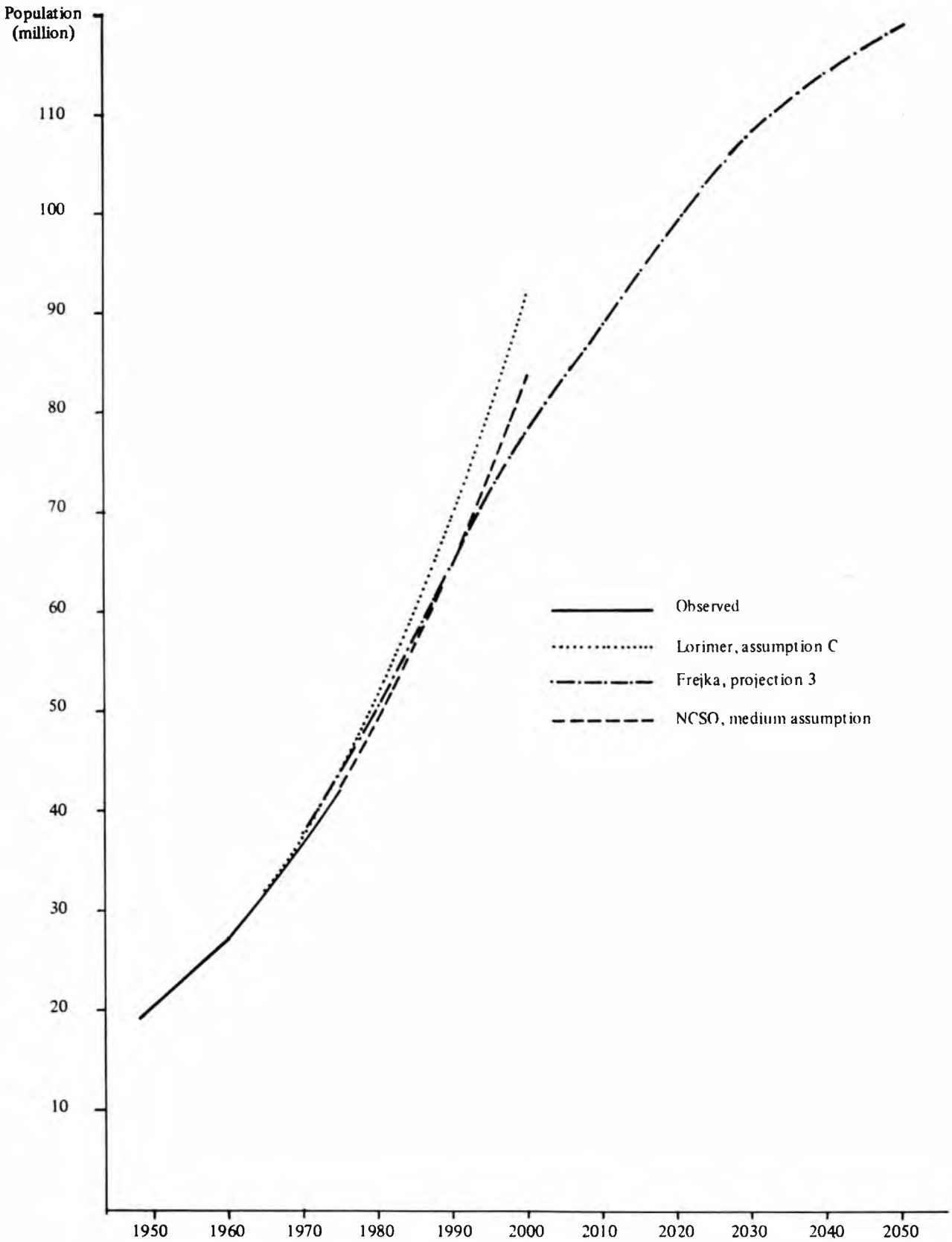
13 *Ibid.*, pp. 19-20.

14 *Ibid.*, p. 20.

15 *Ibid.*, p. 19.

16 The component or cohort-survival method consists of separate projections of males and females by age. This method requires separate projections of the future course of each of the components of population change, namely, fertility, mortality and migration.

17 From 1918 to 1938, life expectancy at birth rose from an average of 31.6 to 40.0 years indicating an annual increment of 0.42 years. The period 1948-1960 showed a near doubling of the annual increment for the 1918-1938 period. Life expectancy increased from 43.8 to 53 years. The expectation of life at birth in 1960, estimated to be around 53 years, rose to 58.8 in 1970, representing an annual increase of 0.58. However, the average increase in life expectancy went down to 0.38 years during the period 1968-1973. The trend in expectation of life at birth values seems to suggest that a threshold level of mortality as indicated by the life expectation at birth of 58 years has been attained and that minimal improvements in life expectancy can be expected. See Zelda C. Zablan, *A Threshold Level of Mortality: Some Evidences from Past Trends*, PREPF Research Note No. 45 (Manila, University of the Philippines Population Institute, 1975).



Source: Based on data in tables 2, 137, 139 and 140.

Figure 19. Projected population growth, 1950-2050, according to various assumptions.

Table 140. Projected population by sex, 1970-2000, according to alternative assumptions

Projection year	Projected population (in thousands) according to								
	High assumption[a]			Medium assumption[b]			Low assumption[c]		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
1970[d]	18,330	18,522	36,852	18,330	18,522	36,852	18,330	18,522	36,852
1975	21,388	21,415	42,803	21,240	21,277	42,517	21,092	21,140	42,230
1980	25,267	25,082	50,349	24,638	24,499	49,137	24,010	23,915	47,925
1985	30,064	29,586	59,650	28,556	28,186	56,742	27,047	26,787	53,834
1990	35,677	34,844	70,521	32,834	32,207	65,041	29,996	29,574	59,571
1995	42,105	40,852	82,957	37,389	36,478	73,867	32,719	32,147	64,866
2000	49,503	47,754	97,257	42,333	41,105	83,439	35,374	34,651	70,025

Source: Age and Sex Population Projections for the Philippines by Province, 1970-2000, UNFPA-NCSO Population Research Project, Monograph No. 2, (Manila, National Census and Statistics Office 1974).

a Constant fertility.

b Moderate decline in fertility.

c Rapid decline in fertility.

d The population was projected to mid-year (1 July 1970) because the Census was taken on 6 May.

registration data cannot be utilized for purposes of projecting the population. However, the 1973 National Demographic Survey provided information on fertility levels and patterns by age from data collected in the form of pregnancy histories. The age-specific fertility rates for the period 1968-1972 centreing in the year 1970 were used for projecting the population. These rates are show below:

Age group	Age-specific fertility rate
15-19	0.056
20-24	0.227
25-29	0.302
30-34	0.272
35-39	0.199
40-44	0.100
45-49	0.022

The following three alternative assumptions were made in regard to the future course of fertility:

(a) High series. For purposes of this series, it was assumed that the schedule of age-specific fertility rates observed for the 1968-1972 cohort of women interviewed in 1973, resulting in a total fertility rate (TFR) of 5.89, would remain constant throughout the projection period. This series was intended to illustrate the consequences of a constant fertility trend, that is, population continuing to grow at high rates, in the event that the government's population programme failed to achieve its main goal of reducing the birth rate;

(b) Medium series. This series assumed a moderate decline in age-specific fertility rates, with the annual rates of decline following Leibenstein's formulation as modified by Lorimer. It was further assumed that the decline in total fertility rate was to take effect during the middle of the first quinquennial period, 1970-1975, from a level of 5.89 as observed in 1970 to 5.44, representing a decline of 0.45 or 8 per cent. By the end of the century, the projected total fertility rate would have declined to 3.59, implying a 39 per cent decline. The schedule of age-specific fertility rates used for the projection according to this assumption is presented in table 142;

(c) Low series. The series assumed an accelerated decline in fertility over the 30-year projection period starting from 1970 with a doubling of the assumed annual rates of decline according to the Leibenstein-Lorimer formulation. According to this assumption, the total fertility rate observed in 1970 would have declined to 4.96 by the middle of the period 1970-1975 and could be expected to decline further to 2.21 by the end of the century. Table 143 shows the schedule of age-specific fertility rates used for the low series projection of population.

It was also assumed that net international migration would remain negligible throughout the projection period in view of the fact that the Government has discouraged migration to and from the country. The estimated sex ratio at birth based on

Table 141. Probabilities of surviving (nPx) derived from the Princeton "West" Model Life Tables, with starting life expectancy at birth of 58.0, 1970-2000

Sex and age group	Period Mortality level Expectation of life at birth	1970-75 16.92 58.00	1975-80 17.70 59.90	1980-85 18.50 61.80	1985-90 19.26 63.70	1990-95 20.03 65.60	1995-2000 20.81 67.50
Male							
0		.9009	.9119	.9227	.9333	.9434	.9535
1-4		.9712	.9756	.9799	.9837	.9872	.9906
5-9		.9896	.9908	.9920	.9933	.9943	.9954
10-14		.9886	.9898	.9910	.9922	.9933	.9944
15-19		.9832	.9849	.9867	.9883	.9899	.9914
20-24		.9796	.9818	.9838	.9859	.9879	.9898
25-29		.9774	.9799	.9824	.9847	.9869	.9891
30.34		.9734	.9762	.9791	.9817	.9843	.9868
35-39		.9665	.9699	.9731	.9763	.9792	.9822
40-44		.9559	.9596	.9633	.9669	.9704	.9738
45-49		.9396	.9438	.9480	.9521	.9560	.9599
50-54		.9151	.9199	.9245	.9292	.9338	.9384
55-59		.8789	.8842	.8897	.8951	.9005	.9059
60-64		.8264	.8327	.8391	.8454	.8519	.8583
65-69		.7524	.7597	.7666	.7737	.7810	.7883
70-74		.6497	.6575	.6653	.6732	.6813	.6893
75+		.4091	.4164	.4237	.4312	.4392	.4472
Female							
0		.9160	.9261	.9361	.9458	.9549	.9640
1-4		.9739	.9782	.9823	.9862	.9895	.9928
5-9		.9900	.9915	.9930	.9943	.9955	.9967
10-14		.9807	.9849	.9899	.9936	.9949	.9957
15-19		.9853	.9872	.9891	.9910	.9926	.9943
20-24		.9819	.9842	.9864	.9886	.9906	.9926
25-29		.9792	.9818	.9843	.9866	.9889	.9912
30-34		.9760	.9788	.9814	.9841	.9866	.9891
35-39		.9719	.9747	.9776	.9804	.9830	9857
40-44		.9657	.9686	.9716	.9744	.9772	.9800
45-49		.9547	.9580	.9613	.9645	.9677	.9708
50-54		.9374	.9414	.9453	.9493	.9532	.9571
55-59		.9092	.9143	.9194	.9245	.9295	.9345
60-64		.8646	.8709	.8772	.8836	.8900	.8964
65-69		.7961	.8035	.8108	.8183	.8259	.8336
70-74		.6961	.7043	.7126	.7210	.7296	.7381
75+		.4423	.4512	.4603	.4691	.4772	.4853

Source: Zelda C. Zablan, *The Prospects of Mortality in the Year 2000: A First Attempt,* PREPF Research Note No. 18 (Manila, University of the Philippines Population Institute, 1975).

birth registration statistics for 1970 was 110 males per 100 females. This is considered to be too high a ratio in comparison with countries having more accurate vital statistics data. For purposes of this study it has been assumed that 105 male babies are being born per 100 females.

Utilizing the basic demographic parameters estimated as above and the adjusted 1970 mid-year population, the Philippine population was projected to the year 2000 by five-year intervals. Results are presented in tables 144, 145 and 146. Under the high assumption, the total population is expected to

Table 142. Projected age-specific fertility rates, 1970-2000 (medium assumption)

Age group	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
15-19	0.0493	0.0434	0.0382	0.0336	0.0296	0.0261
20-24	0.2105	0.1952	0.1810	0.1678	0.1556	0.1443
25-29	0.2842	0.2674	0.2516	0.2367	0.2227	0.2095
30-34	0.2535	0.2362	0.2201	0.2051	0.1911	0.1780
35-39	0.1872	0.1690	0.1526	0.1378	0.1244	0.1123
40-44	0.0872	0.0761	0.0664	0.0569	0.0505	0.0441
45-49	0.0169	0.0130	0.0100	0.0077	0.0059	0.0045
TFR[a]	5.44	5.00	4.60	4.23	3.90	3.59

Source: Helen C. Solis, *Fertility Assumptions for Philippine Population Projections, 1970-2000,* PREPF Research Note No. 17 (Manila, University of the Philippines Population Institute).

a Total fertility rate.

Table 143. Projected age-specific fertility rates, 1970-2000 (low assumption)

Age group	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
15-19	0.0433	0.0335	0.0259	0.0200	0.0155	0.0120
20-24	0.1949	0.1674	0.1438	0.1235	0.1060	0.0910
25-29	0.2672	0.2364	0.2091	0.1850	0.1637	0.1448
30-34	0.2360	0.2048	0.1777	0.1542	0.1338	0.1161
35-39	0.1619	0.1317	0.1072	0.0872	0.0710	0.0578
40-44	0.0758	0.0575	0.0436	0.0331	0.0251	0.0190
45-49	0.0127	0.0074	0.0043	0.0025	0.0014	0.0008
TFR[a]	4.96	4.19	3.56	3.03	2.58	2.21

Source: Same as for table 142.

a Total fertility rate.

increase to 98 million or by about 166 per cent by the end of this century. The varying fertility assumptions in the medium and the low assumptions would generate population sizes by that date of 78.8 million and 65.5 million respectively, or 114 per cent and 78 per cent larger in the year 2000 than in 1970, respectively. Thus, the total population of the Philippines will continue to increase considerably even under the assumption of a rapid decline in fertility. This is because of the current age structure of the population, which has high built-in potential for rapid population growth.

The implied vital rates resulting from the various projections are recorded in table 147. The high series shows a slight increase in the crude birth rate from 40.2 per thousand during the period 1970-1975 to 41.9 during the period 1980-1985. Thereafter the crude birth rate is expected to decline to a level of 39.2 by the end of the century. Under the medium series, the crude birth rate is expected to follow a slow but steady decline from a level of 37.5 births per thousand in 1970 to 27.8 births per thousand in the year 2000. The low series shows a more rapid fertility decline, i.e. from a level of 34.5 births per thousand in 1970 to 19.3 births per thousand in 2000.

Over the next 30 years, the death rate is expected to decline by 4.8 points [10.6 to 5.8 deaths

Table 144. Projected male and female population by five-year age group, 1970-2000 (high assumption)

Age	(1 July) 1970	1975	1980	1985	1990	1995	2000
				Males			
0-4	3,162,567	3,390,426	4,506,074	5,415,980	6,363,325	7,394,484	8,662,657
5-9	2,832,583	3,071,485	3,600,379	4,415,501	5,327,699	6,281,874	7,324,975
10-14	2,559,832	2,803,123	3,043,227	3,571,575	4,385,916	5,297,330	6,252,977
15-19	1,992,410	2,530,649	2,774,531	3,015,837	3,543,716	4,356,530	5,267,664
20-24	1,533,936	1,958,937	2,492,436	2,737,629	2,980,551	3,507,924	4,319,063
25-29	1,194,758	1,502,643	1,923,234	2,452,058	2,699,028	2,944,486	3,472,143
30-34	1,012,652	1,167,756	1,472,439	1,889,434	2,414,541	2,663,670	2,912,391
35-39	945,200	985,715	1,139,963	1,441,665	1,854,857	2,376,632	2,628,509
40-44	735,511	913,536	956,045	1,109,297	1,407,497	1,816,275	2,334,327
45-49	628,905	703,075	876,629	920,958	1,072,579	1,365,835	1,768,688
50-54	504,403	590,919	663,562	831,044	876,844	1,025,385	1,311,064
55-59	404,849	461,579	543,586	613,643	772,206	818,797	962,221
60-64	312,798	355,822	408,128	483,628	549,111	695,372	741,748
65-69	192,393	258,496	296,293	342,460	408,859	467,788	596,838
70-74	151,305	144,756	196,379	227,138	264,961	319,319	368,757
75-80	164,539	165,616	164,139	200,197	239,234	285,590	347,823
Total	18,328,641	21,304,533	25,057,094	29,667,864	35,160,924	41,617,291	49,271,845
				Females			
0-4	3,077,178	3,573,531	4,358,240	5,232,882	6,141,357	7,128,073	8,340,838
5-9	2,721,212	2,996,863	3,495,627	4,281,099	5,160,668	6,076,872	7,076,750
10-14	2,492,654	2,693,999	2,971,389	3,471,157	4,256,696	5,137,444	6,056,818
15-19	2,108,997	2,444,545	2,653,319	2,941,377	3,448,941	4,234,986	5,115,352
20-24	1,633,451	2,077,994	2,413,254	2,624,397	2,914,904	3,423,418	4,210,846
25-29	1,278,548	1,603,885	2,045,161	2,380,433	2,594,478	2,887,503	3,398,084
30-34	1,069,890	1,251,954	1,574,694	2,013,051	2,348,535	2,565,679	2,862,092
35-39	963,516	1,044,213	1,225,412	1,545,404	1,981,043	2,317,064	2,537,713
40-44	757,245	936,441	1,017,794	1,197,962	1,515,114	1,947,365	2,283,929
45-49	660,097	731,271	907,037	988,889	1,167,294	1,480,569	1,908,417
50-54	516,581	630,195	700,558	871,935	953,783	1,129,590	1,437,336
55-59	407,039	484,243	593,266	662,237	827,728	909,146	1,081,130
60-64	304,072	370,080	442,743	545,449	612,238	769,373	849,597
65-69	197,846	262,901	322,303	388,374	481,959	544,892	689,666
70-74	142,504	157,505	211,241	261,323	317,806	398,050	454,222
75+	189,758	183,127	193,558	239,625	300,822	375,423	475,994
Total	18,520,588	21,442,747	25,125,596	29,645,594	35,023,366	41,325,441	48,778,784

Source: University of the Philippines Population Institute.

Table 145. Projected male and female population by five-year age group, 1970-2000 (medium assumption)

Age	(1 July) 1970	1975	1980	1985	1990	1995	2000
				Males			
0-4	3,162,567	3,415,320	3,847,445	4,274,236	4,621,801	4,872,136	5,070,232
5-9	2,832,583	3,071,485	3,331,986	3,770,111	4,204,565	4,562,641	4,826,337
10-14	2,559,832	2,803,123	3,043,227	3,305,330	2,744,851	4,180,598	4,541,652
15-19	1,992,410	2,530,649	2,774,531	3,015,837	3,279,548	3,719,760	4,157,186
20-24	1,533,936	1,958,937	2,492,436	2,737,629	2,980,551	3,246,424	3,687,769
25-29	1,194,758	1,502,643	1,923,284	2,452,058	2,699,028	2,944,486	3,213,310
30-34	1,012,652	1,167,756	1,472,439	1,889,434	2,414,541	2,663,670	2,912,391
35-39	945,200	985,715	1,139,963	1,441,665	1,854,857	2,376,632	2,628,509
40-44	735,511	913,536	956,045	1,109,297	1,407,497	1,816,275	2,334,327
45-49	628,905	703,075	876,629	920,958	1,072,579	1,365,835	1,768,688
50-54	504,403	590,919	663,562	831,044	876,844	1,025,385	1,311,064
55-59	404,849	461,579	543,586	613,463	772,206	818,797	962,221
60-64	312,798	355,822	408,128	483,628	549,111	695,372	741,748
65-69	192,393	258,496	296,293	342,460	408,859	467,788	596,838
70-74	151,305	144,756	196,379	227,138	264,961	319,319	368,757
75+	164,539	165,616	164,139	200,197	239,234	285,590	347,823
Total	18,328,641	21,029,427	24,130,072	27,614,485	31,391,033	35,360,708	39,468,852
				Females			
0-4	3,077,178	3,307,139	3,721,219	4,129,737	4,460,581	4,696,601	4,881,871
5-9	2,721,212	2,996,863	3,235,043	3,655,353	4,072,746	4,413,744	4,662,785
10-14	2,492,654	2,693,999	2,971,389	3,212,397	3,634,517	4,054,418	4,399,178
15-19	2,108,997	2,444,545	2,653,319	2,941,377	3,191,837	3,615,980	4,036,983
20-24	1,633,451	2,077,994	2,413,254	2,624,397	2,914,904	3,168,217	3,595,368
25-29	1,278,548	1,603,885	2,045,161	2,380,433	2,594,478	2,887,503	3,144,772
30-34	1,069,890	1,251,954	1,574,694	2,013,051	2,348,535	2,565,679	2,862,092
35-39	963,516	1,044,213	1,225,412	1,545,404	1,981,043	2,317,064	2,537,713
40-44	757,245	936,441	1,017,794	1,197,962	1,515,114	1,947,365	2,283,929
45-49	660,097	731,271	907,037	988,889	1,167,294	1,480,569	1,908,417
50-54	516,581	630,195	700,558	871,935	953,783	1,129,590	1,437,336
55-59	407,039	484,243	593,266	662,237	827,728	909,146	1,081,130
60-64	304,072	370,080	442,743	454,449	612,238	769,373	849,597
65-69	197,846	262,901	322,303	388,374	481,959	544,892	689,666
70-74	142,504	157,505	211,241	261,323	317,806	398,050	454,222
75+	189,758	183,127	193,558	239,625	300,822	375,423	475,994
Total	18,520,588	21,176,355	24,227,991	27,657,943	31,375,385	35,273,614	39,301,053

Source: Same as for table 144.

Table 146. Projected male and female population by five-year age group, 1970-2000 (low assumption)

Age	(1 July) 1970	1975	1980	1985	1990	1995	2000
				Males			
0-4	3,162,567	3,125,996	3,254,981	3,348,465	3,342,635	3,213,054	2,984,156
5-9	2,832,583	3,071,485	3,049,721	3,189,555	3,293,884	3,299,849	3,182,851
10-14	2,559,832	2,803,123	3,043,227	3,025,323	3,168,184	3,275,108	3,284,669
15-19	1,992,410	2,530,649	2,774,531	3,015,837	3,001,725	3,146,957	3,256,767
20-24	1,533,936	1,958,937	2,492,436	2,737,629	2,980,551	2,971,407	3,119,892
25-29	1,194,758	1,502,643	1,923,284	2,452,058	2,699,028	2,944,486	2,941,098
30-34	1,012,652	1,167,756	1,472,439	1,889,434	2,414,541	2,663,670	2,912,391
35-39	945,200	985,715	1,139,963	1,441,665	1,854,857	2,376,632	2,628,509
40-44	735,511	913,536	956,045	1,109,297	1,407,497	1,816,275	2,334,327
45-49	628,905	703,075	876,629	920,958	1,072,579	1,365,835	1,768,688
50-54	504,403	590,919	663,562	831,044	876,844	1,025,385	1,311,064
55-59	404,849	461,579	543,586	613,463	772,206	818,797	962,221
60-64	312,798	355,822	408,128	483,628	549,111	695,372	741,748
65-69	192,393	258,496	296,293	342,460	408,859	467,788	596,838
70-74	151,305	144,756	196,379	227,138	264,961	319,319	368,757
75+	164,539	165,616	164,139	200,197	239,234	285,590	347,823
Total	18,328,641	20,740,103	23,255,343	25,828,151	28,346,696	30,685,524	32,741,799
				Female			
0-4	3,007,178	3,026,980	3,148,192	3,235,363	3,226,035	3,097,292	2,873,294
5-9	2,721,212	2,996,863	2,960,991	3,092,468	3,190,616	3,192,616	3,074,991
10-14	2,492,654	2,693,999	2,971,389	2,940,263	3,074,840	3,176,258	3,181,626
15-19	2,108,997	2,444,545	2,653,319	2,941,377	2,921,445	3,059,158	3,162,599
20-24	1,633,451	2,077,994	2,413,254	2,624,397	2,914,904	2,899,826	3,041,720
25-29	1,278,548	1,603,885	2,045,161	2,380,433	2,594,478	2,887,503	2,878,367
30-34	1,069,890	1,251,954	1,574,964	2,013,051	2,348.535	2,565,679	2,862,092
35-39	963,516	1,044,213	1,225,412	1,545,404	1,981,043	2,317,064	2,537,713
40-44	757,245	936,441	1,017,794	1,197,962	1,515,114	1,947,365	2,283,929
45-49	660,097	731,271	907,037	988,889	1,167,294	1,480,569	1,908,417
50-54	516,581	630,195	700,558	871,935	953,783	1,129,590	1,437,336
55-59	407,039	484,243	593,266	662,237	827,728	909,146	1,081,130
60-64	304,072	370,080	442,743	545,449	612,238	769,373	849,597
65-69	197,846	262,901	322,303	388,374	481,959	544,892	689,666
70-74	142,504	157,505	211,241	261,323	317,806	398,050	454,222
75+	189,758	183,127	193,558	239,625	300,822	375,423	475,994
Total	18,520,588	20,896,196	23,380,912	25,928,450	28,428,640	30,749,349	32,792,693

Source: Same as for table 144.

Table 147. Estimated vital rates, 1970-2000

Projection period and projection series	Crude birth rate (per 1000)	Crude death rate (per 1000)	Crude rate of national increase (per 1000)
High series			
1970-1975	40.19	10.55	29.64
1975-1980	41.52	9.52	32.00
1980-1985	41.86	8.51	33.35
1985-1990	41.12	7.54	33.58
1990-1995	39.97	6.65	33.32
1995-2000	39.20	5.81	33.39
Medium series			
1970-1975	37.45	10.35	27.10
1975-1980	36.38	9.21	27.17
1980-1985	34.91	8.22	26.69
1985-1990	32.76	7.37	25.39
1990.1995	30.23	6.64	23.59
1995-2000	27.79	6.01	21.78
Low series			
1970-1975	34.52	10.13	24.39
1975-1980	31.58	8.92	22.66
1980-1985	28.80	7.99	20.81
1985-1990	25.77	7.27	18.50
1990-1995	22.50	6.73	15.77
1995-2000	19.25	6.33	12.92

Source: Dionisia R. dela Paz, *Population Projections: 1970-2000*, Project Report, PREPF Phase I (Manila, University of the Philippines Population Institute, 1975).

per thousand (high series)], by 4.4 points (medium series), and by 3.8 points [10.1 to 6.3 deaths per thousand (low series)].

The crude rate of natural increase is expected to increase from 29.6 to 33.4 per thousand under the high series. The two other series of projections show a decline from 27.1 to 21.8 per thousand (medium series) and from 24.4 to 12.9 per thousand (low series).

The proportion of the total population in borad age groups is shown in table 148. According to the high series, the proportion of the total population below age 15 is expected to decline from 45.7 per cent in 1970 to 44.6 per cent by the end of the century. With a moderate fertility decline, this same age group will drop by almost 10 points by the year 2000. Under the low assumption, the population under 15 will decline to 28.4 per cent by the year 2000.

The proportion of the population of working age, 15-64 years, will remain constant at about 52 per cent from 1970 to the end of the century according to the high series. Under the medium assumption, this proportion will increase by about 9 points (from 51.5 per cent in 1970 to 60.2 per cent in the year 2000). A much greater increase is expected under the low assumption: the number of persons aged 15-64 will rise by nearly 16 points to 67.2 per cent of the total population by the end of the century.

The proportion of the population aged 65 years and over will follow the same trend. The high series

Table 148. Percentage distribution of the projected population by broad age group, 1970-2000

Projection	Period	0-14	15-64	65 and over	Total
High	1965-1970	45.71	51.47	2.82	100.0
	1970-1975	44.05	53.21	2.74	100.0
	1975-1980	43.79	53.45	2.76	100.0
	1980-1985	44.48	52.72	2.80	100.0
	1985-1990	45.08	52.05	2.87	100.0
	1990-1995	44.99	52.13	2.88	100.0
	1995-2000	44.59	52.42	2.99	100.0
Medium	1965-1970	45.71	51.47	2.82	100.0
	1970-1975	43.33	53.89	2.78	100.0
	1975-1980	41.67	55.47	2.86	100.0
	1980-1985	40.43	56.57	3.00	100.0
	1985-1990	39.42	57.37	3.21	100.0
	1990-1995	37.92	58.70	3.38	100.0
	1995-2000	36.04	60.24	3.72	100.0
Low	1965-1970	45.71	51.47	2.82	100.0
	1970-1975	42.55	54.63	2.82	100.0
	1975-1980	39.52	57.51	2.97	100.0
	1980-1985	36.39	60.41	3.20	100.0
	1985-1990	33.99	62.46	3.55	100.0
	1990-1995	31.34	64.77	3.89	100.0
	1995-2000	28.35	67.17	4.48	100.0

Source: Dionisia R. dela Paz, *Population Projections: 1970-2000*, Project Report, PREPF Phase I (Manila, University of the Philippines Population Institute, 1975).

shows a constant proportion of about 2.8 per cent during the entire projection period. The medium series shows a moderate increase from 2.8 per cent in 1970 to 3.7 per cent in the year 2000. The low series shows a greater increase in this proportion from 2.8 per cent to 4.5 per cent at the end of the century.

Another important consideration in population and economic planning is the child dependency ratio, which is defined as the ratio of the number of children under age 15 to the number of persons in the 15-64 age groups. It identifies, for example, the burden shouldered by the potential "working" population in regard to education and health services for the group of children. This ratio was 88.8 per hundred persons aged 15-64 in 1970. Under the high series, this ratio will drop to 85.0 in the year 2000. Under the medium series, it will decline to 59.8, and it would be 42.2 according to the low series. The aged dependency ratio (the ratio of the number of persons 65 years old and over the number of persons 15-64), recorded in table 149, shows very little variation from one projection series to another. With the changes in the age structure indicated by the medium and low projections, the total dependency burden will be reduced gradually over the 30-year period covered by the projections. During the period 1965-1970, one worker had to support about one dependant. By the end of the century, under the medium projections, every three workers will have two dependants to support, while according to the low projections, every two workers will have to support one dependant.

Table 149. Dependency ratios according to various population projections, 1970-2000

Projection	Period	Child dependency ratio[a]	Aged dependency ratio[b]	Total dependency ratio[c]
High	1965-1970	88.83	5.48	94.31
	1970-1975	82.78	5.15	87.93
	1975-1980	81.92	5.16	87.08
	1980-1985	84.40	5.31	89.71
	1985-1990	86.59	5.51	92.10
	1990-1995	86.31	5.53	91.84
	1995-2000	85.04	5.71	90.75
Medium	1965-1970	88.83	5.48	94.31
	1970-1975	80.40	5.15	85.55
	1975-1980	75.12	5.16	80.28
	1980-1985	71.47	5.31	76.78
	1985-1990	68.69	5.59	74.28
	1990-1995	64.59	5.77	70.36
	1995-2000	59.81	6.18	65.99
Low	1965-1970	88.83	5.48	94.31
	1970-1975	77.90	5.15	83.05
	1975-1980	68.70	5.16	73.86
	1980-1985	60.23	5.31	65.54
	1985-1990	54.41	5.68	60.09
	1990-1995	48.39	6.01	54.40
	1995-2000	42.21	6.66	48.87

Source: Same as for table 148.

a Number of children aged 0-14 years per 100 persons aged 15-64 years.

b Number of persons aged 65 years and over per 100 persons aged 15-64 years.

c Total *a* + *b*.

Chapter XI

ECONOMIC ACTIVIY OF THE POPULATION

A. DATA AND CONCEPTS

1. Data sources[1]

There are two important sources of information on the economic activity of the Philippines' population. These are: (a) the population censuses; and (b) the sample surveys of households.

As was noted in chapter I, the Philippines has a fairly long tradition of census-taking, the first population census being taken in 1903. Six additional censuses were carried out in 1918, 1939, 1948, 1960, 1970 and 1975. The censuses collected information on the economic characteristics of the population as well. Those conducted during the first half of the century utilized the "gainful worker" approach, while the 1960 and subsequent censuses made use of the labour force concept.[2] This chapter focuses mainly on the 1960 and 1970 Censuses where the definitions used were basically the same.

Another major source of data on the economic activity of the population is the nation-wide sample survey of households carried out by the Bureau of the Census and Statistics on a continuing basis since 1955.[3] These surveys collected, among others, valuable information on labour force characteristics of the population; they have adopted the labour force concept for collecting information on the economic activity of the population. The results of these surveys are published by the Bureau in a series of *Survey of Household Bulletins.*

An important and interesting feature of the two major sources of data on labour force characteristics in the Philippines is that both the population censuses and the sample household surveys are designed and carried out by the very same government agency. Hence, the terms and concepts used, as well as the procedures adopted, in respect of the censuses since 1960 and surveys are similar on uniform. The adoption of uniform concepts and procedures has the advantage of making available a historical series of comparable data for analysing trends and changes in labour force characteristics.

It must, however, be noted that in spite of the similarity in terms, concepts and procedures used in regard to the censuses and household surveys, there would nevertheless be differences in regard to the results obtained from the two sources even for the same period, owing at least to two important factors. In the first place, the size of the samples selected for enumeration is different.[4] Secondly, compared to sample surveys, the census is a very large scale operation carried out by a large number of less-trained enumerators. It is therefore likely that less care would have been exercised in gathering information at the census, thus reducing the accuracy of the information collected. Thus the advantage of a larger sample covered in the census enumeration could have been offset by a relatively more accurate recording of information in the sample surveys.

2. Definitions and concepts

The population aged 10 years and over was categorized into two activity statuses: in the labour force, and not in the labour force. The labour force, or the economically active population, was defined to include all persons aged 10 years and over who were either employed or unemployed. A person was considered to be "employed" if during the reference week he/she was either: (a) working for pay or profit or without pay on the family farm or enterprise; or (b) not working but had a job or business from which he or she was absent (because of temporary illness, bad weather, employees' strike etc.) or on leave; or (c) temporarily laid off for not more than 30 days, or (d) expected to report to anew job within 30 days from the enumerator's visit. "Unemployed" persons were defined as those who were not at work during the reference week but were wanting and looking for work, or would have been looking for work but for the fact that they were ill or believed that no work was available.

1 For a full discussion on sources of data, see S. Selvaratnam, "The Philippines labour force data" (Bangkok, International Labour Organisation, Asian Regional Team for Employment Promotion, May 1974) (mimeo).

2 A historical perspective of the various definitions of the Philippines work force is given in Milagros R. Ranoa, *An Analysis of Working Force Activity in the Philippines, 1948-1968,* unpublished Ph.D dissertation submitted to the University of Chicago, 1971.

3 From its inception in October 1955 until July 1958, this survey was known as the Philippines Statistical Survey of Households (PSSH). Since then it has come to be called the Bureau of the Census and Statistics Survey of Households (BCSSH).

4 For example, in 1960, while labour force data was collected from a sample of 10 per cent of the 5 million households at the census, only 1 per cent of all households was included in the sample for the household survey.

Persons aged 10 years and over who were neither employed nor unemployed according to the definitions stated earlier were classified as "not economically active". Those in this category were further classified into:

(a) Housekeeper or person who does housekeeping chores in one's house such as cooking, cleaning the house and laundering for family members of the household. This does not include a paid housekeeper for an employer;

(b) Student or person enrolled in school or college and not considered economically active during the reference week;

(c) Others, such as retired persons not wanting to work, those unable to work because of physical disability or ill health and volunteers working without pays in non-family farms or enterprises.

The censuses also gave structural profiles of the labour force. The published 1960 census tabulations focused on employed workers and provided data on occupation, industry and status of workers in the various occupational and industrial groups. Similar tabulations were available from the 1970 figures, although additional data on experienced workers were also given.

"Occupation" referred to the kinds of work done by a labour force member during the reference week, while "industry" referred to the activity of the establishment in which the person worked. The worker was also classified according to status or class, i.e., his "position in relation to other workers, if any, in the enterprise".[5] The following categories were used: wage and salary workers, own-business workers and unpaid family workers. Wage and salary workers comprised those working for private employers on a wage, salary, commission or tip basis and those working for the Government. Own-business employers included the self-employed who worked in their own business, farm, profession or trade without employing any worker to operate such economic activities and the employers who worked in their own business, farm, profession or trade with one or more employees.

In the case of those unemployed at survey date but previously employed (for two weeks consecutively at any time since they were 10 years old), the occupation or industry in which the individual last worked was reported. This information on the "experienced worker" was reported in detail in 1970. For purposes of regional comparison, the section on structure focuses on these workers.

3. Data problems

The 1960 and 1970 Censuses differed in terms of certain enumeration procedures. The procedure for establishment of labour force status was outlined in more detail in the 1970 enumeration manual. The 1960 data related to a 10 per cent sample while those of 1970 came from a 5 per cent sample. The major difference between the two, however, lies in the date of enumeration. The 1960 Census was conducted in the month of February and completed in March while the 1970 Census was carried out from 6 May to 16 May. The 1960 Census was conducted during school time while the 1970 enumeration took place during vacation time. The results presented in the subsequent sections reflect some of these inherent data problems.

B. ECONOMICALLY ACTIVE POPULATION

1. Over-all trends

The total as well as the economically active population by sex, as recorded at the Censuses of 1960 and 1970, together with activity rates are shown in table 150. It will be observed that while the total population of the country increased by 35.4 per cent during that decade, the economically active population or the labour force increased by 44.1 per cent. Consequently, the crude activity rate, or the proportion of the economically active to the total population, increased from 31.5 per cent in 1960 to 33.5 per cent in 1970.

The increase in the size of the economically active population as well as of the activity rates was not uniform for both sexes. In the case of the males, while the total population increased by 33.6 per cent between 1960 and 1970, the economically active population increased by only 31.7 per cent, resulting in a decline in the male crude activity rate from 46.5 in 1960 to 45.9 in 1970. But in the case of females, while their total population increased by 37.3 per cent, the number of economically active females recorded a tremendous increase (by about 80 per cent) during the 10-year period, pushing up the female crude activity rate from 16.3 in 1960 to 21.3 in 1970. It will thus be seen that the increase in the

5 *Methods of Analysing Census Data on Economic Activities of the Population* (United Nations publication, Sales No. E.69.XIII.2), p. 3.

Table 150. Total and economically active population by sex, 1960 and 1970

Sex and year	Total population	Population aged 10 years and over	Economically active population	Activity rates	
				Curde[a]	Refined[b]
Both sexes					
1960	27,087,685	17,873,060	8,536,000	31.51	47.76
1970	36,684,486	25,116,228	12,297,314	33.52	48.96
Males					
1960	13,662,869	8,931,180	6,352,420	46.49	71.13
1970	18,250,351	12,284,233	8,369,181	45.86	68.13
Females					
1960	13,424,816	8,941,880	2,183,380	16.27	24.42
1970	18,434,135	12,831,995	3,928,133	21.31	30.61

Source:

Source: Labour Force Projections by Age and Sex for the Philippines, 1970-2000, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977), table 1.

a The crude activity rates refer to the number economically active per 100 of the total population.

b The refined activity rates refer to the number economically active per 100 of the population aged 10 years and over.

over-all crude activity rate was occasioned by the substantial increase in the female rate which more than offset the decline in the male rate.

In the Philippines, since particulars regarding economic activity were collected in respect of persons aged 10 years and over, a more refined measure of the activity level could be obtained by relating the total number of economically active population to the total population aged 10 years and over. These refined rates indicate that the total economically active population comprised 47.8 per cent of the population aged 10 years and over in 1960 and 49.0 per cent in 1970. The refined rates for males showed a decline from 71.1 to 68.1 while the female rates increased from 24.4 to 30.6 during this period.

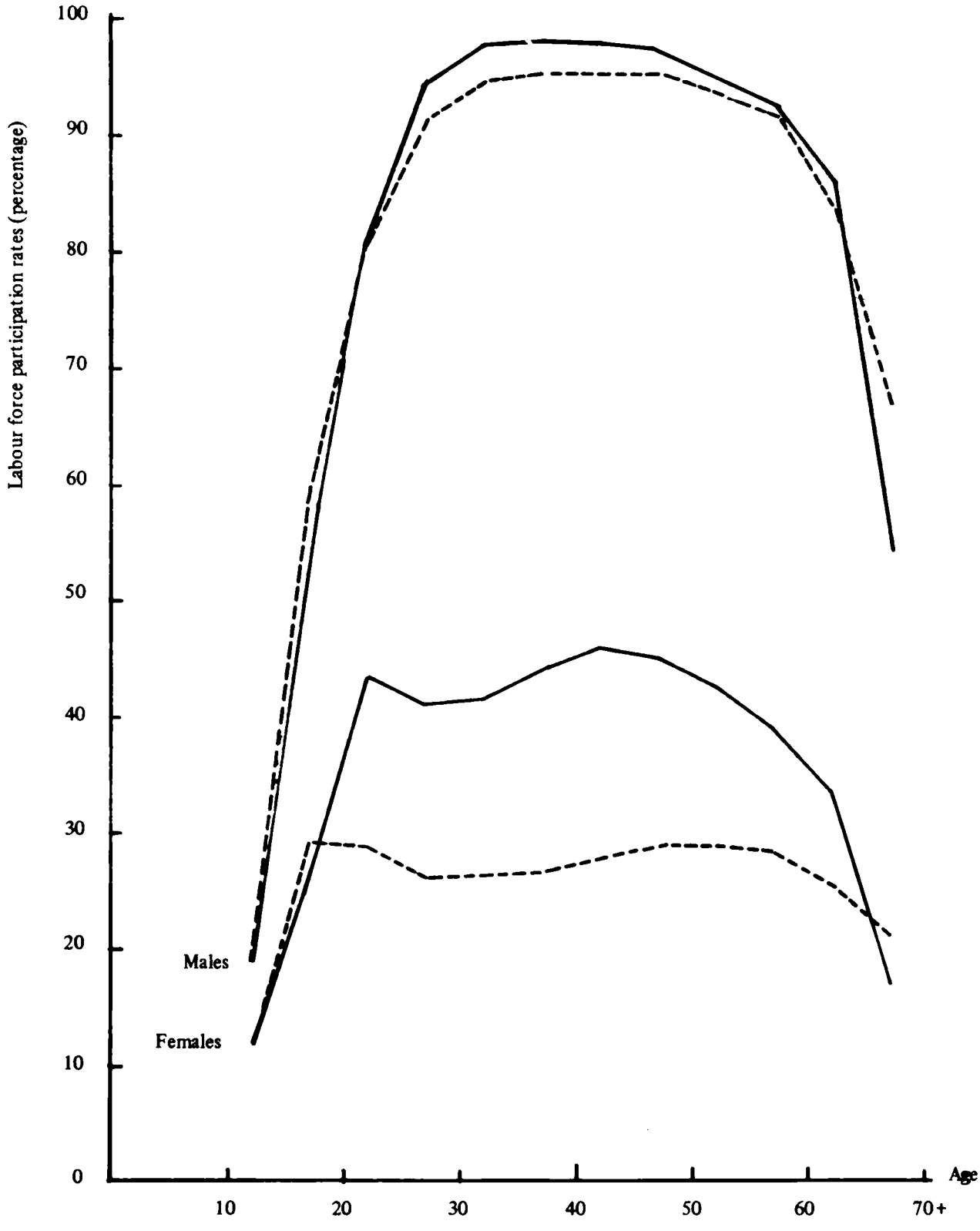
2. Age-sex trends and patterns

The 1960 and 1970 Censuses also give information on participation in economic activity by age and sex. The age-specific participation rates for males and females are shown in table 151. It will be noted from this table, as well as from figure 20 that in 1960, male participation rates followed the universal pattern: participation rates increasing with increasing age until the peak ages of participation, thereafter declining gradually. Male participation rate reaches the peak at ages 30-49.

Apart from being lower than the corresponding rates for males, female participation rates in 1960 followed a different pattern. Two peak ages of participation can be discerned for the entire country; the first peak at ages 15-19 and the second in the 45-54 age group. Female rates dropped in the late twenties but gradually increased until the forties, remained more or less stable at that level until the late fifties and gradually declined thereafter.

The dimensions of age-specific participation rates were somewhat different in 1970. For females, the peak age of participation had shifted to the early forties. Compared to 1960, there was in increase in female participation rates at all ages except in the last age group. The greatest increase occurred in the middle age groups, especially in the ages 25-50. The male participation rates on the other hand declined in almost all ages, except in regard to the first age group (10-14 years) where there was a slight increase.

> "In many instances, the observed declines in the participation rates are considerable, amounting from 3.7 to 10.3 percentage points in 10 years. This trend, indicating a large decline in the labour force participation rate between 1960 and 1970, is very unlikely for Filipino males. In most countries, it has been observed that the labour force participation rates for males have



Source: Labour Force Projections by Age and Sex for the Philippines, 1970-2000 Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977).

Figure 20. Age-specific labour force participation rates by sex, 1960 (enumerated) and 1970 (adjusted)

Table 151. Labour force participation rates by age and sex, 1960 and 1970 Censuses

Age group	Both sexes			Males			Females		
	1960	1970	Percentage change	1960	1970	Percentage change	1960	1970	Percentage change
10-14	15.16	17.07	1.91	19.85	20.95	1.10	10.12	13.05	2.93
15-19	44.43	41.35	-3.09	59.25	52.42	-6.83	29.63	31.47	1.84
20-24	54.29	53.85	-0.44	80.82	76.00	-4.82	28.87	34.37	5.50
25-29	57.90	61.37	3.47	91.32	87.58	-3.74	26.09	35.74	9.65
30-34	59.69	63.57	3.88	94.51	90.31	-4.20	26.28	36.15	9.87
35-39	60.05	65.06	5.01	95.48	90.60	-4.88	26.75	38.30	11.55
40-44	61.22	64.80	3.58	95.37	90.53	-4.84	27.91	39.97	12.06
45-49	62.37	62.94	0.57	95.10	89.74	-5.36	28.93	38.69	9.76
50-54	61.85	60.20	-1.65	93.57	87.10	-6.47	28.99	36.52	7.53
55-59	60.72	58.34	-2.38	91.71	85.82	-5.89	28.33	33.35	5.02
60-64	58.50	53.31	-5.19	86.38	79.29	-7.09	25.50	28.64	3.14
65 and over	43.66	36.77	-6.89	66.83	56.51	-10.32	21.17	17.70	-3.47
10 and over	47.76	48.96	1.20	71.13	68.13	-3.00	24.42	30.61	6.19

Source: Same as for table 150.

been relatively stable especially for the age group 20-59 years, although some changes have been observed in both very young and very old ages. The labour force participation rate for males derived from the *Quarterly Survey of Household* of the Philippines for the years 1966 and 1973 are similar to those of other countries with similar stages of economic and social development. Further, there are no indications of substantial decline in the participation rates in peak productive ages. This unusual phenomenon of declining participation rate at the peak of labour force participation (ages 25 to 54 for the males, between 1960 and 1970) indicates a relatively low participation rate which in turn is an indication of apparent errors in the census data."[6]

It has been pointed out by the National Census and Statistics Office that the possible errors in the 1970 census data on economically active population would have resulted from the sampling and enumeration procedures. At the 1970 census, data on the economic characteristics of the population were collected from a 5 per cent sample households. Estimates for the country as a whole were prepared "by computing raising factors for the sample household of each Enumeration District (ED) based on the exact proportion of the number of sample households to the total number of households. Also, for estimating population characteristics, each sample person was multiplied by the weight assigned to the sample household where he belonged. A downward bias was perhaps introduced in this method of inflation due to the observed fact that the sizes of the sample households selected were generally smaller than the average size for the ED".[7]

In view of the possible errors in the labour force estimates based on the 1970 census data, the National Census and Statistics Office prepared an adjusted set of age/sex-specific labour force participation rates for 1970.[8] These adjusted rates are compared with the rates based on the enumerated data of the 1960 Census in table 152. It will be observed that according to the adjusted rate, the over-all participation rate for males remained more or less constant between 1960 and 1970. It will also be noted that there was a slight decrease in the participation rates for the age groups below 20 years and above 60 years. This is:

6 *Labour Force Projections by Age and Sex for the Philippines, 1970-2000*, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977), p. 10.

7 *Ibid.*, p. 10.

8 *Ibid.*, pp. 11-13.

Table 152. Labour force participation rates by age and sex, 1960 (enumerated) and 1970 (adjusted)

Age group	Both sexes			Males			Females		
	1960 (enumerated)	1970 (adjusted)	Percentage change	1960 (enumerated)	1970 (adjusted)	Percentage change	1960 (enumerated)	1970 (adjusted)	Percentage change
10-14	15.16	15.15	-0.01	19.85	18.97	-1.06	10.12	11.41	1.29
15-19	44.43	46.49	2.06	59.25	57.18	-2.07	29.63	36.39	6.76
20-24	54.29	61.92	7.63	80.82	81.43	0.61	28.87	43.61	14.74
25-29	57.90	67.05	9.15	91.32	94.75	3.43	26.09	41.17	15.09
30-34	59.69	68.91	9.22	94.51	97.71	3.20	26.28	41.65	15.37
35-39	60.05	70.81	10.76	95.48	98.03	2.55	26.75	44.12	17.37
40-44	61.22	71.61	10.39	95.37	97.95	2.58	27.91	46.04	18.13
45-49	62.37	70.54	8.18	95.10	97.20	2.11	28.93	45.14	16.21
50-54	61.85	68.16	6.32	93.57	94.34	0.77	28.99	42.60	13.61
55-59	60.72	65.86	5.14	91.71	92.96	1.25	28.33	38.91	10.58
60-64	58.50	60.02	1.52	86.38	85.89	-0.49	25.50	33.41	7.92
65 and over	43.66	35.34	-8.32	66.83	54.43	-12.41	21.17	17.04	-4.13
10 and over	47.76	51.98	4.22	71.13	70.11	-0.92	24.42	34.41	9.99

Source: Labour Force Projections by Age and Sex for the Philippines, 1970-2000, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977), table 3.

"...a phenomenon frequently associated with modernization and industrialization. If the phenomenon is occurring in urban areas, older employed persons may be encouraged to retire earlier because of the old-age pension benefits they may receive from the existing social security system. Also, in urban areas, younger workers, with more skills and higher levels of education, might have tended to push the older workers out of the labour force. Another explanation may lie in the great increase in the participation of females in the labour force. This additional supply of labour might have pushed the older male marginal workers out of the economically active group".[9]

The adjustments effected have also resulted in the over-all female participation rate increasing considerably from 24.4 in 1960 to 34.4 in 1970. It will also be seen from table 152 and figure 20 that between 1960 and 1970, the female participation rates in respect of all age groups recorded increases, the sole exception being the very old age group, viz., 65 years and over. Remarkable increases in participation rates were observed in regard to women in the reproductive span – 20 to 49 years. What is interesting about the increases in the age-specific female participation rates is their magnitude. For instance, the participation rate for the 40-44 age group increased by 18 percentage points during the 10-year period, while in the adjacent age groups the increases ranged from about 14 to 17 percentage points. Similar increases in female labour force participation rates were also reported for the United States and for several countries, for example, Indonesia, the Republic of Korea and Singapore, in the ESCAP region.[10]

Another interesting feature of the adjusted 1970 female participation rates is that the double peaks occurred at ages 20-24 and 40-44, not at 15-19 and 50-54 as in 1960. Also, the peaks in 1970 were more pronounced than in 1960.

"The shifting of the peak from the 15-19 working age group in 1960 to the 20-24 working age group in 1970 may be due to the greater availability of educational opportunities to females and also the changes in the pattern of age at first marriage in favour of the older ages. The explanation to the shifting of the peak from the 50-54 working age group in 1960 to 40-44 working age group in 1970 may lie in the change in the age pattern of fertility among the females; that is, the age at last childbirth among females may have decreased due to the changes in spacing and fertility control."[11]

3. Determinant factors

In general, the size and composition of the economically active population are determined by (a) the size and age structure of the population, and (b) the age-specific participation rates.

"The population serves as a potential source and reserve of the labour force. The size of the total population, and the proportion in the younger and older age groups, however, give only the maximum dimensions of the number of persons who can participate in economic activity. But a number of social and economic factors, such as the institutional framework of the society, the social attitudes towards work, and the level and type of economic organization, determine the proportion of persons at a given age who can contribute to the supply of labour. These factors act and react on one another and the long-term prospects of manpower supply are shaped by the resulting evolution of these factors."[12]

It has already been noted that there was a substantial increase in the economically active population or the labour force in the Philippines between 1960 and 1970. The increase could be attributed to two factors: (a) changes in size and age-sex composition of the population during that period; and (b) changes in the age-specific participation rates.[13] The effect of the variation in the participation rate of a particular age group on the size of the labour force will depend on the proportionate share of that age group in the total population. Conversely, the effect of changes in the proportionate share of an age group on the size of the labour force will depend upon the level of the age-specific participation rate.

9 *Ibid.*, p. 13.

10 ILO Yearbook, 1974 (Geneva, International Labour Office).

11 *Labour Force Projections by Age and Sex for the Philippines, 1970-2000*, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977), p. 19.

12 S. Selvaratnam, "Potentials and problems of manpower in Ceylon" in *National Seminar on Manpower Assessment and Educational Planning: Summary Record of Proceedings* (Colombo, Colombo Plan Bureau, 1965), p. 30.

13 *Labour Force Projections by Age and Sex for the Philippines, 1970-2000*, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977), p. 21.

Thus, if there is a simultaneous variation in both the participation rate and the age structure, the combined effect on the size of the labour force can be substantial.

A recent study has attempted to measure the effects of the changes in the age structure of the population and in age-specific participation rates on the size of the Philippines economically active population or labour force between 1960 and 1970. The results of this exercise are presented in table 153. It will be seen from this table that if there had been changes between 1960 and 1970 in the size and composition of the population only and not in the participation rates, then the expected size of the economically active population or labour force in 1970 would have been 11,711,000, of whom 8,632,000 males and 3,079,000 females. Therefore, the difference of 3,175,000 between the expected size of the labour force in 1970 (11,711,000) and the enumerated labour force in 1960 (8,536,000) could be attributed to the demographic changes that occurred during that 10-year period. In other words, between 1960 and 1970, there was an addition of about 2,280,000 males and 895,000 females to the Philippines labour force on account of changes in the size and composition of the country's population.

As a result of the adjustment mentioned earlier, the size of the Philippines labour force in 1970, adjusted for census errors, was 13,026,000 (8,647,000 males and 4,379,000 females). The difference between the adjusted figure and the expected labour force of 11,711,000 based solely on the assumption of demographic changes could be attributed to variations in the age-specific labour force participation rates during that period.

> "In other words, the effects of the changes in the labour force participation rate between 1960 and 1970 on the growth of the labour force was about 1,315,000 more people in the labour force in 1970 than otherwise would have been expected. Of these, 1,300,000 were females in contrast to only 15,000 males. What was apparent from this analysis was that between 1960 and 1970, the changes that were experienced by the male labour force were logically due to demographic changes which amounted to about 99 per cent of the total changes during the decade. On the other hand, for females, non-demographic factors played a more important role in explaining the changes in the female labour force constituting 59.2 per cent of the total changes. The female labour force, therefore experienced a dramatic growth which was influenced more by socio-economic rather than mere demographic factors."[14]

4. Female participation rates by marital status

A woman's marital status will to some extent affect her propensity to be in the labour force. In

14 Ibid., p. 21.

Table 153. Effect of changes in size and composition of the population, and in participation rates, on the growth of the labour force, 1960-1970

Sex	1960 labour force	1970 expected labour force if there were no changes in the age specific labour force participation rates from 1960	Demographic changes (2)–(1)	1970 adjusted labour force	Difference between the 1970 adjusted and 1970 expected labour force (4)–(2)
	(1)	(2)	(3)	(4)	(5)
Male	6,352,420	8,632,168	2,279,748	8,647,284	15,116
Female	2,183,580	3,078,609	895,029	4,378,673	1,300,064
Both sexes	8,536,000	11,710,777	3,174,777	13,025,957	1,315,180

Source: Labour Force Projections by Age and Sex for the Philippines, 1970-2000, Monograph No. 6, UNFPA-NCSO Population Research Project (Manila, National Census and Statistics Office, 1977).

most developing countries of the world, labour force participation rates for married females have been lower than the rates for females of other marital statuses. Table 154 shows the age-specific participation rates of Filipino females aged 10 years and over by marital status. In almost all ages, the proportions of married females in the labour force was lower than the corresponding proportions for those never married, or widowed, divorced or separated.[15] This was true for females within the ages 15-64. The largest difference can be noted in respect of the age group 25-29, where the participation rate of those never married was more than twice that of married females (60.2 per cent compared to 29.5 per cent, respectively) and the rate of widowed/separated/ divorced women amounted to 57 per cent.

Only the extreme age groups differ from the observed pattern. Married females aged 10-14 have a higher participation rate than women of other marital statuses in the same age group. Several factors may have contributed to this phenomenon. For instance, for certain married females in this age group labour force participation may have become a necessity, perhaps to augment family income.

The patterns of labour force participation in respect of the three groups of women varied as illustrated in figure 21. For females who were never married, participation rates increased steadily and substantially to a peak at ages 25-29, remaining relatively constant in the age group 30-39 and then declining gradually. The participation rates for married females increased gradually with increasing age, reaching a peak at ages 40-44 years and declining thereafter. The participation rates for females who were previously married increased steadily from 38.8 in the 15-19 age group to a peak at ages 30-39. Beginning with the 40-44 age group, there has been a decline in these rates. There was not much difference in the levels and patterns of labour force participation between never-married females and those females who were widowed, divorced or separated.

5. Urban-rural differentials

The 1970 economically active population by urban and rural residence, together with the corresponding activity rates, are shown in table 155. There were 8.4 million economically active persons in the rural areas compared to 3.9 milllion in areas designated as urban by the National Census and Statistics Office (NCSO).[16] In other words, there were about 46 economically active urban persons for every 100 economically active rural persons. In both areas, the economically active persons constituted about a third of the respective total populations, the crude activity rate for urban being 33.4 and for rural 33.6. However, the refined activity rates or the rates for the population aged 10 years and over showed a higher participation rate for rural areas (50.0 per cent compared to urban areas (46.9 per cent).

About 43 per cent of all males living in urban areas were economically active, the corresponding proportion among females being only 24 per cent. The difference in the levels of labour force participation between males and females in rural areas was even greater: 47.1 per cent for males as against 19.9 for females. It will also be noted from the table that, while the activity rate of the rural male was higher than that of the urban male, in the case of the females the rate was higher in the urban than in the rural areas.

The age-sex specific participation rates for rural and urban areas are given in table 156. The male rates

Table 154. Age-specific participation rates for females aged 10 years and over by marital status, 1970

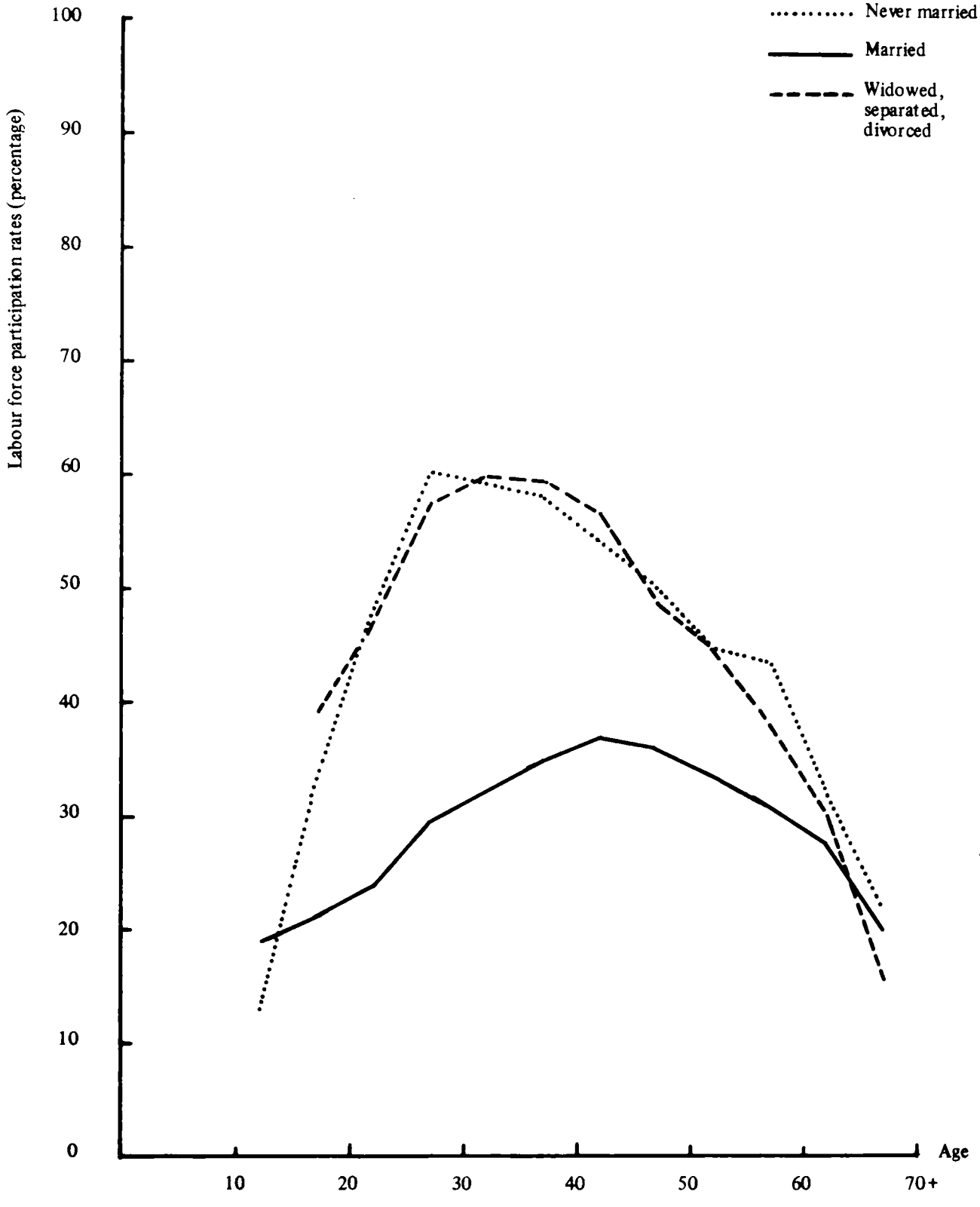
Age group	Marital status of women		
	Never married	Married	Widowed/ separated/ divorced
10-14	13.0	18.9	*a*
15-19	33.3	21.1	38.8
20-24	48.2	23.8	46.9
25-29	60.2	29.5	57.4
30-34	59.1	32.1	59.8
35-39	58.0	34.9	59.4
40-44	54.1	36.8	56.4
45-49	50.0	35.9	48.7
50-54	44.7	33.4	44.4
55-59	43.4	30.6	38.0
60-64	31.8	27.4	30.0
65+	21.7	19.7	15.7

Source: Philippines 1970 Census . . ., National Summary, vol. 11, table II-14, p. 208.

a No rate has been calculated since the numbers involved in this category are too small.

15 No corresponding tabulations for males are available. However, marital status of males has been demonstrated to have very little effect on their activity rates.

16 For NCSO definition of "urban" see chapter IV.



Source: Table 154.

Figure 21. Age-specific participation rates of females 10 and over, by marital status, 1970

Table 155. Total and economically active population, by sex and urban/rural residence, 1970

Sex and locale	Total population	Population aged 10 years and over[a]	Economically active population[a]	Activity rates	
				Crude	Refined
Both sexes	36,684,486	25,116,228	12,297,314	33.5	49.0
Urban	11,677,820	8,311,679	3,895,891	33.4	46.9
Rural	25,006,666	16,804,549	8,401,423	33.6	50.0
Males	18,250,351	12,284,233	8,369,181	45.9	68.1
Urban	5,673,570	3,900,477	2,443,610	43.1	62.6
Rural	12,576,781	8,383,756	5,925,571	47.1	70.7
Females	18,434,135	12,831,995	3,928,133	21.3	30.6
Urban	6,004,250	4,411,202	1,450,283	24.2	32.9
Rural	12,429,885	8,420,793	2,477,850	19.9	29.4

Source: 1970 Census.

a Excluding persons categorized as "age not stated".

Table 156. Age-specific labour force participation rates in urban and rural areas, 1970

Age group	Male		Female	
	Urban	Rural	Urban	Rural
10-14	9.1	25.8	8.9	14.9
15-19	35.6	60.3	33.2	30.4
20-24	68.3	80.1	38.5	31.8
25-29	85.7	88.5	40.9	32.9
30-34	90.3	90.3	40.8	33.6
35-39	90.8	90.5	43.1	35.9
40-44	90.9	90.4	44.1	37.8
45-49	89.3	89.9	41.2	37.5
50-54	85.7	87.7	37.8	35.9
55-59	82.9	87.1	33.3	33.4
60-64	73.4	81.8	27.2	29.3
65+	43.5	61.6	14.4	19.3

Source: 1970 Census.

in both areas followed the pattern of increasing participation with advancing age, reaching peak rates, slightly over 90 per cent, around ages 35-39 and decreasing steadily thereafter. Urban and rural rates around ages 35-39 hardly differed although rural rates were higher in all other age groups, particularly at the younger ages.

Female rates varied distinctly. Participation rates in most ages were higher in urban areas, with the exception of those in the extreme age groups, namely, 10-14 and 55 and over. In both areas, female participation rates reached their peak in the early forties (see figure 22).

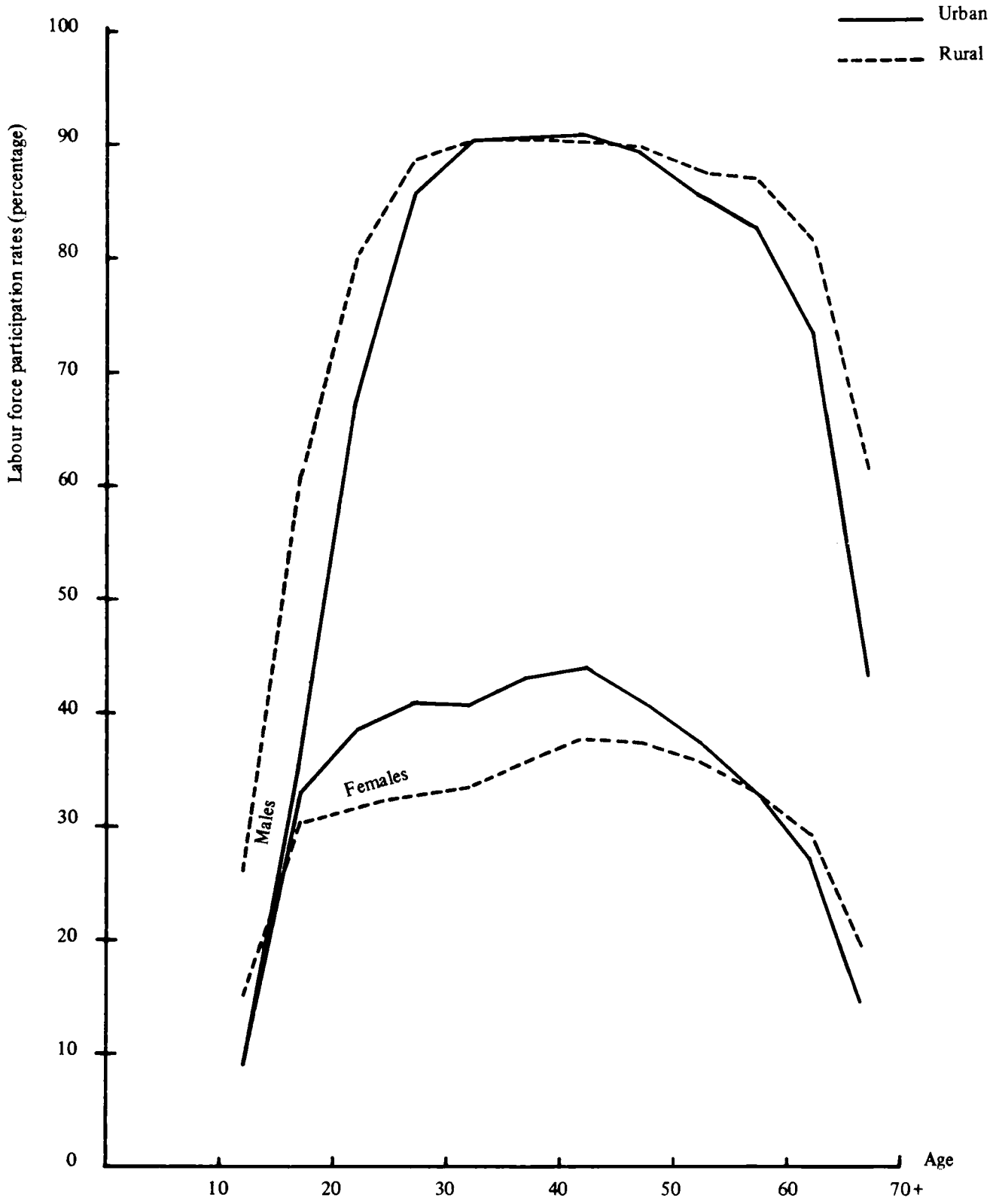
C. EMPLOYED POPULATION

1. Introduction

As noted earlier, the economically active population includes the employed as well as the unemployed. The relative share of the employed and the unemployed in the total economically active population of 1960 and 1970 is shown in table 157. It will be seen that, while in 1960 the employed category constituted 93.1 per cent of the total economically active population, in 1970 that proportion had declined to 92.3 per cent. Consequently, there was an increase in the proportion unemployed from 6.9 per cent in 1960 to 7.7 per cent in 1970. The changes are more marked in the case of females, in respect of whom the proportion employed registered a decline from 89.5 per cent in 1960 to 88.2 per cent in 1970, while the proportionate share of the unemployed increased from 10.5 to 11.8 per cent. The corresponding proportions in regard to economically active males remained unchanged over the 10-year period.

2. Employment trends

The growth of the employed population during the decade 1960-1970 is shown in table 158. It will be seen that total employment in the Philippines rose



Source: Table 156.

Figure 22. Age-specific participation rates by sex in urban and rural areas, 1970

Table 157. Economically active population aged 10 years and over by sex and activity status, 1960 and 1970

Sex and year	Economically active persons		Employed persons		Unemployed persons	
	Number	Percentage	Number	Percentage	Number	Percentage
Both sexes						
1960	8,536,000	100.0	7,944,450	93.1	591,550	6.9
1970[a]	12,297,314	100.0	11,355,355	92.3	941,959	7.7
Males						
1960	6,352,420	100.0	5,990,130	94.3	362,290	5.7
1960[a]	8,369,181	100.0	7,891,754	94.3	477,427	5.7
Females						
1960	2,183,580	100.0	1,954,320	89.5	229,260	10.5
1970[a]	3,928,133	100.0	3,463,601	88.2	464,532	11.8

Source: National Census and Statistics Office.

a The figures for 1970 exclude 3121 persons categorized as "age not stated", of whom 1,579 were males and 1,542 females.

Table 158. Growth of the employed and unemployed populations, 1960-1970

Sex and employment status	1960	1970[a]	Increase 1960-1970	
			Number	Percentage
·s				
·mployed	7,944,450	11,355,355	3,410,905	42.9
Unemployed	591,550	941,959	350,409	59.2
Total	8,536,000	12,297,314	3,761,314	44.1
Males				
Employed	5,990,130	7,891,754	1,901,624	31.7
Unemployed	362,290	477,427	115,137	31.8
Total	6,352,420	8,369,181	2,016,761	31.7
Females				
Employed	1,954,320	3,463,601	1,509,281	77.2
Unemployed	229,260	464,532	235,272	102.5
Total	2,183,580	3,928,133	1,744,553	79.9

Source: National Census and Statistics Office.

a The figures for 1970 exclude 3,121 persons categorized as "age not stated", of whom 1,579 were males and 1,542 are females.

from a level of 7.9 million in 1960 to 11.4 million in 1970, an increase of some 3.4 million, or 43 per cent, in 10 years. During the same period, the total labour force increased by about 3.8 million, or 44 per cent. Thus the increase in the number employed was slightly less than the increase in the labour force. Since the yearly increment to the labour supply was not taken care of by the yearly increase in employment opportunities, there was an increase in the number unemployed from about 592 thousand in 1960 to about 942 thousand in 1970, or 59 per cent.

Of the 7.9 million people employed in 1960, nearly 6 million, or about 75 per cent, were males. The number of employed males increased by 1.9 million or by about 32 per cent during the decade 1960-1970. However, since the number of employed females increased very substantially by 77 per cent, the proportionate share of the males in total employed population dropped to about 69 per cent in 1970. It may also be noted that the substantial increase in the number of employed females has been overshadowed by a dramatic increase in the number of unemployed females.

3. Age composition of the employed population

The percentage distribution of the 1970 employed population by age and sex is shown in table 159. It will be seen that in the case of the urban as well as rural males, the proportion employed increased with age until the age group 25-29, thereafter decreasing gradually with increasing age. In the case of females, the highest concentration is in the 20-24 age group for urban females and 15-19 for rural females. These differences between males and females and between urban and rural females may partly reflect the effect of marital status and the tendency among rural females to enter marriage at an earlier age than urban females.

It will also be noted that in both the urban and rural areas, a greater proportion of females than males are employed in the younger age groups, 10 to 24. In all other age groups, while in the urban areas the proportions for males are higher than for females, in the rural areas the proportions for females are somewhat higher than those for males at ages 40 to 54.

Another notable feature is that in the youngest age group, 10-14 years, the proportions for males and females are substantially higher in the rural than in the urban areas, reflecting on the one hand the employment opportunities available for children in the rural agricultural sector and on the other the availability of educational opportunities which tend to keep children out of the labour force in the urban areas.

Table 159. Percentage distribution of the employed population aged 10 years and over by age and sex and by urban and rural residence, 1970

Age group	Philippines		Urban		Rural	
	Males	Females	Males	Females	Males	Females
10-14	5.0	6.5	1.9	3.6	6.3	8.3
15-19	10.2	15.1	7.0	16.4	11.5	14.2
20-24	14.0	15.3	14.6	17.7	13.8	13.8
25-29	15.1	13.4	16.8	14.6	14.4	12.6
30-34	12.7	10.5	15.0	11.3	11.8	10.0
35-39	10.8	9.3	12.1	9.5	10.3	9.3
40-44	7.8	7.7	8.9	7.8	7.4	7.6
45-49	6.7	6.8	7.2	6.3	6.5	7.2
50-54	5.3	5.5	5.5	4.9	5.3	5.8
55-59	4.6	4.2	4.7	3.7	4.6	4.6
60-64	3.4	2.8	3.3	2.3	3.5	3.1
65+	4.4	2.9	3.0	2.0	4.7	3.5
All ages	100.0	100.0	100.0	100.0	100.0	100.0

Source. *Philippines 1970 Census . . .*, National Summary, vol. II, table 11-12.

The age specific employment rates, or the proportion of persons employed to total economically active persons in specified age groups, for males and females in the urban and rural areas, are given in table 160. For the country as a whole, the age-specific employment rates for males in all age groups exceeded the corresponding rates for females. The highest proportion of employed males and females was in the age group 30-59 years. The rural sector conformed to the national pattern but in the urban sector the age-specific employment rates were higher for females at ages 10-19 and for males at all other ages.

There were also differences between the urban and rural age-specific employment rates. In the case of males, the rural rates were higher than the corresponding urban rates at all ages except the 35-39 age group where the urban rate was slightly higher. The over-all employment rate for rural males was 1.4 percentage points higher than for urban males. In the case of females, the urban rates were higher than the rural rates in all age groups except in the oldest age group, and the over-all urban female rate was 3.9 percentage points higher than the corresponding rural rate.

4. Industrial classification

The type of economic activity that an employed person performs can be looked at from the point of view of the industry or the activity of the establishment in which an economically active person worked during the reference week. The percentage distribution of the employed population by major industrial sector and by sex for the country as a whole, as well as for urban and rural areas, is given in table 161.

For the country as a whole, the highest proportion, nearly 54 per cent, of all employed persons were engaged in the major industrial group of agriculture, forestry, hunting and fishing, while the second largest concentration, about 16 per cent, were in the services industry, followed by 12 per cent in manufacturing. The pattern, however, shows a considerable variation between urban and rural areas and between males and females. While in the urban areas the largest proportion of all employed persons, 34.7 per cent, are engaged in the services industry, in the rural areas, as is to be expected, the highest concentration of the employed population is in agriculture and allied industries. It may also be noted that, although the economy of the Philippines is still largely agrarian, a substantial proportion of the employed population in various non-agricultural activities, including a majority of the persons working in manufacturing activities and sizeable numbers of those employed in commerce and services, are to be found in the rural areas.

Compared to females, a substantially greater proportion of employed males were engaged in the agricultural sector. A greater proportion of females than males were employed in the manufacturing, commerce and services industries. Another interesting feature of the industrial attachment of the employed females is that, while in the rural areas about 51 per cent of employed females were engaged in agriculture, in the urban areas an almost equal proportion were employed in the services industries.

The proportionate distribution of the employed population by broad industrial sectors for the 12 regions in the country is shown in table 162. Metropolitan Manila differed from all other areas in the country on account of its non-agricultural character. This was due partly to the concentration of most industrial establishments in the country within the metropolitan area.[17] The two regions nearest to Metropolitan Manila – Central Luzon and Southern Tagalog – had lower proportions of persons employed in agriculture compared to the remaining areas. Male workers in the remaining regions, particularly Cagayan Valley, Eastern Visayas and Western Mindanao, were concentrated largely in the agricultural industries, except in the Ilocos, Cagayan Valley and the southwestern portion of Mindanao.

5. Occupational structure

Occupation refers to the kind of work done during the reference period by the person employed irrespective of the industry in which the person is classified. In other words, it refers to the specific job performed by the person in the establishment office, farm etc. as, for example, farmer, typist, stenographer, lawyer, physician, mechanic. The percentage distribution of the employed persons by major occupational groups is show in table 163.

The occupational distribution of the employed population more or less reflects the pattern of distribution according to industrial groups. For the country as a whole, 53 per cent of all employed persons

17 *1972 Listing of Establishments* (Manila, Bureau of the Census and Statistics, 1974).

Table 160. Age-specific employment rates for urban and rural areas, 1970

Age group	Philippines		Urban		Rural	
	Males	Females	Males	Females	Males	Females
10-14	86.8	82.1	75.2	82.8	88.5	81.9
15-19	88.6	85.4	80.9	88.9	90.8	83.1
20-24	92.6	86.1	89.9	88.4	93.8	84.4
25-29	95.7	89.1	95.4	91.6	95.8	87.4
30-34	96.2	89.3	96.1	91.8	96.3	87.6
35-39	96.9	90.9	97.0	93.0	96.8	89.6
40-44	96.8	91.0	96.7	93.6	96.9	89.4
45-49	96.6	91.2	96.3	93.3	96.7	90.1
50-54	96.4	90.9	96.0	92.2	96.6	90.2
55-59	96.0	90.5	96.1	93.0	95.9	89.3
60-64	95.7	90.3	95.1	92.3	96.0	89.5
65+	93.8	87.6	91.9	87.2	94.3	87.8
All ages	94.3	88.2	93.3	90.6	94.7	86.7

Source: ***Philippines 1970 Census*** .... National Summary, vol. II, table 11-2.

Table 161. Percentage distribution of employed population by major industrial sector and by sex for urban and rural areas, 1970

Major industrial sector	Philippines			Urban areas			Rural areas		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
Agriculture, forestry, hunting and fishing	53.7	62.5	33.8	15.1	20.7	5.3	71.6	79.5	51.2
Mining and quarrying	0.5	0.6	0.1	0.4	0.5	0.0	0.5	0.6	0.1
Manufacturing	11.9	7.9	21.1	18.0	16.9	20.0	9.1	4.2	21.9
Electricity, gas, water and sanitary services	0.3	0.4	0.1	0.6	1.0	0.1	0.1	0.2	0.0
Construction	3.9	5.5	0.1	6.1	9.5	0.1	2.8	3.9	0.1
Commerce	7.4	4.8	13.2	14.4	11.2	20.0	4.1	2.2	9.1
Transport, communication and storage	4.4	6.2	0.3	8.3	12.6	0.7	2.5	3.5	0.1
Services	16.4	10.4	30.0	34.7	24.5	52.6	7.9	4.7	16.1
Industry not adequately described	1.6	1.7	1.3	2.4	3.1	1.2	1.3	1.2	1.4
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ***Philippines 1970 Census*** ..., National Summary, table 11-6.

Table 162. Percentage distribution of the employed population by broad industrial sector[a], by sex and region, 1970

Region	Males			Females		
	Agriculture[b]	Manufacturing[c]	Services[d]	Agriculture[b]	Manufacturing[c]	Services[d]
Philippines	62.5	14.0	21.8	33.8	21.3	43.6
Metropolitan Manila	3.9	34.1	58.5	0.6	21.4	75.9
Ilocos	69.6	13.6	15.6	53.2	15.2	30.1
Cagayan Valley	81.3	6.6	10.9	70.7	7.1	21.3
Central Luzon	51.8	19.0	26.7	15.0	28.3	55.4
Southern Tagalog	61.2	15.7	21.4	21.7	31.4	44.9
Bicol	74.1	9.5	14.7	32.7	26.9	38.5
Western Visayas	67.1	13.2	18.0	36.6	21.2	41.1
Central Visayas	66.3	13.3	18.9	40.3	20.1	38.3
Eastern Visayas	79.9	7.1	11.7	50.8	17.6	30.7
Western Mindanao	80.0	5.7	13.0	59.3	13.4	25.6
Northern Mindanao	72.8	9.5	16.3	41.9	22.6	34.1
Southern Mindanao	77.7	7.4	13.5	53.1	12.5	33.4

Source: 1970 Census.

a Excludes the cateogry "industry not adequately described", hence the total for the three industrial sectors does not add up to 100 per cent.

b Comprises the major division "agriculture, forestry, hunting and fishing.

c Comprises the major divisions "mining and quarrying", "manufacturing", and "construction".

d Comprises the major divisions "electricity, gas, water and sanitory services"; "commerce"; "transport, communication and storage" and "services".

Table 163. Percentage distribution of employed population by major occupational group and by sex, for urban and rural areas, 1970

Major industrial sector	Philippines			Urban areas			Rural areas		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
Professional, technical and related workers	5.7	3.6	10.6	11.5	8.3	17.0	3.0	1.7	6.6
Administrative, executive and managerial workers	1.2	1.2	1.1	2.5	3.0	1.6	0.6	0.5	0.8
Clerical workers	3.3	2.9	4.0	8.1	7.8	8.6	1.0	0.9	1.2
Sales workers	6.8	4.2	12.7	12.9	9.6	18.6	4.0	2.1	9.1
Farmers, fishermen, Hunters, loggers and related workers	53.0	61.6	33.6	14.6	20.0	5.2	70.8	78.5	50.9
Miners, quarrymen and related workers	0.3	0.4	0.0	0.2	0.4	0.0	0.3	0.4	0.0
workers in transport and communications	4.4	6.3	0.2	8.0	12.3	0.4	2.7	3.8	0.1
Craftsmen, production process workers and labourers NEC	14.4	11.9	20.1	20.6	22.2	17.9	11.6	7.8	21.5
Service, sport and related workers	7.6	3.7	16.3	16.0	8.4	29.2	3.7	1.8	8.5
Stevedores and related freight handlers and labourers NEC	2.1	2.9	0.3	3.8	5.7	0.6	1.4	1.8	0.2
Occupation unidentifiable, members of the Armed Forces	0.6	0.7	0.2	1.1	1.6	0.2	0.3	0.4	0.2
Not stated	0.6	0.4	0.9	0.7	0.7	0.7	0.5	0.3	1.0
All occupations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Philippines 1970 Census* . . . , National Summary, table 11-8.

Note: NEC = not elsewhere classified.

were engaged in agricultural and allied occupations. Craftsmen and other processing workers comprised the next largest proportion with 14.4 per cent of all employed persons in the country. Substantial proportions were also engaged in services and sales occupations.

The sex differential in regard to occupational distribution is also similar to the pattern noted in respect of industrial attachment. Far and other extractive workers were mostly males, while females were predominantly non-agricultural workers. The numbers as well as proportions of females among professional and related workers exceeded those for males; the sex ratio in this occupational group being 76 males per 100 females.[18] The same ratio could be noted in respect of the sales group, while in the service occupations the ratio was even lower: 51 males per 100 females.

As is to be expected, a very high proportion, nearly 71 per cent, of all employed persons in the rural areas were farmers, fishermen, loggers and related workers, while a further 12 per cent were craftsmen and production process workers and labourers. In the urban area, however, the employed population was more evenly distributed among the various occupational groups, the largest one being craftsmen and related workers (about 21 per cent), followed by service and related workers (about 16 per cent), farmers and related workers (15 per cent), sales workers (about 13 per cent) and professional, technical and related workers (12 per cent).

The percentage distribution of the employed population by four broad occupational categories for various regions of the country is shown in table 164. It will be seen that the pattern obtaining in the various regions of the country conforms more or less to the national pattern. Most male workers except those in Metropolitan Manila are farmers. The largest proportions are recorded in respect of those regions situated in the extreme ends of the country (e.g. Cagayan Valley and the Mindanao regions) while relatively lower proportions are noted in regions contiguous to Metropolitan Manila.

For the country as a whole, about 22 per cent, or about one of every five employed males, were "blue collar" workers. But in Metropolitan Manila (41.6 per cent), Central Luzon (30.6 per cent) and Southern Tagalog (23.3 per cent) the share of "blue collar" workers in total employed population was higher than the national average. In regard to "white collar" and service occupations, it was only in Metropolitan Manila and Central Luzon that the proportion of males engaged in those occupations exceeded the national average.

While only a third of all employed females in the country were engaged in agricultural and allied occupations, in some regions, such as Ilocos, Cagayan Valley, Eastern Visayas, Western Mindanao and Southern Mindanao, the proportion exceeded 50 per cent. Nevertheless, the proportions of females employed in agricultural occupations were lower than the corresponding proportions for males.

Another interesting feature is that the proportions of females employed in "white collar" jobs were more than twice the corresponding proportions for males in all regions except Metropolitan Manila, where the proportion for females was still higher than that for males. It may also be noted that it was the Metropolitan Manila region that recorded the highest proportions of employed males and females engaged in "white collar" occupations.

6. Employment status

The employed persons have been classified according to their employment status into the following four broad categories:

(a) Wage and salary worker or employee: This category includes the private employee or person working for a private employer for wage, salary, commission, tips etc., and government employee or person working for the Government or a government-owned or controlled corporation;

(b) Self-employed or person working in his or her own business, farm, profession or trade for profit or fee without paid employee;

(c) Employer or person working in his or her own business, farm or trade for profit or fee with one or more paid employees;

(d) Unpaid family worker, or person working without pay on family farm or enterprise.

The percentage distribution of the 1970 employed population by employment status, by sex and by urban rural residence is given in table 165. It will be noted that for the country as a whole, nearly 42

18 Professors and teachers make up a sizeable portion of this occupational group (64.6 per cent of all professionals) and, being a female-dominated subgroup with a sex ratio of 38, may largely account for the low sex ratio of the entire professional group.

Table 164. Percentage distribution of the employed population by broad occupational group,[a] by sex and region, 1970

Region	Males				Females			
	"White collar" workers[b]	Farmers and related workers[c]	"Blue collar" workers[d]	Service workers[e]	"White collar" workers[b]	Farmers and related workers[c]	"Blue collar" workers[d]	Service workers[e]
Total Philippines	11.9	61.6	21.6	3.7	28.4	33.6	20.6	16.3
Metropolitan Manila	35.9	3.7	41.6	9.1	45.4	0.6	19.4	33.8
Ilocos	8.4	69.7	18.3	2.6	21.3	52.1	16.0	9.5
Cagayan Valley	5.9	81.0	10.8	1.8	14.5	70.6	7.3	6.9
Central Luzon	11.9	51.3	30.6	4.7	37.7	14.8	27.0	19.3
Southern Tagalog	10.8	60.8	23.3	3.7	32.6	21.7	30.8	13.5
Bicol	8.4	72.7	15.5	2.9	23.7	31.8	27.5	15.6
Western Visayas	9.8	65.0	17.7	3.7	25.9	36.2	20.4	16.6
Central Visayas	10.3	65.3	20.1	3.4	24.7	40.1	19.5	14.8
Eastern Visayas	6.2	78.8	12.0	2.4	18.1	50.6	17.3	13.1
Western Mindanao	7.8	79.5	8.7	2.0	17.4	59.5	13.2	8.7
Northern Mindanao	9.2	71.4	16.0	2.6	23.5	41.7	22.1	11.5
Southern Mindanao	7.7	76.3	13.3	2.1	23.1	52.9	12.1	10.9

Source: 1970 Census.

a Excludes the categories "Occupation unidentifiable, members of the Armed Forces" and "Not stated", hence the total for the four occupational groups does not add up to 100 per cent.

b Comprises the major occupational groups "Professional, technical and related workers" "Administrative, executive and managerial workers", "Clerical workers", and "Sales workers".

c Comprises the major occupational group "Farmers, fishermen, hunters, loggers and related workers".

d Comprises the major occupational groups "Miners, quarrymen and related workers", "Workers in transport and communication", "Craftsmen, production process workers and labourers NEC", and "Stevedores and related freight handlers and labourers NEC".

e Comprises the major occupational group "Service, sport and related workers".

Table 165. Percentage distribution of the employed population by employment status and sex for urban and rural areas 1970

Residence and sex	Wage and salary worker	Self-employed	Employer	Unpaid family worker	Status not stated	All statuses
Philippines						
Both sexes	41.5	37.0	1.4	19.7	0.4	100.0
Males	40.3	42.6	1.3	15.5	0.3	100.0
Females	44.3	24.1	1.5	29.5	0.6	100.0
Urban areas						
Both sexes	70.0	21.4	1.9	6.5	0.3	100.0
Males	71.1	21.9	1.9	5.0	0.3	100.0
Females	68.1	20.6	1.9	9.1	0.4	100.0
Rural areas						
Both sexes	28.3	44.2	1.1	25.9	0.4	100.0
Males	27.8	51.1	1.1	19.7	0.3	100.0
Females	29.7	26.2	1.2	42.0	0.8	100.0

Source: Philippines 1970 Census . . ., National Summary, vol. II, table 11-4.

per cent of all employed persons were wage and salary workers or employees. A further analysis of the data indicates that nearly 83 per cent of all employees worked for private agencies and institutions and only 17 per cent were absorbed by the government sector. The high proportion of wage-earners and salaried workers reflects the extent of organized economic activity in the country. It will also be noted that while 40 per cent of all employed males were wage and salary workers, the corresponding proportion for females was slightly higher: 44.3 per cent.

Of the total employed persons in the country, 37 per cent were self-employed, that proportion being substantially higher for males (42.6 per cent) compared to females (24.1 per cent). Unpaid family workers constituted about 20 per cent of all employed persons, 15.5 per cent of all employed males and 29.5 per cent of all employed females.

The proportionate distribution of employed persons by employment status in the urban and rural areas is, however, different from the national pattern. In the urban areas, a substantially large proportion of employed persons (70.0 per cent) age wage and salary employees, the proportion for males being 71.1 per cent and for females 68.1 per cent. In the rural areas, however, a majority of the employed males (51.1 per cent) are self-employed while a majority of the employed females (42.0 per cent) are unpaid family workers.

The percentage distribution of the employed population by employment status for various regions given in table 166 shows that certain status differences were more pronounced in specific regions. In Metropolitan Manila, a very high proportion of employed males (85.7 per cent) and females (78.8 per cent) were wage and salary workers. This reflects to a large extent the predominance of non-agricultural industries and occupations in this area. In Central Luzon, Southern Tagalog and Western Visayas, between 41 and 54 per cent of the employed males and females were basically wage-earners.

The lowest proportions of male as well as female wage and salary workers could be found in the more "frontier" regions of the country, namely, the Ilocos and Cagayan Valley in the north, and the Mindanao regions in the south, in addition to Eastern Visayas. It was also in those same regions that relatively large proportions of unpaid family workers

Table 166. Percentage distribution[a] of employed persons in various region by employment status and sex, 1970

Region	Males			Females		
	Wage and salary worker	Own-business worker	Unpaid family worker	Wage and salary worker	Own-business worker	Unpaid family worker
Philippines	40.3	43.9	15.5	44.3	25.6	29.5
Metropolitan Manila	85.7	12.8	1.6	78.8	16.7	4.4
Ilocos	29.1	48.6	21.8	31.3	23.4	44.5
Cagayan Valley	21.6	53.6	24.6	22.3	18.5	59.0
Central Luzon	48.3	50.6	10.6	51.5	32.0	15.9
Southern Tagalog	41.1	45.1	13.3	46.5	31.6	20.8
Bicol	29.5	51.7	18.6	39.4	29.8	30.1
Western Visayas	54.4	34.1	11.2	54.4	24.5	20.4
Central Visayas	37.1	46.0	16.5	37.6	27.1	34.5
Eastern Visayas	24.8	54.7	20.4	32.3	27.0	40.3
Western Mindanao	20.6	56.1	22.7	23.2	21.7	54.0
Northern Mindanao	28.7	52.3	18.9	32.1	29.1	38.3
Southern Mindanao	26.5	51.1	22.3	32.2	20.1	47.4

Source: 1970 Census.

a Excludes category "Status not stated".

were to be found. About one out of every five employed males and roughly between 38 and 59 per cent of the employed females in these regions were unpaid family workers.

In most regions of the country, usually around half of the employed males were in "own-business", that is, either self-employed or employees. In Metropolitan Manila and Western Visayas the proportions of those engaged in "own-business" were comparatively low.

D. UNEMPLOYED POPULATION

1. Growth trends

As stated earlier, the population censuses collected information on the number and characteristics of unemployed persons. For purposes of the census, persons in the household 10 years and over were classified as unemployed if they were not at work during the reference week but were wanting and looking for work or would have been looking for work had they not been temporarily ill, or they believed no work was available. The growth of the unemployed population between 1960 and 1970 is shown in table 167.

Table 167. Growth in unemployment, 1960-1970

Sex	Number unemployed		Increase in unemployment	
	1960	1970	Number	Percentage
Both sexes	591,550	941,959	350,409	59.2
Males	362,290	477,427	115,137	31.8
Females	229,260	464,532	235,272	102.6

Source: Table 158.

It will be observed that the total unemployed population recorded an increase from about 592,000 in 1960 to about 942,000 in 1970 – an increase of about 59 per cent in 10 years. It will also be noted that the increase in the number of unemployed females was more than twice the corresponding number among males, and was largely responsible for the high increase in total unemployment during the 1960-1970 decade. Consequently, the share of unemployed females in total unemployed population increased from 38.8 per cent in 1960 to 49.3 per cent in 1970.

The substantial increase in the number of unemployed persons during the period 1960-1970 was due to the failure of the economy to create enough employment opportunities in the face of rapid population increase.

> "Since 1960, the labour force has on average grown by 2.6 per cent per year and employment in agriculture by about 1 per cent. But instead of this sectoral shift reflecting the increasing labour demands of dynamic industrial expansion, we find employment in manufacturing growing at less than the average for the whole labour force. During the 1960s the manufacturing sector accounted for only some 12 per cent of the total employment. Moreover, its contribution slightly declined during the decade. In contrast the commerce and services sectors of the economy increased their share of employment, from 20 per cent to 30 per cent, during the same period. The quite rapid increase in output per urban industrial worker, in response to rising capital/labour ratios and labour-saving technological change, was purchased at the expense of a declining rate of labour absorption."[19]

2. Age-sex distribution

The percentage distribution of the unemployed population in the urban and rural areas by age and sex is shown in table 168. The highest concentration of the unemployed was among young adults about 51 per cent of all unemployed persons in the country being aged 15-29 years. The proportion of unemployed in the subsequent age groups decreased with increasing age. There was no significant difference between the age distribution of unemployed males and females. However, there was a higher proportion of males than females unemployed in the age group 10-24 years. About 70 per cent of the unemployed of both sexes were 10-34 years. The age-sex distribution of unemployed persons in the urban and rural areas followed the over-all pattern.

The age-specific unemployment rates given in table 169 show that, for the country as a whole, the highest unemployment rate among males and females was recorded for those aged 10-14 years, and that the rates declined with increasing age up to ages 35-39 and gradually increased thereafter. It will also be

19 *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines,* Report of an Inter-Agency Team (Geneva, International Labour Office, 1974), p. 7.

Table 168. Percentage distribution of the unemployed population by age and sex, urban and rural areas, 1970

Age group	Whole country			Urban areas			Rural areas		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
10-14	11.7	12.7	10.6	8.1	8.8	7.2	13.3	14.7	12.0
15-19	20.4	21.6	19.2	21.5	22.9	19.8	19.9	20.9	18.9
20-24	18.5	18.6	18.4	22.8	23.0	22.5	16.5	16.3	16.7
25-29	11.7	11.3	12.2	12.0	11.3	12.9	11.6	11.3	11.9
30-34	8.8	8.2	9.4	9.1	8.6	9.8	8.6	8.0	9.2
35-39	6.4	5.8	7.0	6.0	5.3	6.9	6.5	6.0	7.0
40-44	5.0	4.3	5.7	4.6	4.2	5.1	5.1	4.3	5.9
45-49	4.4	3.9	4.9	4.1	3.9	4.4	4.6	4.0	5.2
50-54	3.7	3.3	4.1	3.5	3.2	4.0	3.7	3.4	4.1
55-59	3.3	3.2	3.3	2.7	2.7	2.7	3.5	3.5	3.6
60-64	2.4	2.5	2.2	2.1	2.4	1.9	2.5	2.6	2.4
65-69	1.6	1.7	1.5	1.6	1.6	1.6	1.6	1.7	1.4
70-74	1.1	1.3	0.8	0.8	1.0	0.6	1.2	1.5	0.9
75 and over	1.2	1.6	0.7	1.0	1.2	0.7	1.3	1.8	0.8
All ages	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Philippines 1970 . . .*, National Summary, vol. II, table 11-2.

Table 169. Age-specific unemployment rates,[a] urban and rural areas, 1970

Age group	Whole country			Urban areas			Rural areas		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
10-14	15.0	13.2	17.9	21.1	24.8	17.2	13.8	11.5	18.1
15-19	12.7	11.4	14.6	14.7	19.1	11.1	11.8	9.2	16.9
20-24	9.6	7.4	13.9	10.7	10.1	11.6	9.0	6.2	15.6
25-29	6.3	4.3	10.9	5.9	4.6	8.4	6.5	4.2	12.6
30-34	5.7	3.8	10.7	5.3	3.9	8.2	6.0	3.7	12.4
35-39	4.8	3.1	9.1	4.3	3.0	7.0	5.1	3.2	10.4
40-44	5.0	3.2	9.0	4.3	3.3	6.4	5.4	3.1	10.6
45-49	5.2	3.4	8.8	4.7	3.7	6.7	5.4	3.3	9.9
50-54	5.4	3.6	9.1	5.3	4.0	7.8	5.4	3.4	9.8
55-59	5.7	4.0	9.5	4.9	3.9	7.0	6.0	4.1	10.7
60-64	5.8	4.3	9.7	5.7	4.9	7.7	5.8	4.0	10.5
65-69	6.7	4.9	11.4	8.5	6.6	13.0	6.1	4.4	10.9
70-74	7.2	5.8	12.3	7.7	7.1	9.3	7.1	5.4	13.3
75 and over	10.5	9.2	15.0	14.8	13.6	18.6	9.5	8.3	14.1
All ages	7.7	5.7	11.8	7.7	6.7	9.4	7.7	5.3	13.3

Source: *Philippines 1970 Census . . .*, National Summary, vol. II, table 11-2.

a Unemployment rate is defined as percentage of persons unemployed in the recorded number of economically active (labour force).

noted from the table that though the over-all level of unemployment was the same for both sexes in urban and rural areas, the rates in respect of the younger age groups were higher in the urban than in the rural areas. While in the case of males unemployment rates in the urban areas were generally higher than the corresponding rural rates, in regard to females the rural rates were higher than the urban rates. "Most of the open unemployed are new labour-force entrants and younger workers below age 25, especially urban males. This concentration of young workers probably reflects their access to support from their families while they are looking for their first job".[20]

3. Category of unemployed

The 1970 Census made a distinction between (a) those unemployed who were previously employed but unemployed at the time of the Census, and (b) those who were looking for work for the first time. It will be seen from table 170 that for the country as a whole 55.7 per cent of all unemployed were seeking jobs for the first time, the proportion for females (67.7 per cent) being higher than for males (44.2 per cent). The same pattern more or less prevailed in the urban and rural areas. But, while in the urban areas nearly 52 per cent of the unemployed males were first-time job-seekers, the corresponding proportion in the rural areas was only about 40 per cent.

Table 170. Distribution of the unemployed population by type of unemployment, sex and rural/urban residence, 1970

Sex and type of residence	Total	Looking for work for the first time	
		Number	Percentage
Philippines			
Both sexes	941,959	525,099	55.7
Male	477,427	210,789	44.2
Female	464,532	314,310	67.7
Urban			
Both sexes	299,100	175,164	58.6
Male	163,247	85,398	52.3
Female	135,853	89,766	66.1
Rural			
Both sexes	642,859	349,935	54.4
Male	314,180	125,391	39.9
Female	328,679	224,544	68.3

Source: Same as for table 169.

E. SUMMARY

In 1970, the labour force was estimated at 12.3 million, which represented an increase of 44.1 per cent from 8.5 million in 1960. Compared to the growth of the total population (35.4 per cent), the growth of the labour force was higher, implying rising crude and refined activity rates and declining dependency ratios.

The increase in the number of female labour force members partly accounted for the substantial growth of the total labour force. While male age-specific refined activity rates declined during the 1960-1970 period, those for females increased. The largest changes occurred in the middle age groups for both sexes.

Despite such increases in the number of labour force members, the unemployed increased at a higher rate than those employed. The number of unemployed females grew more substantially, and in 1970 more than half of all unemployed females in each age group were looking for work for the first time.

The country's labour force was engaged predominantly in agriculture while the next largest proportions were in services and manufacturing. Occupational distribution of the employed population largely reflected the industrial distributions. Male workers were predominantly farmers while females predominated in non-farm occupations. That was true for most areas in the country except for Metropolitan Manila, where males and females concentrated on non-agricultural occupations, and for two regions contiguous to the metropolitan area where male and female workers were engaged largely in the non-agricultural sector.

In 1970, wage and salary workers comprised over 40 per cent of all workers while substantial proportions were working in enterprises entailing little or no organizational structure. To a certain extent, the status of most workers reflected the level of development in the country.

20 *Ibid.*, p. 5.

Chapter XII

POPULATION GROWTH AND EDUCATIONAL DEVELOPMENT

A. INTRODUCTION

The relationship between population and education is a very complex one. Although it is generally agreed that education is a basic need, it is not an easy task to adjust the universality and quality of education to the needs of the people and to facilitate the achievement of socio-economic development.

There is no doubt that a minimum level of education is necessary to understand the modern world and also to participate in the development processes. Unfortunately, it is not possible to define this required minimum level. In certain cases, a liberal provision of opportunities for education may be very costly and may not be consistent with the requirements of the economic system. From a purely economic point of view, "the restriction of educational opportunities may be necessary to avoid a situation in which the volume of graduates exceeds the capacity of the economy to absorb them. Waste may result either by the emigration of the highly trained, or by the unemployment and discontent of the less competent graduates, or both".[1]

However, several surveys and socio-demographic studies show that mortality, especially infant mortality, is low when educational attainment is high. Family planning knowledge and practice are more widespread and effective among the urban people, who are generally more educated than the rural people. Education makes it easier for people to be aware of job opportunities and to take advantage of these opportunities. This is perhaps why migrants are better educated than non-migrants. The influence of education in the demographic characteristics of the population, particularly its rate of growth, has been discussed to a certain extent in the preceding chapters on the basis of available data. This chapter will focus on the effects of population growth on education development.

"The manner in which population growth affects educational development may be considered as being twofold. First, there is the direct impact of increased numbers that have to be provided with education as the population grows. The intensity of this problem would depend on the proportion of the school-age population that has yet to be brought into school, the rate at which the population grows, the resources that the country is willing to spare for education and the country's target dates for achieving universal schooling for all children of school-going age. Secondly, there is the more complex manner in which population growth affects educational development through its impact on the socio-economic system. For instance, rapid population growth could contribute towards increase unemployment. This in turn could intensify the selection function of education to such an extent as to deform education's major function, viz., education for education's sake."

"However, these two sets of problems are not as separate from each other as they would appear, because along with the rapid expansion of education systems arises the need to modify the educational programmes if they are to remain functionally valid to these increasing numbers".[2]

B. LITERACY AND EDUCATIONAL ATTAINMENT

It is generally believed that the Filipinos are the most highly educated people in Asia. Although some may not agree with this observation, education in the Philippines presents a few remarkable traits.

As mentioned in the introductory chapter, an important feature of Philippine culture is the diversity of languages. No single language is the mother tongue of more than a fourth of the population. The two principal languages in the country, according to the 1970 Census of Population and Housing, are Tagalog, spoken by 24.5 per cent of the population, and Cebuano, spoken by 24.2 per cent of the population. Other important languages such as Iloco, Hiligaynon and Bicol are spoken by 11.3 per cent, 10.2 per cent and 6.8 per cent of the population, respectively. However, about 55 per cent of the Philippine people are able to speak Pilipino, a form of Tagalog promoted by the Government as the national language in order to develop national unity. English is the mother tongue of only about 35,000 Filipinos,

1 William F. Pratt, "Illustrative projections of school enrollment", *First Conference on Population, 1965* (Quezon City, University of the Philippines Press, 1966), p. 422.

2 *Population of Sri Lanka*, ESCAP Country Monograph Series No. 4 (Bangkok, 1976), p. 208.

but as many as 45 per cent of the total population are able to speak that language.

1. Literacy

A "literate person" is one who can both read and write a simple message in any language or dialect. According to this definition, the literacy rate or the proportion of literate persons among those 10 years old and over in 1970 amounted to 83.4 per cent for the country as a whole.

Table 171. Literacy rate of the population 10 years old and over by sex, 1939, 1948, 1960 and 1970

Year	Both sexes	Males	Females
1939	48.8	54.3	43.2
1948	59.8	62.8	56.9
1960	72.0	73.6	70.6
1970	83.4	84.6	82.2

Source: The Population of the Philippines: Its Growth and Development, Technical Paper No. 3, Bureau of the Census and Statistics, April 1973, table 9, p. 28.

It is clear from table 171 that the literacy rate has been increasing steadily since 1939, when it was below 50, meaning that more people were illiterate than literate in the Philippines at that time. The progress has been more significant in the case of females than in the case of males, resulting in a reduction in the gap from 11.1 percentage points in 1939 to only 2.4 in 1970.

Differences in literacy between provinces are indeed very large and have been narrowing rather slowly, as shown in table 172. In all census years, the highest literacy rate was registered in respect of Manila, this rate increasing from 80.7 in 1939 to 96.4 in 1970. Rizal, which ranked fifth in 1939, improved its position to second place in 1970, while Camarines Norte, which ranked second in 1939, was pushed to fifth place in 1970. Bulacan ranked third in 1939 as well as in 1970 while Zambales maintained fourth place in all censuses from 1948 to 1970. The province of Quezon, which ranked fourth in 1939, ranked only sixth in 1960 and eighth in 1970.

At the other end, Sulu remained the least literate province in all census years although the literacy rate increased from 18.5 in 1939 to 41.7 in 1970. Cotabato and Mountain Province improved their literacy rates but are still among the five least literate provinces. On the other hand, in Negros Oriental and Zamboanga (now divided into Zamboanga del Norte and Zamboanga del Sur) the literacy rates increased from a little over 30 per cent in 1939 to 72-73 per cent in 1970.

It will be seen from table 173 that young adults living in urban areas are the most literate, the literacy rates being as high as about 97 per cent for both males and females in 1970. However, old women and men are still very illiterate in rural areas, only 26 per cent of the females and 42 per cent of the males aged 75 and over being literate. For the total population 10 years old and over, the differential in the literacy rate between urban and rural residents amounts to 14 percentage points, 92.8 per cent in the urban as against 78.7 per cent in the rural areas. Urbanization is certainly an important factor in increasing the literacy level of the population, directly or indirectly. However, the tremendous and steady increase of the literacy rate during the period under review should be viewed against the substantial increase of enrolments in primary schools, which will be discussed in a subsequent section of this chapter.

2. Educational attainment

Although global statistics on educational attainment are somewhat difficult to interpret owing either to the age structure of the population and its evolution, or to changes in the school system, the magnitude of the increase, both qualitatively and quantitatively, in educational attainment in the Philippines cannot be denied. It will be seen from table 174 that while in 1939 only about 42 per cent of the population aged 6 years and over had completed at least some grade, in 1970 this porportion was as high as 81 per cent. This increase has taken place in spite of the fact that the total population in this age group increased from 12.9 million to 29.6 million, or more than doubled during this period. It will also be noted that the higher the grade, the greater is the increase in the proportion of persons completing that grade. For instance, the percentage of those completing elementary level increased from about 37 in 1939 to 59 in 1970; that of high school graduates nearly quadrupled from 4 to 15; while the percentage of those completing college-level education increased from less than 1 to a little over 7 during this period. It will also be seen from the table that differences in levels and trends between males and females are small, although a slightly higher proportion of females than males have completed college education.

Table 172. Most and least literate provinces, census years 1939-1970

Rank order	1939		1948		1960		1970	
	Province	Literacy rate	Province	Literacy rate	Province	Literacy rate	Province	Literacy rate
	Five most literate provinces							
1.	Manila	80.7	Manila	86.8	Manila	91.5	Manila	96.4
2.	Camarines Norte	72.8	Rizal	78.5	Camarines Norte	89.9	Rizal	95.8
3.	Bulacan	67.9	Camarines Norte	76.9	Rizal	89.6	Bulacan	93.5
4.	Quezon	67.4	Zambales	75.5	Zambales	86.5	Zambales	93.1
5.	Rizal	67.3	Quezon	74.8	Bulacan	85.6	Camarines Norte	92.2
	Five least literate provinces							
1.	Sulu	18.5	Sulu	28.3	Sulu	28.2	Sulu	41.7
2.	Cotabato	19.9	Cotabato	33.9	Mountain Province	52.5	Ifugao	50.6
3.	Mountain Province	29.1	Mountain Province	35.8	Zamboanga del Sur[a]	53.0	Mountain Province	61.5
4.	Negros Oriental	31.0	Negros Oriental	46.2	Cotabato	53.3	Lanao del Sur	63.4
5.	Zamboanga	33.5	(	47.6	Negros Oriental	54.7	Cotabato	64.9

Sources: (1) For census years 1939, 1948 and 1960: *ook of Philippine Statistics, 1966* (Manila, Bureau of the Census and Statistics).
(2) For 1970: *The Population of the Philippines: Its Growth and Development,* table 10.

a Zamboanga was divided into two separate provinces by RA No. 711 dated 6 June 1952.

Table 1973. Literacy rate of the population 10 years old and over, by sex, age and rural-urban residence, 1970

Age	Total population			Urban population			Rural population		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
10-14	87.3	85.7	88.9	93.8	93.2	94.4	84.5	82.7	86.4
15-19	92.7	92.3	93.2	96.8	96.9	96.8	90.5	90.1	91.0
20-24	91.5	91.7	91.4	96.9	97.1	96.7	88.5	88.8	88.1
25-29	88.6	89.0	88.2	95.9	96.1	95.7	84.8	85.5	84.1
30-34	87.5	88.5	86.5	95.4	96.0	94.7	83.3	84.5	82.1
35-39	82.7	84.8	80.5	93.4	94.7	92.1	77.4	80.0	74.7
40-44	80.0	82.5	77.7	92.1	93.7	90.6	73.9	76.9	71.0
45-49	74.1	77.8	70.8	89.2	91.6	87.1	67.1	71.4	63.1
50-54	70.2	74.6	66.4	86.7	89.9	84.1	62.7	67.9	57.9
55-59	67.6	71.8	63.7	84.7	88.4	81.4	59.7	64.4	55.3
60-64	62.3	68.0	56.9	80.9	85.4	76.9	53.9	60.5	47.4
65-69	58.6	65.6	52.0	77.4	83.4	72.3	49.9	58.0	41.8
70-74	50.8	58.6	42.6	70.8	79.8	62.5	42.4	50.6	33.3
75 and over	42.1	50.4	34.6	61.8	72.4	53.5	34.0	42.3	26.0
10 and over	83.4	84.6	82.2	92.8	90.4	91.8	78.7	80.2	77.2

Source: Calculated from *Philippines 1970 Census . . .*, National Summary, vol. II, table III-4, p. 286.

Table 174. Distribution of the population 6 years old and over by highest grade completed and by sex, 1939, 1948, 1960 and 1970

	1939	1948	1960	1970
Both sexes				
No grade completed	57.83	43.50	29.14	18.90
Elementary	37.49	47.34	55.57	58.98
High school	3.90	7.39	10.99	15.04
College	0.79	1.77	4.30	7.09
Total population 6 years old and over	100.00 (12,888,963)	100.00 (15,673,582)	100.00 (21,557,572)	100.00 (29,609,044)
Males				
No grade completed	54.28	41.60	27.94	18.06
Elementary	39.72	47.94	55.33	58.73
High school	4.93	8.40	12.16	16.27
College	1.07	2.06	4.57	6.94
Total population 6 years old and over	100.00 (6,475,015)	100.00 (7,817,607)	100.00 (10,812,108)	100.00 (14,650,358)
Females				
No grade completed	61.40	45.38	30.35	19.72
Elementary	35.23	46.76	55.81	59.22
High school	2.85	6.38	9.81	13.83
College	0.51	1.48	4.03	7.23
Total population 6 years old and over	100.00 (6,413,948)	100.00 (7,855,975)	100.00 (10,745,464)	100.00 (14,958,686)

Source: For census years 1939, 1948 and 1960, *Yearbook of Philippine Statistics, 1966* (Manila, Bureau of the Census and Statistics), table 17, p. 57.

For 1970, computed from *Philippines 1970 Census . . .*, National Summary, vol. II, table III-8, pp. 302-319.

Data on educational attainment are also available by age group from the 1960 and 1970 censuses, making it possible to assess the long-term trends and a few more recent changes (tables 175 and 176). Table 176 clearly shows the dramatic increase in the proportion of people with no formal education at all with increase in age. In 1970 over 50 per cent of the males and about 66 per cent of the females aged 75 years and over did not complete any grade. The corresponding proportions were only about 5 per cent for both males and females aged 15 to 19 years. Simultaneously, the proportions completing high school or college levels had recorded marked decreases underlining the demand for higher education among the younger cohorts. More than one fourth of the males aged 20-24 had attained the high school level, as against only about 4 per cent in respect of those 75 and over. Corresponding figures for females were 19.5 per cent and 1.5 per cent, respectively. Similarly strong differences between age groups are evident with regard to proportions completing the college level for both sexes.

The effect of age obscures the comparison between age groups 15-19 and 20-24 since many 15-19 year old high school students attain college when they are 20-24 years old. Combined proportion of high school and college levels shows similar magnitudes for both age groups: 42.6 and 43.2 per cent for males and ages 15-19 and 20-24, respectively, and 44.0 and 40.3 per cent for females of the same age groups. However, the proportion completing college level is higher among females than males, and this indicates that today females tend to attain a higher level of education than males in the Philippines.

It will be seen from table 177 that urban residents in all age groups are better educated than their rural counterparts. The proportion in the "no grade completed" category for those aged 25 years and over is 9.5 per cent for urban residents as against 25.4 per cent for the rural residents but the imbalance is still greater in the "college" category: 20.9 per cent and 4.0 per cent for urban and rural, respectively. The availability of educational facilities and the selectivity of migration are probably the main reasons for the above mentioned differences. As stated in chapter III on internal migration, both these factors are closely interrelated.

C. EDUCATIONAL SYSTEM

1. The Spanish period

As noted in the introductory chapter, the Philippines came under the rule of the Spaniards from 1565-1898. In accordance with Spanish policies and practices, the educational structure of the coun-

Table 175. Distribution of the population 15 years old and over by highest grade completed, sex and broad age group, 1960

	15-19	20-24	25 and over
Males			
No grade completed	11.04	11.49	29.59
Elementary	61.02	57.17	50.55
High school	24.28	22.01	12.81
College	3.66	9.33	7.05
Total population	100.00 (1,384,759)	100.00 (1,194,182)	100.00 (4,709,332)
Females			
No grade completed	10.40	13.38	37.29
Elementary	63.32	60.03	48.95
High school	21.61	17.76	8.37
College	4.67	8.83	5.39
Total population	100.00 (1,429,547)	100.00 (1,264,441)	100.00 (4,728,184)

Source: *Yearbook of Philippine Statistics, 1966,* (Manila, Bureau of the Census and Statistics), table 18, p. 58.

Table 176. Distribution of the population 15 years old and over by highest grade completed, sex and age group, 1970

	15-19	20-24	25-34	35-44	45-54	55-64	65-74	75+	25 years[a] and over
Males									
No grade completed[a]	4.71	5.76	9.11	13.93	21.86	27.47	36.37	51.91	17.57
Elementary	52.68	51.03	56.11	55.43	58.15	55.69	50.55	41.17	55.47
High school	36.83	26.38	21.19	19.55	11.91	10.38	7.71	3.82	16.60
College	5.78	16.84	13.59	11.09	8.08	6.46	5.37	3.10	10.36
Total population	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	(1,982,777)	(1,526,521)	(2,196,731)	(1,672,586)	(1,127,825)	(714,173)	(342,039)	(163,745)	(6,227,441)
Females									
No grade completed[a]	5.00	7.03	11.34	18.00	28.13	36.95	49.96	66.18	22.80
Elementary	51.05	52.63	59.38	59.18	59.14	52.53	43.88	31.58	56.75
High school	35.47	19.47	16.25	13.41	7.42	6.60	3.78	1.46	11.72
College	8.49	20.87	13.03	9.41	5.31	3.92	2.38	0.78	8.73
Total population	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	(2,096,954)	(1,624,113)	(2,335,021)	(1,710,935)	(1,169,967)	(707,049)	(338,405)	(188,675)	(6,469,367)

Source: *Philippines, 1970 Census . . .*, National Summary, vol. II, tables III-6 and III-8.

a Including "not stated".

Table 177. Percentage distribution of the population 25 years old and over by highest grade completed, age and urban/rural residence, 1970

Residence and highest grade completed	25-34	35-44	45-54	55-64	65-74	75 +	25 years[a] and over
Philippines							
No grade completed[a]	10.26	15.99	25.06	32.19	43.13	59.55	20.24
Elementary	57.79	57.33	58.65	54.12	47.23	36.03	56.12
High school	18.64	16.45	9.62	8.50	5.76	2.56	14.11
College	13.30	10.24	6.66	5.20	3.88	1.86	9.53
Total population	100.00 (4,531,752)	100.00 (3,383,521)	100.00 (2,297,792)	100.00 (1,421,222)	100.00 (680,444)	100.00 (352,420)	100.00 (12,696,808)
Urban							
No grade completed[a]	4.11	6.64	11.10	16.05	25.32	42.77	9.54
Elementary	39.44	44.05	53.48	53.60	52.57	46.29	45.45
High school	29.21	26.93	19.39	17.48	12.17	5.91	24.09
College	27.24	22.38	16.02	12.87	9.94	5.03	20.93
Total population	100.00 (1,546,243)	100.00 (1,095,225)	100.00 (721,611)	100.00 (453,073)	100.00 (212,469)	100.00 (106,971)	100.00 (4,143,208)
Rural							
No grade completed[a]	13.44	20.46	31.45	39.74	51.21	66.87	25.42
Elementary	67.30	63.68	61.02	54.36	44.81	31.56	61.29
High school	13.17	11.43	5.15	4.29	2.85	1.10	9.28
College	6.08	4.43	2.38	1.61	1.13	0.47	4.01
Total population	100.00 (2,985,509)	100.00 (2,288,296)	100.00 (1,576,181)	100.00 (968,149)	100.00 (467,975)	100.00 (245,449)	100.00 (8,553,600)

Source: Philippines 1970 Census . . ., National Summary, vol. II, table III-6.

a Including "not stated".

try during that period was characterized by a typical dual system of colonial education – one set of schools for the Filipino children and another for the children of resident Spaniards. Education for the Filipinos was aimed at converting them to Catholicism and maintaining them in that faith. "Instructions in these schools, known as catechism schools, generally covered little more than Christian doctrine and enough reading and writing to make Filipinos aware of and to enable them to fulfill their religious obligations. Ideally, instruction was also to have been given in Spanish, arithmetic and various handicrafts. Schools for Spanish youth, on the other hand, were designed to duplicate the instruction given in Spain".[3]

The first catechism school was founded at Tigbauan, Panay, in 1593. Others soon followed and it appears that those who attended the early catechism schools did so enthusiastically. During the seventeenth and eighteenth centuries Catholicism and the catechism schools spread throughout the Islands and were fairly well attended. Available enrolment data show that "attendance in 1818 ranged from 40 and even 50 per cent in the more populous provinces such as Cebu to 18 per cent in several of the less populous provinces".[4] However, the enrolments seem to have declined during the latter part of the nineteenth century, especially in the more progressive urban areas.

Spanish schools were also set up to educate Spanish youth and constituted a complete primary-to-university educational system. Although these schools were clearly intended for Spanish youth, there seems to have been enough flexibility to allow some Filipinos to enter them. The Jesuits admitted Mestizos and Filipinos into their classes even at the highest educational level, such as the University of San Ignacio. Detailed information on enrolments in universities and colleges is not available; however, it seems that enrolments increased dramatically around the middle of the nineteenth century, after nearly two hundred years of stability. For instance, in the Dominican-run University of Santo Tomas, the average yearly enrolment in philosophy fluctuated between 127 and 143 students per year; in theology, between 22 and 27 students per year; and in law, between 48 and 59 students per year.[5] The combined average yearly enrolments increased to 334 students between 1841 and 1850, and to 514 during the following decade. Later on, enrolments in law reached 1,159 students during the 1895/96 school year. The majority of the students were Filipinos as evidenced by fragmentary data[6] and by the fact that the Spanish population in the Philippines was not large enough to supply all of the Santo Tomas students.

Along with the two systems described earlier, Filipinos themselves established private schools which developed in response to the deficiencies of the colonial schools. Around 1900, roughly one third of the primary schools were private. "Private secondary education was also available during the latter part of the nineteenth century in schools popularly known as latinities".[7] By 1895 these schools enrolled almost as many first and second year students as the Spanish secondary schools. Although, initially, Filipinos founded schools and taught in order to earn a living, eventually, their reasons became more political. "There appears to be little doubt that in the minds of late nineteenth century Filipinos, education was clearly linked to Spanish dominance and Filipino subservience... The intellectual climate was ripe, therefore, for private schools to be founded by those who sought and taught, covertly if not overtly, Filipino independence".[8]

It will thus be seen that before 1863 education for the Filipinos was mainly a process of Christianization in the hands of the priests and curates. The media of instruction were the dialects of the people, and most children attended classes until they were able to recite the catechism from memory and to make their confessions and receive communion. However, boys who were especially bright were somewhat fortunate in that they were taught some Spanish and many of them became clerks, printers and government officials.

Though the need for educational reforms was recognized at various times during the Spanish rule,

3 Karl Schwartz, "Filipino education and Spanish colonialism: toward an autonomous perspective", *Comparative Education Review*, vol. XV, No. 2, June 1971, pp. 202-218.

4 *Ibid.*, pp. 204-206.

5 *Ibid.*, p. 210.

6 In 1886, out of an enrolment of 1,982 in the University of Santo Tomas, there were 1,367 Filipinos, 123 European and 93 Island-born Spaniards, 180 Spanish Mestizos and 219 Chinese Mestizos. See *Census of the Philippines, 1903* (Washington, DC, Government Printing Office, 1905), vol. 3, p. 634.

7 Karl Schwartz, *loc. cit.*, p. 213.

8 *Ibid.*, p. 215.

only a few reforms were undertaken until the promulgation of the Educational Decree of 1863. This Decree established "an educational system, free and compulsory for children 7 to 12 years old, with secondary, trade and normal schools, and collegiate instruction at the University of Santo Tomas. It stipulated that Spanish was to be the language of instruction at all levels. The elementary curriculum included reading, writing, arithmetic, geography, history, Christian doctrine, Spanish, vocal music, and agricultural studies for boys and needlework for girls".[9]

The number of primary schools increased from 25 in 1867 to 2,167 in 1898, while enrolments recorded an increase from 1,940 to about 200,000 during the same period. All these schools received support from the Government and were managed by parish priests. In fact, the discontent among the people during the last part of the nineteenth century was in part due to the inability of the educational system to meet the growing demand for educational opportunities.

2. The American period

Shortly after the fall of Manila in 1898, the schools were reopened and the first significant changes brought to the curriculum were the introduction of English, first taught by United States Army personnel, and the removal of the religious emphasis of the Spanish regime. American teachers trained Filipino teachers, and the Manila Normal School was soon founded to educate more teachers. "A system of free, public and nonsectarian education comprising 4 years of primary and 4 of secondary training was established by 1907. The private schools controlled by religious orders added English to the curriculum, but continued much as before under supervision by the government".[10]

Vocational training was instituted in the public schools; some industrial education, handicrafts and gardening were included in elementary grades while agriculture, surveying, business arithmetic and home economics were included at the secondary level. Athletics and physical training were introduced in both elementary and secondary grades. Enrolments in primary schools rose from about 580,000 in 1910, to 1,100,000 in 1925, and secondary school enrolment from about 3,000 to almost 50,000.

The National Board of Education was established in 1936. The Education Act of 1940 gave the national Government responsibility for the financial support of the elementary school system. It sought to provide the largest number of children possible with both primary and intermediate education. However, since resources were limited, there was an impairment of the elementary schools that affected the entire educational system.

3. Japanese and post-independence period

The Japanese attempt to reorganize the educational system to promote co-operation between the Philippines and Japan and the use of the Japanese language had little success. However, education then took on a strongly nationalistic character.

Soon after independence (July 1946) were laid the principles and basis of the present Philippine educational system. "The objectives of education in the Philippines, stated in 1948 by a Congressional Committee, were to teach the people to live a moral life guided by faith in God and love for each other; to exercise the rights and practice the principles of democracy; to appreciate the arts, letters and sciences; to add their own contributions to them; to carry on the Filipino way of life; and to promote the cause of world peace through an understanding of other countries.

"Primary education is compulsory. The Elementary Education Act of 1953 and its 1957 revision state that every child shall be enrolled in school at the beginning of the academic year following his seventh birthday and shall remain in school until his elementary education is completed".[11]

4. The present educational system

In the Philippines, education is primarily the responsibility of the Government. It is administered by the Department of Education, headed by the secretary of Education. Educational goals and policies are based on (a) the Philippine Constitution, (b) laws passed by the Philippine Congress and (c) decisions of the Board of National Education, established in 1956.

The educational objectives have been formulated repeatedly by the various administrative bodies in charge of the implementation of educational policies. For instance, "the objectives of the educational

9 Frederic H. Chaffee and others, *Area Handbook for the Philippines* (Washington, DC, 1969), pp. 120-121.

10 *Ibid.*, p. 121.

11 *Ibid.*, p. 123.

system in the New Society may be described as follows:

"(i) To help develop a national consciousness that unifies all Filipinos while preserving and respecting their cultural and ethnic identities.

"(ii) To develop Filipino citizens:

(a) whose values, attitudes and behaviour are in accord with those accepted in a society that strives to implement accelerated programmes for socio-cultural and economic development;

(b) who know their duties and responsibilities as well as their rights and privileges in the New Society; and

(c) who possess the knowledge, skills, and attitudes to respond positively to changes in social and economic processes that are brought about by population pressure and technological change.

"(iii) To bring to the people more opportunities for self-realization and to equalize educational opportunities at all levels of education.

"(iv) To participate in economic development and in meeting the need for social services that are presently inadequately provided for".[12]

The structure of the Department of Education as of 1974 may be briefly described as follows: "Five offices are in charge of the technical operations within the Department's responsibility: the Administrative Office, the Division of Educational Planning, the Technical Advisory Staff, the Special Stabilization Fund Administrative Office, and the Institute of Spanish Language and Culture. The schools, however, are administered through the Bureau of Public Schools, the Bureau of Vocational Education, and the Bureau of Private Schools, respectively depending on whether they are public, vocational, or private schools".[13] However, the Department of Education and Culture has recently been reorganized on the basis of a decision taken in April 1976. In the reorganized structure, the bureaux referred to earlier have been replaced by staff bureaux based on each of the three levels of education, elementary, secondary and higher (see figure 23).

Educational Institutions in the Philippines have been classified into public and private schools. Public schools are those financed and operated by the national and local governments (provincial, city and municipal) while private schools are those operated by religious organizations (sectarian schools) and private corporations (proprietory schools). Only a few of these private proprietory schools are run along non-profit lines; most of them are owned by stockholders and organized as profit-making enterprise.

Both public and private schools offer three levels of schooling: the first level (elementary), the second level (secondary) and the third level (collegiate). Some children start their pre-school education in public or private kindergarten and nursery schools. The ages of the pre-school children range from three to six years. In the public schools, pre-school education is available in the laboratory schools of the normal schools or teachers' colleges. The private kindergarten and nursery schools either exist by themselves or are attached to some private colleges and universities. Pre-school education is not a requirement for admission to the first grade of the first level of education (elementary).

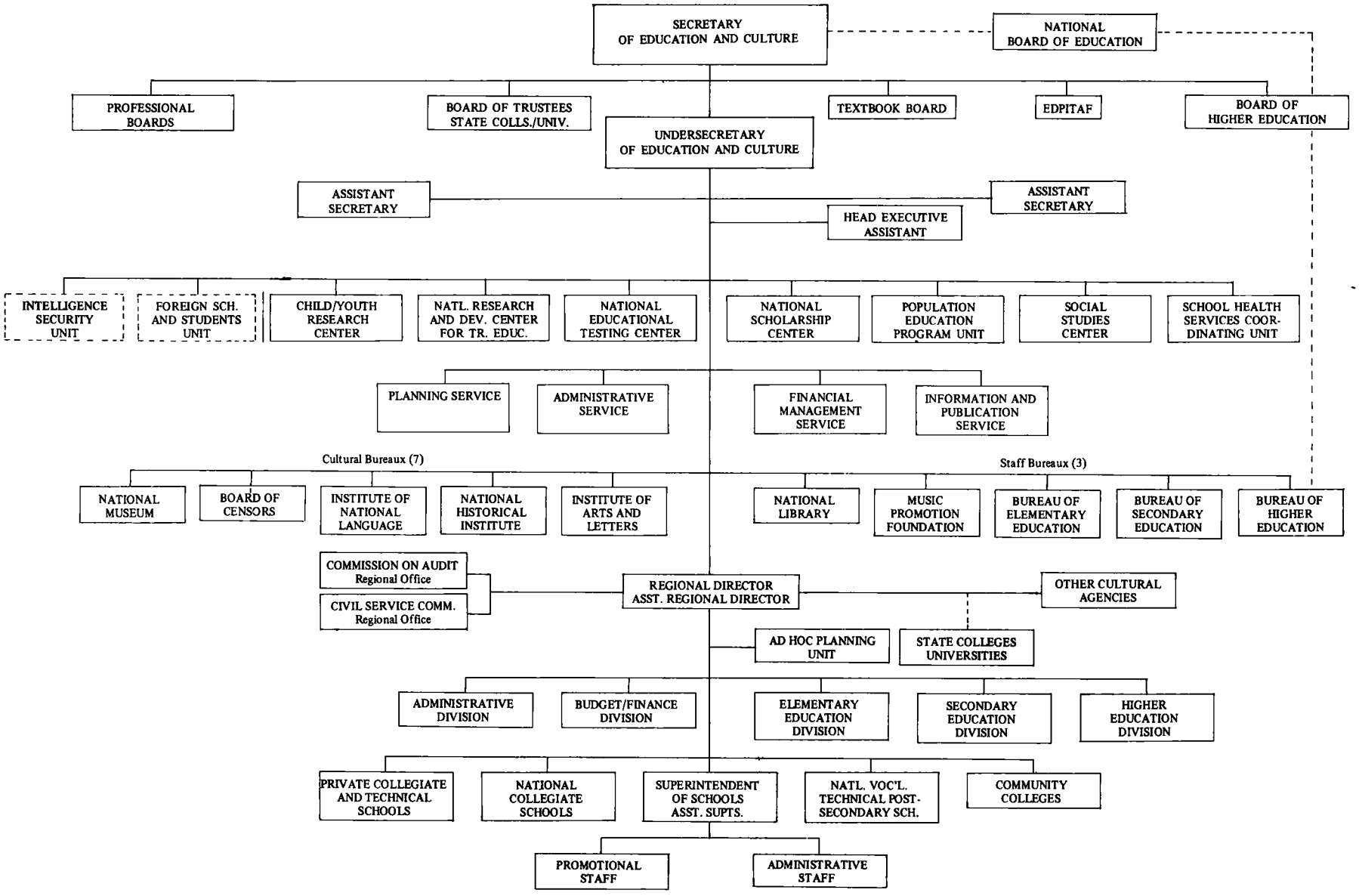
Elementary education in the public schools covers six years; four years of primary education and two years of intermediate education. A first grade child in the public school starts schooling at the age of seven. In the private schools, elementary education also covers six years. There are, however, a few private schools that require three years of intermediate education. This is in consonance with the Elementary Education Act of 1953, which authorizes the restoration of the seventh grade in the elementary level. This particular provision of law has not been implemented in the public schools owing to lack of funds.

There are two types of public secondary schools: general and vocational. These two types are also found among private schools. Both types of schools require four years of schooling. There are, however, a few public and private special vocational schools which require only one year of schooling or less.

Higher or collegiate education is offered in the public normal schools and teachers' colleges, in the state colleges and universities and in private colleges

12 Felix P. Santos, Rene R. Calado and Fortunata C. Vilamar, *Educational Administration in the Philippines*, Bulletin of the UNESCO Regional Office for Education in Asia, No. 15, June 1974, pp. 130-131.

13 *Ibid.*, pp. 131-133.



Source: *Special Report*, Department of Education and Culture, Philippines, 1976.

Figure 23. Abridged organizational chart of the Department of Education and Culture, April 1976

and universities. Graduate education is also available in some of these institutions of higher learning. Figure 24 shows the structure of the formal education system of the country.

Table 178 shows the number and percentage of enrolment in public and private schools in school year 1975/76. It will be seen that roughly 95 per cent of the elementary, both primary and intermediate, pupils were enrolled in public schools. This share seems to have remained stable during the past two decades.[14] At the secondary level, private schools accounted for more than half of the total enrolment (55 per cent); however, their share of the total secondary enrolments had been sharply reduced since the early 1960s.[15] Most colleges and universities are private, accounting for 85 per cent of the enrolments in 1975/76. This percentage has also declined from a level of 96.6 in 1959/60 and 97.8 in 1963/64 to 89.2 in 1972/73 and to its present level. This decline has largely been due to an increase of public college enrolments, which jumped from about 8,000 during the period 1962-1964 to 99,000 in school year 1974/75 and to 125,000 in 1975/76. Figure 25 shows the repartition of students between public and private schools for each level of education and the various types of schools, from kindergarten and nursery schools up to graduate education.

A vocational orientation has recently been emphasized at the secondary level, although the necessary facilities are not available everywhere. "Beginning with the school year 1957-1958, the curriculum of the General High School followed the 2-2 Plan. By Department Order No. 20 of 30 May 1973, a revised programme was set up according to which, beginning with the Third Year, students who plan to go to college take the academic or college preparatory curriculum, while those who do not plan to do so take the vocational curriculum. High School is terminal for the latter students. There is no assurance that they can be employed, however, because their training may not be thorough enough to make them acceptable to employers. In most general secondary schools, there are no shops, machinery, tools, equipment and supplies, or funds to operate the vocational courses. It should be pointed out that early experience in some occupational fields is gained in public or private schools: prevocational courses in agriculture and handicrafts are part of the general elementary curriculum for grades II through VI; there are also elementary 'settlement' farm schools and intermediate farm schools in the rural areas".[16]

Apart from the formal system of education, more emphasis has been given through the years to community schools. It is based on the idea that education should be a continuing process throughout life and that it should work for the community as a whole. "The community school assumes responsibility for improving general living conditions through a curriculum based on local needs, environment and resources. It helps out-of-school youth and adults without sacrificing the growth and development of the children in school. The teacher takes the lead in community welfare projects until lay leaders are trained to effectively carry out com-

14 Percentages calculated for school years 1959/60 to 1963/64 are as follows: 95.8, 95.3, 95.3, 95.4 and 95.3 (based on data published in *Yearbook of Philippine Statistics, 1966*, pp. 42 and 48.

15 Percentages for school years 1959/60 to 1963/64 amount to 65.9, 65.9, 65.6, 71.8 and 70.1 (same source as foot-note 14).

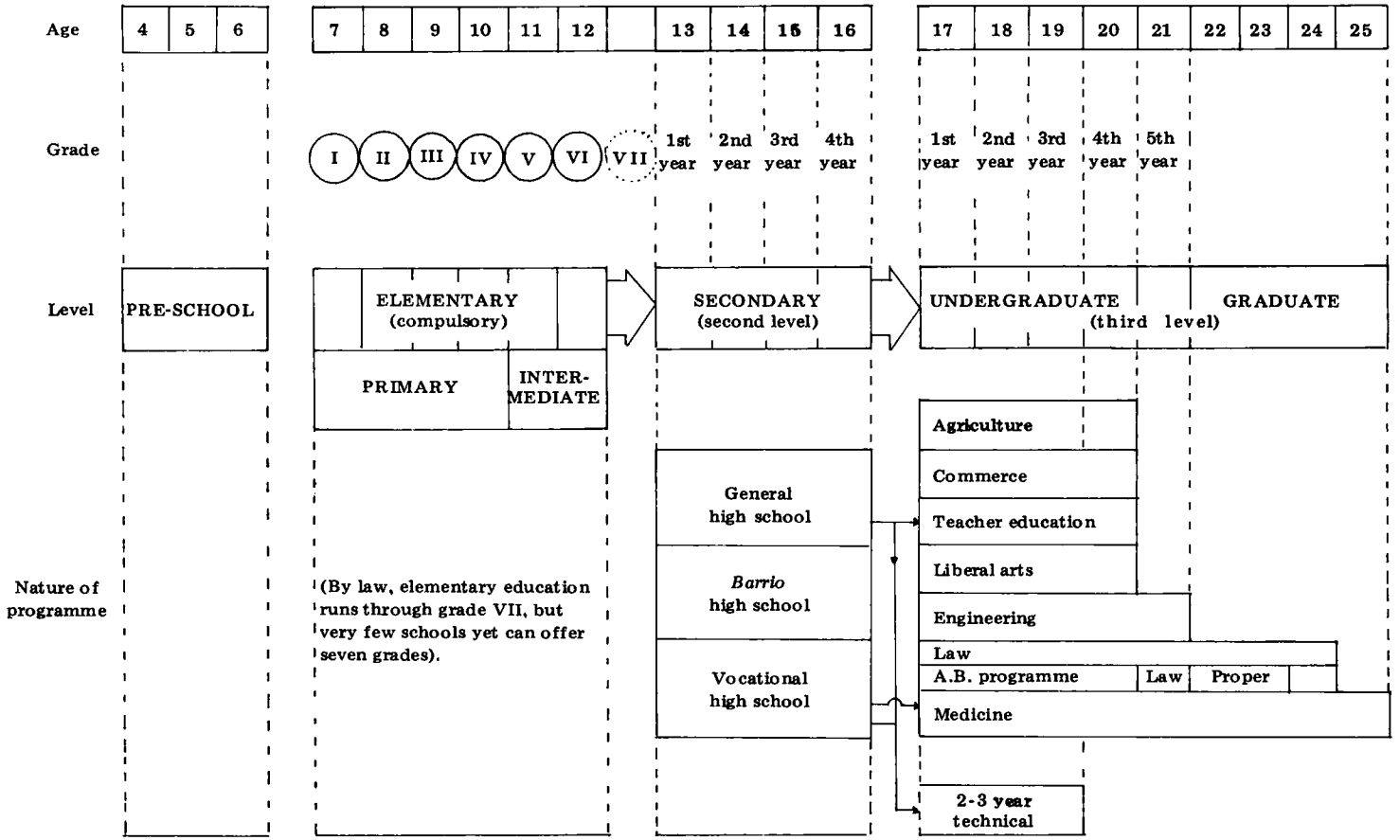
16 Santos, Calado and Vilamar, *op. cit.*, p. 134.

Table 178. Numerical and percentage distribution of educational enrolments by level of education and type of educational institutions, 1975/76[a]

Level of education	Numbers enrolled			Percentage distribution		
	Public	Private	Total	Public	Private	Total
Primary	5,401,000	285,592	5,686,592	94.98	5.02	100.00
Intermediate	1,961,049	107,390	2,068,439	94.81	5.19	100.00
Secondary	955,909	1,186,200	2,142,109	44.62	55.38	100.00
Collegiate	125,105	721,520	846,625	14.78	85.22	100.00
Total	8,443,063	2,300,702	10,743,765	78.59	21.41	100.00

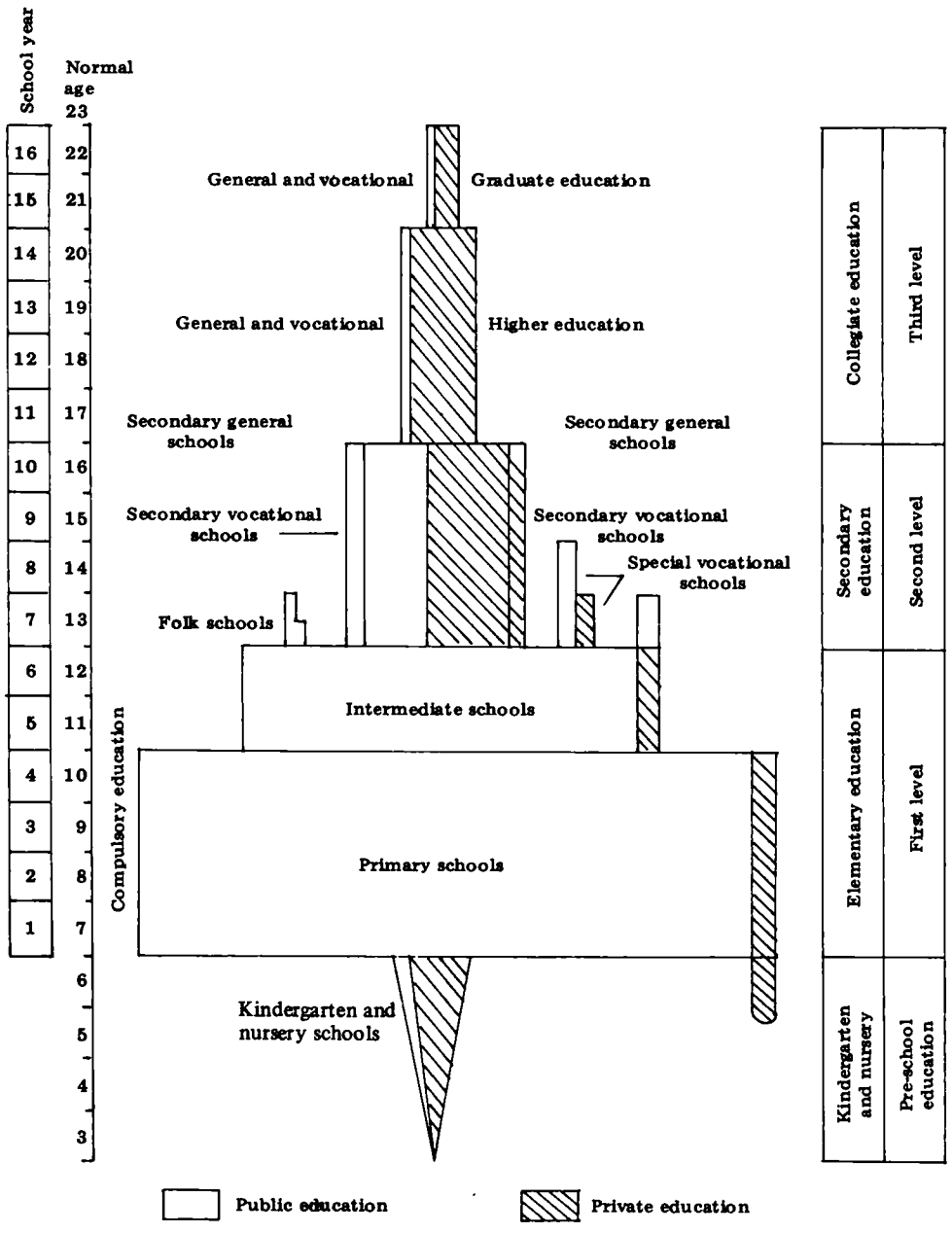
Source: Special Report, Department of Education and Culture, 1972-1976, Manila, 30 August 1976.

a Data as at 28 August 1976. Figures do not include participants in short-term opportunity and other non-formal education programmes.



Source: Same as figure 23.

Figure 24. Structure of the formal system of education of the Philippines, 1973



Source: Same as figure 23.

Figure 25. Educational system of the Philippines

munity plans. At that point, the teacher becomes an adviser and consultant. Adult education through the community schools includes demonstrations, community forms, literacy classes, study sessions, field trips and home industry centers".[17]

As a result of these measures, "since 1964-1965, it has been possible, at little or no extra cost to the government, to benefit and continue benefiting 2/3 million out-of-school children, youth and adults, including mayors and barangay leaders, who graduated from barangay high schools and/or community colleges, which they helped open. These institutions now include 2,000 barangay high schools, 1,000 public pre-school classes, 75 community colleges, 15 midwifery centers, and a large number of multi-grade schools".[18]

D. SCHOOL-AGE POPULATION AND ENROLMENTS

1. School-age population

As mentioned earlier, schooling in the Philippines generally starts at the age of 7 years. A negligible few who enrol in private schools start at the age of 6 years. The duration of the first level of education (elementary equivalent to the UNESCO term "primary") is six years. The second level (secondary) is four years, and a majority of the third level (collegiate) is four years. By and large, the elementary (primary) school-age population in the country is therefore 7 to 12 years old, secondary school-age population is 13 to 16 years old and collegiate school age is from 17 to 20 years.[19]

Table 179 shows the school-age population and its proportion to the total population of the country in 1960 and 1970. It will be seen that more than a third of the total population is of school-going age, 7 to 20 years. Children in the age group 7-12 years constitute roughly half of the potential students. Between 1960 and 1970, the average annual growth rates of the school-age population have been higher than the rate for the total population. The rate of increase of the potential high school students has been the highest, 4.3 per cent a year, as against only 3.0 per cent for the total population.

2. School enrolments

The growth in enrolments at the elementary level during the 20-year period 1956/57 to 1975/76 is shown in table 180. It is evident from this table that first-level enrolments more than doubled during these two decades, although the rate of increase was not uniform from year to year, while over the entire 20-year period, the annual growth rate average 4.0 per cent, during the decade 1960-1970, the average annual growth rate was even higher, 5.2 per cent or 1.8 percentage points higher than the rate of growth of the population aged 7-12 years. However, during the first part of the 1970s, the growth of elementary school enrolments had slowed down to approximately to 2.2 per cent per annum. In 1975/76, nearly 65 per cent of all elementary enrolments were in respect of rural areas and the balance of 35 per cent related to urban areas.[20]

It should, however, be noted that the quality and usefulness of the enrolment data is very limited owing to a lack of (a) precise and operational definitions and concepts and (b) personnel at all levels adequately trained in the methods of collection and analysis of statistics in the Department of Education and Culture. Moreover, it would definitely be better to study trends from data on "the annual grade completions rather than enrolments; that is, for each educational level, the number of students who complete a whole year of schooling rather than the number of students who enrol at the start of the academic year. Time series data on completions, however, are not readily available".[21]

It will be seen from table 181 that enrolments at the secondary level of education almost quadrupled between 1956 and 1975, recording an average annual growth rate of 7.1 per cent. There were a few occasions when this rate reached very high levels of over 10 per cent. Again the average rate of growth was highest, 9.9 per cent, during the 1960s, this rate being more than double the rate of 4.3 per cent recorded in respect of the corresponding total population aged 13 to 16 years. In comparison,

17 Frederic H. Chaffee and others, *op. cit.*, p. 129.

18 Pedro T. Orata, *The ultimate goal of education under the new society:* education for *all*, for *life*, and *throughout* life, prepared for the Educators Congress, 13-16 December 1976.

19 As will be discussed later, there are a large number of over-age students in each level and hence the age categories may not correspond to the true situation.

20 Department of Education and Culture, *Activities and Accomplishments*. The total elementary enrolment according to this report is 7,639,530 (4,965 for rural and 2,673,835 for urban), which is slightly different from table 180.

21 Ruperto P. Alonzo, *Measuring Philippine Development*, note 11, p. 121.

Table 179. School-age population in the Philippines, 1960 and 1970

Age group	1960		1970		Average annual rate of increase (percentage)
	Number	Percentage	Number	Percentage	
7-12	4,702,569	17.36	6,607,085	18.01	3.38
13-16	2,348,541	8.67	3,617,355	9.86	4.31
17-20	2,247,451	8.30	3,094,712	8.44	3.18
7-20	9,298,561	34.33	13,319,152	36.31	3.58
All ages	27,087,685	100.00	36,684,486	100.00	3.01

Sources: *Census of the Philippines, 1960 (Population and Housing)*, Summary (Manila, Bureau of the Census and Statistics, 1963), p. 8; and *Philippines 1970 Census* . . . , National Summary vol. II, table I-7.

Table 180. Elementary school enrolment in the Philippines school years 1956/57 to 1975/76

School year	Enrolment	Percentage increase
1956/57[a]	3,677,900	-
1958/59[a]	3,713,900	0.98
1958/59[a]	3,970,500	6.91
1959/60[a]	4,145,500	4.41
1960/61	4,197,750	1.26
1961/62	4,435,038	5.65
1962/63	4,823,252	8.75
1963/64	5,236,386	8.57
1964/65	5,578,140	6.53
1965/66	5,815,675	4.26
1966/67	6,193,128	6.49
1967/68	6,407,268	3.46
1968/69	6,700,367	4.57
1969/70	6,855,432	2.31
1970/71	6,968,978	1.77
1971/72	7,299,115[b]	4.74
1972/73	7,108,485	-2.61
1973/74	7,347,981	3.37
1974/75	7,476,730	1.75
1975/76	7,755,031	3.72

Sources: (1) For school years 1956/57 to 1959/60, see note *a* below.

(2) For school years 1960/61 to 1971/72, statistical bulletins of the Bureau of Public Schools, Bureau of Education, Bureau of Private Schools, Board of National Education.

(3) For school years 1972/73 to 1975/76, *Special Report*, p. 11a.

a Enrolment estimated on the basis of table 3/1, p. 131, in Mahar Mangahas, ed., *Measuring Philippine Development; Report of the Social Indicators Project*, 1976.

b Although this figure comes from the source indicated above, a more recent publication, *Activities and Accomplishments*, from the Philippines Department of Education and Culture, 1977, acknowledges on elementary enrolment of only 6,994,201.

during the late 1950s and the first half of the 1970s the average annual growth rate of secondary enrolments was much slower – 3.5 per cent and 4.5 per cent, respectively.

In 1975/76, nearly 22 per cent of the secondary students were enrolled in barangay or rural high schools and 78 per cent in high schools located in urban areas.[22]

It may also be noted that although secondary education has been increasingly popular in the Philippines, it was subject to various criticisms. Its curricula, academic as well as vocational, have been rightly criticized for producing incompetent graduates, "most of them still unprepared to do anything worthwhile that may contribute to the economic development of the country".[23] The several experiments which have been carried out to improve the system have proved more or less successful.[24] The Technical Committee on Secondary Education of the Board of National Education recommended the organization of three-year community high schools which would give general education and emphasize vocational courses tied up with the resources or industry of the town. Along with this, it was also proposed to have five-year high schools made up of the three-year community high schools plus two years of a strictly college-preparatory course. The "3-2 plan" was meant to remedy the

22 Department of Education and Culture, *Activities and Accomplishments.*

23 *Towards General Education in the Philippines*, p. 153.

24 The Davao Plan, the Bayambang Project, the U.P. Preparatory High School and the Plan of the National Economic Council are examples of various attempts in the late 1950s better to prepare high school students either to pursue academic work or to take up to a vocational career. For more details, see *Towards General Education in the Philippines*, pp. 158-163.

Table 181. Secondary school enrolment in the Philippines, school years 1956/57 to 1975/76

School year	Enrolment	Percentage increase
1956/57	582,093	-
1957/58	585,783	0.63
1958/59	632,015	7.89
1959/60	680,262	7.63
1960/61	668,130	-1.78
1961/62	719,058	7.62
1962/63	826,242	14.91
1963/64	946,666	14.57
1964/65	1,037,109	9.55
1965/66	1,168,844	12.70
1966/67	1,284,647	9.91
1967/68	1,361,725	6.00
1968/69	1,502,346	10.33
1969/70	1,584,796	5.49
1970/71	1,715,084	8.22
1971/72	1,723,365	0.48
1972/73	1,916,800	11.22
1973/74	1,983,581	3.48
1974/75	2,068,477	4.28
1975/76	2,142,109	3.56

Sources: (1) For school years 1956/57 to 1959/60, *Measuring Philippine Development*, table 3/2, p. 134.

(2) For school years 1960/61 to 1971/72, statistical bulletins of the Bureau of Public Schools, Bureau of Vocational Education, Bureau of Private Schools and Board of National Education.

(3) For school years 1972/73 to 1975/76, *Special Report*, p. 11a.

Table 182. College enrolment in the Philippines, school years 1958/59 to 1975/76

School year	Enrolment	Percentage increase
1958/59	275,296	-
1959/60	276,750	0.53
1960/61	280,735	1.44
1961/62	318,116	13.32
1962/63	372,355	17.05
1963/64	401,533	7.84
1964/65	450,876	12.29
1965/66	527,067	16.90
1966/67	553,976	5.11
1967/68	600.707	8.44
1968/69	627,104	4,39
1969/70	633,045	0.95
1970/71	651,472	2.91
1971/72	688,259	5.65
1972/73	701,694	1.95
1973/74	746,868	6.44
1974/75	788,475	5.57
1975/76	846,625	7.37

Sources: (1) For school years 1958/59 and 1959/60, *Measuring Philippine Development*, table 3/3, p. 137.

(2) and (3) Same as for table 181.

brevity of the pre-college education and the use of a foreign medium of instruction, English, which are both obstacles in the way of effective general education. In 1970, a similar recommendation was also made by the Presidential Commission to survey Philippine Education. Nevertheless, the secondary education still continues to be of four-year duration.

It will be seen from table 182 that enrolments at the collegiate level increased from 275,000 in 1958/59 to 847,000 in 1975/76, or at an average annual rate of 6.8 per cent, which was slightly less than the average annual rate of growth of 7.1 per cent recorded in respect of high school enrolments during the same period. In the case of college enrolments also, the increase was not uniform. Between 1960/61 and 1965/66, the enrolments almost doubled corresponding to an average annual growth rate of 13 per cent. The subsequent decade was characterized by a much slower pace of growth with annual increases not exceeding 8.5 per cent in any of the 10 years and the rate of growth during this decade averaging 4.9 per cent.

The percentage distribution of collegiate enrolments by field of study given in table 183 indicates that by far the largest number of students were enrolled in social sciences, followed by engineering/trades, medical sciences and humanities. The pattern did not change very much between 1971/72 and 1975/76 although significant changes took place with regard to those enrolled for education and agriculture: the percentage share of education declined from 12 to 9 while that of agriculture increased from 2.5 to 5 per cent.

The sex ratio of college students given in table 184 shows that while in the late 1950s slightly more males than females were enrolled in colleges, beginning from the 1960s there has been an increasing predominance of female students. This trend has

Table 183. Distribution of collegiate enrolment by field of study, school years 1971/72 and 1975/76

Field of study	1971/72	1975/76
Narural sciences	2.15	2.19
Medical sciences	11.56	12.42
Engineering/trades	13.63	15.15
Agriculture	2.51	5.12
Education	12.11	8.91
Social sciences	41.50	39.36
Humanities	11.09	10.66
Arts	1.50	1.79
Graduate studies	3.96	4.39
Total	100.00	100.00

Source: Activities and accomplishments.

Table 184. Sex ratio of college students and population aged 17 to 21, school years 1958/59 1970/71

School year	Sex ratio[a]	
	Students	Population
1958/59	106.3	93.3
1959/60	104.8	93.7
1960/61	93.8	94.1
1961/62	92.1	93.5
1962/63	86.6	92.9
1963/64	90.8	92.3
1964/65	91.9	91.7
1965/66	85.6	91.1
1966/67	84.3	90.5
1967/68	82.1	90.0
1968/69	80.1	89.4
1969/70	82.1	88.8
1970/71	79.8	86.9

Source: Measuring Philippine Development, table 3/3, p. 137.
a Number of males per hundred females.

partly been due to a higher number of females in the population concerned. The proportion of females in the population aged 17 to 21 years steadily increased from 1960/61 to 1970/71 as evidenced by the decline in the sex ratio from 94 males per 100 females to 87 during the 10-year period. In the same span of time, sex ratio for college students experienced a sharper decline from 94 to 80. In 1960/61, when the sex ratio was about the same for the population aged 17-21 years and for the students enrolled in colleges, the enrolment ratio was also the same for both sexes, viz., 10.7 per cent. Since then, the enrolment ratio has been growing faster for females than for males.

3. Enrolment ratio

It has already been noted in the preceding section that enrolment *per se* is not a good indicator of the performance of the educational system and that a more accurate picture could be obtained from grade completions. However, since time-series data on the latter are not available in the Philippines, it becomes necessary to focus on enrolment data.

The enrolment ratios or the proportion of the school-age population that is enrolled in the school system gives a fairly good idea of the progress made with regard to educational development in the country. However, there are difficulties in computing these ratios. For instance, students in elementary schools should, theoretically, be 7 to 12 years old, or, more precisely, enrolled in grades I to VI at those ages should there be no repeaters and no over-aged or under-aged enrollees. Hence, the number of enrolments in grades I to VI divided by the number of children aged 7 to 12 years is by definition the enrolment ratio at the elementary level. Similar computations are made in respect of enrolment ratios at the secondary and college levels. In practice, however, both the numerator and the denomiator of the ratio have often to be adjusted to take care of the deficiencies of the data. With regard to the elementary-level enrolment ratios, it has been observed:

"The enrolment figures for the elementary level are adjusted by a factor of 0.896 so as to exclude the enrollees who are 'over-aged'. In our judgement, the over-aged group would be one-half of the thirteen-year-olds and all of the fourteen-year-olds and over. The factor 0.896 is the ratio of those enrollees twelve years and below plus one half of the thirteen-year-olds to all enrollees for the years 1958 to 1962, the period for which we were able to get enrolments cross-classified by age and grade level... Although in theory one would want to define enrolment ratios such that the maximum value is unity, the problems in data availability very often prevent this... We see that by 1965 both male and female enrolment ratios have exceeded unity. This could be due to several factors: (a) many students may be enrolled in more than one school; (b) we have not excluded those pupils six years old and below; (c) the population

projections could be understated; and (d) schools could be over-reporting their enrolment figures".[25]

The age-specific enrolment ratios, or enrolment ratios by single year of age, for the first level of education in 1968 are given in table 185. The limitations of the available data are eivdent from the fact that some of the ratios are above 100, which is not theoretically possible. Apart from the defects in enrolment data referred to earlier, this discrepancy could also be due to under-estimation of the population, errors in age-distribution and misreporting of age of pupils enrolled. In addition, the reference dates in respect of the population and the enrolments may not be the same. However, this should not obliterate the fact that about one half of the 13 year-olds and one fourth of the 14 year-olds are enrolled in an elementary school.

Table 185. Age-specific enrolment ratios for the first level of education, 1968

Age	Enrolment ratio
6	3
7	86
8	105
9	108
10	109
11	98
12	95
13	57
14	26

Source: Progress of education in the Asian region, p. 74.

More generally, the age-distribution of pupils by grades at the first level of education (table 186) shows that roughly 49 per cent of the pupils are of normal age for the grade they are enrolled in, 27 per cent are over-aged by one year and 17 per cent by more than one year. The age-distribution does not vary much according to the grade, though a normal age is more often the case at grade II than at other grade. From grade II to grade IV, the share of normal age enrollees decreases along with a corresponding increase of both under-age and over-age categories of pupils.

Table 187 gives the enrolment ratios by sex and level of education for all school years from 1956/57 to 1970/71. It will be seen from this table that the enrolment rates rise "dramatically for all education levels over a relatively short period of time. This elementary rate reaches over hundred per cent in 1965; the high school rate doubles and the college rate increases by sixty per cent between 1956 and 1970. We notice too that female enrolment ratios are consistently below the male rate for elementary and secondary schooling, but at the tertiary level, females outperform males by 1965. Male-female differences in participation are most pronounced at the secondary level, the difference declining through time".[26]

It was noted earlier that enrolment figures *per se* do not necessarily reflect accurately the efficiency of the educational system and that graduation rates are a better indication in this respect. The National Economic and Development Authority has published a series of graduation rates from elementary schools, and these rates show an increase from 50 per cent in the mid-1950s to 87 per cent in 1970.[27]

4. Retention rates

The retention rates for 15 successive cohorts show the proportion of a given cohort of pupils enrolled in a particular base grade that reach some terminal grade level as they progress through the school system. The usual method of computing these rates is to calculate the ratios of enrolment say for grade g in year t to enrolments in grade $g-1$ in year $t-1$. It may, however, be noted that repeaters and returning drop-outs in grade g will tend to raise the ratio, thus leading to an over-evaluation of the performance of the educational system.

The retention rates for 15 successive cohors starting with students enrolled in grade 1 in school year 1951/52 are given in table 188. Of the 1951/52 cohort enrolled in grade 1, only 33.5 per cent eventually completed the elementary level after six years in 1956/57. This proportion increased to about 51 per cent for all cohorts, except one, which entered grade 1 from 1960 to 1965.

25 *Measuring Philippine Development*, p. 130. In regard to the over-reporting of students, R.P. Alonzo notes: "It has been suggested that since there is a required minimum number of enrollees to start a class in public elementary schools, some schools pad up their enrolment figures to set up new classes and acquire funds for new classrooms".

26 *Ibid.*, p. 140.

27 *Ibid.*, p. 140 and table 3/4, p. 141.

Table 186. Age distribution of enrolments at the first level: percentage of under-age, normal-age and over-age pupils by grade, 1966/67

Age category	Grades						Over-all enrolment
	I	II	III	IV	V	VI	
Under age	4.3	1.8	3.3	4.2	5.1	7.1	6.5
Normal age	51.9	58.5	53.3	50.6	49.3	45.9	49.2
Over age by 1 year	25.7	25.2	25.4	25.4	24.7	27.0	27.1
Over age by 2 years)		8.8	9.9	10.6	11.6	11.3)	
)	18.1					)	17.2
Over age by 3 years or more)		5.7	8.1	9.2	9.3	8.7)	
(Percentage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total: (							
(Number (in thousands)	1,542.0	1,243.7	1,165.0	1,042.3	920.3	783.0	6,696.3[a]

Source: *Progress of education in the Asian region*, p. 110.

a The over-all enrolment shown here significantly differs from the figure given in table 180 for the same school year. This, however, is unfortunately, very often the case with statistics on education coming from various sources. Nevertheless, it seemed appropriate to show these interesting data, which support the criticism of the applicability of the enrolment ratio.

Table 187. Enrolment ratios, by sex and level of education, school years 1956/57 to 1970/71

School year	First level			Second level			Third level[a]		
	Total	Males	Females	Total	Males	Females	Total	Males	Females
1956/57	79.6	81.6	78.0	27.3	30.7	23.9	-	-	-
1957/58	78.2	79.3	77.0	26.9	30.0	23.7	-	-	-
1958/59	81.4	82.6	80.2	28.3	31.5	25.1	10.6	11.3	9.9
1959/60	82.7	84.0	81.4	29.8	32.7	26.9	10.4	11.0	9.8
1960/61	81.6	82.7	80.4	28.7	31.2	26.1	10.7	10.7	10.7
1961/62	85.2	85.3	85.2	30.1	32.6	27.6	13.5	13.4	13.6
1962/63	90.7	90.8	90.5	33.7	35.7	31.7	14.3	13.8	14.8
1963/64	96.3	96.3	96.3	37.7	40.6	34.8	15.5	15.4	15.6
1964/65	100.4	100.4	100.4	40.3	42.3	38.3	14.6	14.6	14.6
1965/66	102.4	101.8	103.1	44.3	46.1	42.6	16.6	16.1	17.1
1966/67	106.7	106.1	107.4	47.5	49.1	46.0	16.9	16.3	17.5
1967/68	108.0	107.3	108.8	49.2	50.7	47.7	17.8	17.0	18.6
1968/69	110.6	110.0	111.2	52.9	54.8	51.1	18.4	17.4	19.4
1969/70	110.7	109.9	111.5	54.5	56.5	52.5	17.7	17.0	18.4
1970/71	110.1	109.5	110.8	57.6	59.7	55.5	17.9	17.0	18.6

Source: *Measuring Philippine Development*, tables 3/1, 3/2 and 3/3.

a College enrolments in public schools before 1958 appear heavily understated; therefore, the series starts only in school year 1958/59.

Table 188. Retention rates[a] at the elementary level of education in the Philippines, cohorts 1951/52 to 1965/66

Cohorts	GRADES						Elementary school graduation
	I	II	III	IV	V	VI	
1951/52	100.0	77.5	69.9	61.9	46.0	37.6	33.5
1952/53	100.0	80.3	72.5	63.9	49.9	39.5	35.0
1953/54	100.0	80.5	73.6	66.1	50.2	41.4	37.5
1954/55	100.0	82.4	77.2	68.1	54.3	44.7	39.7
1955/56	100.0	83.7	76.1	68.7	54.6	43.1	37.6
1956/57	100.0	82.0	76.9	69.4	52.1	43.3	38.9
1957/58	100.0	85.2	80.8	71.1	57.1	48.7	44.5
1958/59	100.0	84.0	77.2	67.0	57.6	50.1	43.8
1959/60	100.0	82.6	78.5	69.1	59.5	52.4	46.4
1960/61	100.0	85.0	81.6	74.8	64.2	56.2[b]	51.3
1961/62	100.0	85.1	80.0	73.4	62.3	56.6	51.1
1962/63	100.0	84.1	78.9	71.1	62.6	56.3	51.2
1963/64	100.0	83.3	77.8	71.8	64.0	57.6	47.2
1964/65	100.0	83.2	78.9	72.1	65.0	57.9	51.3
1965/66	100.0	84.5	79.5	74.4	66.2	58.7	51.4

Source: *Measuring Philippine Development*, table 3/5, p. 143.

a The "retention rates" shown in this table are in fact ratios of enrolments in a given grade to the enrolments of the same cohort in grade I. For example (see first row), 775 students entered grade II in school year 1952/53 for every 1,000 students who entered grade I in 1951/52.

b We have changed the 65.2 figure given in the source referred to since we have other evidence that it was due to a printing error.

5. School attendance

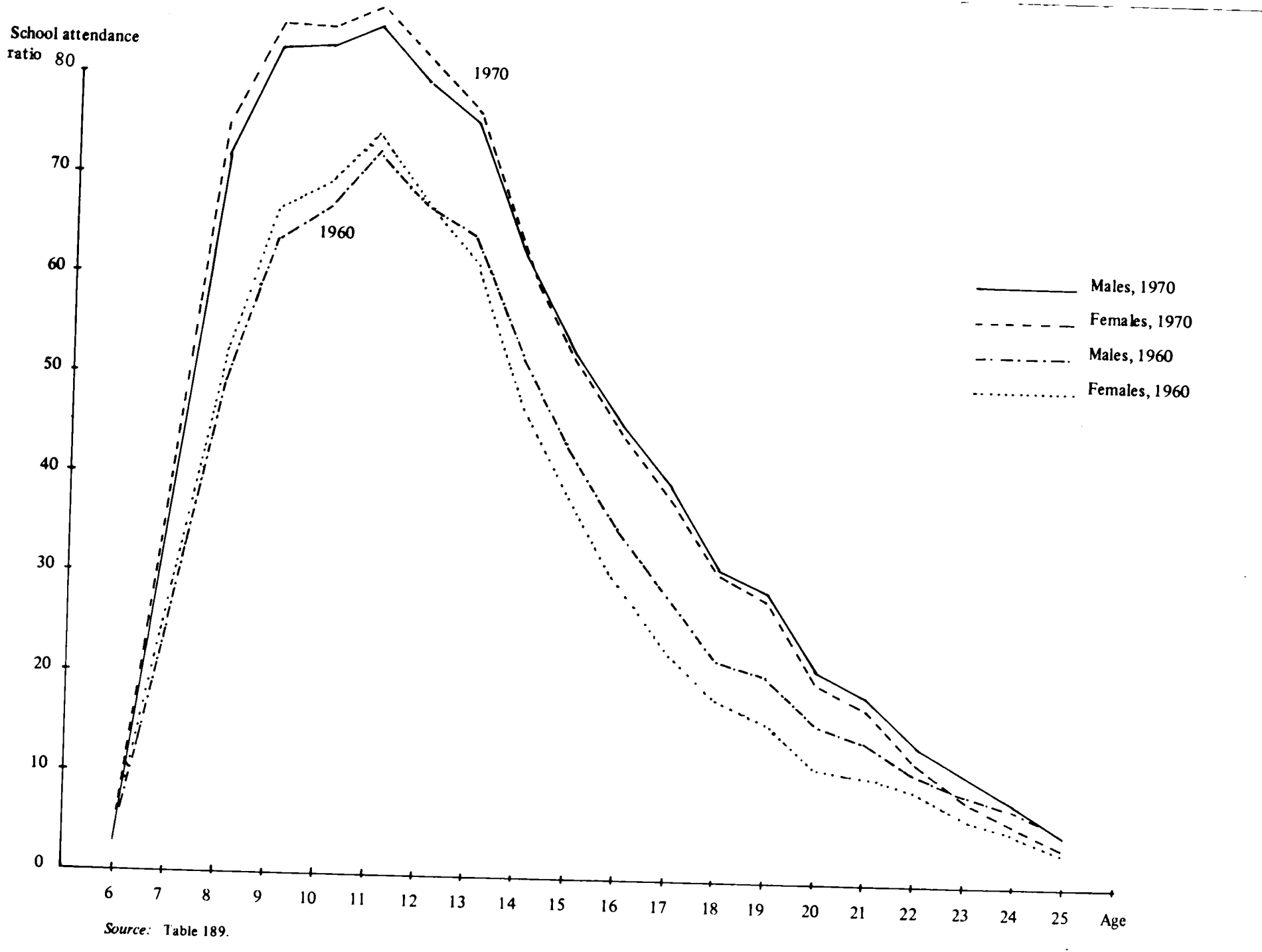
The school attendance ratios calculated on the basis of the school attendance data from the censuses of 1960 and 1970 are given in table 189 and illustrated in figure 26. These ratios show that enrolment data do not give a true picture of the number and percentage of children and young adults attending schools.[28] It will be seen that in 1960 only about 50 per cent of the 8-year-olds were attending school but by 1970 this proportion had dramatically increased to 73 per cent. The highest attendance rate for both sexes in 1960, 73 per cent, was recorded for those children aged 11 years. In 1970, the highest rate was also for the 11-year-olds but the rate had increased by 13 percentage points to 86 per cent. It may also be noted that in 1970 attendance rates at ages 8 to 13 were above 73 per cent. Further, the female attendance rate is higher than the rate for males at younger ages (below 13 years in 1960 and below 14 years in 1970) but the reverse is true beyond these ages.

Although increases in the school attendance ratios were about the same for males and females at the younger ages, they were significantly higher for females at ages 14 to 21. Thus, while in 1960 the attendance rate at age 17 years for males was 5.5 percentage points higher than for females, in 1970 this gap has been reduced to a mere 1.4 percentage points. Though data for recent years are not available, it is possible that at older ages female attendance ratios are now higher than the male ratios, thus reflecting the recent trends in high school and college enrolments.

E. FUTURE PROSPECTS

Although the expenditures of the Department of Education and Culture increased on an average by more than 10 per cent a year in recent years (1973 to 1977), a declining trend can be noted in the Department's share of total government expenditures, from about 16 per cent in 1973 to 7.4 per cent in 1977. However, the share of the school system amounts to about 10 per cent if the infrastructure

28 It has, however, to be noted that the census data have their own limitations as well.



Source: Table 189.

Figure 26. School attendance ratio by sex and age, 1960 and 1970

Table 189. School attendance ratio[a] by sex and age in the Philippines, 1960 and 1970

Age	1960			1970		
	Males	Females	Both sexes	Males	Females	Both sexes
6	3.2	3.7	3.4	2.6	3.1	2.9
7	25.0	27.3	26.1	33.2	36.4	34.8
8	48.2	51.5	49.8	71.7	75.0	73.3
9	63.1	66.4	64.7	82.5	85.0	83.7
10	66.3	69.0	67.6	82.7	84.7	83.7
11	72.0	74.0	73.0	84.9	87.1	86.0
12	66.7	67.2	66.9	79.2	81.6	80.3
13	63.9	61.5	62.7	75.3	76.4	75.8
14	51.7	47.3	49.5	62.4	62.1	62.3
15	42.2	37.5	39.9	52.7	52.0	52.3
16	34.5	29.2	31.8	45.5	44.4	44.9
17	28.2	22.7	25.5	39.5	38.1	38.8
18	21.8	18.0	19.9	31.0	30.5	30.7
19	20.3	15.9	18.0	28.8	28.1	28.4
20	15.6	11.4	13.3	20.9	19.8	20.3
21	14.0	10.7	12.3	18.6	17.5	18.0
22	10.9	9.3	10.1	13.8	12.1	12.9
23	9.0	6.7	7.8	10.9	8.7	9.8
24	7.6	5.2	6.4	8.2	6.2	7.2
25	5.3	3.4	4.3	5.3	4.0	4.6
26	4.8	3.2	4.0	4.4	3.4	3.9
27	4.0	2.8	3.4	3.3	2.6	2.9
28	3.4	2.5	2.9	2.5	2.0	2.2
29	3.0	2.3	2.6	2.1	1.7	1.9

Sources: (1) For 1960, *Census of the Philippines, 1960 (Population and Housing), Summary* also reproduced in *Yearbook of Philippine Statistics, 1966*, p. 61.

(2) For 1970, *Philippines 1970 Census . . .*, National Summary, vol. II.

a The school attendance ratio is the number of persons attending school per hundred persons of the same age and sex.

budget for school buildings and the allocation for state colleges and universities are included.[29]

One of the main goals of the Department of Education and Culture is to contribute to national development. In order to achieve its goal, the Department has included in the curricula new topics such as population concepts, nutrition, taxation, drug addiction control, environmental protection, land reform, the New Constitution and co-operatives. "Vocational secondary schools intensified the organization of supervised farming and food production projects; electronics engineering, medical technology, and automotive technician courses were among the technical courses that attracted more students".[30] As noted earlier, medical science, engineering and agriculture are fields which attracted more students, resulting in increased enrolments of 16, 20 and 120 per cent respectively, from 1972/73 to 1975/76. This achievement has been partly due to the policy of giving priority to scholarship applicants in those fields.

In order to plan the furture development of education in the country, and "in consonance with Presidential Letter of Instruction No. 363, the DEC

29 *Activities and Accomplishments*, p. 1.

30 *Ibid.*, p. 3.

(Department of Education and Culture) has prepared (the) Ten-Year Education Development Plan for the School Years 1975-1976 to 1984-1985".[31] Based on an analysis of the educational and manpower profile of the population, elementary and secondary programmes aimed at providing broad general education were formulated. These programmes are based on enrolment projections and assessment of the corresponding needs for teachers and administrators, textbooks and other instructional materials, as well as classrooms and other school-related buildings. The plan also provides for the training of manpower at the middle level through formal vocational and technical education, and the development of high-level professions. The main perspectives of the educational system as stated in the Ten-Year Education Development Plan are discussed in the sections that follow.

1. Enrolment projections

Two sets of enrolment projections – high and low – were computed for the first level of education. However, only the "low" projections are presented in the Plan, since they correspond closely to the policies and objectives of the Department of Education and Culture. The "low" projections are based on the assumption that compulsory attendance is expected to normalize the ages of the enrolled pupils.[32] According to this set or projections, elementary enrolment reached 7,640,000 in school year 1975/76. Of this total, 95 per cent were enrolled in the public schools and the remaining 5 per cent in the private schools. By school year 1984/85, these enrolments will increase to 9,013,000,[33] rising at an average rate of 1.9 per cent annually (see table 190). The target participation rate was set at 98 per cent of the 7 to 12 year olds in school year 1984/85. In comparison, the projected enrolments of the "high" set of projections, based on past trends, show a 2.6 million increase, from 8,653,000 elementary enrolments in 1975/76 to 11,252,000 in 1984/85. However, the projected figure for 1975/76 seems to be too far above the level of the current estimation for the same school year, as shown earlier in table 180.

Two sets of projections were prepared for the second level, adopting the methods used in projecting the first-level enrolments. It will be seen from table 191 that according to the "low" projection, the estimated enrolment of 2,154,000 in school year 1975/76 will increase to 3,246,000 in 1984/85, representing an average annual rate of increase of 4.7 per cent.[34] Sixty per cent of the students are assumed to be enrolled in private schools as against 40 per cent in public schools. The participation rate is expected to reach 65 per cent of the 13-16 age group by 1984.

As a result of the priority recently given to the development of vocational and technical education, especially at the secondary level, enrolments in the sector of education have shown a marked increase since 1973. "In school year 1975-1976 vocational and technical enrolment registered at 293 thousand of which nearly 204 thousand were enrolled in public vocational/technical schools and 90 thousand were enrolled in the private vocational/technical schools... By curriculum levels vocational/technical enrolment reached 240 thousand in the secondary level and 53 thousand in the past secondary level in the same school year... The total vocational/technical enrolment is projected to increase at an annual rate of 12 per cent over the ten-year plan period reaching 812 thousand by school year 1984-1985. This rate of increase is much higher than the over-all 4.7 per cent rate of increase of secondary enrolment".[35] The projected number of vocational/technical enrolment at the secondary level for school year 1984/85 amounts to 666,000, that is 20.5 per cent of the over-all secondary enrolment, a much bigger share than in 1975/76, when it was only 11.1 per cent.

According to the Ten-Year Plan, college enrolment during school year 1975/76 numbered 948,000 (see table 192). Of this total, 424,000 or 44.8 per cent were enrolled in commerce and business administration; 150,000 (15.8 per cent) were enrolled in arts and sciences, the second major field of study. The rate of increase during the Ten-Year Plan period varies by major fields of study depending on which

31 Ten-Year Education Development Plan, 1976-1985, (Manila, Department of Education and Culture), foreword.

32 The projections of school-going-age population used for the enrolment projections described here, *seem to be the "low assumption" projections computed by the National Census and Statistics Office* (see *Age and Sex Population Projections for the Philippines by Province, 1970-2000*, Monograph No. 2). However, the figures shown in the Ten-Year Plan document, table 1, namely, 7,017,000 children in the 7-12 (elementary) age bracket in 1975 and 7,833,000 in 1984 are not consistent with the enrolment figures and the assumptions given elsewhere in the document.

33 The percentages of students enrolled in public and private elementary schools are assumed to remain constant throughout the projection period at 95 and 5 per cent, respectively.

34 The "high" projections, based on past trends, give estimated enrolments of 2,290,000 in 1975/76 and 4,050,000 in 1984/85.

35 Ten-Year Education Development Plan, 1976-1985, pp. 16-17.

Table 190. Projected public and private elementary school enrolment, school years 1975/76 to 1984/85[a] (in thousands)

School year	GRADES						Total elementary
	I	II	III	IV	V	VI	
1975/76	1,763	1,432	1,311	1,179	1,052	902	7,640
1976/77	1,795	1,459	1,335	1,201	1,072	919	7,781
1977/78	1,829	1,486	1,360	1,223	1,092	936	7,925
1978/79	1,863	1,514	1,385	1,246	1,112	953	8,072
1979/80	1,897	1,542	1,411	1,269	1,133	971	8,222
1980/81	1,932	1,571	1,437	1,292	1,154	989	8,375
1981/82	1,968	1,600	1,464	1,316	1,175	1,007	8,530
1982/83	2,005	1,629	1,491	1,341	1,197	1,026	8,688
1983/84	2,042	1,660	1,519	1,366	1,219	1,045	8,849
1984/85	2,080	1,690	1,547	1,391	1,242	1,064	9,013

Source: Projections for the Ten-Year Education Development Plan.

a These "low" projections assume (i) a decreasing number of over-age in the school enrolment with the full implementation of compulsory education and (ii) a target participation rate of 98 per cent of the 7 to 12 year-olds in school year 1984/85.

Table 191. Projected public and private secondary school enrolment, school years 1975/76 to 1984/85[a] (in thousands)

School year	First year	Second year	Third year	Fourth year	Total enrolment
1975/76	718	566	474	396	2,154
1976/77	751	592	496	415	2,254
1977/78	786	620	520	434	2,359
1978/79	823	648	544	455	2,469
1979/80	861	679	569	476	2,585
1980/81	901	710	596	498	2,705
1981/82	943	743	623	521	2,831
1982/83	987	778	652	545	2,963
1983/84	1,033	814	683	571	3,101
1984/85	1,081	852	715	597	3,246

Source: Projections for the Ten-Year Education Development Plan.

a These "low" projections assume that the participation rate of the 13-16 age-group by 1984 will be 65 per cent.

Table 192. Projected collegiate enrolment in private and public schools by major field of study, school years 1975/76 to 1984/85

Field of study	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
1. Agriculture	24,908	28,304	32,370	36,902	42,068	47,117	52,770	59,103	66,196	74,139
2. Chemistry	4,557	5,103	5,514	6,066	6,672	7,340	8,073	8,881	9,769	10,745
3. Commerce and business administration	424,664	458,720	486,765	515,952	546,050	576,792	607,902	639,105	670,204	702,814
4. Engineering and technology	149,941	172,409	197,644	225,757	256,819	287,057	319,388	355,366	395,404	439,958
5. Food, nutrition and dietetics	7,989	8,352	8,722	9,130	9,537	9,983	10,440	10,918	11,419	11,944
6. Lae and foreign science	14,361	14,065	14,047	14,030	14,022	14,022	14,022	14,022	14,022	14,022
7. Arts and sciences	150,191	154,264	158,570	163,097	167,842	172,767	177,840	183,065	188,447	193,990
8. Medical sciences	44,414	46,982	49,726	52,637	55,742	59,033	62,521	66,219	70,139	74,294
9. Music and fine arts	8,196	8,254	8,313	8,373	8,445	8,524	8,604	8,685	8,766	8,848
10. Nautical science	11,249	12,805	14,327	15,749	17,002	18,018	19,096	20,238	21,449	22,733
11. Teacher training	53,834	48,746	45,121	42,674	41,220	40,563	40,563	40,563	40,563	40,563
12. Graduate studies	53,792	60,985	67,547	73,075	78,071	82,313	86,792	91,521	96,515	101,790
Total	948,096	1,018,989	1,088,666	1,163,442	1,243,500	1,323,529	1,408,011	1,497,686	1,592,896	1.695,840

Source: Department of Education and Culture, Planning Service.

appears to be most needed by the country's development. The fields of engineering and technology, agriculture and chemistry are initially projected at a rate of 15.0 per cent, 14.0 per cent and 10.0 per cent respectively. On the other hand, the fields of teacher training, law and foreign service which have already experienced negative growth rates in the past, which will continue to experience the same but at a declining negative rate from 9.5 per cent and negative 2.0 per cent initially, respectively".[36] By school year 1984/85, the total college enrolment is expected to reach 1,696,000 with a declining proportion of students enrolled in commerce and business administration (41.4 per cent) and in arts and sciences (11.4 per cent), but an increased share of engineering and technology (25.9 per cent) and agriculture (4.4 per cent). The number of collegiate graduates projected by major fields of study shows trends similar to those of total enrolments but in view of the asumptions made, the proportionate share of the various professional categories will be altered by the end of the projection period.[37]

2. Educational needs

To meet the projected increase in elementary and secondary enrolments and to reduce the existing backlog, a number of additional classrooms are required. On the basis of 40 pupils per classroom in both the public and the private elementary schools, it is estimated that the number of elementary school classrooms needed in 1975/76 is 190,990 and that this will increase to 225,331 in 1984/85. In other words, about 3,000 to 4,000 new classrooms are required annually to meet increasing enrolments in addition to another 2,000 classrooms to replace damaged or dilapidated ones in the public sector alone. To reduce the present backlog, the Government has programmed the construction of 12,000 classrooms annually, or 4,000 units of 3 classrooms each.

At the secondary level, the projected number of school classes is based on two different ratios, 40 students per class in normal secondary schools and 25 students per class in vocational schools. The number of secondary school classrooms is thus estimated to increase from 61,600 in 1975/76 to 92,839 in 1984/85, with an average yearly increase of 3,471 classes. Shop rooms and science laboratories will be constructed as deemed necessary.

The number of teachers needed for the elementary level was computed on the basis of the one-one plan in the primary grades (one teacher, one class) and three-two class plan in the intermediate grades (three teachers, two classes). This was also based on the ratio of 40 pupils/students per class. The projections given in table 193 show an average yearly increase of 4,986 elementary teachers, of which 2,840 are primary teachers and 1,446 are intermediate teachers.

Similar projections were prepared in respect of the secondary level, using a 1:2.25 ratio for vocational schools and a 1:1.6 ratio for state colleges and universities, public and private schools. The results are summarized in table 194. Fourty-five thousand secondary teachers are needed, in addition to the actual number of nearly 90,000 in school year 1975/76, to maintain the same ratio of students per teacher during the Ten-Year Plan period. It means a yearly average increase of about 5,000 secondary school teachers, of whom 2,913 will be for the private schools, 1,456 for public schools, 614 for public vocational schools and 49 for the state colleges and universities, at the secondary level.

The gap between enrolments and available textbooks increased consistently during the last half of the 1960s and the first half of the 1970s. Records show that the estimated 5.6 million copies available in the schools satisfy only about 10 per cent of the total requirements in the elementary and secondary levels. In terms of book-to-pupil ratio, this quantity allocates only one book in each subject area for every 10 pupils in the primary, for every 12 pupils in the intermediate and for every 9 students in the secondary. Moreover, of the existing 5.6 million textbooks, only 1.2 million, or 21 per cent, are less than 5 years old; the remaining 4.4 million or 79 per cent are from 5 to 10 years old and are deemed obsolete. If all the pupils and students in the elementary and secondary levels are to be provided with one textbook each for every subject area (8 subject areas), the elementary schools would need 61,120,000 textbooks for school year 1975/76 and this would increase to 72,110,000 in school year 1984/85. However, since this target cannot be easily realized, the Ten-Year Plan programmed requirements of only 21.6 million and 28.1 million students' textbooks respectively for these two school years.[38]

36 *Ibid.*, pp. 18-19.

37 For more details, see *Ten-Year Education Development Plan*, p. 20.

38 For more details, see *Ten-Year Education Development Plan*, p. 12 and table 15.

Table 193. Number of teachers needed at the first level of education, school years 1975/76 and 1984/85

Type	Level	1975/76	1984/85
Public	Primary	135,029	159,309
	Intermediate	68,757	81,120
	Total	203,786	240,429
Private	Primary	7,107	8,384
	Intermediate	3,619	4,270
	Total	10,726	12,654
Total	Primary	142,136	167,693
	Intermediate	72,376	85,390
	Total	214,512	253,083

Source: Computed on the basis of table 190 according to one-one class plan in the primary grades (one teacher, one class) and three-two class plan in the intermediate grades (three teachers, two classes), and based on the ratio of 40 pupils/students per class.

Table 194. Number of teachers needed at the secondary level of education, school years 1975/76 and 1984/85

Schools	1975/76	1984/85
State colleges and universities	862	1,299
Vocational schools	10,904	16,434
Public schools	25,846	38,954
Private schools	51,691	77,906
Total	89,203	134,593

Source: Computed on the basis of table 191, using either a 1:2.25 (one teacher to 2.25 classes) ratio or a 1:1.6 ratio according to the type of school.

The current textbook production programme of the Educational Development Project Implementing Task Force (EDPITAF) covers such elementary subject areas as Science, Mathematics, Social Studies, English and Pilipino. The targets set at the secondary level envision an increase from 5.7 million students' textbooks in 1975/76 to 10.1 million in 1984/85. The subject areas, under the EDPITAF project are Communication Arts (Pilipino, English), Practical Arts, Science and Mathematics.

3. Education and manpower needs

The increasing demand for education in the Philippines has resulted in a rapid increase in school enrolments at all levels of education. A review of the demand for education in the Philippines can be done only in terms of the growth in the enrolment ratios of the relevant age groups for the three levels of education. Such enrolment ratios, however, merely reflect existing shortage in accommodations and not so much of the demand for accommodations. Available data shows that the enrolment in technical and vocational secondary education was very much lower than enrolment in general (academic) education. Only about 11 per cent of the total secondary enrolment were enrolled in technical and vocational schools. At present there seems to be a need for an increasing number of students with vocational training at the second level of education for the growing number of vocational tasks to be performed.

Of the total number of graduates at the third level (collegiate), only about 1.71 per cent graduated in agricultural courses in 1971/72 (see table 195). The rest of the graduates were distributed as follows: commerce and business administration. 38.62 per cent; teacher training, 28.61 per cent; liberal arts and sciences, 14.99 per cent; engineering and technology, 7.85 per cent; medical science, 5.71 per cent; law and foreign service, 1.80 per cent; food, nutrition and dietetics, 1.14 per cent; music and fine arts, 0.69 per cent; nautical science, 0.58 per cent; and chemistry, 0.32 per cent.

According to the Ten-Year Education Development Plan these proportions will change markedly by 1984/85. It would appear that the increasing numbers, and proportions of graduates in agriculture and engineering and technology will be in response to a real demand for qualified manpower in these fields. With regard to the very fast increase of the number of commerce and business administration graduates and the dramatic decline of the number of graduates in teacher training, no justification is given in the Plan. However, projections of the number of teachers needed at the first level of education (see table 193), 4.3 thousand additional teachers yearly, seem to justify the low target set for teacher training by 1984/85.

The Philippines, like most developing countries, has its own pattern of social demand for education based on its own particular social, economic and political structure and cultural values. The social demand for education based on the subjective desires of individuals, however, does not necessarily conform to objective assessment of manpower requirements for national development. If investment in education

Table 195. Numerical and percentage distribution of graduates in both public and private schools by major field of study, in 1971/72, 1975/76 and 1984/85

Field of study	1971/72				1975/76		1984/85	
	Males	Females	Total	Percentage	Both sexes	Percentage	Both sexes	Percentage
Agriculture	1,223	338	1,561	1.71	3,185	2.58	10,280	4.67
Chemistry	42	250	292	0.32	348	0.28	819	0.37
Commerce and business administration	11,814	23,474	35,288	38.62	63,948	51.78	128,085	58.15
Engineering and technology	6,631	522	7,153	7.83	8,827	7.15	28,905	13.12
Food, nutrition and dietetics	-	1,038	1,038	1.14	1,279	1.04	1,908	0.87
Law and foreign service	1,446	201	1,647	1.80	1,969	1.59	1,805	0.82
Liberal arts and science	5,552	8,147	13,699	14.99	19,343	15.66	25,093	11.39
Medical science	703	4,517	5,220	5.71	5,720	4.63	9,653	4.38
Music and fine arts	433	200	633	0.69	2,512	2.03	2,779	1.26
Nautical science	501	27	528	0.58	1,300	1.05	3,586	1.63
Teacher training	7,086	17,226	24,312	26,61	15,079	12.21	7,354	3.34
Total (Under-graduate)	35,431	55,940	91,371	100.00	123,510	100.00	220,267	100.00

Sources: (1) For school year 1971/72, Department of Education and Culture.
(2) For 1975/76 and 1984/85, *Ten-Year Education Development Plan*, table 24.

is to contribute to the socio-economic development of the country, then it becomes necessary to take into consideration the future manpower requirements from an objective national point of view, while at the same time meeting the social demand for education. It is therefore necessary to study the forces that determine the emergence of social demand for education and the methods that could be adopted for guiding and controlling the demand or directing it into more appropriate channels.

F. IMPLICATION OF POPULATION TRENDS FOR EDUCATION

Population growth has been increasingly recognized as a major variable which affects development in general and educational development in particular. However, one tends to think of it as an unidimensional factor although the various aspects of population, such as its repartition by age and its spatial distribution for instance, are also of the utmost importance.

From 1960 to 1975, the population aged 7 to 12 increased by roughly 50 per cent, while the 13-to-16-year-olds and 17-to-20-year-olds experienced sharper increases of 83 and 73 per cent, respectively. By 1984, the population of elementary school age will have increased by two thirds and that of the other two age groups will have more than doubled (see table 196). Enrolments have been growing at a higher rate than population at all three levels of education and estimates indicate that by 1984/85, enrolments will increase more than twofold in the elementary schools, almost five times in secondary schools, and six times in colleges and universities

Table 196. Observed and projected school-going-age population in the Philippines[a], 1960, 1970, 1975 and 1984

Age group	1960	1970	1975	1984
7-12	100	140	149	167
13-16	100	154	183	209
17-20	100	138	173	207

Sources: (1) For 1960 and 1970, table 179;
(2) For 1975 and 1984, *Ten-Year Education Development Plan*, table 1.

a Base 100 in 1960, corresponding to:
4,703 thousand for 7-to-12 year-olds,
2,349 thousand for 13-to-16 year-olds,
2,247 thousand for 17-to-20 year-olds.

Table 197. Observed and projected enrolment growth in the Philippines[a], school years 1960/61, 1970/71, 1975/76 and 1984/85

	1960/61	1970/71	1975/76[b]	1984/85
First level of education	100	166	182	215
Second level of education	100	257	322	486
Third level of education	100	232	338	604

Sources: Tables 180-182 and 190-192.

a Base 100 in school year 1960/61 corresponding to:
4,198 thousand in first level,
668 thousand in second level,
281 thousand in third level.

b Indices for 1975/76 were computed with, as numerators, figures from the Ten-Year Education Development Plan (see part E of this chapter).

(see table 197). "The dramatic shifts in the composition of total enrolment, more than the over-all growth itself, have meant higher costs. Every student place in secondary education costs the equivalent of around 5 elementary student places; for higher education, the proportion may be in the area of 1:20".[39] Further, "in elementary education, the Philippines have reached near universal enrolment. Population growth becomes the chief determinant of enrolment expansion the closer a country comes to this target. But, at the second and third level, relative demand outweighs population growth as a cause of educational expansion".[40]

Population pressure leaves little room for quality improvement programmes, such as training of teachers, providing more and better school buildings and introducing modern teaching equipment. Though the student/teacher ratio in the Philippines is reasonably low, the adequacy of library resources, instructional materials, and other physical resources is rarely adequate, thus impairing the quality of education.

The effectiveness of the school system is also challenged by the excessive school dropouts and repetitions. Less than 60 per cent of the students who entered grade I around 1965 eventually completed

39 *Population Factors in Educational Planning in the Philippines*, UNESCO Regional Office for Education in Asia and Oceania, Bangkok, 1978, paper prepared for the National Training Seminar on Methods for Projecting School Enrolments, Marikina, 13-24 February 1978. See p.1.

40 *Ibid.*, p. 2.

grade VI (see table 188).[41] Although dropouts are a waste of resources and a sign of poor quality of schooling, their very existence over the last few years has probably saved the contemporary school system from enormous problems. At the individual family level, keeping every child in school over the full cycle of at least elementary education would greatly increase the burden to be born by poor families with many children. The very high youth dependency ratio of nearly 90 persons aged 0-14 years per 100 persons aged 15-64 years puts a severed strain on the limited economic means of an adult population whose share in the total population is diminishing. Hence child labour is used and this is one of the prime causes of dropout.

As stated earlier in the internal migration chapter the most important single factor that could perhaps determine a migrant's successful adaptation to his environment is his educational attainment. The disparity in the availability of educational opportunities and facilities has been an important factor behind out-migration among lifetime as well as recent migrants with rural origins and urban destinations. Moreover, education in itself induces movement in so far population in the less developed areas. More attention should be given to school mapping by educational planners, as part of the integrated development programmes designed to improve living conditions and economic prospects in areas of out-migration. "Another aspect needing close study is the relationship between educational contents and rural-urban migration. Critics of the conventional types of elementary and secondary education claim that curricula are still focused on urban values and academic learning, ignoring the practical problems, needs, and constraints of the vast-majority of people living in rural areas".[42] To a certain extent, this problem has been recognized by the Department of Education and Culture and curriculum reforms are being launched better to meet the needs of the country as well as those of the individuals.

Although demographic studies increasingly take into account education as an important variable for all aspects of population movements, educational planners would be well advised to make full use of available population data and techniques when they plan the future development of education: "Certain basic techniques of demography must be introduced into the training of educational planners in the Philippines, be they at the centre or in regional and provincial offices. Population data relevant to the task of educational planning must be identified and systematically collected... The overlapping concerns of population policies and educational planning should lead to more effective forms of mutual consultation and co-operation. With a firm institutional base for population policies and planning already laid in the Philippines, there is no reason to postpone co-ordinated action".[43]

41 It seems that this situation has not changed recently, as the figures given in *Population Factors in Educational Planning in the Philippines*, p. 4 are as follows: from every 100 young Filipinos who entered grade I in 1969/70, only 83 made it to grade II, 77 to grade III, 71 to grade IV, 64 to grade V and 59 to grade VI.

42 *Ibid.*, p. 9.

43 *Ibid.*, p. 9.

Chapter XIII

FAMILIES, HOUSEHOLDS AND HOUSING

A. DATA AND CONCEPTS

A systematic analysis of the formation and growth of households in the Philippines is rendered difficult by the absence of adequate and uniform data on a time-series basis. The chief sources of information are the population and housing censuses of 1960 and 1970 and the national demographic surveys of 1968 and 1973. The unit of enumeration in the censuses and surveys was the household and not the family.

The definitions of the concepts used in the 1970 population and housing census are basically comparable to those used in the 1960 census. The recommendations of the United Nations[1] were followed whenever feasible. The censuses defined the household as consisting of "a group of people who sleep in the same dwelling unit and have common arrangements for the preparation and consumption of food. However, a person living alone in a distinctive dwelling unit is considered as one separate household. In most cases, a household consists of a related family group. In some instances, three generations may be found living together in one household. Some household members may have no relationship to the central group – boarders and servants, for example – but they are counted as part of the household if they eat and sleep in the same dwelling unit. In most cases, a household may be taken to be the entire group of persons who customarily sleep in one dwelling unit. An exception, however, is that of two or more distinct family groups with independent eating arrangements who share one dwelling unit only for economy or for lack of housing facilities in the district".

The 1968 and the 1973 national demographic surveys also defined the household as "consisting of the entire group of persons who usually live together sharing common house-keeping arrangements or of a person who lives alone, having his own housekeeping arrangements. Hence, it can consist of more than one family, or of entirely non-related persons or of merely one person". Thus, the definition of household adopted in the Philippine censuses and surveys conform to the one adopted by the United Nations, viz., "the concept of household is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials of living".

The 1970 census defined the head of household as "the person who generally provides the chief source of income for the household unit. He or she is the adult person responsible for the organization and care of the household or who is regarded as such by the members of the household". In the two National Demographic Surveys, the household head was defined as the person who reports himself as such or is so reported by another member of the household.

The census also collected information on family nucleus, a term restricted to a married couple or parents and their never-married children in the same household, that is, to the conjugal family nucleus. A conjugal family nucleus consists of any of the following: (a) a married couple without children; (b) a married couple with one or more never-married children; (c) one parent (either father or mother) with one or more never-married children.

In view of the nature of the information collected in the censuses and surveys, analysis of trends, patterns and differentials in household size, structure and headship will be based on the data from the two national demographic surveys, while analysis of the distribution of dwelling units by selected characteristics will be based on the data from the 1960 and 1970 population and housing censuses.

B. HOUSEHOLDS

1. Household size

The percentage distribution of households by household size is given in table 198. It will be noted that in both 1968 and 1973, the proportion of households increases with an increase in household size up to six-member households, thereafter declining gradually. It is also evident from the table 198 that more than 55 per cent of all households were large-sized in that they consisted of six or more persons. A comparison of the data for 1968 and 1973

1 *Principles and Recommendations for the 1970 Population Censuses* (United Nations publications, Sales No. E.67.XVII.3), para. 246.

2 *Philippines 1970 Census...*, National Summary, vol. II, p. XIII.

Table 198. Percentage distribution of households by household size, 1968 and 1973

Household size (number of members)	1968[a]	1973
1	0.6	1.4
2	4.6	5.1
3	8.9	9.2
4	13.5	13.2
5	14.7	14.0
6	15.2	14.6
7	12.0	12.9
8	11.3	11.2
9	6.9	7.4
10 and over	12.3	10.9
All households	100.0	100.0
Mean household size[b]	6.27	6.16

Sources: 1968 and 1973 national demographic surveys.

a The size of the household was unknown in 6.3 per cent of the cases in 1968. The percentage distribution has therefore been calculated for the households whose size was known.

b Computed assuming that households in the category "10 and over" have an average size of 11.

indicate that the proportion of these large-sized households has been stable, at about 57 per cent of the total number of households. Altogether, there has been a very slight decrease in the mean household size from 6.27 to 6.16 during the same period.[3]

According to the data obtained in the 1970 population and housing census, 30.6 per cent of the households were in the urban areas, which together accounted for 31.7 per cent of the country's population, while the remaining 69.4 per cent of the households were located in the rural areas, where 68.3 per cent of the country's population lived. Consequently, the average household size in the urban areas, 6.2, was higher than that of the rural household, 5.8 persons (see table 199).

3 It may, however, be noted that in 1968 information regarding size was not available in respect of 6.3 per cent of the households.

2. Household size and age of head

Data from the 1968 survey presented in table 200 show an overwhelming proportion of male heads of household, 90 per cent against 10 per cent for female heads. Between one half and two thirds of the male heads belong to households with 6 or more members and the proportion is even higher for males aged 35 to 54. The median age of male heads peaks at 46 in the 2-3 household members category, then drops by almost 10 years to 36.5 years in the 4-5 category and increases to nearly 43 in the 6 and over category, reflecting the life cycles of the families. With regard to female heads, there is an inverse relationship between age (median age) and household size.

3. Marital status and household size

It will be seen from table 201 that a majority of married as well as widowed heads of households, both among males and females, were concentrated in large-sized households, that is, those with a membership of 6 or more persons. In 1968, about 58 per cent of married male heads and 35 per cent of married female heads were in large-sized households. By 1973, these proportions have increased to 60.5 and 55.0 respectively. While in 1968, about 30 per cent of the widowed female heads were found in large families, in 1973 this proportion was as high as 37.5 per cent. In 1973, most of those heads of households who were either single or divorced/separated were in small-sized households, that is, those containing less than six persons.

Table 199. Numerical and percentage distribution of households and persons as well as average household size, urban and rural areas, 1970

Area	Number of households	Percentage	Number of persons	Percentage	Average household size
Philippines	6,163,128	100.0	36,602,532	100.0	5.9
Urban	1,884,291	30.6	11,615,341	31.7	6.2
Rural	4,278,837	69.4	24,987,191	68.3	5.8

Source: *Philippines 1970 Census...*, National Summary, vol. II, part II, housing tables, table 10.

Table 200. Percentage distribution of households by size, according to age at last birthday and sex of household head, 1968

Age and sex of household head	Household size					
	Total	1-person	2-3	4-5	6 and over	No information
Philippines	100.0	0.6	12.9	27.2	53.7	5.6[a]
Males	90.2	0.1	11.1	27.4	56.5	4.9
15-24	2.9	-	36.1	50.6	6.1	7.2
25-34	25.0	0.03	11.2	44.8	41.5	2.5
35-44	29.8	0.1	5.0	17.5	73.8	3.6
45-54	20.8	0.1	7.4	18.3	69.1	5.1
55-64	13.9	0.1	14.6	26.6	51.5	7.2
65 and over	7.7	-	29.6	26.6	31.7	12.1
Median age	41.9	b	46.2	36.5	42.6	49.7
Females	9.8	5.9	28.6	25.2	27.9	12.3
15-24	1.0	-	53.8	7.7	7.7	30.8
25-34	7.4	2.1	16.3	30.6	29.6	21.4
35-44	19.0	2.4	17.6	26.0	44.0	10.0
45-54	25.7	2.1	26.6	27.5	34.0	9.8
55-64	26.4	10.7	31.7	29.7	16.4	11.5
65 and over	20.5	9.6	40.7	14.8	20.4	14.5
Median age	53.3			52.0	48.3	53.9

Source: Luisa B. Nartatez, "Patterns, trends and differentials in household structure and size: from two surveys", *PREPF* Research No. 28 (University of the Philippines Population Institute, 1975).

a Differs from the percentage given in table 198 (note *b*) because table 200 relates only to household heads whose age is known. At the same time, there are fewer cases of "no information".

b Not calculated as the number of cases was too small.

4. Household structure

In analysing household structure, the household classification scheme adopted by the Organization of Demographic Associates was used. The following are the operational definitions of the various family types:

Nuclear: consists ordinarily of a married couple with or without unmarried children. The household may also include other unrelated persons (e.g., boarders), or other unmarried relatives or single married relatives of the same generation as the couple.

Stem: consists ordinarily of a married couple and one or both parents of the husband and wife, with or without unmarried children and with or without unmarried relatives or single married relatives. The extension is vertical and not lateral.

Joint: consists of a married couple with or without unmarried children, and at least one married brother or sister (with his or her family) of the husband or wife. Extension is lateral not vertical.

Stem-joint: has both lateral and vertical extensions. Consists of a married couple and one or both parents of the husband or wife, with or without unmarried children, and with at least one married brother or sister (with his or her family) of the husband or wife.

Household of related persons: consists of related persons who are not married or whose spouses are absent and without unmarried children.

Household of unrelated persons: consists of two or more unrelated persons.

Table 201. Percentage distribution of households by size, according to marital status and sex of household head, 1968 and 1973

Marital status and sex of head	Household size					
	Total	1-person	2-3	4-5	6 and over	No information[a]
			1968			
Philippines	100.0	0.6	12.9	27.2	53.7	5.6
Males	90.2	0.1	11.1	27.4	56.5	4.9
Single	1.0	2.5	5.0	16.0	11.8	54.7
Married	95.7	0.1	11.5	28.2	58.2	2.0
Widowed	3.0	-	3.3	8.3	20.4	68.0
Divorced/separated	0.3	-	7.7	7.7	7.7	76.9
Females	9.8	5.9	28.6	25.2	27.9	12.3
Single	11.8	-	2.7	7.7	7.7	81.9
Married	14.5	4.2	28.8	31.9	34.6	0.5
Widowed	66.1	7.2	31.7	26.8	30.4	3.9
Divorced/separated	7.6	7.0	42.0	26.0	25.0	-
			1973			
Philippines	100.0	1.42	14.34	27.20	57.04	
Males	90.23	0.70	12.88	27.09	59.34	
Single	1.93	18.03	38.62	16.67	26.68	
Married	95.78	0.10	11.98	27.39	60.53	
Widowed	2.08	8.21	28.58	23.87	39.35	
Divorced/separated	0.21	39.66	32.55	16.19	11.60	
Females	9.77	8.10	27.85	28.25	35.80	
Single	9.55	25.28	32.98	19.97	21.77	
Married	7.29	0.76	16.82	27.42	55.00	
Widowed	72.14	7.22	27.81	27.46	37.51	
Divorced/separated	11.03	3.83	30.96	41.15	24.06	

Source: Same as for table 200.

a The lack of information on household size in several categories being very high (over 60 per cent), it will not be commented upon the data shown for these categories.

One-person households: consist of a single person regardless of marital status.

The percentage distribution of households in 1968 and 1973 according to various types defined above is shown in table 202. It will be noted that, in both years, the most prevalent type of household is the nuclear, though there has been a very slight decline in the proportion of nuclear households from 78.2 per cent in 1968 to 77.9 per cent in 1973. The proportion of one-person households showed an increase from 0.6 per cent to 1.4 per cent during this period.

The stem family household was found to be more common than the joint/stem-joint type. However, while the stem type recorded a decline from 17.2 per cent to 13.7 per cent, the joint/stem-joint recorded an increase from 3.8 per cent to 6.6 per cent between 1968 and 1973.

The least common types of households in both years were the ones of related and unrelated persons, whose global share in the total number of households increased from 0.2 per cent in 1968 to 0.4 per cent in 1973.

Table 202. Percentage distribution of households by family type, 1968 and 1973

Household type	1968	1973
One-person households	0.6	1.4
Nuclear	78.2	77.9
Stem	17.2	13.7
Joint/stem-joint	3.8	6.6
Households of related persons	0.1	0.1
Households of unrelated persons	0.1	0.3
All households	100.0	100.0

Source: Same as for table 200.

5. Headship rates

The headship rate refers to the percentages of households heads among the population of each sex-age or sex-age-marital-status group. Its importance lies in its use in the projection of the future number of households and families.

Figures 27 through 29 show the age-sex specific household headship rates for the Philippines as well as the urban and rural sectors of the country. The curves take the form which is found in most countries of the world. The pattern exhibited by the male headship rates roughly resembles that of male economic activity rates (labour force participation rates). Males become household or family heads at various ages, mostly before reaching the age of 35 and some between 35 and 65 years and nearly all are heads by the time they reach age 50. The rates decrease thereafter, at first gradually, and more rapidly after age 60.

For the country as a whole, the level of headship rates for males, in both 1968 and 1973, was very low at the younger ages. It increased substantially after ages 25-29 years, reaching a level of 95-96 per cent in the age groups 60-64 in 1968 and 50-54 in 1973. Thereafter, the rate decreased, rapidly in 1968 but more slowly in 1973. For females, the level in both survey years, was extremely low at the younger ages, increasing gradually after age 30 to reach a level of 25-30 per cent at ages 65 years and over.

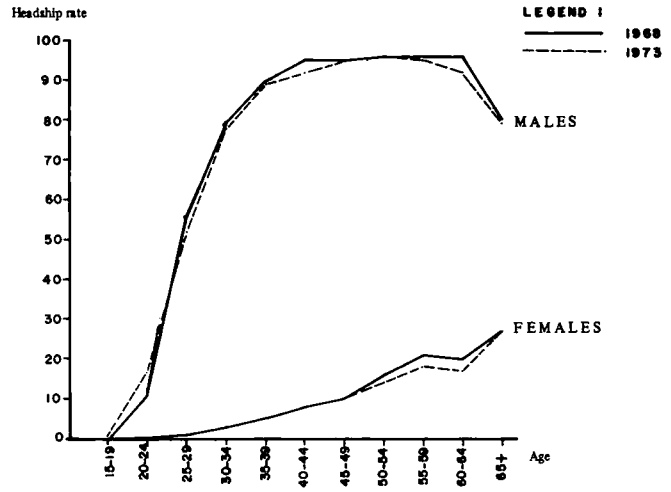
The pattern of sex-age specific headship rates obtaining in the urban and rural areas is almost identical to the national pattern. There was, however, a difference with regard to the peak headship rates: in 1968 the rates reached a peak at age group 55-59 years for urban males, while for rural males the peak was at the next older age group, 60-64 years.

The 1968 and 1973 sex-age specific household headship rates for the country as a whole as well as the urban and rural areas are shown in table 203. The rates for most age groups exhibited a general decline between 1968 and 1973. Holding residence constant, a less pronounced decline in headship rates was noted in the urban sector, where both males and females experienced increased rates, particularly in the younger age groups. This may be explained by the growing number of young men and women who flock to urban areas for either education of employment. The rural sector showed an over-all decline in headship rates for both males and females.

The age-sex specific headship rates for single persons are given in table 204. It will be noted that there has been a sudden rise in headship rates among males at all ages from 1968 to 1973. On the other hand, the rates for females recorded declines except in respect of a few age groups. While there has been an increase in headship rates of the rural single males, the rates for rural single females recorded a reduction during the five-year period 1968-1973. In the urban sector, single males in the age group 30-39 showed an increase in rates while such increases were recorded for females at ages 15-19 and 25-29.

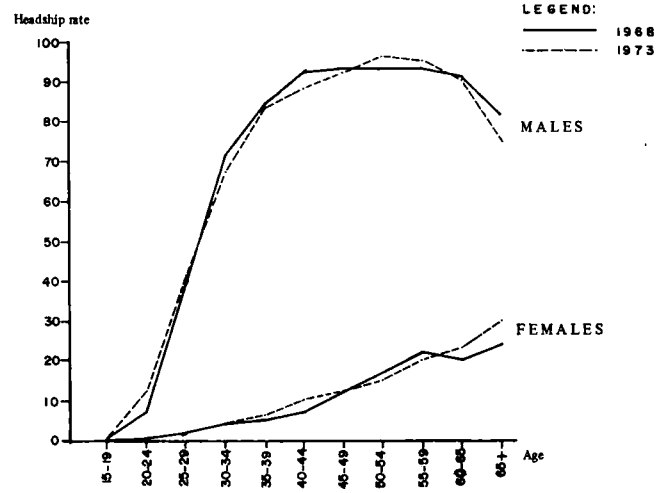
The age-sex specific headship rates for married persons by residence in 1968 and 1973 are given in table 205. It will be noted that the changes between these two dates with regard to married males were small and in either direction, except at ages 15-24, which showed a substantial increase. Trends in the age groups below 35 were different in the urban and rural sectors as can be seen from the table. The trend with regard to married females was the same as that of single females, viz., a decline in the rates between 1968 and 1973. In the urban areas, however, there was an increase in the headship rates of married females in four age groups. The very low rates for married females may be taken to be a reflection of the universal tendency to consider the husband as the head of the household in cases where a married couple are living together.

Widowed and separated/divorced persons showed relatively high headship rates in 1968 as well as in 1973 in most age groups over 35. Unfortunately, the very small number of observations do not make it possible to give reliable estimates of headship rates by age, sex and residence for these two categories.



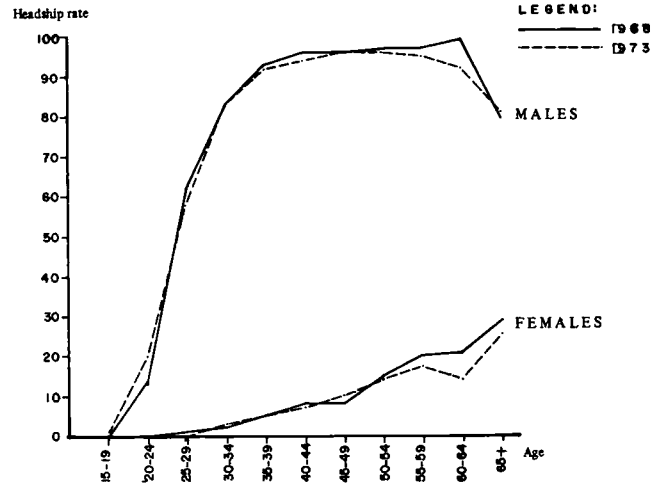
Source: Josefina V. Cabigon, "Patterns, trends, and differentials in household headship in the Philippines", *PREPF* Research Note No. 29, University of the Philippines Population Institute, 1975.

Figure 27. Sex-age specific household headship rates for the Philippines, 1968 and 1973



Source: Josefina V. Cabigon, "Patterns, trends, and differentials in household headship in the Philippines", *PREPF* Research Note No. 29, University of the Philippines Population Institute, 1975.

Figure 28. Sex-age specific household headship rates for the Philippines, urban areas, 1968 and 1973



Source: Josefina V. Cabigon, "Patterns, trends, and differentials in household headship in the Philippines", *PREPF* Research Note No. 29, University of the Philippines Population Institute, 1975.

Figure 29. Sex-age specific household headship rates for the Philippines, rural areas, 1968 and 1973

Table 203. Sex-age specific headship rates by residence, 1968 and 1973

(percentage)

Year, residence and sex	15-19	20-24	25-29	30-34	35.39	40-44	45-49	50-54	55-59	60-64	65 and over
Philippines											
1968											
Males	0.15	11.43	53.63	78.74	89.93	94.70	94.97	95.61	95.96	96.22	79.88
Females	0.02	0.38	1.19	2.65	5.08	7.84	9.83	15.57	20.62	20.23	27.38
1973											
Males	0.87	17.19	52.34	77.58	88.82	91.71	95.34	95.60	95.22	91.82	79.44
Females	0.06	0.34	0.95	3.26	5.11	7.66	10.45	13.97	18.16	17.29	27.09
Urban											
1968											
Males	0.44	6.70	38.65	71.37	83.76	92.21	92.86	92.98	93.4	91.34	80.81
Females	0.05	0.46	1.90	3.71	4.91	7.37	12.48	16.92	22.35	19.63	23.71
1973											
Males	0.40	11.86	40.60	67.30	82.97	87.74	92.43	95.61	94.91	90.49	75.07
Females	0.17	0.54	2.08	3.55	5.62	9.66	12.37	14.78	20.16	22.55	29.86
Rural											
1968											
Males	0	14.48	61.70	83.10	92.68	95.82	96.00	96.95	97.45	98.68	79.49
Females	0	0.32	0.82	2.15	5.18	8.10	8.36	14.89	19.72	20.50	29.22
1973											
Males	1.09	20.13	58.00	82.58	91.63	93.70	96.46	95.60	95.36	92.42	81.36
Females	0	0.21	0.28	3.10	4.85	6.71	9.64	13.57	17.23	13.81	25.24

Source: Josefine V. Cabigon, "Patterns, trends, and differentials in household headship in the Philippines", *PREPF* Research Note No. 29 (University of the Philippines Population Institute, 1975).

6. Household projections

A set of household projections based on the simple household-to-population ratio method was prepared by the National Census and Statistics Office.[4] The projections covered the 30-year period, 1970-2000. The method involves the projection of the ratio of the number of households to an adult portion of the population (in this case, persons aged 25-64 years) and applying these projected ratios to the projections of corresponding population.

Three projections of the aggregate number of households were prepared. The high variant assumed that the ratio of 529:308 observed in 1970 would continue until the end of the projection period. The medium variant assumed a moderate decline in this ratio, which by the year 2000 will reach 523:539. In the low projections it was assumed that the ratio would decline rapidly to 504:900 by the end of this century. The projected rates were applied to the projected population for various five-year intervals between 1970 and 2000 to obtain the number of households at these dates. The results of this exercise are summarized in table 206.

According to the high series, the number of households in the Philippines will increase from about 6.2 million in 1970 to 17.5 million in the year 2000, indicating an increase of about 184 per cent. The medium variant will result in a total of

4 Cecilia V. Lacuata, *Household Projections for the Philippines, 1970-2000,* Monograph No. 4 (Manila, National Census and Statistics Office, 1975).

Table 204. Headship rates for single persons by age, sex and residence, Philippines, 1968 and 1973
(percentage)

Year, residence and sex	15-19	20-24	25-29	30-34	35-39
Philippines					
1968					
Males	0.04	0.95	4.10	6.31	13.85
Females	0.02	0.21	1.26	4.11	7.29
1973					
Males	0.15	1.25	4.86	11.35	20.82
Females	0.07	0.09	2.08	3.69	4.13
Urban					
1968					
Males	0.13	0.74	4.12	5.79	12.86
Females	0.06	0.43	1.76	7.32	7.41
1973					
Males	0.12	2.48	3.87	13.01	16.29
Females	0.18	0.18	3.57	5.32	7.12
Rural					
1968					
Males	0.00	1.10	4.08	6.67	15.00
Females	0.00	0.00	0.80	1.49	7.14
1973					
Males	0.16	0.47	5.60	9.95	24.48
Females	0.00	0.00	0.44	1.47	0.42

Source: Same as for table 203.

17.2 million households by the end of the century – an increase of about 179 per cent. If there were to be a rapid decline in the ratio of households to adult population as assumed in the low series, the total number of households by the year 2000 would be about 16.4 million, or an increase of about 166 per cent over the 1970 total.

For the purposes of the present study, projections of households at five-year intervals for the period 1975-2000 were prepared using the headship rate method.[5] According to the method, projected age-sex specific headship rates are applied to population projections by age and sex to obtain the total number of households.

Further levels of household headship rates were estimated using the extrapolative method by modified exponential. The method assumes that changes in the age-specific headship rates will diminish as time goes on and that the rates of change will be continuous. The projected future age-sex specific headship rates are shown in table 207. These rates were applied to the medium series of population projections[6] to obtain the number of households. The results are summarized in table 208.

The total number of households estimated at about 6.8 million in 1975 will increase to 14.9 million by the year 2000, or by about 119 per cent.

C. HOUSING

1. Data and definitions

In the Philippines a major difficulty in assessing changes in the housing stock is posed by the lack of annual construction statistics.[7] However, the national housing censuses that were carried out simultaneously with the population censuses of 1960 and 1970 collected information relating to dwelling units, their structural characteristics, conditions of tenure and occupancy, type of facilities available etc. But the 1960 census does not contain an urban/rural breakdown.

For the purposes of the census, a dwelling unit was defined as a "separate and independent place of abode intended for habitation, or one not intended for habitation but occupied as living quarters by a household at the time of the census. In most places in the country a dwelling unit is a house. In urban areas, it may commonly be an apartment, a group of rooms or just one room. Anywhere it may be a barong-barong (a temporary shelter of salvaged materials), a shack, a garage, a boat, a tent or even a cave. Usually a dwelling unit is occupied by only one household and has its own working facilities and independent entrance. In congested areas, a house although constructed as living quarters for only one household, may contain more than one household".[8]

The census also made a distinction between various types of dwelling units such as: (a) single

5 For a description of this method, see *Methods of Projecting Households and Families*, Manual VII (United Nations publication, Sales No. E.73.XIII.2).

6 Dionisia R. dela Paz, "Household and family projections", PREPF Research Note No. 24 (University of the Philippines Population Institute, 1975).

7 The only data available with regard to construction relate to permit values for selected areas.

8 *Philippines 1970 Census...*, Enumerator's Manual, p. 8.

Table 205. Headship rates for married persons by age, sex and residence, 1968 and 1973

(percentage)

Year, residence and sex	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 and over
Philippines											
1968											
Males	7.69	49.68	78.62	90.99	95.01	97.39	98.52	97.89	97.84	98.09	92.82
Females	0.00	0.65	0.39	0.75	1.67	2.34	1.67	3.50	2.32	1.99	3.13
1973											
Males	29.96	59.41	75.94	88.16	94.69	95.96	98.14	98.63	97.59	95.80	93.18
Females	0.00	0.28	0.31	0.99	0.90	0.98	1.09	0.51	2.01	0.02	0.00
Urban											
1968											
Males	17.24	33.49	63.97	86.38	92.28	96.15	96.22	96.13	96.23	95.63	94.74
Females	0.00	0.55	0.85	1.02	1.29	0.96	2.26	3.99	3.15	2.33	3.36
1973											
Males	15.46	47.98	68.97	80.05	90.66	92.88	95.15	97.30	97.01	95.66	88.61
Females	0.00	0.45	0.87	1.06	0.97	1.76	1.16	0.96	4.75	0.08	0.00
Rural											
1968											
Males	0.00	57.86	84.82	94.08	96.15	97.95	99.67	98.77	98.62	99.29	92.04
Females	0.00	0.68	0.21	0.64	1.84	3.09	1.37	3.27	1.92	1.85	3.03
1973											
Males	34.40	63.62	78.56	91.78	96.55	97.43	99.29	99.17	97.85	95.86	95.22
Females	0.00	0.22	0.05	0.96	0.87	0.66	1.07	0.31	0.80	0.00	0.00

Source:

Source: Same as for table 203.

Table 206. Projected number of households under alternate assumptions, and population aged 25-64 years, 1970-2000

Year	Population aged 25-64 years	Projected number of households		
		High series[a]	Medium series[b]	Low series[c]
1970	11,643,744	6,163,128	6,163,128	6,163,128
1975	13,872,000	7,343,000	7,292,000	7,259,000
1980	16,777,000	8,880,000	8,786,000	8,694,000
1985	20,421,000	10,809,000	10,680,000	10,493,000
1990	24,281,000	12,852,000	12,715,000	12,388,000
1995	28,421,000	15,043,000	14,869,000	14,415,000
2000	33,070,000	17,504,000	17,172,000	16,560,000

Source Cecilia V. Lacuata, *Household Projections for the Philippines, 1970-2000,* Monograph No. 4 (NCSO, 1975).

a Based on assumption of constant household-to-adult population ratio throughout the projection period.

b Based on assumption of moderate decline in household-to-adult population ratio.

c Based on assumption of rapid decline in household-to-adult population ratio.

Table 207. Projected age-sex specific household headship rates[a], 1970-2000

	1975	1980	1985	1990	1995	2000
Males						
15-19	1.16	1.87	2.58	3.28	3.97	4.66
20-24	19.38	24.63	29.52	34.10	38.39	42.39
25-29	51.83	50.59	49.37	48.18	47.02	45.89
30-34	77.13	75.99	74.87	73.77	72.68	71.62
35.39	88.38	87.30	86.22	85.16	84.12	83.08
40-44	90.53	87.67	84.91	82.22	79.62	77.10
45-49	95.48	95.81	96.12	96.41	96.67	96.92
50-54	95.60	95.59	95.58	95.57	95.56	95.55
55-59	94.92	94.19	93.47	92.75	92.04	91.33
60-64	90.12	86.00	82.08	78.32	74.74	71.33
65 and over	79.26	78.83	78.39	77.96	77.54	77.11
Females						
15-19	0.08	0.12	0.16	0.20	0.24	0.28
20-24	0.33	0.29	0.26	0.23	0.21	0.19
25-29	0.87	0.69	0.55	0.44	0.35	0.28
30-34	3.51	4.12	4.72	5.32	5.92	6.51
35-39	5.12	5.15	5.17	5.20	5.23	5.26
40-44	7.59	7.41	7.24	7.08	6.91	6.75
45-49	10.70	11.32	11.93	12.54	13.14	13.74
50-54	13.38	12.00	10.77	9.66	8.67	7.78
55-59	17.26	15.20	13.39	11.79	10.38	9.14
60-64	16.24	13.88	11.86	10.14	8.66	7.41
65 and over	26.97	26.69	26.41	26.13	25.85	25.58

Source: Dionisia R., dela Paz, "Household and family projections", *PREPF* Research Note No. 24 (University of the Philippines Population Institute, 1975).

a The data used for these projections are the age-sex specific headship rates given by the national demographic surveys of 1968 and 1973. Small variations in a five-year period may lead, once projected 30 years ahead, to exaggerated differences from one age group to the other. This is, for instance, the case for females aged 45-49. However, the projected numbers of households given in table 208 for the total population and for males and females separately (all ages together) are not affected by the discrepancies shown by some constituent age groups.

house or a complete structure intended for a single family or household; (b) duplex or a structure intended for two households with complete living facilities for each; (c) apartment or accessoria – that is, a structure usually of several stories, made up of independent living quarters with independent entrances from internal halls or courts; (d) barong-barong or a shack or makeshift shelter usually built with light materials; (e) commercial or building used for trade and commerce but partly or wholly used for dwelling purposes; and (f) others, that is, any structure which does not fall into any of the above classifications.

2. Housing development, 1960-1970

The changes in housing stock or dwelling units in relation to population growth between 1960 and 1970 are indicated in table 209. It will be noted that during the decade 1960-1970, while the total population of the country increased by 35.4 per cent, the total number of dwelling units increased by 27.3 per cent and the total number of occupied dwelling units by 29.3 per cent. Consequently, the occupancy rate or the average number of persons per occupied dwelling unit increased from 5.8 in 1960 to 6.1 in 1970.

Table 208. Projected number of households by age and sex of household head[a], 1975-2000

	1975	1980	1985	1990	1995	2000
Total	6,892,873	8,206,108	9,835,789	11,718,048	14,392,435	16,139,627
Males	6,232,603	7,445,974	8,949,409	10,672,551	13,165,091	14,688,539
15-19	29,355	51,884	77,809	107,569	147,674	193,725
20-24	379,642	613,887	808,148	1,016,368	1,246,302	1,563,245
25-29	778,820	972,989	1,210,581	1,300,392	1,984,497	1,474,588
30-34	900,690	1,118,906	1,414,619	1,781,207	1,935,955	2,085,854
35-39	871,175	995,188	1,243,003	1,579,596	1,999,223	2,183,765
40-44	827,024	838,165	941,904	1,157,244	1,446,118	1,799,766
45-49	671,296	839,898	885,225	1,034,073	1,320,353	1,714,212
50-54	564,918	634,299	794,312	838,000	979,858	1,252,722
55-59	438,131	512,004	573,404	716,221	753,621	878,796
60-64	320,667	350,990	396,962	430,064	519,721	529,089
65+	450,885	517,764	603,442	711,817	831,769	1,012,777
Females	660,270	760,134	886,380	1,045,497	1,227,346	1,451,088
15-19	1,956	3,184	4,706	6,384	8,678	11,304
20-24	6,857	6,998	6,823	6,704	6,653	6,831
25-29	13,954	14,112	13,092	11,416	10,106	8,805
30-34	43,943	64,877	95,016	124,942	151,888	186,322
35-39	53,464	63,109	79,897	103,014	121,182	133,484
40-44	71,076	75,418	86,732	107,270	134,563	154,165
45-49	78,246	102,677	117,974	146,379	194,547	262,216
50-54	84,320	84,067	93,907	92,135	97,935	111,825
55-59	83,580	90,176	88,673	97,589	94,369	98,815
60-64	60,101	61,453	64,690	62,081	66,628	62,955
65+	162,773	194,063	234,870	287,583	340,797	414,366

Source: Same as for table 207.
a See table 207.

Table 209. Population growth and housing development in the Philippines, 1960-1970

	1960	1970	Percentage change
All dwelling units	4,790,954	6,099,844	27.3
Occupied dwelling units	4,648,245	6,010,827	29.3
Population	27,087,685	36,684,486	35.4
Occupancy rate	5.83	6.10	4.6

Source: Based on the censuses of population and housing carried out in 1960 and 1970.

A further breakdown of the 1970 data by rural and urban residence indicates that of the total 6,099.844 dwelling units, 1,845,202 or 30.2 per cent were in the urban areas and the remaining 4,254,642 dwelling units or 69.8 per cent were in the rural areas. The percentage distribution of occupied dwelling units was roughly the same as for total dwelling units: 30 per cent in urban areas and 70 per cent in rural areas. However, the occupany rate of 6.50 in urban areas was higher than the rural rate of 5.93.

As stated earlier, the 1960 census data on housing was not classified into urban and rural. Nevertheless, on the basis of "certain plausible assumptions for the number of dwelling units, per

type of building", an ILO sponsored mission[9] estimated that, of the total number of 4,791,000 dwelling units, about 873,000 or about 18 per cent were in the urban areas and the balance of 3,918,000 units or 82 per cent were in the rural areas. Thus, while the stock of urban houses more than doubled between 1960 and 1970, the increase in rural housing has been only by about 8 per cent. The mission observed, however, that "there was considerable building of 'strong' dwelling units in the rural areas. Thus the net increase was small mainly because of the substitution of 'strong' dwellings for 'light' ones, and consequently the rural areas enjoyed a substantial improvement in the quality of housing. An interesting trend in the urban areas is the increase in 'light' construction, which must reflect rural-urban migration and the growth of aquatter settlements".[10]

The numerical and percentage distribution of dwelling units by type of building is given in table 210. It will be noted that the single type dwelling unit appears to be the most common, the proportion of such type of dwelling units increasing from 85.2 per cent in 1960 to 88.5 per cent in 1970. There was also an increase in the proportions of duplex and apartment type dwelling units during this period. The barong-barong type of dwelling unit constituted about 11 per cent of all dwelling units in 1960; but in 1970 its share had declined to 3.6 per cent. In fact, there was a decline in the absolute number of such units from about 516,000 in 1960 to about 222,000 in 1970, thus indicating that makeshift or temporary houses are being gradually abandoned in favour of the more permanent type of house.

With regard to the type of occupancy or tenancy, it is clear from table 211 that in both 1960 and 1970 about 87 per cent of the dwelling units were owner-occupied. The proportion of rented dwelling units recorded an increase from 6.4 per cent in 1960 to 8.5 per cent in 1970. A detailed analysis of the 1970 data indicates that while about 95 per cent of all dwelling units in rural areas were owner-occupied, the corresponding proportion in urban areas was only about 68 per cent. However, in the urban sector, nearly 26 per cent of all occupied dwelling units were rented, compared with about 1 per cent in rural areas.

Table 210. Numerical and percentage distribution of all dwelling units by type of building, 1960 and 1970

Type of building	1960		1970	
	Number	Percentage	Number	Percentage
Single	4,083,544	85.23	5,400,024	88.53
Duplex	51,144	1.07	193,011	3.16
Apartment/ accessoria	97,548	2.04	229,116	3.76
Barong-barong	515,898	10.77	222,004	3.64
Commercial	38,470	0.80	49,492	0.81
Other	4,350	0.09	6,197	0.10
Total	4,790,954	100.00	6,099,844	100.00

Sources: 1960 and 1970 population and housing censuses.

Table 211. Percentage distribution of occupied dwelling units by type of occupancy, 1960 and 1970

Type of occupancy	Whole country		Urban	Rural
	1960	1970	1970	1970
Owner-occupied	87.12	86.91[a]	67.82[a]	95.10[a]
Owner-occupied and retned	0.83	0.81	1.97	0.31
Rented	6.38	8.50[b]	25.50[b]	1.22[b]
Occupied rent-free	5.67	3.73	4.63	3.34
Occupied rent-free and a part rented out	-	0.05	0.09	0.03
Total	100.00	100.00	100.00	100.00

Sources: 1960 and 1970 Population and housing.

a Including "owned and a part occupied free by others".

b Including "rented and a part occupied free by others or rented out".

The percentage distribution of households by availability of selected facilities such as type of water supply, toilet facilities, lighting and cooking is shown in table 212. For the country as a whole, in 1960 the open well was the most important source of water supply, nearly 32 per cent of the dwelling units depending on this source, while the pump was second in importance. In 1970, the pump was the major source used by about 29 per cent of the households, while another 24 per cent depended

9 *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines*, Report of an Inter-Agency Team financed by the United Nations Development Programme and organized by the International Labour Office (Geneva, International Labour Office, 1974), pp. 211-212.

10 *Ibid.*, p. 212.

Table 212. Percentage distribution of occupied dwelling units by selected facilities, 1960 and 1970

Facilities	Whole country		Urban	Rural
	1960	1970	1970	1970
A. Type of water supply				
Piped water	20.02	24.03	54.30	10.70
Artesian well	5.84	8.54	9.54	8.10
Pump	23.04	28.80	25.33	30.33
Open Well	31.51	22.38	5.73	29.71
Spring	13.61	11.54	1.96	15.75
Rainwater	1.17	2.55	2.64	2.51
Others	4.80	2.16	0.50	2.90
B. Type of toilet facilities				
Flush/water seal	7.61	22.59	48.36	11.24
Antipolo/closed pit	9.24	15.90	19.12	14.48
Open pit	35.81	22.93	11.95	27.77
Public toilet	2.33	1.86	3.37	1.19
None	45.01	36.71	17.20	45.33
C. Type of lighting				
Electricity	16.48	23.18	60.36	6.80
Kerosene/gas	81.90	75.56	38.96	91.67
Oil	0.44	0.47	0.36	0.52
Others	1.18	0.80	0.32	1.00
D. Type of cooking fuel				
Electricity	1.30	2.76	8.26	0.34
Kerosene/gas	3.26	10.91	26.02	4.25
Gas (air)	1.14	5.71	15.07	1.59
Wood	92.77	79.26	49.31	92.45
Charcoal	0.55	0.38	0.78	0.21
Others	0.98	0.98	0.57	1.16

on piped water and a further 22 per cent on open wells. The situation in urban and rural areas, however, was markedly different. In 1970, more than half (54.3 per cent) of the urban households used piped water and about one fourth (25.3 per cent) the pump. In comparison, the pump and the open well were the major source of water in the rural areas, servicing 30.3 per cent and 29.7 per cent of the rural households respectively.

Toilet facilities appear to be the most neglected aspect of Philippine housing. For the country as a whole, about 45 per cent of the dwelling units in 1960 were without any toilet facilities and this proportion declined to about 37 per cent in 1970. The proportion using the flush or water seal type increased from 7.6 per cent in 1960 to 22.6 per cent in 1970 and that of those using antipolo or closed pit increased from 9.2 per cent to 15.9 per cent. There was also a decline in the proportion of dwelling units depending on open pits and public toilets. The lack of facilities is felt more in the rural areas. Of the total urban households, 48.4 per cent use to flush or water seal toilet; 19.1 per cent the antipolo or closed pit and 11.9 per cent the open pit. In comparison, the flush or the water seal type is used by 11.2 per cent of rural households, the antipolo or closed pit by 14.5 per cent and the open pit by 27.8 per cent.

Kerosene appears to be the most important type of lighting used by households, the proportion

for the country as a whole being 81.9 per cent in 1960 and 75.6 per cent in 1970. The next important type of lighting is electricity, which increased its proportion from 16.5 per cent in 1960 to 23.2 per cent in 1970. It will also be noted that in 1970 electricity was used by about 60 per cent of urban households and by only about 7 per cent of rural households while kerosene was used by about 92 per cent of rural households and about 39 per cent of urban households.

Wood is the most common cooking fuel used both in 1960 and 1970, although there has been a decline in this proportion from about 93 per cent in 1960 to 79 per cent in 1970. The proportion using kerosene and gas increased considerably during this decade. In the urban areas, 49.3 per cent use wood as compared to 92.4 per cent in the rural areas. The other important cooking fuels of urban dwellers are kerosene (26.0 per cent), gas (15 per cent) and electricity (8.3 per cent). Among rural households, only 0.3 per cent use electricity, 4.3 per cent kerosene and 1.6 per cent gas.

3. Demand for housing

A recent study, using the normative methodology recommended by the United Nations, estimates that an additional 5.4 million new dwelling units will be required between 1971 and 1980.[11] This would imply an almost doubling of the 1970 stock of dwelling units in just 10 years. The study also concluded that only about 12 per cent of the urban families, that is, those with an annual income of 10,000 pesos and above, could afford housing at market prices. The 23 per cent falling in the 4,000 to 9,999 pesos annual income bracket could afford to own a house only if they could obtain long-term loans, at reasonable rates of interest and if the costs of land development and of construction were quite low. On the assumption that the minimum standard cost of constructing an urban house is 12,000 pesos and of a rural unit 5,000 pesos, the additional estimated requirements of housing would involve an average investment of 3,500 million pesos a year.

The ILO-sponsored mission referred to earlier considered the estimates of de Vera to be rather high. The mission was of the opinion that "housing standards are frequently postulated which are applicable only to middle-income people with middle-class values, or uncritically adopted from developed countries with a temperate or cold climate. To be realistic, the concept of effective demand is to be preferred, i.e., the demand for housing, under existing supply conditions, as expressed in the market in the form of prices and quantities. Demand in this sense implies autonomous, individual choice within a budget constraint".[12]

The mission attempted to derive a more realistic estimate of the rate of growth of housing demand (g_D) by the following equation:

$$g_D = g_H + eg_Y$$

where g_H = rate of growth of household formation
g_Y = rate of growth of real income per household
e = income elasticity of housing demand

In projecting the total number of households, the mission took into consideration the fact that age at marriage and frequency of marriage have been undergoing a long-term change in the direction of delayed and less frequent marriage and therefore the assumption was made that the rate of growth of households for "all areas" and "rural areas" would decline by 0.2 per cent over the decade 1971-1980.[14] The estimated growth rates and the projected number of households are as follows:

Period	All areas	Metropolitan Manila	Other urban	Rural
	Number of households (in thousands)			
1971-1975	7,200	600	1,500	5,000
1976-1980	8,400	700	2,000	5,700
	Rate of growth of households (percentage)			
1971-1975	3.3	3.4	3.6	3.4
1976-1980	3.2	2.6	4.8	3.3

On the basis of elasticities worked out separately for Metropolitan Manila, other urban areas and rural areas, and the estimated household formation rates, the mission estimated the growth of demand for housing under the following varying assumptions in regard to the growth of household income:

(1) Extrapolating the trends in growth in

11 Jacob S. de. Vera, "The Philippine housing need, 1960 to 1980", in *Housing in the Philippines: Preparatory Materials for the Conference on Housing* (Manila, National Economic Development Authority, 1973).

12 *Sharing in development...*, pp. 218-219.

13 *Ibid.*, Special Papers, No. 14, "Estimating the demand for housing", p. 608.

household incomes observed during the period 1960-1970;

(2) Planned rate of growth of income of 7 per cent, which would mean an income per household growth rate of around 3.2 per cent. Here again it was further assumed that this rate would be (a) 5.0 per cent in urban areas and 2.4 per cent in rural areas; and (b) equal in all areas (i.e., 3.2 per cent);

(3) An optimistic 5 per cent real income growth per household in both urban and rural areas.

The rates of growth of housing demand implied in the various assumptions are summarized in table 213. These growth rates were applied to the 1972 figure for fixed capital formation in construction (1,053 million pesos) to obtain alternative levels of total outlays for the construction of dwellings under alternative income growth assumptions. The results are shown in table 214.

Table 213. Rate of growth of housing demand under alternate assumptions regarding growth of household income, 1971-1980

Assumptions regarding household income growth	Rate of growth of housing demand (percentage) for:			
	All areas	Metro Manila	Other urban	Rural
1. Extrapolation of 1960-1970 trends				
1971-1975	5.4	5.6	6.2	5.4
1976-1980	5.3	4.8	7.4	5.3
2. Growth rate of 3.2 per cent per annum				
(a) 1971-1975	7.0	8.8	9.8	6.2
1976-1980	6.9	8.0	11.0	6.1
(b) 1971-1975	7.0	6.8	7.6	7.1
1976-1980	6.9	6.0	8.8	7.0
3. Growth rate of 5 per cent per annum				
1971-1975	9.1	8.8	9.8	9.3
1976-1980	9.0	8.0	11.0	9.2

Source: *Sharing in Development...*, p. 609.

Note: For an explanation regarding various assumptions, see text.

Table 214. Projections of investment in construction of dwellings under various growth assumptions[a], 1972-1980

(millions of pesos at 1972 prices)

Year	All			Rural				Urban[b]			
	(1)	(2a)=(2b)	(3)	(1)	(2a)	(2b)	(3)	(1)	(2a)	(2b)	(3)
1972	1,053	1,053	1,053	527	527	527	527	526	526	526	526
1973	1,110	1,127	1,149	555	559	564	576	555	568	563	573
1974	1,170	1,206	1,253	585	594	604	630	585	612	602	623
1975	1,233	1,290	1,367	617	631	647	688	617	659	643	679
1976	1,298	1,379	1,490	650	669	692	751	650	710	687	739
1977	1,367	1,474	1,624	684	710	741	820	684	764	733	804
1978	1,440	1,576	1,770	720	754	793	896	720	822	783	874
1979	1,516	1,685	1,930	759	800	848	978	759	885	837	952
1980	1,570	1,801	2,103	799	848	907	1,068	799	953	894	1,035

Source: Same as for table 213.

a See text.

b The growth rates of the demand for "urban" under the various income assumptions are:

	(1)	(2a)	(2b)	(3)
1971-1975	5.4	8.0	7.0	9.0
1976-1980	5.3	7.9	6.9	8.9

Chapter XIV

POPULATION GROWTH, NUTRIONAL REQUIREMENTS AND FOOD SUPPLIES

A. INTRODUCTION

The World Population Conference, held at Bucharest in August 1974, and the World Food Conference, held at Rome later in the same year, brought together convincing evidence that the population problem and the chronic food crisis have reached a dangerous and critical point. Analysis of the relevant data for a large number of developing countries indicate that during the past few decades while population has tended to increase at a steady or almost uniform rate, *per capita* food production has not maintained the same uniformity of pace year by year. At the World Food Conference, much interest and concern was shown with regard to the problems of hunger and malnutrition, which loom large in low-income countries. It was the consensus that the impending widespread starvation could be averted only through the adoption of a strategy that would on the one hand ensure an enormous increase in productivity of the soil and an improvement in the distribution systems in developing countries, and on the other bring about a reduction in their current high rates of population growth.

Like most developing countries, the Philippines has in recent decades been experiencing unprecedentedly high rates of population growth. At the current average growth rate of 2.8 per cent per annum, the total population of the country, which was estimated at 42 million in 1975, will increase to 84 million by the year 2000 A.D. In other words, the population of the Philippines can be expected to double in about 25 years. The rapid increase in population has not been matched by corresponding increases in average *per capita* food production. Undernutrition is one of the pressing problems today and becomes worse each year as over a million persons more are added to the population to be fed. Since adequate food supplies are a major problem in the country, the size of the population as well as its rate of growth would have an immediate and direct impact on food requirements as well as the level and adequacy of food intake.

An attempt is therefore made in this chapter to: (a) analyse the pattern and levels of food consumption on the basis of *per capita* availabilities and food intake as shown by dietary surveys; (b) draw attention to the uneven distribution of food and the resultant incidence of malnutrition; (c) estimate, on the basis of nutritional goals, the requirements of specific food items and food groups for the increasing population during the period 1975-2000; and (d) discuss the prospects for supplying the estimated food requirements.

B. NUTRITIONAL REQUIREMENTS

The need for food varies according to age, sex, physiological condition and such ecological factors as geographical location and environmental temperature; but an important factor which causes great variation in food requirement is physical activity. Thus, farmers who are engaged in the operation of mechanized agricultural equipment will not require as many calories as those doing manual farm work. And in industrialized societies, where energy intakes are excessive owing to the sedentary nature of many occupations, obesity has become a problem.

The requirements of calories and proteins vary according to the sex and age of the persons. The total calorie needs of children are less than those of adults; the teen-age group requires more calories than young adults. Sex is another factor in the estimation of calorie needs, the requirements of males from 15 years and over being generally higher than those of females. The average weight of different age groups of both sexes is likewise important in calculating energy needs. Similarly, the need for protein varies with age and body weight conditions like pregnancy and lactation as well as with the quality of protein.

Nutrition is what foods containing various nutrients seek to contribute to the physiological make-up and well-being of organisms. It is true that man eats food and not "nutrients". However, since nutrients are the basis used in estimating the adequacy of food, it becomes necessary to establish a guideline for nutrient requirements. Supplying some essential nutrients does not ensure good nutrition; the body must have an adequate supply of each nutrient to meet its needs all the time. Further, nutritional benefits cannot be attained in the ab-

sence of other social ingredients such as sound public health measures, including good sanitation, immunization against communicable diseases and above all a satisfactory living standard.

The Food and Nutrition Research Institute (FNRI) of the Philippines has developed a guide that gives the amounts of energy and certain nutrients needed to keep the country well nourished. This guide could also be used as a basis for evaluating the diets of individuals and population groups as well as for planning the country's food supply. These requirements, termed recommended dietary allowances (RDA), are given in table 215. It has to be noted that the available data on which the RDA are based are tentative and subject to revision when new research findings become available.[1]

Further, the recommendations for calories and nine nutrients are meant for healthy Filipinos doing moderate activity in the Philippines. Adjustments have to be made for those engaged in heavy physical activity, those with sedentary occupations and those who are diseased or malnourished. Also, the RDA are given for various age groups and weights of reference persons in each age and sex, and adjustments will be needed for those adults and children who do not conform to the reference size. The allowances provide a margin of safety for proteins, minerals and vitamins but not for calories. Likewise, the recommended allowances do not cover nutrient losses during storage and cooking, but do take into account the quality of the proteins in the Filipino diet, the availability from food or absorption from the intestinal tract of iron and carotene.

People by and large do not consume either proteins or calories in any conscious way. They eat foods which contain the nutrients. It is therefore necessary to translate the recommended dietary allowances in terms of specific foods that can provide the amount of nutrients specified or recommended. Table 216 gives the recommended daily food allowances for Filipinos. It will be noted that the foods needed have been classified according to function into three main groups: (a) body-building foods, which include fish, meat, poultry, eggs, milk and dried beans; (b) energy foods, which include rice and other cereals, sweet potatoes and other tubers, sugar, fats and oils; and (c) regulating foods, which are the fruits and vegetables. The daily food allowances given in table 216 have been computed on the basis of data available from two important sources, viz., *Food Consumption Tables Recommended for Use in the Philippines*[2], and dietary survey reports of the Food and Nutrition Research Institute.[3]

C. FOOD AND NUTRITION SITUATION

The information on food consumption in the Philippines is obtained from nutrition surveys conducted on a regional basis during the 1960s. The data indicate the prevalence of undernourishment and malnourishment throughout the country.[4] The average daily *per capita* nutrient and food intakes compared with recommended allowances are shown in table 217.

It will be noted that, except for "cereals" and "other fruits and vegetables", all food groups are taken in amounts below sufficiency. Despite adequate intake of cereals, there is a deficit in energy – 83 per cent of the requirement – owing to the very low intake of fat and insufficient consumption of other foods like tubers, dried beans and nuts and animal foods. Of the recommended allowances, only 73 per cent of the meat, poultry and fish, 24 per cent of the eggs, 27 per cent of the milk and less than a third of the leafy and yellow vegetables and of the fats and oils are included in the average diet.

Though the intake of protein is near sufficiency levels, owing to the low energy in the diet, the protein cannot be efficiently utilized for growth and/or repair of body tissues. In the absence of adequate calories, the more expensive protein foods will inevitably be metabolized for energy purposes. The protein problem in the Philippines is therefore an indirect result of inadequate calories in the diet. As a result, height and weight measurements of the subjects in the sample households surveyed showed that growth and development of children and weights of adults were far below desired levels. This is an indication of general undernourishment.

It will also be noted from the table that the average intake of vitamin A and riboflavin is less than half the recommended amounts. The inadequate

1 In fact, the RDA shown in the table constitute the sixth revision since their formulation in 1941.

2 Food Composition Tables Recommended for Use in the Philippines, Handbook I, Fourth Revision (Food and Nutrition Research Centre, National Institute of Science and Technology, 1968).

3 Unpublished survey data of the Food and Nutrition Research Institute, National Science Development Board.

4 Diet Atlas of the Philippines, 1974 (Food and Nutrition Research Institute, National Science Development Board).

Table 215. Recommended dietary allowances for Filipinos per day, for specific nutrients

	Body weight	Energy	Protein	Calcium	Iron	Vitamin A activity		Thiamine	Riboflavin	Niacin	Ascorbic acid
						Retinol equivalent	I.U.[a]			(mg equivalent)	
	kg	kcal	gm	gm	mg			mg	mg		mg
Reference man											
20-39 years	56	2,580	63	0.5	10	650	4,500	1.3	1.3	17	75
40-49 years	56	2,450	63	0.5	10	650	4,500	1.2	1.2	16	75
50-59 years	56	2,320	63	0.5	10	650	4,500	1.0	1.2	15	75
60-69 years	56	2,060	63	0.5	10	650	4,500	1.0	1.0	14	75
70-79 years	56	1,810	63	0.5	10	650	4,500	0.9	0.9	13	75
Reference woman											
20-39 years	48	1,920	54	0.5	18*	550	3,800	1.0	1.0	13	70
40-49 years	48	1,820	54	0.5	18*	550	3,800	0.9	0.9	13	70
50-59 years	48	1,730	54	0.5	8	550	3,800	0.9	0.9	13	70
60-69 years	48	1,540	54	0.5	8	550	3,800	0.8	0.8	13	70
70-79 years	48	1,340	54	0.5	8	550	3,800	0.7	0.7	13	70
Pregnant (2nd and 3rd trimesters)		+430	+14	1.0	18*	575	4,000	+0.4	+0.4	+3	120
Nursing (first 6 months)		+550	+28	1.0	18	975	6,800	+0.3	+0.6	+4	120
(next 6 months)		+440	+16	1.0	18*	800	5,600	+0.3	+0.4	+3	120
Infants											
6-11 months	9	970	25	0.6	9	250	1,800	0.5	0.5	6	30
Children											
1-3 years	13	1,310	26	0.5	6	250	1,800	0.7	0.7	9	35
4-6 years	18	1,640	32	0.5	8	325	2,300	0.8	0.8	11	45
7-9 years	24	1,870	37	0.5	7	400	2,800	0.9	0.9	12	55
Boys											
10-12 years	32	2,270	43	0.7	11	500	3,500	1.1	1.1	15	65
13-15 years	44	2,510	59	0.7	12	625	4,300	1.3	1.3	17	75
16-19 years	55	2,700	67	0.6	13	650	4,500	1.4	1.4	18	90
Girls											
10-12 years	35	2,170	48	0.7	18*	500	3,500	1.1	1.1	14	70
13-15 years	44	2,200	59	0.7	18*	625	4,300	1.1	1.1	15	75
16-19 years	48	2,060	59	0.6	18*	625	4,300	1.0	1.0	14	80

Source: Food and Nutrition Research Institute.

Note: Figures with a plus (+) sign are amounts to be added to original recommendations for the appropriate age groups. It is preferable that amounts with an asterisk (*) be higher than indicated. Supplemental iron is recommended during pregnancy.

a "I.U." stands for International Unit. It is a term used to measure the vitamin A activity of plant and animal foods. It represents the vitamin A value that will cause a specific growth response in rats whose reserves of vitamin A have been depleted. One International Unit is equivalent to 0.3 mcg of retinol or 0.6 mcg of B-carotene.

Table 216. Recommended dietary allowances for Filipinos per day, for specific foods

	Body-building foods						Energy foods					Regulating foods					
	Whole milk	Fish/meat/ poultry		Eggs		Beans/ nuts (dried)	Cereals	Kamote/ potatoes etc.		Sugar	Fats	Leafy/yellow vegetable		Vitamin C rich fruits		Other fruits/ vegetables	
	E.P. gm	A.P gm	E.P. gm	A.P. pc.	E.P. gm	A.P. E.P. gm	A.P. E.P. gm	A.P. gm	E.P. gm	A.P. E.P. gm	A.P. E.P. gm	A.P. gm	E.P. gm	A.P. gm	E.P. gm	A.P. gm	E.P. gm
Reference man																	
20-39 years	-	210	130	½	20	20	420	180	150	35	35	110	70	65	50	165	110
40-49 years	-	195	120	½	20	20	410	180	150	30	30	110	70	65	50	165	110
50-59 years	-	195	120	½	20	20	400	120	100	30	30	110	70	65	50	150	100
60-69 years	-	175	110	1	40	20	360	120	100	20	30	110	70	65	50	150	100
70-79 years	200	175	110	1	40	-	280	60	50	20	20	110	70	65	50	150	100
Reference woman																	
20-39 years	-	195	120	½	20	20	310	120	100	25	25	110	70	65	50	150	100
40-49 years	-	195	120	½	20	20	300	120	100	20	20	110	70	65	50	150	100
50-59 years	-	195	120	½	20	15	270	120	100	20	20	110	70	65	50	150	100
60-69 years	-	175	110	½	20	15	260	120	100	20	20	110	70	65	50	150	100
70-79 years	150	175	110	1	40	-	200	60	50	20	10	110	70	65	50	150	100
Pregnant (2nd and 3rd trimesters)	200	+15	+10	½	20	20	+30	120	100	+5	+5	110	70	+65	+50	+75	+50
Nursing (first 6 months)	200	+45	+30	+½	+20	20	+70	120	100	+5	+5	+45	+30	+65	+50	+75	+50
(nest 6 months)	200	+15	+10	+½	+20	20	+50	120	100	+5	+5	+45	+30	+65	+50	+75	+50
Infants 6-11 months	480	50	30	½	20	10	80	25	20	25	10	25	15	40	30	30	20
Children 1- 3 years	240	65	40	½	20	10	160	60	50	25	25	40	25	40	30	50	35
4- 6 years	240	80	50	½	20	10	220	60	50	25	30	45	30	40	30	75	50
7- 9 years	150	95	60	½	20	10	290	70	60	25	30	45	30	65	50	150	100
Boys 10-12 years	100	160	100	½	20	15	380	120	100	20	30	80	50	65	50	150	100
13-15 years	-	195	120	½	20	30	420	120	100	20	30	110	70	130	100	150	100
16-19 years	-	225	140	½	20	30	450	120	100	30	40	110	70	130	100	150	100
Girls 10-12 years	100	160	100	½	20	15	360	120	100	20	25	80	50	65	50	150	100
13-15 years	-	175	110	½	20	20	360	120	100	20	30	110	70	130	100	150	100
16-19 years	-	195	120	½	20	20	340	120	100	20	30	110	70	100	75	165	110

Source: Food and Nutrition Research Institute.

Notes: Figures with a plus (+) sign are amounts to be added to original recommendations for the appropriate age groups.

A.P. = as purchased.
E.P. = edible portion.

Table 217. Average daily *per capita* food and nutrient intakes compared with recommended allowances in nine regions, 1958-1969

Item	*Per capita* intake	Recommended allowances	Sufficiency (percentage)
Food items[a]			
Cereals	345	321	107
Starchy roots and tubers	65	113	58
Sugars and syrups	18	25	72
Dried beans, nuts and seeds	7	17	41
Leafy and yellow vegetables	27	90	30
Vitamin-rich foods	29	71	41
Other fruits and vegetables	138	138	100
Meat, poultry and fish	119	162	73
Eggs	5	21	24
Milk and milk products	21	78	27
Fats and oils	8	28	29
Nutrients			
Calories	1,671	2,010	83
Protein (gm)	46.2	51	91
Calcium (gm)	0.34	0.6	57
Iron (mg)	9	12	75
Vitamin A, I.U.[b]	1,812	3,632	50
Thiamine (mg)	0.73	1.0	73
Riboflavin (mg)	0.47	1.0	47
Niacin (mg)	14	14	100
Ascorbic acid (mg)	67	67	100

Source: Food and Nutrition Research Institute.

a Consumption in terms of number of grams per day.

b See definition of "I.U." under table 215.

intake of vitamin A was evident from the fact that approximately 25 per cent of the subjects had dry conjunctiva, while "deficient" to "low" levels of serum vitamin A were found in about 48 per cent of the subjects, especially among children aged 1-6 years. Thus, children run a higher risk of blindness than adults.[5] The source of vitamin A is mostly from plants in the form of carotene or vitamin A precursors and the inclusion of more leafy green and yellow vegetables in the diet is therefore urgently called for in the Philippines.

The dietary surveys did not reveal significant deficiency in the average intake of iron, but determination of hemoglobin levels indicated that almost half of the population surveyed had "low" to "deficient" levels. The distribution among the various population groups showed that iron deficiency was a problem in 71 per cent of the children aged 1-6 years, in 78 per cent of the pregnant women and in 52 per cent of the nursing mothers.[6]

All available data point to the existence of malnutrition in the Philippines. It has, however, to be noted that average figures conceal the real magnitude of the problems because the food intake of a large percentage of the population is far below the average. Thus, the problem of malnutrition among that group of people is indeed more accute than what the average for the country as a whole indicates.

There are a number of factors responsible for the widespread incidence of undernutrition and malnutrition in the Philippines. Firstly, the low level of incomes among the vast majority of the people result in equally low levels of expenditure on food. *Per capita* food expenditure has a bearing on the quantity and quality of food consumed. Table 218 gives the average diet rating by daily *per capita* food expenses. It will be seen that there is a marked increase in diet rating with increase in expenditure on food. At very high levels of food expenses, there is an almost flattening out in diet rating, and this would suggest that above a certain level of expenditure other factors are needed further to improve the quality of the diet. Although the data relating to food expenses collected in the 1960s may not be applicable in absolute terms to present monetary value of the Philippine currenty, they show the relationship between levels of food expenditure and the quantity and quality of the diet.

Secondly, the quality and quantity of the food consumed are also a function of the number of people who share that food. As will be seen from table 219, there is a progressive decrease in diet rating with an increase in the number of household members. In other words, the quality of the diet is better when household size is smaller. It will also be noted from the table that the proportion of houses

5 Summary results of the nine regional nutrition surveys conducted in the Philippines: Biochemical Phase", (Food and Nutrition Research Institute, National Science Development Board) (unpublished).

6 *Ibid.*

Table 218. Average diet rating[a] by daily *per capita* food expenses in nine regions of the Philippines, 1958-1969

Daily *per capita* food expense (centavos)[b]	Average diet rating	Households	
		Number	Percentage
up to 29	53	486	17.3
30 - 49	61	964	34.3
50 - 69	69	635	22.6
70 - 89	75	359	12.8
90 - 109	78	191	6.8
110 - 129	85	83	2.9
130 and above	83	95	3.3

Source: Food and Nutrition Research Institute.

a Diet ratings were computed by adding all percentages of adequacy for each nutrient and dividing the total by 9, the number of nutrients for which the diets were evaluated. Any figure above 100 per cent was pegged at 100.

b 100 centavos = 1 peso.

Table 219. Diet rating by number of household members in nine regions of the Philippines, 1958-1959

Number of household members	Households		Diet rating
	Number	Percentage	
1 - 3	336	11.9	74
4 - 6	1,061	37.7	66
7 - 9	929	33.0	62
10 - 12	361	12.8	62
Over 12	126	4.5	61

Source: Food and Nutrition Research Institute.

with fewer than 4 members is small. Most households in the Philippines have a large number of children besides relatives and domestic helpers.

Thirdly, the urban-rural differences in food consumption has also been a contributory factor to the uneven distribution of food in the country.[7] Data from the dietary surveys indicate that diets in urban areas are somewhat better in quality than those in the rural areas. This may be due to differentials in income, availability of food and other factors. It will be seen from table 220 that, although food intakes in both areas have not reached sufficiency levels contribution to the diet of protective foods such as meat, fish and poultry, eggs, milk and even fruits and vegetables was higher in urban than in

7 Carmen Ll. Intengan, *Urbanization and Nutrition*, paper presented to the 13th Pacific Science Congress, Vancouver, Canada, 18-29 August 1975.

Table 220. Mean daily *per capita* intake in urban and rural Philippines compared with recommended food allowances

(gm edible portion)

Food groups	Urban	Rural	RFA
Cereals and cereal products	322	349	321
Starchy roots and tubers	26	60	94
Sugars and syrups	23	15	25
Dried beans, nuts	7	7	17
Fruits and vegetables	153	119	203
Meat, poultry and fish	87	66	101
Eggs	7	3	21
Milk and milk products	38	13	78
Fats and oils	11	6	28

Source: Food and Nutrition Research Institute.

rural households. The total calorie intake of the rural population was also lower than that of the urban residents, reflecting serious nutritional deficiencies among the rural people.

Estimates regarding food availability can also be obtained from the food balance-sheets prepared earlier by the National Economic Council and now by the newly created National Economic Development Authority (NEDA). The food balance-sheet is a technique for analysing national supplies and utilization of individual food commodities or group of food items on a yearly basis. It shows the amount of food supply which is available for consumption in relation to the population for a given year. The food supply consists of the total foodstuffs produced in the country plus the total foodstuffs imported, after which deductions are made of the quantities exported, fed to animals, used for seeds, manufactured as non-food products and losses due to wastage of all kinds except kitchen waste in the preparation and cooking of the food as well as plate waste. In other words, the food balance-sheet gives the *per capita* supplies per day of food available for human consumption in actual quantities and in terms of calories and nutrients like protein and fat.

The food balance-sheet tables prepared from year to year will show not only the pattern and sources, but also the trends of the country's over-all food production, net imports or exports and supply during a given period. They will also disclose changes that may have taken place in the type and quality of food available for consumption which can be compared with established nutritional allowances to

determine the adequacy or the insufficiency of the country's over-all food supply in relation to nutritional standards.

The net available food supply for human consumption during the calendar year 1973 is shown in table 221. It will be seen that in 1973 the net available food supply of the country amounted to 14,599,000 metric tons, of which 11,600,000 or about 79 per cent were of vegetable origin and 2,999,000 or about 21 per cent were of animal origin. Of the total food supply available for human consumption derived from plant sources, carbohydrates or energy foods (cereals, starchy roots and tubers and sugar) constituted about 64 per cent; fruits and vegetables, 24 per cent; and dry beans and nuts, coconuts for food and fats and oils, including miscellaneous foods, 12 per cent. Almost 68 per cent of the total cereal food supply available for consumption was milled rice; 23 per cent corn and the remaining 9 per cent wheat flour. Compared with the total food supply, the supply of carbohydrates or energy foods in CY 1973 constituted about 50.5 per cent, of fruits and vegetables 19.4 per cent and of the rest about 8.3 per cent.

As noted earlier, 2,999,000 metric tons or about 21 per cent of the total food supply available for human consumption in the Philippines in 1973 were derived from animal sources. Of this amount, nearly 76 per cent consisted of meat, poultry and fish; about 19 per cent of milk; and about 5 per cent of eggs. Compared with the total net available food supply for human consumption, the supply of meat, poultry and fish constituted about 15.7 per cent and milk and eggs about 4.4 per cent.

For purposes of measuring the adequacy or inadequacy of the country's food supply nutri-

Table 221. Net available food supply for human consumption in calendar year 1973
(in thousands of metric tons as on purchased basis)

Food groups	Gross available food supply	Non-food utilization[a]	Net available food supply for human consumption[b]	Percentage distribution of net available food
A. Vegetable origin	12,953	903	11,600	79.46
1. Cereals	6,464	570	5,404	37.02
(a) Rice (milled)	3,812	131	3,681	25.21
(b) Corn (shelled)	2,182	430	1,262	8.64
(c) Wheat flour	470	9	461	3.16
2. Starchy roots and tubers	1,406	178	1,228	8.41
3. Sugar and syrups	738	-	738	5.06
4. Dry beans and nuts[c]	55	2	53	0.36
5. Vegetables	1,280	65	1,215	8.32
6. Fruits	1,658	85	1,613	11.05
7. Oils and fats	178	2	176	1.21
8. Coconuts for food	119	1	118	0.81
9. Miscellaneous	1,055	-	1,055	7.23
B. Animal origin	3,042	43	2,999	20.54
1. Meat and poultry	684	-	684	4.69
2. Fish and other marine products	1,639	30	1,609	11.02
3. Milk	568	-	568	3.89
4. Eggs	151	13	138	0.95
C. All sources	15,995	946	14,599	100.0

Source: Food Balance Sheet of the Philippines, 1973.

a Includes animal and poultry feeds, seeds, waste, non-food manufacture and other by-products in the milling of corn.

b Gross available supply minus non-food utilization.

c Excluding coconuts.

tionally, an attempt has been made in table 222 to compare the *per capita* food supply available for consumption with the recommended dietary allowances. It will be noted that, except for cereals, sugar and syrups and vitamin C-rich foods, the *per capita* availability of other food items are far below being adequate. The *per capita* supply of pulses, nuts and seeds amounted to only 4 grams per day as against the recommended requirement of 17 grams. While the supply of meat, poultry and fish was about 92 per cent sufficient, the supply of eggs, milk and milk products, fats and oils were less than 50 per cent adequate. In other words, compared with recommended allowances, the country's food supply derived from plant sources was on the whole about 98 per cent adequate while that derived from animal sources was 72 per cent adequate.

It must, however, be remembered that the food balance-sheet gives only an over-all picture; it does not show the consumption situation with regard to individual households nor the difference in consumption within groups of the population. A comparison of the available supply with the data on actual food intake shows that consumption levels are generally lower than what is available with the exception of dried beans and nuts.

D. PROJECTED NUTRIENT REQUIREMENTS

As noted earlier, the nutrient requirements vary according to the age, sex and body weight conditions of the individuals concerned. Hence, estimates of nutrient requirements for the future will have to be based on estimates regarding the size of the various population groups such as infants, children, adolescents, adults, pregnant and lactating mothers etc. The numbers of persons in each of these component subgroups at five year intervals from 1975 to 2000 have been derived from the age-sex projections of the University of the Philippines Population Institute.[8] The estimated numbers of pregnant and lactating mothers were prepared on the basis of the following assumptions:

(a) Numbers of pregnant mothers = number of infants (0-11 months) + correction for mortality at birth + correction for pregnancy not ending in a live birth where

(i) correction for mortality at birth = number of infants x (1-probability of surviving at age 0). The probabilities of surviving ($_nP_x$) were derived from the Princeton "West" Model Life Tables under the low assumption with starting life expectancy at birth of 58.00 in 1970-1975;[9]

(ii) Correction for pregnancy not resulting in a live birth = number of infants x (1-

8 The medium series assumes a moderate decline in the age-specific fertility ratio. For details regarding assumptions, see chapter x.

9 The $_nP_x$ values derived for males and females aged 0 years were:

	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
Males	0.9009	0.9119	0.9227	0.9333	0.9434	0.9535
Females	0.9160	0.9261	0.9361	0.9458	0.9549	0.9640

Table 222. Percentage of sufficiency of available food stuffs *per capita* in 1973 compared with recommended allowances

Food groups	Available supply[a] (gm as purchased)	Recommended[b] (gm as purchased)	Sufficiency (percengage)
Cereals	352	321	110
Roots and tubers	80	113	71
Sugars and syrups	48	25	192
Pulses, nuts and seeds	4	17	24
Leafy and yellow vegetables		90	
Vitamin C-rich foods	79	71	111
Other fruits and vegetables	113	138	82
Meat, poultry and fish	149	162	92
Eggs	10	21	48
Milk and milk products	37	78	47
Fats and oils	12	28	43

Sources: *a* Based on data in table 221.
b See table 217.

PLB), where PLB = 0.83.[10] In the absence of other data relating to PLB (probability of a pregnancy ending in a live birth), the same value was assumed to remain valid up to the year 2000.

(b) Number of lactating mothers = number of infants

$$(0 - 11 \text{ months}) \times \frac{\text{average length of breast feeding}}{12} \times (\text{percentage breast fed} + \text{percentage mixed fed}).$$

The average length of breast feeding was assumed to be 11 months and the percentage of breast fed and mixed fed to be 85 per cent throughout the projection period.

(c) The proportions of pregnant and nursing mothers were derived on the basis of the age-specific fertility rates for each projection year.[11]

The estimated numbers of infants, children, adolescents, adults, pregnant and lactating mothers at five-year intervals from 1975 to 2000 are shown in table 223.

The average daily nutrient requirements per person based on physiological and nutritional considerations, as well as the proportions of some population subgroups during the projection period 1975-2000 are as follows:

	1975	1980	1985	1990	1995	2000
Energy, Kcal	2,010	2,012	2,014	2,021	2,029	2,036
Protein, gm	49.9	50.2	50.4	50.7	51.1	51.5
Percentage of the population 15 years and below	46	44	43	42	40	38
Percentage of pregnant women	4.2	4.2	3.9	3.7	3.4	3.1
Percentage of nursing mothers	2.6	2.6	2.5	2.3	2.2	2.0

The slight increases in energy and protein needs are due to the shift in the age of the component groups of the population. Thus, decreasing fertility will increase the proportion of the older population, that is, those above 15 years of age, whose nutrient needs are higher, thereby increasing the *per capita* average. However, this increase will be partly compensated by the decrease in the proportion of pregnant and lactating mothers, whose nutrient needs are even higher than those of other adults. Likewise, the lower the rate of population growth, the more significant will be the increase in the *per capita* needs for calories and protein, owing to the influence of the higher requirement of the adults on the weighted average.

E. FOOD SUPPLY TARGETS

The estimates of average needs given in the previous section have been translated into quantities of food commodities on the basis of the recommended food allowances for Filipinos given in table 216, and the projections of the component subgroups of the population shown in table 223. In estimating the future annual requirements of food commodities, the following assumptions were made: (a) food consumption patterns will not change markedly from present food intake[12] and (b) the reference man and woman would weigh 56 and 48 kg. respectively.[13] Nevertheless, nutritional goals will be defined to serve as a guideline, and new estimates can be made whenever necessary to adjust within the framework of consumer demand. What is important is to be clear on the nutrient contributions made by the different food commodities so that adjustments will be feasible if it appears that production levels cannot be raised to meet consumer demand. The projected food requirements for the period 1975-2000 are shown in table 224.

A breakdown of the food groups "cereals" and "meat, poultry and fish" by major food items that comprise these groups on the basis of their proportionate consumption as revealed by dietary surveys is given in table 225. On the assumption that the current consumption proportions of these food items will remain unchanged, rough estimates of the requirements of these food items are also projected up to the end of this century.

It must, however, be noted that the projections presented in the tables give, at most, estimates of future needs for human consumption from the nutri-

10 Source: Zelda Zablan, University of the Philippines Population Institute.

11 The proportions derived are as follows:

	1975	1980	1985	1990	1995	2000
15-19	7.40	6.34	5.72	5.25	5.09	4.82
20-29	55.14	56.53	54.98	53.49	53.43	53.85
30-49	37.46	37.13	39.30	41.26	41.48	41.33

12 This is of course not likely since food consumption is very much dependent on *per capita* income.

13 However, it is expected that, with improved health through sanitation and nutrition, there will be an increase in the heights and weights of the reference adults. This will therefore result in significant increases in the requirements for most food-stuffs.

Table 223. Projections of component subgroups of the population, 1975-2000
(in thousands)

	1975	1980	1985	1990	1995	2000
Infants (0-11 months)	1,402	1,632	1,753	1,874	1,954	2,027
Children						
1-3 years	4,032	4,526	5,046	5,452	5,743	5,971
4-6 years	3,789	4,122	4,695	5,171	5,541	5,807
7-9 years	3,568	3,856	4,336	4,863	5,307	5,636
10-12 years	3,357	3,675	3,994	4,542	5,042	5,442
Male adolescents						
13-15 years	1,628	1,762	1,903	2,129	2,403	2,642
16-19 years	1,996	2,198	2,392	2,590	2,937	3,292
Female adolescents						
13-15 years	1,557	1,709	1,854	2,068	2,332	2,561
16-19 years	1,722	1,889	2,130	2,324	2,658	3,003
Adults - men	9,209	11,133	13,248	15,540	18,025	20,874
Adults - women	7,085	8,544	10,380	12,447	14,783	17,480
Pregnant	1,769	2,041	2,175	2,306	2,386	2,456
Lactating	1,092	1,271	1,366	1,460	1,523	1,579
Total	42,206	48,358	55,272	62,766	70,634	78,770

Source: Based on the medium projections of the population (table 145) prepared by the University of the Philippines in 1975.

Table 224. Projected food requirements, 1975-2000
(Thousands of metric tons)

Year	Body-building food				Energy foods				Regulating foods		
	Whole milk	Fish/ meat/ poultry	Eggs	Beans/ nuts (dried)	Cereals	Kamote/ potatoes etc.	Sugar	Fats	Leafy/ yellow vegetables	Vitamin C-rich fruits	Other fruits/ vegetables
1975	1304	2437	320	258	4868	1702	387	429	1348	1099	2092
1980	1461	2818	366	296	5597	1972	445	495	1559	1257	2412
1985	1628	3240	420	340	6413	2270	513	568	1792	1429	2764
1990	1789	3707	477	388	7317	2602	583	644	2049	1617	3156
1995	1919	4215	539	439	8287	2958	656	724	2333	1824	3578
2000	2025	4754	601	479	9301	3328	731	806	2632	2038	4021

Source: Food and Nutrition Research Institute.

Table 225. Projected requirements of some food items, 1975-2000

(Thousands of metric tons)

Food items	1975	1980	1986	1990	1995	2000
Cereals	5,112	5,869	6,710	7,642	8,642	9,681
Rice (73.00 %)	3,732	4,284	4,898	5,579	6,309	7,067
Corn (20.00 %)	1,022	1,174	1,342	1,528	1,728	1,936
Wheat (7.00 %)	358	411	470	535	605	678
Meat, poultry fish	2,437	2,818	3,240	3,707	4,215	4,754
Meat (26.25 %)	640	740	851	973	1,106	1,248
Poultry (8.75%)	213	247	284	324	369	416
Fish (65.00 %)	1,584	1,831	2,106	2,410	2,740	3,090

Source: Food and Nutrition Research Institute.

tional standpoint. These estimates do not include any provision for seed, feed, industry requirements, losses and wastage. Nor do these estimates take into consideration the income elasticity of demand and the desired better stocks. The purpose of these estimates relating to future food needs is to provide a basis for working out food production programmes.

It is clear from the tables that the Filipino diet is essentially based on cereals, particularly rice. In the decade of the 1960s, the *per capita* consumption of cereal consisted of 73 per cent rice, 20 per cent corn and 7 per cent wheat. Changes in these proportions will depend on income elasticity of demand. Today nearly 80 per cent of the Filipinos consume rice and 40 per cent of the country's arable land is devoted to the production of this cereal. Rice will for some time continue to remain the principal staple and cereals will constitute the principal source of both energy and proteins. It is estimated that the requirements of cereals will increase from 5,112,000 metric tons in 1975 to 9,681,000 metric tons or by nearly 89 per cent by the end of this century.

The higher content of protein in pulses than in cereals makes the production and consumption of pulses desirable. However, unlike in the neighbouring countries, the intake of beans is not common among the Filipinos. Their utilization in Philippine recipes as a meat extender has still to be encouraged, while the production of high-yielding varieties has become a subject of intensive research in agriculture.

Among the animal protein foods consumed, only 35 per cent are meat and poultry; the balance of 65 per cent consist of fish and other sea foods, which are relatively less expensive. Poultry and piggery farms have made substantial gains and production has been found to be more feasible than grazing cows. As a consequence, the available supply of milk in the country is mostly imported. There is no prospect that in the foreseeable future the demand can be locally met.[14] Since the cost of deriving nutrients from foods of animal origin compared with that from foods of plant origin is very high, it is necessary for developing countries like the Philippines to rely on food crops as a source not only of energy but of protein as well.

In the Philippines, productivity of land is the principal factor in determining food supply. Other factors include importation, existing food stocks, use of cereals for livestock feed and the movement of food supply within the country. Government policies and programmes have also played a key role in ascertaining food supply.[15] Damages wrought by plant and animal diseases, in addition to droughts and floods have also been known to affect the supply of food.[16] Cultural and geographical factors affect the food consumption patterns.[17]

There are two basic ways in which food production may be increased. The first of these is to bring new land into cultivation. This has been an important process in some countries of the region, particularly Malaysia, Thailand, Burma and Indonesia. It is estimated that in the Philippines an additional area of 1.1 million hectares is potential cropland. However, given the current economics of land development, bringing additional land under cultivation may not

14 It is essentially for this reason that in the recommended allowances, use of milk has been recommended only for the vulnerable groups, viz., infants, young children, pregnant and lactating women, and persons over 70 years old.

15 For instance, in cognizance of shortfalls in production, the Government has resorted to increased importation and provided supportive services to production. When cereals supply was critical in 1973, there was a move to shift consumption from rice to corn or to a rice-corn combination, and to minimize intake of cerals in favour of animal or fish protein.

16 For instance, in 1972 a succession of typhoons destroyed much of the standing crops resulting in food deficits in 1973.

17 Filipino Moslems do not consume pork. There is a difference in consumption of the staple cereal by region. For instance, the island of Luzon is notably a rice area, while corn is the staple crop in the Mindanao region and parts of the Visayan region. In some areas, rice or corn is combined with kamote or bananas to form the staple.

in the short run yield a sound profit on development investment. In this connexion, it has been observed that: "As the cultivation frontier is pushed towards marginal areas by population pressure, the marginal cost of agricultural production via external expansion can be expected to rise in relation to the marginal cost of production via intensifcation; eventually intensification becomes less costly than area expansion".[18]

The second method is to increase the average yield per unit of land already under cultivation of food crops. "The Philippines has been able to avoid agricultural stagnation by intensifying land use now that the cultivated area can no longer be easily increased. The problem now is how to maintain and accelerate the rate of growth".[19] Intensive use of cultivated land implies increased irrigation, greater application of fertilizers, use of better seeds, pest control, crop rotation and other improved agricultural practices. Effective agricultural extension education is also needed to speed up the adoption by farmers of proven techniques of production suitable to the conditions under which the farmer operates, and strengthened basic education to make farmers more receptive to changes and new ideas. Agricultural land reform will also be needed to improve tenure relationships and to ensure the farmer operator a fair share of the harvest.[20] To raise average yields it will also be essential to expand the network of experimental stations, in order to conduct research and development more specific to local ecological conditions.[21]

The livestock, poultry and fishing industry in the Philippines provides roughly 77 per cent of the gross available food supply of animal origin. The livestock subsector is contributing about 27 per cent of the gross value added in the agricultural sector in the 1970s and it has not expanded as fast as the other subsectors of agriculture. Cattle for meat production are generally raised on ranches that are poorly managed; these ranches usually belong to large landowners who secure pasture permits or leases from the Government. The outlook for livestock production is not as bright as that for crop production. Unless there is a drastic change in the method of raising livestock, the country will have to keep on importing meat, poultry and other meat products. There is a need to encourage more specialized livestock and poultry farms.[22]

To meet the increasing need for animal food, fishing promises to contribute significantly to the available supplies. Also fish is relatively less expensive than meat. Because of its long coastline, the Philippines should be able to produce more marine fish products in order to increase the animal protein intake. Inland fishing also offers great potential.

In conclusion, it may be stated that there is undoubtedly a need for an intensified programme directed to the utilization and application of the present knowledge in agriculture, animal production and food technology. There is likewise an urgent need to utilize the land to its full productive capacity by adoption to improved and modern cultivation practices. There is also the need to educate the people in methods of processing and conserving perishable foods so that adequacy in food supply can be maintained during the lean months and/or during the rainy season. Proper methods in food preparation will prevent heavy losses in food nutrients. In short, all possible ways which can maximize food utilization should be exploited. In the context of low income, inadequate economic growth and rapidly expanding population, vast numbers of Filipinos are living amid severe stresses and malnutrition. As a developing country struggling for economic growth and stability, the Philippines can ill afford a malnourished and half-starved population.

Finally, since man eat food and not nutrients, consumers will demand food and not nutrients to obtain an adequate diet. Nutrition, therefore, will have no effect upon the demand for food unless nutrition knowledge is acquired by consumers. A relentless drive in the dissemination of nutrition information is a critical need.

18 *Sharing in Development...*, p. 445.

19 *Ibid.*, p. 446.

20 N.B. Tablante, "Problems of agricultural productivity in the Philippines", *Economic Research Journal*, vol. 12, Nos. 47-54, 1965.

21 *Sharing in Development...*, p. 451.

22 It was observed: "Integration of livestock production with crop production on farms can greatly increase employments, and incomes there and make a considerable contribution to meeting the increasing demand for meat as balanced rural mobilization proceeds". *Ibid.*, p. 471.

Chapter XV

POPULATION AND NATURAL RESOURCES

A. INTRODUCTION

The pressure of rapidly growing population on material resources has been receiving considerable attention over the years. Fears have been expressed by a substantial number of scholars as to the adequacy and capability of natural resources to support an increasing population at rising levels of living. Discussions relating to the possible implications of growing human numbers for the man-resource relationship have often proceeded on the assumption that there is definite knowledge about the quantum of existing available resources. In most instances, this assumption may not be warranted in view of the new discoveries of available resources, the rapid rate of their exploitation and the recent advances in technology.

In spite of the "prodigious expansion in the efficiency of resource use and in the substitution of new resources for the others, which the continuous unfolding of science and technology has rendered possible",[1] the spectre of neo-Malthusianism has been revived. The whole discussion on the so-called "population explosion" raises the issue of the adequacy of natural resources (which are relatively fixed and in many instances non-renewable) in relation to the rapidly expanding population of the developing countries the world over. Given an exponential growth of population and an even faster rate of utilization of relatively fixed natural resources, the exhaustion of certain critical minerals, such as petroleum, can readily be envisaged unless significant changes occur in the parameters used in their projections to the future.

The rate at which a country can develop itself depends upon several factors, such as the extent of its known (and still to be discovered) natural resources, its people and their skills, the stock of capital and the rate of capital accumulation, institutional resources, the rate of technological advance etc. "In the less developed countries where a low rate of resource exploitation generally prevails, economic development tends to be hindered by the high rates of population growth, which tend to adversely affect the accumulation of capital. As these countries advance in their development, they witness an acceleration in the consumption of their natural resources. The importance of these resources inputs, however, tends to decline relative to total input and total output as economic development advances. This does not imply that the absolute volume of resources requirements declines; it merely means that, with an increase in total output, the total demand for resources inputs may grow less."[2]

An attempt is made in this chapter to examine the availability of various types of natural resources in the Philippines to meet the development needs of the country's growing population.

B. LAND RESOURCES AND AGRICULTURAL DEVELOPMENT

Figure 30 illustrates the land use of the country for agriculture, forestry and fishing.

The favourable combination of topography, climate, soils and natural vegetation renders but a specific portion of the Philippines, or each of the several regions, suitable for agricultural development. The area which is thus favoured constitutes the arable land area which may be slightly extended through the use of modern technology. Arable land includes land under cultivation, irrigated or high quality pasture, fallow and land which is potentially productive but remains under-developed due to remoteness, inadequate transportation, sparse population and other factors.

By and large, topography or relief is the most important factor that limits the use of land resources in the Philippines. The total land area with desirable surface contours is limited by landforms, and in this respect slope is a critical factor. The land suitable for agriculture under the present conditions of Philippine farm technology amounts to approximately a third of the total land area of 30 million hectares.[3] At

1 *The Determinants and Consequences of Population Trends* (United Nations publication, Sales No. E. 71.XIII.5).

2 *Ibid.*, p. 367.

3 Land with slopes from 0 to 12 per cent can be cultivated while land with slopes over 12 but not more than 25 per cent can be safely cultivated only if adequate and special soil management programmes are practised. Based on these limitations imposed by topography, a little over 50 per cent of the total land area of the Philippines constitutes land of agricultural or arable value though of greatly varying quality. However, with the present level conditions of Filipino farm technology, most of the lands with slopes of over 12 per cent will probably remain unused for some time to come.

present about 8.4 million hectares or 28 per cent of the total land area is in farm lands including a small area in pastures. Climate is not a hindrance to agricultural development in the Philippines since temperature is uniformly high the year round; hardly any area is rendered unsuitable for cultivation by scanty rainfall.

Although the estimated total cultivated area appears substantial, there were only 0.287 hectares per person in 1960, when the population was 27.1 million, and 0.229 hectares per person in 1970, when the population increased to 36.7 million. Since the number of persons engaged in agriculture increased from 4.6 million in 1960 to 6.1 million in 1970, the size of farm area per farm worker decreased from an average of 1.69 hectares in 1960 to 1.38 hectares in 1970.

The total number of farm units recorded an increase from 1,634,700 in 1939 to 1,638,600 in 1948 or by 0.2 per cent. But since 1948, the total number of these units increased tremendously to 2,166,000 in 1960 or by 32 per cent. The most important factor that contributed to the rapid increase in the number of farms in the 1950s was the Government's policy of "land to the landless", which resulted in the development of many settlement areas and the eventual awarding of a number of land titles to small owner operators. Between 1960 and 1970, the number of farm units increased by only 9 per cent as practically all available lands optimally suited for farming had been exhausted except in relatively small remaining pockets.[4]

Farmers in the rural areas of the Philippines are, for the most part, small holders and tenants working small plots. According to the preliminary results of the 1970 census of agriculture, of the 2,364,000 farm units in the country, nearly 2 million or about 85 per cent were less than 5 hectares in size while the balance of 364,000 or 15 per cent were 5 or more hectares each in size. Compared with the data of the 1960 census of agriculture, farms in the less than 5 hectares category increased by 13 per cent while those in the category of 5 or more hectares decreased by 11 per cent. It would thus appear that with the increase in the number of farm workers, there has been a reduction in the average size of land holdings.

4 In fact, several geographers believe that substantial portions of land cultivated at present must be returned to forest to maintain the ecological balance between forested and non-forested areas.

In the Philippines, most of the small farm holdings are devoted to the cultivation of food crops while the larger ones (five or more hectares in size) are used for production of commercial export crops. The small average size of the farm land used for crops coupled with unusually low yields create problems with regard to the production of adequate quantities of food to feed the country's growing population.

Increased food production could be achieved by extending the area under cultivation or by increasing the yields per unit of land already cultivated, or by both methods. With respect to putting new land into cultivation, as noted earlier, the Philippines has almost exhausted its supply of virgin land that can be tapped for farm lands. The remaining lands are mostly marginal lands which would require very heavy investments for development but might not give adequate returns. Hence, the alternative is to increase the yields from lands already under cultivation of food crops.[5]

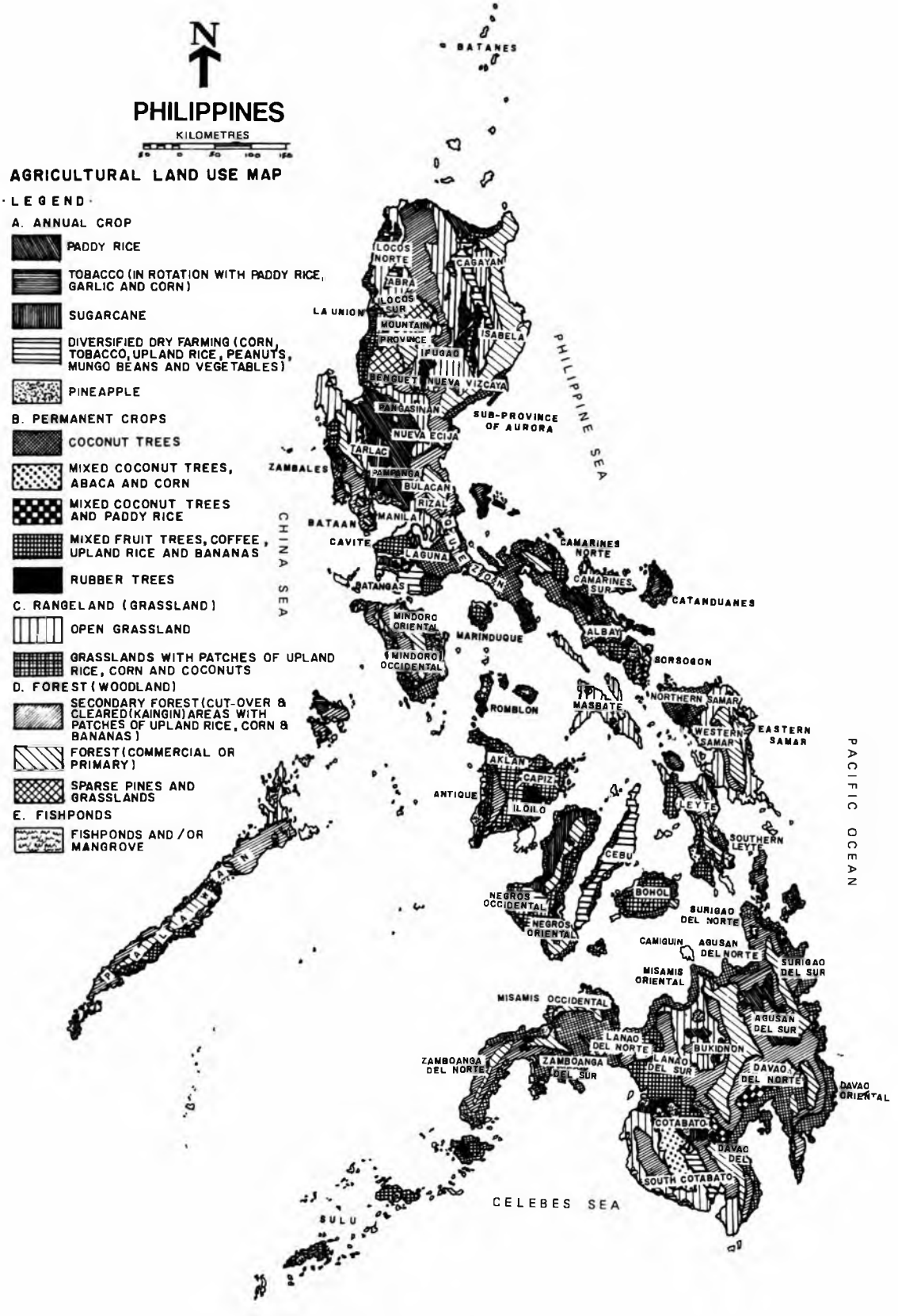
It has been repeatedly pointed out that the new agricultural frontier in the Philippines is a technological one, a frontier for the scientist who will develop better techniques of crop production to achieve higher yield levels. In fact, it has been demonstrated through a number of experimental farms in different parts of the country that modern scientific farming methods can increase yields per unit of area cultivated. The adoption of scientific methods involves the use of high-yielding crop varieties, application of fertilizers, use of insecticides and pesticides, weeding, farm mechanization and provision of irrigation facilities.[6] These will require huge capital outlays as well as extensive education compaigns.

C. FORESTRY RESOURCES

The large and diverse forests of the Philippines constitute another valuable resource. Forest lands in the Philippines are divided into two categories: com-

5 It may also be noted that of the total area already under cultivation, a small but significant portion is withdrawn every year for residential, commercial and industrial uses.

6 At present only about 1.1 million hectares of land are under irrigation in the Philippines. Another 3 million hectares may also be irrigated if the necessary facilities are made available. It is estimated that rice production would then increase from about 12.5 million tons to 45.0 million tons. It is towards this end that the government has geared its agricultural development programme.



Source: Prepared by the University of the Philippines Population Institute.

Figure 30. Map of the Philippines showing land utilization

mercial and non-commercial.[7] The commercial forests of the Philippines cover about 7,261,000 hectares or about 24 per cent of the total land area. Non-commercial forests or reproduction-brushlands, which in time may contain trees of commercial size and volume, cover another 2,578,000 hectares. Unproductive mossy forests found in about 1,545,000 hectares make up the balance of the non-commercial forests of the country.

The tropical forests of the Philippines are dominated by broad evergreens. These forests have developed under conditions of continuous warmth and large amounts of moisture. Owing to the high temperatures and high amounts of precipitation, forest growth in the tropics is characteristically rapid. Climate is thus an asset in the Philippines as it helps a tree to grow to merchantable size in approximately 50 years or less, a period that is comparatively much shorter than in the middle latitudes.

One of the fastest growing industries in the Philippines in recent decades has been the logging industry, accounting for a substantial proportion of the annual foreign exchange earnings. The fragmentation of the Philippines into more than 7,100 islands provides good accessibility to many of the originally forest-covered coastal or near coastal areas.[8] Since government regulations relating to the exploitation of forest resources have not been strictly enforced, existing forest stands are fast dwindling in the absence of compensatory reforestation of cut-over forest. On the whole, management of forest resources has so far been inadequate to maintain the present rate of economic utilization and ensure at the same time adequate forest resources for posterity.

In the period between 1900 and 1975, the areas of excellent commercial forest stands in the Philippines decreased considerably. In 1911, one third of the total land area of the country was covered with virgin forest. However, as a result of the high profitability of log exports tremendous pressures were exerted on forest resources and as a consequence wasteful and destructive operations were quite common. Further, with the rapid growth of population and the development and expansion of commercial agriculture the areas that were logged were mostly released for agricultural purposes. Since development of forest resources in the Philippines has always been oriented towards utilization and never towards protection and conservation, the area under forest stands has been declining over the years.

The rate at which forested lands of the Philippines are being denuded is truly alarming. The estimated rate in 1972 of about 170,000 hectares is quite high when one takes into account that only 11.4 million hectares of the total land area in 1973 was forested. If present forest areas that are being exploited can be kept under a programme of sustained yield management so that they are operated under conditions that will permit faster recovery, the Philippines can expect to have a continuous supply of lumber and related products for some time to come. However, it is at times argued that there will always be forests to exploit even without adequate provisions for forest conservation. Still others are of the opinion that forests are detrimental to a more vigorous development of the country's agriculture. It has, however, to be noted that much of the area now covered with forests is not suitable for agricultural purposes and that this area can be rendered more productive by using it permanently for the growing of timber.

It is encouraging to note that the Forestry Reform Code of the Philippines has been conceived and made into law by Presidential Decree No. 389. The general provisions of this Code include the promotion of wise utilization, conservation and development of forest resources, including associated services related to water supply, recreation and wildlife preservation; the maintenance of a wholesome ecological environment; acceleration of the reforestation of denuded lands; and the establishment of a stable forestry agency.

D. MINERAL RESOURCES

Since minerals are used mainly by industry, the problem of the presumably limited supply of mineral resources in the light of growing population and increasing industrialization has attracted wide attention. The increasing significance of mineral resources

7 Commercial forest are areas dominated by trees of commercial species, the stand of which is at least 40 cubic metres per hectare, having a minimum diametre at breast height of 30 centimetres. Non-commercial forests are those dominated by trees of commercial species but lacking either or both of the above specifications.

8 However, as logging operations were carried farther and farther out into the interior parts of the different islands, the initial advantage of coastal forest location diminished proportionately. In the inland forests of Luzon and Mindanao that were opened for timber concessions, extensive land transportation facilities were required right at the start.

within the framework of economic development in the Philippines is due to the opportunities brought about by unforeseen demands for certain key minerals. Hence, mineral exploitation would contribute to economic development.

Mining has been an important economic activity in the Philippines for several decades. However, it is still primarily an industry whose output of metal ores and concentrates are for export. Although a slight rise has been registered in recent years only a small amount of the minerals mined are processed and used for local industries. It is believed that the mining industry will account for a major portion of foreign exchange earnings in the years ahead. The Government of the Philippines has also underscored the need for further development of the mining industry by taking into consideration the significance of inter-industry relations between mining and manufacturing.

There are a number of minerals found in the Philippines, some of which are present in appreciable amounts. Philippine minerals essential to the alloying and production of other metals include chromite (metallurgical), manganese, molybdenum and nickel, which will soon be extracted from the extensive nickeliferous lateritic ores in north-eastern Mindanao. Other minerals being produced in commercial quantities either for export or for internal consumption or for both are copper, gold, iron ore, chromite (refractory), mercury, sulphur, limestone and silica.

There are a few other minerals which are present but the variety of mineral resources in the Philippines is limited as the geological events responsible for their occurrence are not as extensive as in continental land masses. The estimated reserves of metallic and non-metallic ores in the Philippines are indicated in tables 226 and 227. It is axiomatic in geology that the larger the land mass, the greater the quantity and variety of mineral resources as the probability of occurrence of geological events or processes is also greater.

The Philippines has problems with fuel resources. Coal reserves are small, scattered and low grade, generally of the non-cooking variety. Present known coal reserves amount to 104 million metric tons. It is unlikely, however, that surprising discoveries will be made in the future as the conditions in which coal is formed and the location of prospective coal deposits are now well known.

Water, however, as a source of power seems to hold more promise. Mountain topography and high seasonal or annual precipitation, provided that the acceptable minimum ratio of forests to total land area is maintained, make hydroelectric power development feasible. Even then, large hydroelectric power sites are few. Geothermal possibilities are being looked into, and the first pilot project in Tiwi, Albay in south-eastern Luzon has been a success. Again, the total power potential from geothermal sources may not be very large, possibly less than that available from water sources.

Oil and natural gas in commercial quantity have yet to be found. It is interesting to note that the Philippines is near the middle of the great series of Pacific island arcs fringing the continent of Asia which have produced significant quantities of oil and natural gas. Geologic evidence based on the surface and submarine morphology of the islands shows that the Philippines is closely related to the Indonesian archipelago, one of the more important oil producing areas of the region. However, despite seepages and other indications of the existence of oil, the Philippines is the only group of this 9,654 kilometre chain where commercial deposits have not been discovered.

Among the metals for industry, deposits of iron ore seem to be adequate and satisfactory. Reserves of magnetite and hematite ore are placed at over 100 million metric tons with an average metallic content of 43.5 per cent. The largest iron ore reserves are the nickeliferous lateritic deposits, of which proven and potential reserves may amount to over 4 billion tons.

Among the non-ferrous metals, copper is easily the most outstanding in the Philippines. Most of the known copper deposits are scattered over the country. Detailed surveys of copper deposits are still going on in areas where copper is suspected to exist as well as in areas where copper has already been found or is being mined at present. The estimated reserves of about 2.3 billion metric tons may not seem very reassuring since the average metallic content of the typical ore deposit is very low.

Gold production in the Philippines is of commercial significance. In fact, it occupies the most important position and for a long time has been the mainstay of the mining industry in the country. Silver is not mined separately but is recovered with gold, with which it is naturally associated. It also occurs with copper and copper-zinc deposits.

Table 226. Estimates of metallic ore reserves, 1973

	Tonnage[a]	Grade[b]	
Gold (Primary)	20,075[c]	.135	Ounce of gold per short ton
(By-product)	1,344,139[c]	.032	
Copper	2,294,141	.596	Cu
Iron			
Lump ore	102,688	43.5	Fe
Laterite	2,937,177	42.52	Fe
Aluminous laterite	292,010	21.03	Al_2O_3
		41.75	Fe
		3.61	SiO_2
Magnetite sand	90,735	55.11	Fe
Manganese	2,763	22.72	Mn
Chromite			
Metallurgical	2,153	29.42	Cr_2O_3
Refractory	15,611	29.95	Cr_2O_3
Mercury	3,744	1.192	pound mercury per metric ton
Nickel	3,602,410	0.930	Ni
Zinc	6,091	5.114	Zn
Lead	4,028	1.461	Pb
Molybdenum	95,868	0.018	Mo
Cadmium	47	0.010	Cd
Platinum group	942	0.080	Ounce per metric ton
Uranium	500	0.040	U_3O_8

a Thousands of metric tons, unless specified.

b Metal or oxyde content in percentage, unless specified. Symbols used in this column have the following meanings:

Cu	=	Copper	Ni	=	Nickel
Fe	=	Iron	Zn	=	Zinc
Al_2O_3	=	Alumina	Pb	=	Lead
SiO_2	=	Silica	Mo	=	Molybdenum
Mn	=	Manganese	Cd	=	Cadmium
Cr_2O_3	=	Chromium oxyde	U_3O_8	=	Uranium oxyde

c Thousands of short tons. The tonnage of "primary gold" corresponds to a volume of 61.8 million cubic yards.

Table 227. Estimates of non-metallic ore reserves, 1973

	Tonnage[a] (Thousands of metric tons)
Asbestos	4,348
Barite	120
Cement raw materials	11,789,895
Clay	272,882
Coal	104,294
Construction materials	492,491
Diatomaceous earth	3,697
Dolomitic limestone	492,798
Feldspar	538,322
Gypsum	7,108
Limestone	6,584,237
Megnesite	1,233
Marble	2,159,589
Perlite	27,501
Pumice and pumicite	11,300
Pyrite	19,052
Quartz	9,638
Rock asphalt	550
Silica rock	117,791
Sulphur	24,132
Talc	268

a Estimates are also given in volume (in thousands of cubic metres) in the case of:

Construction materials	135,083
Limestone	546,463
Marble	163,397
Pumice and pumicite	21,190

It has, however, to be noted that known mineral resources do not set ultimate limits. Many reserve figures are little more than working inventories. The availability of the several mineral resources found in the Philippines will ultimately depend on improvements in the recovery methods. The technology of mineral exploration and exploitation is improving all the time. Nevertheless, the exponential increase in mineral demands for the growing industrialization of the country as well as for exports cannot be satisfied indefinitely. As stated earlier, the small size of the country considerably limits the possibility of finding additional extensive mineral deposits. There is little basis for assuming that even when the surrounding sea is tapped, mineral resources of large usable volume or feasible recoverability will be found.

E. FISHERY RESOURCES

Unlike land, forestry and mineral resources, the fishery resources of a country are not limited to the wealth of its territorial waters. With the development of new fishery techniques and modern fishing vessels, a country's fishermen can draw upon the resources of the world's marine fishing grounds. However, Filippino fishermen have not as yet acquired skill and equipment that may enable them to participate in the deep-sea fishing operations of the world's widely scattered fishing areas.

The Philippines archipelago has an extensive coastline of 17,460 kilometres with numerous protected anchorages. It has extensive marine territorial waters of approximately 1.7 million square kilometres inhabited by more than 2,000 species of fish. Still the marine areas of the Philippines are not very productive because the continental shelf or the underwater extension of the land around the various islands is narrow. The presence of a wide variety of fish but in limited quantities is another drawback.

Man-made factors also limit the productivity of Philippine waters, especially in inland and coastal areas. Among these are over-fishing; the use of destructive methods of catching fish such as dynamite, poisons and fine mesh nets; deforestation, which causes floods and deposits of eroded materials in the rivers, making them shallow or non-permanent; and the use of some rivers for the disposal of industrial wastes laden with substances harmful to aquatic life.

Despite these disadvantages, prospects of the development of off-shore fisheries are fairly good with the use of advanced technology. Though off-shore or deep-sea fishing is relatively new in the Philippines, it is gradually growing. While in 1953, off-shore fisheries accounted for about 23 per cent of total fish production, by 1972 this proportion had increased to about 38 per cent. The reason for this development was the use of better equipment, especially the introduction of fish finders and synthetic fishing nets as well as the increased capacity of the fishing vessels. Further development can be expected in this sector as exploitation has been confined only to the traditional waters.[9]

9 Within Philippines territorial waters is an area of 125,950 square kilometres of non-traditional fishing grounds that have barely been tapped or explored. These grounds are waters at depths of up to 183 metres and surveys or investigations of this area are needed especially regarding the feasibility of trawl fishing.

In-shore fisheries represent the more common fishing operations in the Philippines. These small-scale operations are subject to the rules and regulations of the coastal municipalities. The fishermen engaged in these fishing activities employ small boats of three tons or less in weight operated manually or powered by sail or motor. In-shore fisheries continue to account for more than half of the total fish production annually, though there has been a decline in their proportionate share in total national catch from about 65 per cent in 1953 to about 53 per cent in 1972. It will be possible to improve or increase the output by mechanization of fishing craft.

In the Philippines fresh water areas like rivers, lakes, swamps and marshes and brackish estuarine areas which include the lower courses of rivers and mangroves are important inland fishing areas. The outstanding inland fishery operation is the development of fishponds, which in recent years have experienced a rapid rate of expansion. Fishponds are usually developed from mangrove swamps and on tidal flats near river estuaries. It is currently estimated that about 174,000 hectares are used for different fishpond and agriculture operations.

The main strategy of the second four-year expanded fish production programme of the Bureau of Fisheries is to increase the yield per hectare of existing productive fishponds as well as the development of extensive swamplands in the country. The present average production of a hectare of fishpond, which includes mainly fish and some shrimps, is 560 kilos a year. This production can easily be increased to 1,000 kilos with improvements in the techniques used. In addition, at least about 529,000 hectares of mangrove swamps, estuarine areas, tidal flats and shallow coastal areas are suitable for further development. Thus, if existing fishponds and potential areas can be made to produce 1,000 kilos per hectare per year, the country can expect a yield of 703,325 metric tons of fish and shrimps, thus ensuring an adequate supply of protein foods for a much larger population.

F. SUMMARY

The prospects for economic development in the Philippines will depend, among others, on the size and characteristics of the country's population in relation to available resources. Resources, in general, set certain limits to what may be accomplished in combination with manpower, capital and the level of technology.

Without seeming to be unduly optimistic, it may be said that the Philippines is reasonably endowed with most of the natural resources necessary for economic development except for the conspicuous absence of petroleum resources at the moment. However, efforts to find oil have been going on for several decades and have definitely been accelerated in recent years.

The rosy picture painted in the 1920s and 1930s of vast tracts of arable land awaiting settlers in Mindanao and other areas in northern Luzon and some islands in the Visayas is no longer a true picture of the availability of agricultural land in the 1970s. Rapid migration into these areas in recent decades has practically exhausted all available land optimally suited for agriculture. Hence, increases in agricultural production have to be achieved by raising yields per unit of cultivated land through better irrigation, improved seed variables and more efficient management and marketing.

Approximately one third of the total land surface is covered by commercial forest stands from which timber is cut. However, there appears to be a fast depletion of this valuable resource due on the one hand to indiscriminate exploitation and on the other to the absence of a practical programme of conservation and reforestation. Nevertheless, if the existing resources are properly managed, it will be possible to ensure a continuous supply of lumber and related products.

Similarly, the Philippines has been relatively favoured with mineral resources The growth of copper mining, the development of nickel mining and the rehabilitation of gold mining in recent years are concrete examples of the bright future of the mining industry in the Philippines. The resources for industry in spite of the apparent limitation in fuel resources are at least equally favourable and in the long term generally more promising.

The picture with regard to available fishing resources is comparatively more promising. While government regulations have not been strictly enforced and known fishing grounds have not been properly managed, the archipelagic character of the Philippines favours the country with vast unexploited fishing resources awaiting development.

Any comprehensive programme for the socio-economic development of the country demands the development of a sophisticated inventory of resource endowments, an appraisal of the present systems of resource utilization, an anlysis of cultural and physical obstacles to resource development and an estimate of resource potentials, taking into account conflicting uses and demands for given resources, expected population trends and the probable role of technological change through successive periods.

Chapter XVI

LAW AND POPULATION

A. INTRODUCTION

It is only in recent years that the legal dimensions of population problems have come to be examined in a conscious and systematic manner. It is being increasingly recognized that a country's laws and regulations (taken in the broad sense of all formal and official governmental decisions effectively put into operation) have an impact, direct and indirect, actual and potential, on the components of population change: fertility, mortality and migration.

The effect of some laws on population growth is more evident than that of others. For instance, legislation providing for a policy on population and establishing the requisite administrative machinery for the implementation of that policy will have a more direct and measurable effect on population dynamics. The relationship will be less apparent in the case of laws relating to, say, marriage and divorce and to economic factors bearing on the family such as maternity leave, inheritance and taxation. In these areas it is difficult to establish the causative effect of law and to isolate it from other social and economic variables. Nevertheless, the conclusion remains that law is one of the factors which influence behaviour, although in many cases not decisively. An examination of the country's laws which have a bearing on population would therefore contribute to an understanding of the legal dimensions of the population problem.

B. PHILIPPINE LEGAL SYSTEM

The Philippine legal system is a blend of indigenous customs, the Roman (civil law) and the common law systems. This blending was the consequence of Spanish colonization (1521-1899) and American rule (1899-1946). In 1565, Spain extended her laws to the Philippines. These remained in force until the Treaty of Paris of 1898, when, following the termination of the Spanish-American war, the Philippines was ceded to the United States of America. Spanish political laws in the Philippines were abrogated upon the establishment of American sovereignty; but such municipal laws as affected private rights, including those providing for the punishment of crime, continued to be in force. Thus, the Spanish Civil Code, the Penal Code and the Code of Commerce, among other laws, remained operative during the American occupation. However, all Spanish laws, customs and rights of property inconsistent with the United States Constitution and with American principles and institutions were superseded.[1]

The legal system thus has a nucleus of customary law combined with Spanish law, which was later expanded with Anglo-American law and jurisprudence. The Roman (Spanish) element has since remained static; but laws patterned after those in the United States have steadily grown. Adaptations from Anglo-American law are evident in public administration, trade and commerce, social welfare and procedure. Much of the legislation enacted after independence is of American origin: labour relations, social insurance, taxation, banking and currency.[2] In Sulu and parts of Mindanao, Islamic law is observed.

The new Civil Code, Republic Act No. 386, went into effect on 30 August 1950, four years after the Philippines attained its independence. This code replaced the Spanish Civil Code of 1889, which was extended to the Philippines on 7 December 1889. The new Civil Code, which is the basic law governing family and property relations in the Philippines, was based mainly on the Spanish Civil Code of 1889. The old Code was revised in order to make it conform to the "customs, traditions and idiosyncracies of the Filipino people". Two of the fundamental principles adopted in the new Civil Code were the liberalization of women's rights and the consolidation of the family.[3]

Prior to 1932, the criminal law of the Philippines was based principally on the Spanish Penal Code of 1870. In 1927, this Code was revised by a Committee of five criminal law experts, whose draft was adopted by the Philippine legislature on 8 December 1930 as the Revised Penal Code.[4] This

1 *Alvarez Sanchez v. U.S.*, 216 U.S. 167, 30 S. ct. 361., 54 L. Ed., 432 (1910). In re Shoop, 41 Phil. 213 (1920); see also Gamboa, *Introduction to Philippine Law 72* (7th ed., 1969).

2 Fernandez, "Sixty Years of Philippine Law", *Philippine Law Journal*, 35:1396 (1960).

3 *Report on the Proposed Civil Code* [Philippine (Republic) Code Commission, 1948].

4 Act No. 3815 (1932).

code came into effect in January 1932, repealing the Spanish Penal Code of 1870 and related special penal laws which were passed by the legislative body during the American regime.[5] Laws bearing on family planning and population directly or indirectly may be found in the Civil Code and in the Revised Penal Code, some portions of the Revised Administrative Code, the laws regulating the professions, welfare legislation laws and tax laws. Basic policies are enunciated in the Constitution[6] and the Revised Population Act of 1971.[7]

On 21 September 1972, the President of the Philippines placed the country under martial law.[8] By virtue of his martial law proclamation and as Commander-in-Chief of the Armed Forces, he governs the nation and directs the operation of the entire Government, including all its agencies and instrumentalities.[9] While still under martial law, the Filipino people, through the Citizens' Assemblies created by Presidential Decree No. 86 ratified a Constitution on 17 January 1973.[10] Proclamation No. 1104[11], issued by the President on the same day, declared the continuation of martial law. Since the proclamation of martial law, various Presidential Decrees which constitute part of the law of the land have been issued. The decrees dealt with government reorganization, economic development, monetary and financial reforms, employment and manpower development, social services and family planning.

C. LAWS DIRECTLY AFFECTING POPULATION

1. Constitution

The Philippines is the first sovereign State to recognize the importance of population and raise it to the level of a constitutional objective. Section 10 of article XII reads:

> "It shall be the responsibility of the State to achieve and maintain population levels most conducive to the national welfare".

This provision is sufficiently flexible to enable policy makers to deal with the problems arising from over-population or under-population. Legislation and administrative regulations may thus be adopted to regulate rates of population growth to levels consistent with the requirements of national development.

Although the constitutional provision with regard to population matters is broad in its terms, its implementation is subject to the provisions in the Constitution in regard to other matters such as declared principles and national policies regarding the strengthening of the family as a basic social institution,[12] the promotion of social justice,[13] the establishment and maintenance of adequate social service,[14] the right and duty of parents in rearing youth[15] and the adoption of the generally accepted principles of international law as part of the law of the land.[16] The provisions of the Bill of Rights on due process,[17] equal protection of laws,[18] privacy[19] and religious freedom[20] likewise limit the power to adopt population legislation. Individual rights guaranteed by the Constitution are not absolute. These may, in certain cases, yield to compelling state interests. The extent to which the State may interfere with these rights calls for a constant balancing of interests. Which interest, whether that of the individual or the public, will prevail at a particular time and under specified circumstances, is a question which calls for judicial determination.

2. Population Act

It was only in the late 1960s that the Government expressed concern over the rapid population growth of the Philippines. In 1967, President Ferdinand E. Marcos, together with 17 other Heads of State, signed the United Nations Human Rights Day Declaration on population, which recognized the population problem as "...a principal element in long range national planning, if governments are to achieve their economic goals and fulfill the aspira-

5 Gamboa, *op. cit., supra* note 1 at 401.

6 Art. XV, sect. 10.

7 Presidential Decree No. 79 (1971).

8 Proc. No. 1081, s. 1972, 68 O.G. 7624 (September 1972).

9 Gen. Order No. 1, dated 22 September 1972, 68 O.G. 777 (October 1972).

10 Proc. No. 1102, s. 1973, 69 O.G. 592 (January 1973).

11 69 O.G. 592-3 (January 1973).

12 Constitution, art. II, sect. 4.

13 Constitution, art. II, sect. 6.

14 Constitution, art. II, sect. 7.

15 Constitution, art. II, sect. 4.

16 Constitution, art. II, sect. 3.

17 Constitution, art. IV, sect. 1.

18 Constitution, art. IV, sect. 1.

19 Constitution, art. IV, sects. 3 and 4.

20 Constitution, art. IV, sect. 8.

tions of their people".[21] The following year, the Philippines became a signatory to the Tehran Proclamation on Human Rights, declaring family planning as a basic human right.[22]

In February 1969, the President issued Executive Order No. 171 establishing the Population Commission. This Executive Order, *inter alia*, provides that the Commission shall undertake and disseminate studies on the population problem in all its aspects, and formulate policy and programme recommendations for the Government. In June 1969, a joint resolution of the Congress of the Philippines promulgated basic policies to achieve economic development and to attain justice.[23] It declared that the grave social and economic challenges posed by the high rate of population growth should be met by "positive social and economic measures that will increase the productivity of human work so as to promote economic growth, and by programmes of family planning which respect the religious belief of the individuals involved, so as to increase the share of each Filipino in the fruits of economic development".

In May 1970, President Marcos issued Executive Order No. 233, expanding the composition and the functions of the Population Commission. The Commission was then composed of department secretaries and heads of private and religious agencies concerned with population and family planning.

To place the family planning programme on a permanent and sustained footing, the Congress of the Philippines in 1971 enacted Republic Act No. 6365, which established a policy on population, provided a statutory basis for the Population Commission (POPCOM) and defined its functions.

Soon after the declaration of martial law in September 1972, the President issued Presidential Decree No. 79, revising the Population Act of 1971. Section 2 of this decree declared:

> "...that for the purpose of furthering the national development, increasing the share of each Filipino in the fruits of economic progress and meeting the grave social and economic challenges of high rate of population growth, a national program of family planning involving both public and private sectors which respect the religious beliefs and values of the individuals involved shall be undertaken".

The Decree enlarged the Commission's responsibility in several ways by: (a) encouraging all persons to adopt safe family planning methods by making available all acceptable methods of contraception to all persons desirous of limiting their families; (b) authorizing POPCOM approved paramedics (nurses and midwives) to provide, dispense and administer acceptable methods of contraception; and (c) authorizing POPCOM to utilize clinics, pharmacies as well as other commercial channels of distribution for the distribution of family planning information and contraceptives.

3. Laws on contraception

Previously, the Tariff and Customs Code prohibited the importation of "articles, instruments, drugs and substances designed, intended or adapted for preventing human conception... or any printed matter which advertises or describes or gives directly or indirectly information where, how and by whom contraception is prevented..."[24] In 1966, Republic Act No. 4729 was enacted, regulating the sale and distribution of contraceptives. This subsequent law, according to the Secretary of Justice, impliedly repealed these portions of the Code because it had the effect of making contraceptives legitimate articles of commerce, and their use or distribution is no longer deemed detrimental *per se* to public health and morals.[25] After the proclamation of martial law, a Presidential Decree amending the Tariff and Customs Code deleted the prohibition against the importation of contraceptives.[26] While the importation of contraceptives is now allowed, they are still subject to customs duties and taxes. The Tariff and Customs Code does not have a specific tariff heading for contraceptives. However, they may be classified under other tariff headings such as hormones, whether natural or synthetic, and their derivatives, and these are subject at present to an *ad valorem* tax of 10 per cent.[27]

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21 The Population Council, *Studies in Family Planning*, No. 16 (New York, January 1967).

22 International Conference on Human Rights, Teheran, 1968, (A/CONF.32/41, para. 16).

23 Joint resolution No. 2, Philippines Laws and Resolutions, 6 (1969).

24 *Republic Act No. 1937 (1957)*, sect. 102(d)., hereinafter referred to as the Tariff and Customs Code.

25 Opinion dated 28 April 1969, 48 *Philippine Law Journal*, pp. 440-441 (1973).

26 Presidential Decree No. 34 promulgated on 27 October 1972.

27 Tariff and Customs Code, as amended, sect. 104, schedule VI, chap. 29, 39.

Republic Act No. 4729 made it unlawful for any person, partnership or corporation to sell, dispense or otherwise distribute, whether for or without consideration, any contraceptive drug or device, unless such sale, dispensation or distribution is by a duely-licensed drug store or pharmaceutical company and with the prescription of a qualified medical practitioner. It defined a contraceptive drug as "any medicine, drug, chemical or portion which is used exclusively for the purpose of preventing fertilization of the female ovum" and a contraceptive device as "any instrument, device, material or agent introduced into the female reproductive system for the primary purpose of preventing conception".[28] A violation of this law made the offender liable to a fine of not more than 500 pesos or imprisonment of not less than six months or more than one year or both such fine and imprisonment at the discretion of the court. Recently, the Secretary of Justice rendered the opinion that this law had in turn been impliedly repealed by Presidential Decree No. 79, otherwise known as the Revised Population Act.[29]

The Pharmacy Law[30] on the other hand prohibits the delivery or sale to any person without a proper prescription by a duely-licensed physician of any drug or chemical product or device capable of preventing conception. It requires a pharmacist in charge of a drug store or pharmacy after filling up a prescription containing anti-conceptional substances or devices to record in a separate register book for anti-conceptionals the following data: (a) number and date of the prescription; (b) name and address of the physician; (c) name, quantity and manufacturer of the drug; (d) name and address of the prescription; (e) date of filling the prescription; and (f) signature of the pharmacist filling the prescription.

A violation of this provision entails a fine of not less than 100 pesos but not exceeding 500 pesos, or imprisonment of not less than 30 days but not more than four months at the discretion of the court. Whether or not this portion of the Pharmacy Law has likewise been impliedly repealed by the Revised Population Act has not been ruled upon.

28 Republic Act No. 4729 (1966), section 2.

29 Opinion No. 82 dated 6 June 1975.

30 Republic Act No. 5921 (1969).

4. Laws on abortion

Abortion constitutes a class of felonies (crime) under the Revised Penal Code.[31] While it is not defined in the Code, commentators on the Code are of the opinion that it is the wilful killing of the foetus in the uterus, or the violent expulsion of the foetus from the maternal womb which results in the death of the foetus.[32] Section 3(1) of the recently promulgated Child and Youth Welfare Code[33] provides that a child from the moment of his conception has the dignity and worth of a human being and has the right to be born well.

The Code likewise states that the civil personality of the child commences from the time of his conception, for all purposes favourable to him subject to the requirements of article 41 of the Civil Code. Article 41 of the Civil Code in turn conditions the beginning of the child's civil personality on his being subsequently born alive after being completely separated from the mother's womb. The new code leaves unresolved "the moment of conception" since this is far from settled in the medical field. For there to be abortion, conception must first be proved.

The Penal Code has made a distinction with regard to those abortions which are intentional or unintentional, or those practised by the woman herself, her parents, a physician or a midwife.

The severity of the penalty for intentional abortion would depend on whether it was caused with violence (actual physical force) or with or without the consent of the woman. If it was caused by using any violence on the person of the pregnant woman, the offender shall suffer the penalty of *reclusion temporal*[34]; if it was caused without using violence but without the consent of the woman, the penalty will be *prision mayor*[35]; and if it was performed without using violence and with the consent of the woman, the penalty shall be that of *prision correccional* in its medium and maximum periods.[36]

31 Act. No. 3815 (1930), articles 256-259, hereinafter referred to as the Revised Penal Code.

32 Carrara, cited in G.B. Guevarra, *Commentaries on the Revised Penal Code of the Philippines* 510 (4th edition, 1946).

33 Presidential Decree No. 603 (1975) hereinafter referred to as the Child and Youth Welfare Code.

34 Imprisonment ranging from 12 years and 1 day to 20 years.

35 Imprisonment ranging from 6 years and 1 day to 12 years.

36 Imprisonment ranging from 2 years, 4 months and 1 day to 6 years.

Unintential abortion is deemed to have been committed if violence is inflicted on a pregnant woman, which results in an abortion but where the offender did not intend to cause the abortion. This crime carries with it the penalty of *prision correccional* in its minimum and medium periods.[37]

A woman who practises abortion upon herself or consents that any other person should do so shall suffer the penalty of *prision correccional* in its medium and maximum periods. Her liability is, however, mitigated if her purpose is to conceal her dishonour, in which case, the law provides that she shall only suffer the penalty of *prision correccional* in its minimum and medium periods. Should the abortion be committed by the parents of the pregnant woman or either of them, and they act with her consent, they shall suffer the penalty of *prision correccional* in its medium and maximum periods.

The penalties provided for intentional abortion are imposed in their maximum period on physicians or midwives who, taking advantage of their scientific knowledge or skill, shall cause an abortion or assist in causing the same. The law is silent on the specific manner in which abortion is caused or assistance is rendered thereto (for instance, by an operation or by the prescription or administration of abortives). The reason for the imposition of the maximum penalty in this case, according to some commentators, is that physicians or midwives incur a heavier guilt in making use of their knowledge for the destruction of human life, whereas such knowledge should be used only for preservation.[38] Whether or not there has been a criminal conviction, a physician who has performed an abortion may lose his license to practise medicine, under section 24, paragraph 8, of Republic Act No. 2382. The performance of, or aiding in, any criminal abortion is a ground for reprimand, suspension or revocation of his registration certificate under this law.

While apparently the previsions of the Revised Penal Code punish any and every kind of abortion, yet therapeutic abortion, i.e., interruption of pregnancy to save and preserve the life of the mother, may be justified under article 11, paragraph 4, of the Code, which provides that no criminal liability is incurred by "any person who, in order to avoid an evil or injury, does an act which causes damage to another, provided that the following requisites are present:

"First. That the evil sought to be avoided actually exists;

"Second. That the injury feared be greater than that done to avoid it.

"Third. That there be no other practical and less harmful means of preventing it."

This view is supported at least inferentially in *Geluz v. Court of Appeals,*[39] a case involving damages for procured abortion, where the Supreme Court said:

> "It is unquestionable that the appellant's act in provoking the abortion of appellee's life, *without medical necessity to warrant it,* was a criminal and morally reprehensive act, that cannot be too severely condemmed; and the consent of the woman or that of her husband does not excuse it". (Underlining supplied)

The Revised Population Act explicitly refers to abortion as an unacceptable method of birth control, resort to which shall be discouraged and prevented.[40] There is reference to abortion in other laws too. The Tariff and Customs Code continues to prohibit the importation of such articles, instruments, drugs and substances designed, intended or adapted for producing unlawful abortion. The Revised Administrative Code, which was recently amended by Presidential Decree No. 495, still retains the provision that articles, instruments etc. relating to abortion are absolutely non-mailable matter, while the Child and Youth Welfare Code upholds the policy proscribing abortion.

5. Laws on sterilization

Sterilization is not expressly defined as a crime in the Penal Code. However, mutilation, which consists in intentionally depriving another either totally or partially of some essential organ of reproduction is punished by a penalty ranging from *reclusion temporal* to *reclusion perpetual.*[41] The Secretary of Justice is of the opinion that surgical sterilization

37 Imprisonment ranging from 6 months and 1 day to 4 years and 2 months.

38 Albert, "Revised Penal Code 582" cited in 2 Reyes, *Revised Penal Code: Criminal Law 420* (9th edition, 1971).

39 G.R. No. 16439, 20 July 1961, 2 SCRA 801, 805 (1961). Nevertheless, since a distinction has to be made between civil liability and criminal liability, it is doubtful whether the dictum that is cited lends support to the view that therapeutic abortions are justifiable.

40 Presidential Decree No. 79 (1972), sect. 4(1).

41 Imprisonment ranging from 12 years and 1 day to 30 years.

for both sexes (tubal ligation and vasectomy) cannot be regarded as mutilation within the contemplation of article 262 of the Revised Penal Code because: (a) mutilation involves the lopping or clipping off of some parts of the body which is not involved in these operations; (b) there can be no offence committed where the subject consents knowingly to the operation in the same manner that no offence is committed by a surgeon who intentionally removes, for instance, an eye or a kidney from a person who consents thereto for the purpose of transplanting it to another; and (c) national policy expressed in the Revised Population Act could be thwarted if these two methods are illegal.[42]

6. Use of medical and paramedical personnel in the population programme

It is the declared policy of the State to establish, maintain and ensure adequate social services in the field of health.[43] The administration or dispensation of family planning means and methods has been made a part of health services.

Section 5 of Presidential Decree No. 79 empowers the Commission on Population to "employ physicians, nurses and midwives to provide, dispense and administer all acceptable methods of contraception to all citizens of the Philippines desirous of spacing, limiting or preventing pregnancies; provided, that, the above mentioned health workers, except physicians, for the purpose of providing, dispensing, and administering acceptable methods of contraception, have been trained and authorized by the POPCOM in consultation with the appropriate licensing bodies". This provision was purposely incorporated into the law to impress into the population programme additional personnel in view of the inadequacy of the number of physicians.

By Department of Health Circular No. 214, Series of 1974, regional health directors have been directed by the Secretary of the Department of Health to authorize municipal health officers and rural health and family planning centre physicians to permit nurses and midwives who have completed the required training to dispense oral contraceptives to patients directly, without necessity of examination by a physician as long as the proper use is made of a "check list". The trained nurses and midwives have, however, been enjoined to follow instruction fully and exercise due care and diligence in the dispensation of the pill. Municipal health officers or rural health physicians, on the other hand, have been called upon to provide whatever additional training is necessary further to enhance the proficiency and skill of nurses and midwives and to extend supervision and guidance immediately after training and continuously thereafter.

D. LAWS INDIRECTLY AFFECTING POPULATION

1. Marriage law

Marriage is considered by the Civil Code not as a mere contract but as an inviolable social institution. Hence, its nature, consequences and incidents are governed by law and not subject to stipulation, except that the marriage settlements may to a certain extent fix the property relations during the marriage. No marriage can be solemnized unless the following requisites are complied with: (a) legal capacity of the contracting parties; (b) their consent freely given; (c) authority of the person solemnizing the marriage; and (d) a marriage licence, except in a marriage of exceptional character. Any person who has reached the minimum age can contract marriage, provided that he is not under any of the legal impediments mentioned in articles 80 to 84 of the Code.[44]

The age of consent for marriage under the Civil Code is given in article 54, which reads: "Any male of the age of sixteen years or upwards, and any female of the age of fourteen years or upwards, not under any of the impediments mentioned in Articles 80 to 84, may contract marriage."

Marriages contracted below the age of consent are void from the beginning, even with the consent of the parents. A marriage licence, which is essential to the validity of a marriage will not be issued by the Local Civil Registrar if the parties are not of age, and no marriage will be solemnized without a licence first being issued. Children conceived or born of marriages which are void from the beginning are illegitimate, and have the same status, rights and obligations as acknowledged natural children. They are called natural children by legal fiction. Any person who contracts marriage knowing that the

42 Opinion No. 131 dated 17 September 1973, 48 *Philippines Law Journal* 441 (1973).

43 Constitution, art. 11, sect. 7.

44 In general, the impediments mentioned in articles 80 to 84 refer to those: (a) where there is a lack of any of the essential requisites of marriage, that is, age; (b) bigamous or polygamous marriages; and (c) incestuous marriages or quasi-incestuous marriages.

marriage is in disregard of a legal impediment is punished by *prision correccional* in its medium and maximum period[45] under article 350 of the Revised Penal Code.

If the male is less than 20 years of age or the female less than 18 years, the party concerned is required to exhibit to the Local Civil Registrar the written consent to the marriage of his or her father or mother or guardian or person having charge of him or her. In this case, if the marriage was nevertheless solemnized without the consent of the parent or guardian, the marriage may be annulled, unless after attaining the age of 20 or 18 years, as the case may be, such party freely cohabited with the other and both lived together as husband and wife. Males above 20 but under 25 years of age, or females above 18 but under 23 years of age, are obliged to ask their parents or guardians for advice on the intended marriage. If they do not obtain such advice or if it be unfavourable, the marriage shall not take place until after three months following the completion of the publication of the application for the marriage licence.

The formal requisites for marriage include the security of a marriage licence and the registration of the marriage.

A Memorandum Circular dated 8 February 1974 was issued by the Secretary of Local Governments and Community Development and the Secretary of Social Welfare to all mayors on the promulgation of an ordinance which requires applicants for a marriage licence to present a certification that they have been informed about family planning as a prerequisite to the issuance of marriage licence. Complying with this circular, a number of cities and municipalities have enacted ordinances embodying the general language of the circular and imposing other varying specific requirements.

Plural marriage is prohibited and no divorce may be obtained except among the Muslims under special provision of law.[46] Likewise, incestuous marriages are void *ab initio*. The Revised Penal Code imposes penalties in these two situations.

A widow commits a crime if she remarries before the lapse of 300 days from the death of the husband, unless in the meantime she has given birth to a child. The same law applies to a women who marries within the same period after her first marriage was annulled or dissolved.

Marriages may be judicially annulled for specified causes and within a limited period. But the children conceived or born before the annulment are considered legitimate.

Among others, marriage produces the following rights and obligations between husband and wife: (a) the spouses are obliged to live together, observe mutual respect and fidelity and render mutual help and support; (b) the husband fixes the residence of the family but the court may exempt the wife from living with the husband if he should live abroad unless in the service of the Government; (c) the husband is responsible for the support of the wife and the rest of the family; (d) the husband is the administrator of the conjugal property; (e) the wife manages the affairs of the household; and (f) the wife cannot, without the husband's consent, acquire any property by gratuitous title except from relatives within fourth degree.

2. Legal separation

The Civil Code does not sanction absolute divorce; however, it permits relative divorce or, as the concept is called in the Civil Code, legal separation. In the Philippines, legal separation is not very easy to obtain, the only grounds for granting such separation being: (a) adultery on the part of the wife, and concubinage on the part of the husband; and (b) an attempt by one spouse against the life of the other. According to the Revised Penal Code, adultery is committed by a wife who has sexual intercourse with a man not her husband. Concubinage is committed by a husband who (a) keeps a mistress in the conjugal dwelling or (b) cohabits with her in any other place or (c) has sexual intercourse with a woman who is not his wife under scandalous circumstances.

Legal separation may be claimed only by the innocent spouse. Where both spouses are offenders, it cannot be claimed by either of them. It will not be granted where there is a condonation of, or consent by the innocent spouse to, the adultery or concubinage. Collusion between the two parties to obtain legal separation shall cause the dismissal of

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45 Imprisonment ranging from 2 years, 4 months and 1 day to 6 years.

46 Civil Code, article 78. See also Republic Act No. 394, approved on 17 June 1949. This recognition was for a period of 20 years from the date of approval of the Act. This was extended to 30 years by Republic Act No. 6268, approved on 19 June 1971.

the petition. Neither shall a decree of legal separation be issued upon a stipulation of facts or by confession of judgement.

Before granting legal separation, the court is duty-bound to take steps towards the reconciliation of husband and wife, and must be fully satisfied that such reconciliation is highly inprobable. The decree of legal separation means, among others, that the spouses are entitled to live separately from each other, but the marriage bonds are not severed. Hence, neither spouse can remarry during the life-time of the other.

3. Status of children and child welfare

The Civil Code classifies children into either legitimate or illegitimate. Legitimate children are those born in wedlock or within a competent time afterwards; the illegitimate are those born out of wedlock. Illegitimate children in turn are divided into (a) the natural and (b) those not natural. The natural children belong to three categories: natural proper, natural by legal fiction and natural by presumption. Natural children proper are those born out of wedlock of parents who at the time of the conception of such children were not disqualified to marry each other. Natural children whose parents were not disqualified from marrying each other at the time they were conceived, and who have been recognized by their parents before or after the celebration of the marriage or have been judicially declared as natural, are considered legitimated by the subsequent marriage of their parents. By virtue of the subsequent marriage of their parents, illegitimate children of this class are by law considered legitimate. Natural children by legal fiction are those conceived or born of a void marriage, or conceived of a voidable marriage after the decree of annulment. Natural children by presumption are those recognized by only one of the parents, who had legal capacity to contract marriage at the time of conception. Illegitimate children who are not natural are those who do not fall under any of the categories of natural children stated above.

A child is presumed legitimate if born in lawful wedlock after 180 days following the celebration of the marriage, and before 300 days following its dissolution or the separation of the spouses. This presumption of legitimacy can be overturned only if it was physically impossible for the husband to have access to his wife within the first 120 days (the period of conception) of the 300 which preceded the birth of the child. Physical impossibility of access might occur if the husband was (a) impotent, or (b) living separately from his wife as when he had been confined in prison or residing abroad or (c) seriously ill during the stated period.

The basic state policy towards children is embodied in two constitutional provisions. The first declares that "the State shall strengthen the family as a basic social institution. The natural right and duty of parents in the rearing of the youth for civic efficiency and the development of moral character shall receive the aid and support of the government".[47] The second provides that "the State recognizes the vital role of youth in nation-building and shall promote their physical, intellectual, and social well-being".[48] As regards children, the population policy is concerned not so much with reducing births as with giving each child born the fullest opportunity for development. In the main, it is concerned with the quality of life of the present and future generations.

Statutes protecting children are found in the Civil Code, the Revised Penal Code, labour laws[49] and the Child and Youth Welfare Code.[50]

The Child and Youth Welfare Code directs that every effort should be exerted to promote the welfare of the child and to enhance his opportunities for a useful and happy life and guarantees the following rights to the child without distinction as to legitimacy or illegitimacy, sex, social status, religion, political antecedents or other factors:

(a) The right to be born well;

(b) The right to a wholesome family life that will provide him with love, care and understanding, guidance and counselling, and moral and material security;

(c) The right to a well-rounded development of his personality to the end that he may become a happy, useful and active member of society;

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47 Constitution, art. 11, sect. 4.

48 *Ibid.*, sect. 5.

49 Republic Act No. 679 (1953), as amended, Republic Act No. 1826 (1957), as amended by Presidential Decree No. 173 (1973), and Presidential Decree No. 442 (1974), Republic Act No. 2714 (1960) and Act No. 2071 (1911).

50 Presidential Decree No. 603 (1974); 3(1) to 3(12) enumerates the rights of the child, while art. 4(1) to 4(7) lists the responsibilities of the child.

(d) The right to a balanced diet, adequate clothing, sufficient shelter, proper medical attention and all the basic physical requirements of a healthy and vigorous life;

(e) The right to be brought up in an atmosphere of morality and rectitude for the enrichment and strengthening of his character;

(f) The right to an education commensurate with his abilities and to the development of his skills for the improvement of his capacity;

(g) The right to full opportunities for safe and wholesome recreation and activities;

(h) The right to protection against exploitation, improper influences, hazards and other conditions or circumstances prejudicial to his physical, mental, emotional, social and moral development;

(i) The right to live in a community and a society that can offer him an environment free from pernicious influences and conducive to the promotion of his health and the cultivation of his desirable traits and attributes;

(j) The right to the care, assistance and protection of the State;

(k) The right to an efficient and honest Goverment that will deepen his faith in democracy and inspire him with the morality of the constituted authorities in both their public and their private lives;

(l) The right to grow up as a free individual, in an atmosphere of peace, understanding, tolerance and universal brotherhood.

Coterminous with such rights are certain responsibilities. Thus, the child is expected to:

(a) Strive to lead an upright and virtuous life in accordance with the tenets of his religion, the teachings of his elders and mentors and the biddings of a clean conscience;

(b) Love, respect and obey his parents, and co-operate with them in the strengthening of the family;

(c) Extend to his brothers and sisters his love, thoughtfulness and helpfulness, and endeavour with them to keep the family harmonious and united;

(d) Exert his ulmost to develop his potentialities for service;

(e) Respect his elders, the customs and traditions of the people, the memory of heroes, the duly-constituted authorities, the laws of the country and the principles and institutions of democracy;

(f) Participate actively in civil affairs and in the promotion of the general welfare;

(g) Help in the observance of individual human rights, the strengthening of freedom everywhere, the fostering of co-operation among nations in the pursuit of their common aspirations for progress and prosperity, and the furtherance of world peace.

It should be noted that there are provisions of the Civil Code which appear to encourage large families, such as those recognizing the extended family system, and those obliging certain persons to give support. The Rules of Court give the procedure for enforcing the right to support.

There have been numerous cases of persons yet unable to support themselves marrying, begetting children and continuing to depend on their relatives for support not so much because of the law on support but because of social custom.

4. Inheritance law

Succession under the Civil Code is a mode of acquisition by virtue of which the property, rights and obligations of a decedent are transmitted to another or others either by his will or by operation of law. Succession may be (a) testamentary, (b) legal or intestate (c) or mixed. Testamentary succession is that which results from the designation of an heir made in a will executed in the form prescribed by law. Legal or intestate succession is that which occurs by operation of law, while mixed succession is that effected partly by will and partly by operation of law.

That part of the testator's property which he cannot dispose of by will, because the law has reserved it for compulsory heirs, is known as the legitime. No distinction is made between male and female heirs. The compulsory heirs for whom it is reserved by law are:

(a) Legitimate children and descendants, with respect to their legitimate parents and ascendants;

(b) In default of the foregoing, legitimate parents and ascendants, with respect to their legitimate children and descendants;

(c) The widow or widower;

(d) Acknowledged natural children, and natural children by legal fiction;

(e) Other illegitimate children, e.g., adulterous children.

If there are legitimate children and descendants, the legitimate parents and ascendants are excluded. But the surviving spouse, the acknowledged natural children, the natural children by legal fiction and the other illegitimate children are not excluded even if there are legitimate children and descendants, or legitimate parents and ascendants; neither do they exclude each other. Thus, the surviving spouse and the illegitimate children share in the inheritance concurrently with the legitimate children or with the legitimate parents in every case, but their shares are taken from free portion of the estate.

A compulsory heir may be deprived of his legitime by means of disinheritance for causes expressly provided by law.

Intestate succession takes place when a person dies without a will, or with a void or inefficacious will, or if no one succeeds under his will. If a will is valid but it disposes of only part of the testator's property, intestate succession takes place with respect to the rest of the property not covered by the will.[51] In these cases, the law determines who are to succeed to the inheritance of the deceased. Among those called by the law to succeed by intestacy are the relatives of the deceased, both legitimate and illegitimate, his surviving spouse and the State, according to a specified order. The relative nearest in degree excludes the more distant ones, except where the right of representation takes place. Relatives in the same degree inherit in equal shares except in the cases of brothers and sisters of the full blood and of the half-blood. The share of the brother or sister of the half-blood is one half that of the brother or sister of the full blood.

The order of intestate succession is briefly summarized as follows: first, legitimate children and their descendants; second, legitimate parents and ascendants; third, illegitimate children and their descendants; fourth, the surviving spouse, without prejudice to the rights of brothers and sisters; fifth, collateral relatives within the fifth degree; and, sixth, the State.

The above-listed classes of heirs regardless of sex inherit successively and exclusively – that is, one class succeeds only when there are no classes above it; and it excludes all other classes below it except that the surviving spouse and the illegitimate children are always entitled to their share as concurring heirs.

51 Civil Code, art. 960; *De Castro v. Billion*, 82 Phil. 722 (1908); *Ignacio v. Martinez*, 33 Phil. 576 (1916).

5. Education

The 1973 Constitution provides that all educational institutions shall be under the supervision of, and subject to regulation by, the State. The State is mandated to establish and maintain a complete, adequate and integrated system of education relevant to the goals of national development. All educational institutions are required to inculcate love of country, teach the duties of citizenship and develop moral character, personal discipline and scientific, technological and vocational efficiency. The State is also required to maintain a system of free public elementary education and, in areas where finances permit, to establish and maintain a system of free public education at least up to the secondary level. It shall also provide citizenship and vocational training to adult citizens and out-of-school youth, and set up and maintain scholarships for poor and deserving students.

The Education Act of 1940 made it compulsory for every parent or guardian or other person having custody of any child to enrol him in a public school the next school year following his seventh birthday.[52] The child shall remain in school until he completes an elementary education. Under article 144 of the Labour Code, if a domestic is under 16 years of age, the head of the family or employer shall give him an opportunity to complete at least an elementary education.

The Child and Youth Welfare Code reiterates compulsory elementary education of children by their parents.[53] It also provides that the State shall see to it that no child is refused admission in public schools. To implement the compulsory education policy, all necessary assistance possible shall be given to parents, especially indigent ones or those who need the services of children at home, to enable the children to acquire at least an elementary education. Such assistance may be in the form of special school programmes which may not require continuous attendance in school, or aid in the form of necessary school supplies, school lunch or whatever constitutes a bar to the child's attendance at school or access to elementary education.

52 Commonwealth Act No. 586 (1940), sect. 5, as amended by Republican Act No. 896 (1953), sect. 5.

53 Presidential Decree No. 603 (1975), art. 71.

To promote further the welfare of children of working mother and indigent parents, public nursery and kindergarten schools shall be maintained whenever possible. Their operation and maintenance shall be the responsibility of local governments. Aid from the local school board funds, when available, may be provided.[54] In order to generate funds for these educational projects, local schools boards of chartered cities and all first class-1 and first class-2 municipalities are authorized to invest in government bonds in an amount not less than 30 per cent of their respective shares from the 1 per cent additional real property tax levied.[55]

The Local Council for the Protection of Children in every *barangay* is also given the function of fostering the education of every child in the *barangay*. They are authorized to appropriate sums from *barangay* funds to provide annual scholarships for indigent children who deserve public assistance in the development of their potentialities.

The Revised Population Act makes it an objective of the Population Commission "to make family planning a part of a broad educational program".[56] In line with the Commission's objectives, the Secretary of Education and Culture has issued several directives. First, a youth civic action programme (YCAP) was integrated in the curriculum of all public and private schools, colleges and universities throughout the country.[57] Participation in a youth civic action programme has been required for graduation beginning school year 1973/74. For secondary school and college students, the programme involves among others, lectures on population education and the preparation of posters for population education. Second, the teaching of population education has been required in elementary and secondary schools, both public and private.[58] From school year 1973/74, teachers who have undergone training will make use of the subunits in population education for the five subject areas, namely, social studies, science, health, mathematics and home economics. Curriculum materials are provided and the teachers evaluate their suitability and teachability in the classroom. Third, a pilot study of the three-unit course in population education (undergraduate level) from teacher training schools was conducted in some 15 selected public and private institutions during the first semester of school year 1974/75.[59]

By Letter of Instruction No. 47,[60] the President has instructed the Secretary of Education and Culture to inform all schools of medicine, nursing, midwifery, allied medical professions and social work to prepare, plan and implement the integration of family planning in their curricula and to require from their graduates sufficient instruction in family planning as a prerequisite to qualifying for appropriate licensing examination.

Furthermore, General Order No. 18[61] enjoins citizens of the Philippines, all universities, colleges and schools, government offices, mass media, civic and voluntary organizations of all creeds, and business and industrial enterprises to promote the concept of family welfare, responsible parenthood and family planning.

6. Public welfare

There are three provisions in the 1972 Constitution which deal with public welfare. The first and more general of these is that embodied in article II, section 6, as follows:

> "The State shall promote social justice to ensure the dignity, welfare and security of all the people. Towards this end, the State shall regulate the acquisition, ownership, use, enjoyment, and disposition of private property, and equitably diffuse property ownership and profits."

The two other provisions which are specific determinations of this all-embracing policy are found in sections 7 and 9 of the same article. Section 7 provides that "the State shall establish, maintain and ensure adequate social services in the field of education, health, housing, employment, welfare and social security to guarantee the enjoyment by the people of a decent standard of living". Section 9 states that "the State shall afford protection to labor, promote full employment and equality in employment, ensure equal work opportunities regardless of sex, race or creed, and regulate the

54 Child and Youth Welfare Code, art. 73.

55 Presidential Decree No. 127 (1973), 69 O.G. 1368-k (19 February 1973).

56 Presidential Decree No. 79 (1972), sect. 4(e).

57 Department Order No. 53, dated 26 December 1972.

58 Department Memorandum No. 29, dated 21 May 1973.

59 Department Memorandum No. 39, dated 27 March 1974.

60 Dated 8 December 1972, 68 O.G. 9885 (December 1972).

61 Issued 8 December 1972, 68 O.G. (December 1972).

relations between workers and employers. The State shall assure the rights of workers to self-organization, collective bargaining, security of tenure and just and humane conditions of work".

A year after the ratification of the 1973 Constitution, Presidential Decree No. 442, otherwise known as the Labour Code, was issued by the President primarily "to purge labour laws of historic biases against employment and development and to streamline the administration of labour relations to make it more positive, more efficient as well as more just."[62] The Labour Code incorporates previous laws on conditions of employment and makes special provisions for women, including their maternity leave benefits, minors, and other special groups, health, safety and social welfare benefits as well as labour relations, with modifications.

7. Maternity benefits

Of particular relevance to population are the provisions affecting maternity leave benefits. Maternity leave with pay was reduced from six weeks before and four weeks after normal delivery to two weeks before and four weeks after normal delivery or abortion. Payment, however, was increased from 60 per cent of the regular or average weekly wage to full pay. Maternity leave privileges were limited to the first four deliveries to implement the family planning programme of the Government. The setting-up of such facilities as seats, separate toilet rooms and lavatories, nurseries and family planning services is no longer an absolute requirement for firms but these are left to the Secretary of Labour to impose.

On the other hand, married women, in the service of the Government, in addition to the vacation and sick leave which they enjoy, are entitled in case of pregnancy to a maternity leave of 60 days subject to the following conditions: (a) permanent and regular employees who have rendered two or more years of continuous service are entitled to maternity leave with full pay; (b) permanent and regular employees who have rendered less than two years of continuous service shall be entitled to maternity leave with half pay; (c) temporary employees who have rendered two or more years of continuous service shall be entitled to maternity leave with half pay; (d) temporary employees who have rendered less than two years of continuous service are entitled to a number of days of maternity leave with pay based on the ratio of 30 days of maternity leave to two years of continuous service; and (e) temporary employees who passed civil service examinations given before the date of the application for maternity leave but the results of which examinations were released after such date of application, are entitled to the maternity leave granted to regular employees as of the date when said examinations were given.[63]

The proper department head or chief of bureau or office is enjoined to avoid the assignment of strenuous and fatiguing work to married women under their charge who are in the state of pregnancy.

8. Social security and medical care

Old age and illness protection laws are essential to the establishment of a "small family norm" because they weaken the hold of the extended family. In the Philippines, employees and their families are protected against the hazards of death, disability, sickness and old age by three pieces of social welfare legislation: (a) the Social Security Law,[64] which applies to private employment and is administered by the Social Security System (SSS); (b) the Government Service Insurance Act,[65] which extends to those in government service and implemented by the Government Service Insurance System (GSIS); and (c) title II of the Labour Code on Employee's Compensation, embracing both the private and the public sectors and enforced by the Employees' Compensation Commission.[66] Except in employees' compensation, the employers and employees covered by these social welfare programmes contribute monthly premiums to their respective systems and these premiums constitute separate funds from which claims may be paid.

Coverage in the SSS is compulsory for all employers not over 60 years of age and their employees. The Social Security Act provides retirement, death, permanent disability and sickness benefits to be paid to the beneficiary chosen by the covered employee from the following: the legitimate spouse, the legitimate, acknowledged natural, natural children by legal fiction and other illegitimate children and their legitimate descendants and the legitimate parents or any other person designated by him in

62 F. Marcos, *Labour: Our Greatest Weapon*, 69 O.G. 3522 (1974).

63 Commonwealth Act No. 647 (1941), as amended, sect. 1.

64 Republic Act No. 1161 (1954), as amended.

65 Commonwealth Act No. 186 (1936), as amended.

66 Presidential Decreee No. 442 (1974).

the absence of any of the foregoing. The amount of cash benefits given to the covered employee would depend upon his total monthly contributions, salary and the degree of disability, as the case may be, with minimum amounts set for the different categories of benefits.

Membership in the GSIS is compulsory for all appointive officers and employees in government, including Government-owned and controlled corporations; regular employees of the Philippine National Red Cross; officers and enlisted men of the Armed Forces, and all elective officials receiving compensation as defined in the GSIS Act. Temporary employees are covered for purposes of term insurance for 2,750 pesos if appointed for not less then two months.[67] The benefits under the GSIS Act include life insurance benefits and retirement benefits.

Title II of the Labour Code, which incorporates the provisions of the Workmen's Compensation Act,[68] provides for an employees' compensation programme whereby workers or their dependents, in the event of work-connected injuries or death, may promptly secure adequate financial, medical and related benefits.[69] Financial or income benefits consist of (a) disability benefits for the disabled, which may be total, partial, temporary or permanent, and (b) death benefits.

Medical and related benefits are payments made to the employee for medical, rehabilitation, hospital, burial and other services and supplies other than income benefits, but including reasonable travel expenses between employee's residence and the place of treatment or rehabilitation as well as reasonable board and lodging expenses, as the nature of his disability and the process of his recovery require.

Article 207 of the Labour Code provides that the Philippine Medical Care Plan shall be provided under Republic Act No. 6111, as amended. Under the Medicare Act, coverage is automatic for any persons compulsorily covered by the SSS or by the GSIS. It is also extended to government retirees.

The Philippine Medical Care Plan consists of two basic programmes, namely, Programme I for members of the SSS, and GSIS, and Programme II for those not covered in Programme I. The beneficiaries under Programme I are entitled to hospitalization expense benefits, surgical expense benefits and medical expense benefits.

The benefits granted under the law do not cover any expense for: (a) cosmetic surgery or treatment; (b) dental service, except major dental surgery or operation which requires hospitalization; (c) optometric service or surgery; (d) services related to the case of psychiatric illness or of diseases traceable to such illness.

Present laws give limited retirement and social security benefits to those employed but none for the unemployed, who need even more assistance. The Medical Programme is also of limited application as yet.

9. Housing

Housing may be used as a means of favouring large families, which is being done in Eastern European countries, or as a way to discourage large families by imposing strict requirements for eligibility for public housing, as was done in Singapore. In the government housing programme, no such policy has been adopted.

The People's Homesite and Housing Corporation is the principal national housing agency. It was established by Executive Order No. 93 in 1947, which consolidated the National Housing Commission and the People's Homesite Corporation. The People's Homesite Corporation was organized by the National Development Corporation, a Government-controlled corporation, to promote home building and home ownership, and to establish model communities and co-operative associations. The National Housing Commission, on the other hand, was empowered to expropriate and redistribute land, to build and provide housing and to regulate building and sanitary conditions in slum areas.[70]

To stimulate home building and land ownership, a Home Financing Act was adopted in 1950.[71] Recently, Presidential Decree No. 745 was issued liberalizing the financing and credit terms for low-cost housing projects of domestic corporations and partnerships. In order to meet the critical housing problem, house rentals were also regulated.[72] The

67 Commonwealth Act No. 186 (1936), as amended, sect. 4.

68 Act No. 3428 (1928), as amended.

69 Labour Code, art. 164.

70 Commonwealth Act No. 648 (1941).

71 Republic Act No. 580 (1950).

72 Presidential Decree No. 20 (1972).

GSIS and SSS also offer home building loans to their members.

In order to formulate an over-all framework plan for the country which would pinpoint priority areas for human settlements projects, a Task Force on Human Settlements was set up.[73]

10. Land tenure

Laws relating to land tenure affect fertility in that they provide assurance for security against old age. As a direct response by the Government to agrarian unrest, the Agricultural Land Reform Code[74] was passed in 1963 and was subsequently amended by the Code of Agrarian Reforms[75] in 1971. Among others, this Code established: (a) an agricultural leasehold system; (b) a system of crediting rental as amortization payment on purchase price; (c) a declaration of rights for agricultural labour; (d) a machinery for the acquisition and equitable distribution of agricultural land; (e) the Land Bank; (f) the Agricultural Credit Administration; (g) the Agricultural Productivity Commission to provide marketing, management and other technical assistance and/or services to agricultural lessees, amortizing owner-cultivator, and co-operatives; (h) a machinery for co-operative development; (i) the Department of Agrarian Reforms for formulating and implementing projects of agrarian reform; (j) an expanded programme of land capability survey, classification and registration; (k) the Court of Agrarian Relations; and (l) the Office of Agrarian Counsel to provide legal assistance to agricultural lessees, amortizing owner-cultivator.

Shortly after the declaration of martial law, the President proclaimed the entire country a land reform area,[76] and decreed the emancipation of all tenant farmers of private agricultural lands primarily devoted to rice and corn under a system of share-crop or lease-tenancy whether classified as landed estate or not. The tenant farmer is deemed owner of a portion of land constituting a family-size farm of five hectares if not irrigated and three hectares if irrigated. In all cases, the landowner may retain an area of not more than seven hectares if he is cultivating such area or will cultivate it.[77]

The land reform programme was conceived and adopted without the population problem in mind, but principally to contain agrarian unrest. It would seem that requiring the farmer tiller to cultivate personally a family-size farm could, in the absence of mechanical farming, be an effective incentive for the raising of large families. Considering that the majority of the population live in rural agricultural areas, this may in the long run hinder the national population programme.

11. Taxation

Section 17, paragraph (1), article VIII, of the Constitution provides that "the rule of taxation shall be uniform and equitable. The National Assembly shall evolve a progressive system of taxation." The National Internal Revenue Code, in some respects, complies with this constitutional provision. It provides for the payment of income and wage taxes, personal property taxes, estate taxes and sales and excise taxes, the provisions of which, as may be pertinent to fertility regulation, shall be treated subsequently.

Every citizen or resident alien is obliged by law to pay a tax imposed upon the taxable net income received during each taxable year from all sources within and without the Philippines. This tax varies in unequal or comparable proportions depending on the corresponding taxable income.

Section 23 lays down the amount of personal exemptions allowable to individuals depending on their marital status, i.e., whether a person is single, married but legally separated from his or her spouse, or married or head of a family. It must be noted that only one exemption is made from the aggregate income of both husband and wife who are not legally separated. A Presidential Decree now gives an additional deduction of 10 per cent of the gross income received by the wife not exceeding 500 pesos from the combined gross income of the family.[78] The term "head of a family" includes an unmarried man or woman with one or both parents, or one or more brothers or sisters, or one or more legitimate, recognized natural or adopted children living with and dependent upon him or her for their chief support where such brothers, sisters or children are not more than 23 years of age, unmarried and not gainfully employed or where such children are

73 Execution Order No. 149. s. 1973, 1973, 69. O.G. 11214 (December 1973).

74 Republic Act No. 3844 (1963).

75 Republic Act No. 6389 (1971).

76 Presidential Decree No. 2 (1972).

77 Presidential Decree No. 27 (1972).

78 Presidential Decree No. 69 (1973), 68 O.G. 10179 (25 December 1972).

incapable of self-support because they are mentally or physically defective.

In section 23, paragraph (c), the Tax Code provides an additional exemption for each legitimate, recognized natural or adopted child, wholly dependent upon and living with the taxpayer provided the former is not more than 21 years of age, unmarried and not gainfully employed or is incapable of self-support because he is mentally or physically defective. But the additional exemption under this subsection shall be allowed only if the person making the return is the head of the family. The provision limits to four the total number of dependents for which additional exemptions may be claimed, in implementation of the family planning programme.

The limitation on the number of dependents is likewise prescribed in section 30 of the Tax Code, which deals with deductions from gross income. Thus, in computing net income, there shall be allowed as deductions, among others, expenses incurred and paid in the Philippines during the taxable year not compensated for by insurance or otherwise for medical care of the taxpayer, his spouse or his dependents as defined in section 23(c). Likewise, expenses incurred and paid in the Philippines during the taxable year for basic tuition fees of taxpayer's dependents as defined in section 23(c) who are studying in high schools are deductible.

Finally, section 31(1) of the Tax Code provides that in computing net income, no deduction shall in any case be allowed in respect of personal, living or family expenses.

12. Citizenship

The following are citizens of the Philippines: (a) those who were citizens at the time of the adoption of the Constitution; (b) those whose fathers or mothers are citizens of the Philippines; (c) those who elect Philippine citizenship pursuant to the provisions of the 1935 Constitution; and (d) those who are naturalized in accordance with law. A female citizen of the Philippines who marries an alien shall retain her Philippine citizenship, unless by her act or omission she is deemed, under the law, to have renounced her citizenship. A person may be naturalized in several ways: (a) a foreigner who wants to become a Filipino citizen must apply for naturalization at the proper Court of First Instance. He must have all the qualifications and must comply with all the procedure and conditions prescribed in Commonwealth Act No. 473, as amended; (b) by direct act of the Legislature; and (c) by letter of Instruction No. 270, in which the Solicitor General, the Undersecretary of Foreign Affairs and the Director General of the National Intelligence and Security Agency (NISA) are constituted into a committee to receive and submit recommendations on applications filed for naturalization by decree from aliens not later than 30 June 1975. The applicants should possess all the qualifications and none of the disqualifications provided for in the Letter of Instruction and if they are eligible and qualified for naturalization, their names shall be submitted to the President, who shall grant their naturalization by decree. This new naturalization process expedites the procedure provided for under Commonwealth Act No. 473.

13. Immigration

Under the Immigration Act of 1940[79] aliens are classified either as immigrants or non-immigrants. An immigrant is any alien arriving from any place outside of the Philippines, other than a non-immigrant. Immigrants are divided into quota immigrants and non-quota immigrants. Only 50 quota immigrants are allowed to enter for any nationality in any given year. Under section 13 of the Act, non-quota immigrants belong to five categories and these persons are mostly related to Filipino citizens or residents.

Visa regulations enumerate some 13 classes of non-immigrants whose stay in the Philippines is temporary and for reasons of business (official or private), pleasure, health and studies.

Excluded from entry into the Philippines are 17 classes of non-immigrants which include idiots, paupers, prostitutes, polygamists, subversives etc. However, the Commissioner of Immigration is authorized to exercise his discretion to permit any alien properly documented who is subject to exclusion if he is lawfully a resident in the Philippines and returning from a temporary visit abroad, or applying for temporary admission.

79 Commonwealth Act No. 613 (1940), as amended.

Chapter XVII

STATUS OF WOMEN

A. INTRODUCTION

A comprehensive study of the population situation in any country must take into consideration the status of women as a factor influencing family size and birth rates.[1]

But the status of women is a complex and many-faceted subject. "Status" is a Latin term, which according to Webster is "the condition of a person or thing in the eyes of the law". Law dictionaries citing court decisions define it as: "the rights, duties, capacities and incapacities which determine a person to a given class."[2]

The United Nations Commission on the Status of Women, which has considered the interrelationship of the status of women and family planning from a cross-national viewpoint, has observed:

> "When we speak of the 'status of women', then, we are speaking of the conjunction of positions a woman occupies at any one point in time, as a worker, student, wife, mother, church member, political worker, or whatever, and of the rights and duties she is expected to exercise in her active role as occupant of these positions. It is generally accepted that women are discriminated against and that men have more prestige, power and privileges in almost all societies. But the direct measurement of status is a difficult and complex problem which hinders investigation of the causes and consequences of this particular form of stratification."[3]

Since "the degree to which women are able to exercise equal rights with men is a significant factor having major influence on freedom of choice as to family size and effectiveness of family planning programmes,"[4] an attempt is made in this chapter to review the relevant provisions of the Philippine Constitution and legislation and check them against the United Nations Declaration on the Elimination of Discrimination against Women.[5]

B. POLITICAL RIGHTS

The term "political rights" as used here embraces rights of citizens in relation to the State. Thus, it includes the rights of suffrage, the right to run for and hold public office, to express views on public issues, to form associations, to assemble peaceably and petition the Government for redress of grievances. The Constitution and implementing legislation govern the exercise of these rights.

1. Right to vote and hold office

Suffrage under the new constitution may be exercised by citizens not otherwise disqualified by law, who are 18 years of age or over, and who shall have resided in the Philippines for at least one year and in the place where they propose to vote for at least six months. Literacy, property or other substantive requirements may not be imposed by statute on the right of suffrage.

The Constitution, while guaranteeing the right of suffrage, makes it "the obligation of every citizen qualified to vote to register and cast his vote". This applies to referendums in which the base of participation includes citizens, whether male or female, from the age of 15 years.[6]

An analysis of the proportion of voters who exercised their right during the 18-year period 1953-1971 reveals that a comparatively higher percentage of women cast their votes at nearly every election (table 228) but, as will be seen from table 229, only a very few women were elected to public office.[7]

Whether due to the limitations of language or to the habitual assumption that in the masculine pronouns "he/his" the female half of the citizenry are subsumed, the provisions creating constitutional

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1 "Study of the inter-relationship of the status of women and family planning: report of Special Rapporteur" (E/CN.6/575) (mimeo), p. 7.

2 *Black's Law Dictionary 1580* (4th edition, 1968); *Bouvier's Law Dictionary and Concise Encyclopedia 3129* (1914).

3 "Study of the inter-relationship...", para. 17.

4 *Ibid.*, para. 39.

5 General Assembly Resolution 2263 (XXII) of 7 November 1967.

6 Presidential Decree No. 210 (1973), sect. 6. A penal sanction is imposed on failure to register or to vote.

7 I.R. Cortes, "Womens Vote is Potent Force", *Philipine Daily Express*, 19 February 1975; "Women Power at the Polls", *Time Journal*, 13 February 1975.

Table 228. Percentage of qualified electors who voted, 1953-1971

Year	Percentage exercising voting right		
	Males	Females	Difference
1953	77.0	77.5	0.5
1955	77.4	78.4	1.0
1957	75.9	75.1	-0.8
1959	81.5	82.0	0.5
1961	79.5	79.4	-0.1
1963	79.1	80.1	1.0
1965	76.2	76.6	0.4
1967	81.3	82.1	0.8
1969	79.1	80.3	1.2
1970	68.2	68.0	-0.2
1971	80.0	81.6	1.6

offices, prescribing the qualifications for Prime Minister, President, the Cabinet, the National Assembly etc. are couched in masculine terms. Thus: "No person may be elected President unless he is at least fifty years of age on the day of his election as President". "No person shall be member of the National Assembly unless he is a natural-born citizen..." "The Prime Minister shall be commander-in-chief of all armed forces of the Philippines and, whenever it becomes necessary, he may call out such armed forces..."

Similar provisions in the 1935 Constitution did not prevent women from running for and being elected to membership in the Senate and the House of Representatives. However, a law may specifically provide the sex of an occupant as qualification for public office. Thus, the statute creating the Board of Pardons and Parole specifies that "At least one member of the Board shall be a woman".[8]

The constitutional principle that "the defense of the state is a prime duty of the Government and the people and in the fulfillment of this duty all citizens may be required by law to render personal military or civil service" is reinforced by provisions regarding "a citizen army composed of all able-bodied citizens". The language of these two provisions is sufficiently broad to include males and females. Although another paragraph refers to a "corps of trained officers and men in active duty status", it does not preclude the possibility of personal military or civil service for males and females.

8 Act No. 4103 (1933), sect. 3.

Table 229. Number of male and female officials elected, 1953-1971

Year	Positions	Females	Males
1953	Senators	0	8
	Mayors	14	1,122
1955	Senators	1	7
	Governors	0	54
	Board members	2	103
1957	Senators	0	8
	Representatives	1	101
1959	Senators	0	9
	Governors	0	54
	Board members	12	130
	Mayors	18	1,302
	Vice-Mayors	37	1,283
1961	Senators	1	7
	Representatives	2	102
1965	Senators	1	7
	Representatives	6	98
1967	Senators	2	6
	Governors	5	62
	Vice-Governors	6	61
	Board members	11	168
	Mayors	53	1,397
	Vice-Mayors	72	1,377
	Councillors	720	9,975
1969	Senators	0	8
	Representatives	3	106
1971	Senators	1	7
	Governors	6	62
	Vice-Governors	5	63
	Board members	14	185
	Mayors	44	1,444
	Vice-Mayors	61	1,369
	Councillors	662	10,448

Note: There has been no identifiable women's vote in the Philippines except for the 1936 plebiscite, when close to 500,000 voted on the question of women's suffrage.

Under present legislation women are enlisted in the Medical Corps[9] as well as in the Women's Auxiliary Corps.[10] But in the latter, the conditions under which women may enter and remain in the service differ from those prescribed for men. A woman may not be commissioned or allowed to enlist in the Women's Auxilary Corps unless she is unmarried. Under the old law, if she married after she entered the service she was automatically separated or discharged. But Presidential Decree No.

9 Republic Act No. 2685 (1960).

10 Republic Act No. 3835 (1963).

1043, adopted on 25 October 1976, amended this so that women who have completed at least five years of continuous military service in the armed forces were exempted from this provision and allowed maternity leave privileges enjoyed by those employed in the Government. Furthermore, those women previously separated or discharged on account of marriage may be called to active duty under rules and regulations of the Secretary of National Defense. The Women's Auxilary Corps was established to perform administrative duties and such other functions as may be prescribed by the Secretary of National Defense.

There are more women in government civil service than men. Women constitute nearly 55 per cent of the national and local government employees. But men occupy the higher positions in the bureaucratic hierarchy. For instance, of the 48,878 supervisors, 36,137 are males and 12,741 are females. There are approximately 3 male supervisors to 1 female supervisor.[11]

2. Right of association, assembly and petition

The Constitution guarantees the right to form associations or societies not contrary to law, freedom of speech and of the press and the right peaceably to assemble and petition the Government for redress of grievances. Women in the Philippines of the middle and upper middle classes have enjoyed and made good use of these rights. Organizations, some established early in the century, obtained support of all male legislators for the adoption of women's suffrage, repeal of provisions of law discriminatory to women and other measures.[12] These organizations are active in community, civic, charitable, educational, religious and professional matter.s For instance, the Civil Assembly of Women in the Philippines has 67 affiliates covering a wide field of activities such as business, dietetics, international relations, university activities law and medicine.[13]

3. Citizenship of married women

Because the right to vote and to be voted for are reserved to citizens and certain offices may be held only by natural-born citizens, the citizenship a married woman affects not only her status but also that of her children. Previous laws which provided that a Filipino woman lost her citizenship upon marriage to an alien if under the laws of his country she automatically became its citizen[14] have been superseded by an explicit provision of the 1973 Constitution (article III, section 2) which states:

> "A female citizen of the Philippines who marries an alien shall retain her Philippine citizenship, unless by her act or omission she is deemed, under the law, to have renounced her citizenship."

A Filipino woman also transmits her citizenship to her children born after the entry into force of the 1973 Constitution without need for the latter to elect her citizenship, thus giving these children the status of natural-born citizen. A Filipino woman who loses her citizenship may reacquire it by repatriation.[15]

An alien woman may acquire Philippine citizenship by naturalization.

C. CIVIL RIGHTS

Civil rights refer to those rights held by persons in relation to other persons. In the area of civil rights there remain laws which accord unequal treatment to women although the more burdensome discriminatory provisions generally classifying them with minors, the insane, the deaf mutes and those suffering from civil interdiction have been repealed.

1. Age of majority, marriage

The age of majority is 21 years and a person of age is qualified for all acts of civil life except in cases established by law.[16]

Sons and daughters enjoy the same rights and privileges except that an unmarried daughter above 21 but below 23 cannot leave the parental home without the consent of the father or mother in whose company she lives, except to become a wife, or when she exercises a profession or calling or when the father or mother contracted a subsequent marriage.

Parental authority is exercised over children below the age of majority unless such authority is

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11 "The Philippine civil service: a personnel profile: report of the CSC-NMYC Manpower Assessment Survey Project 4" (1974).

12 T. Subido, *The Feminist Movement in the Philippines, 1905-1955* (National Federation of Women's Clubs, 1955), p. 76.

13 For a listing of affiliated organizations, see "Young Blood Needed", *Times Journal*, 5 July 1975, pp. 38-39.

14 Commonwealth Act. No. 63 (1936), sect. 1(7), as amended by Republic Act. No. 106 (1947).

15 Presidential Decree No. 725 (1975).

16 Civil Code, art. 402.

terminated by reason of the minor's marriage or through the voluntary concession of the father or mother who exercises parental authority by means of a public instrument recorded in the Civil Registry. An emancipated minor can administer property, but cannot borrow money nor alienate real property without parental consent and can only sue or be sued with the assistance of a parent or guardian.[17]

For a valid marriage, legal capacity of the contracting parties and their consent freely given are essential requisites. The minimum age for marriage is 14 for females and 16 for males. Marriages contracted below these ages are void from the beginning. The written consent of the father, mother or guardian must be obtained by males less than 20 years of age and females less than 18 years of age; otherwise the marriage may be annulled at the instance of the parent or guardian. Males above 20 but below 25 and females above 18 but below 23 are required to obtain the advice of parent or guardian before they can be married; otherwise the marriage cannot take place until after three months following the publication of their application for a marriage licence.

As noted in chapter XVI, in the solemnization of a mixed marriage between a Christian and a non-Christian, the law concedes preference to the male. If he is Christian, the marriage is governed by the general provisions of the Civil Code; if he is non-Christian, the parties may agree to have the marriage performed in accordance with the customs, rites or practices of the non-Christian.

In a marriage between a citizen of the Philippines and a foreigner, the law of the husband's country will govern, but the Philippine law on immovable property will apply even when the husband is a foreigner.[18]

2. Women's capacity of act

An unmarried woman of age may engage in business, exercise a profession, acquire and dispose of property, contract and be contracted with, sue and be sued, or choose her own residence. The law imposes restrictions on a married woman's exercise of some of these rights. Thus, while she may exercise any profession or occupation or engage in business, her husband may object if (a) his income is sufficient for the family according to its social standing and (b) his opposition is founded on serious or valid grounds. A disagreement may well reach the courts if it is not resolved within the family.

The husband has to be joined in all suits by and against the wife. The instances, however, when the wife may act alone are numerous. They include cases of separation, judicial, or in fact for at least a year, or by virtue of a marriage settlement, in case the suit concerns the wife's paraphernal property, her profession, business or occupation, or a suit between husband and wife, or involving the wife's civil liability arising from a crime or quasi-delicit.

A married women's right of abode and travel are subject to the husband's right to fix the family residence. The wife may be excused by the court from following the husband to live in a foreign country unless he goes in the service of the Government.

3. Property rights

Married women's power over property in the conjugal partnership is subordinate to that of the husband. The actual practice, however, does not strictly follow the legal provisions, for among Filipino families women hold the family purse and make important decisions affecting the family.

Before the marriage, the contracting parties may agree on absolute or relative community of property or complete separation of property or upon some other regime; if no marriage settlements are made, a relative community or conjugal partnership of gains shall govern the property relations of husband and wife. The system of conjugal partnership of gains recognizes the exclusive ownership by each spouse of certain property each brought into the marriage or acquired during the marriage.

A married woman retains ownership and administration over her paraphernal property. If she is of age, she may mortgage, encumber or otherwise dispose of her paraphernal property without her husband's permission and she may sue or be sued alone with regard to this property. She may, however, empower her husband to administer this property.

But (a) what is acquired by onerous title during the marriage at the expense of the common fund, (b) obtained by industry, or work or salary of the spouses or either of them and (c) the fruits, rents or

17 Civil Code, art. 399. In this article, the antecedent of the pronoun "he" is the term "minor" employed in the generic sense, hence applicable to both males and females.

18 Republic Act. No. 106 (1946), Civil Code, art. 16.

interests coming from the common property or from the exclusive property of each spouse pertain to the conjugal partnership. This answers for the need of the family and upon dissolution by reason of death of either spouse, decree of legal separation of property and the liquidation of the conjugal partnership, its net assets shall be equally divided between husband and wife or their heirs.

In the conjugal partnership the husband is administrator, the wife is manager of the household, the expenses for which the conjugal partnership is liable. Unless the wife suffers from some incapacity enumerated in the law, the husband may not encumber or alienate real property of the conjugal partnership without the wife's consent. The husband has recourse to the court to compel the wife's consent should she refuse reasonably to give it.

As manger of the household, the wife may only bind the conjugal partnership in the purchase of things necessary for the support of the family. She may borrow money for this purpose if the husband does not give her the proper sum. But unless the husband approves, explicitly or tacitly, her purchases of jewelry and other valuable objects are voidable unless she pays from her paraphernal property.

Relief from the courts may be obtained by either husband or wife if a spouse neglects duties to the conjugal union, or brings dangers, dishonour or material injury to the petitioning spouse.

The law provides remedies to the wife in case the husband abuses his powers as administrator. She may petition the court for receivership or that she be named administrator, or that a separation of property be made. In cases where the husband failed to obtain her consent when the law requires it, or his set or contract tends to defraud her, the wife may, during the marriage and within 10 years from the transaction, ask the court to annul the contract. If she does not exercise the rights, she or her heirs may demand the value of the property fraudulently alienated.

A provision more honored in the breach is that which states: "The wife cannot without the husband's consent, acquire any property by gratuitious title, except from her ascendants, descendants, parents in law and collateral relatives within the fourth civil degree". Literally applied even birthday or Christmas gifts between friends are covered.

4. Succession

The laws governing succession do not distinguish between men and women. Any person of either sex, at least 18 years of age, of sound mind and not expressly prohibited by law may make a will. But in spite of the reversal of the general rule regarding the capacity of married women, i.e., from the law classifying women with the legally incapacitated to the present law recognizing her capacity to act except when legal restrictions have been imposed, there are specific provisions making clear the capacity of a married woman to make a will without the consent of her husband and without authority of the court as well as her capacity to dispose by will of all her separate property and her share of property coming from the marriage. Similarly, another statute provides that a married woman may donate her body or any part thereof after death to be used for medical, surgical or scientific purposes.[19]

The system of legitimes under the law applies uniformly to compulsory heirs of the same class regardless of sex. The rights and the share of compulsory heirs depend on the proximity of relationship to the decedent and the number and category of heirs, the surviving spouse sharing in the estate of the deceased. The closer blood relatives exclude the more remote with the exception of children of a deceased brother or sister who may inherit by representation with uncles or aunts from the estate of the parents of the latter.

5. Parental authority

Under Philippine law, marriage "is not a mere contract but an inviolable social institution"; and the family is a "basic social institution which the law cherishes and protects". The 1973 Constitution reinforces these statutory provisions thus:

> "The State shall strengthen the family as a basic social institution. The national right and duty of parents in the rearing of youth for civic efficiency and the development of moral character shall receive the aid and support of the Government."

Parental authority thus carries with it both a right and a duty which husband and wife exercise jointly over their unemancipated legitimate children. But in case of disagreement the decision of the father prevails, unless there is a judicial order to the countrary. Recognized natural and adopted minor children

19 Republic Act. No. 349 (1949), sect. 2.

are under the parental authority of the father or mother recognizing them.

In case of absence or death of either parent, the present or surviving one shall continue to exercise parental authority unless the court for some justifiable cause appoints another person as guardian.[20] This amends the Civil Code provision which deprived a widow upon remarriage of her parental authority over the children with the deceased father of the children unless he stated in his will that she could remarry and retain her parental authority.[21]

A mother cannot be separated from a child of tender years, unless the court finds compelling reason to do so. The Civil Code set the age at seven. The Child and Youth Welfare Code has reduced it to five.

Under the Child and Youth Welfare Code, a woman may adopt provided she is of age, in full possession of civil rights and satisfies the other requisites for adoption, like capacity to give support, and at least 15 years age difference over the person to be adopted. A married woman must have her husband's consent in writing in order to adopt; husband and wife may jointly adopt.

6. Legal separation, dissolution of marriage

As noted in chapter XVI, there is no absolute divorce under Philippine law. There used to be special legislation recognizing divorce according to Muslim customs and practices, but this was of limited duration and has long expired.[22] What exists at present is a system of legal separation which has the effect of dissolving the conjugal partnership and depriving the guilty spouse of a share in its profits. But the marriage ties remain.[23]

Annulment under the Civil Code may be obtained for specified causes, subject to certain conditions and within a specified period. These are stricter than the Roman Catholic Church rules on annulment.[24]

20 Child and Youth Welfare Code, art. 17.

21 Civil Code, art. 328 in relation to art. 333.

22 Republic Act. No. 394 (1949) expired in 1969 and was not extended.

23 For further details, see chap. XVI.

24 L.P. San Diego, "Women in family law", paper presented at the University of the Philippines Law Center, March 1975 (mimeo), pp. 10-12.

D. PENAL LAWS AFFECTING WOMEN

Unless a marriage is legally dissolved or an absent spouse declared presumptively dead by the court, a spouse who contracts a subsequent marriage is criminally liable for bigamy.[25]

Philippine law also penalizes a woman for premature remarriage. A widow who remarries within 301 days from the date of her husband's death or before having delivered if she was pregnant at the time of his death incurs the penalties of imprisonment and a fine. The same penalties are prescribed for any woman whose marriage is annulled or dissolved if she marries before her delivery or before expiration of 301 days of her legal separation. A widower may remarry any time he pleases.

The Revised Penal Code penalizes certain offences against women. These include rape, seduction, white slave trade and abduction. Adultery, concubinage, seduction, abduction and rape are private crimes and may not be prosecuted except upon complaint of the appropriate private party. As to the last three, marriage of the offender to the offended party extinguishes the criminal action or remits the penalty already imposed. Bigamy or premature marriages are public crimes which may be prosecuted at the instance of the public prosecutor.

Women convicted of a capital offence are treated differently under the law: execution of the death sentence may not be carried out within three years of the date of the sentence or while she is pregnant.

E. EDUCATION

The constitutional mandates for a "complete, adequate, and integrated system of education relevant to the goals of national development" free public education at the elementary level, citizenship and vocational training to adult citizens and out-of-school youth, and scholarships for poor and deserving students, do not distinguish between males and females. There is no discrimination on the basis of sex in the matter of admission to public schools, although some privately run schools are not co-educational and variation in vocational curricula still exist, e.g., industrial arts for boys and home arts for girls.

25 Revised Penal Code, art. 349.

Women have increasingly taken advantage of educational opportunities which the law and society have made available to them. This is evident from the fact that, in 1970, 82.2 per cent of females aged 10 years and over were literate, the literacy rate for males being 84.6 per cent.[26] The degree of literacy and the kind of formal education women have are variables affecting fertility.

The total enrolment in schools at different levels shown in table 230 reveal that, while males outnumber females in elementary schools, the gap narrows in the secondary schools, and in higher education, females outnumber the males.

In certain professions women outnumber the men, e.g., nursing, pharmacy and teaching. In the professions of law[27] and medicine[28] women constitute a substantial number. They have entered other professions and callings, including engineering, agriculture, veterinary medicine and accounting. Female public school teachers outnumber the males but men held more than 58 per cent of administrative positions from division superintendents down to elementary school principals.[29]

Nearly 39 per cent of scholarships administered by the National Science Development Board (317 out of 811 grants) were awarded to females. For the period 1965-1975, women obtained 1,121 of the 1,420 scholarships (78.9 per cent) awarded by the Bureau of Public Schools.[30]

Table 230. Total enrolment by school level and sex, 1971/72

School level	Males	Females	Total
Elementary	3,465,349	3,299,152	6,764,501
Secondary	869,392	853,973	1,723,365
Higher (college graduate and post graduate)	305,031	383,228	688,259

Source: Educational statistics, school year 1971/72, compiled by the technical staff, National Board of Education.

26 Ruth B. Dixon, "Women's Rights and Fertility" in *Reports on Population/Family Planning*, No. 17, January 1975, table 1.

27 According to data given by the Integrate Bar of the Philippines, in 1974 there were 2,401 female lawyers as against 22,671 male lawyers.

28 According to Mrs. Hanz of the Professional Regulation Commission, in 1974 there were 11,526 female doctors as against 23,159 male doctors.

29 L. Brilliantes, "Women and education", paper presented at the University of the Philippines Law Center, March 1975 (mimeo), p. 28.

30 *Ibid.*

F. ECONOMIC AND SOCIAL LIFE

The announced policy in the 1973 Constitution to afford "protection to labour, promote full employment and equality in employment, ensure equal work opportunities regardless of sex, race or creed" is further supplemented by the Labour Code of 1974.[31] However, this Code places women once more with minors under the title: "Working Conditions for Special Groups of Employees". Incorporated in this title are provisions on the employment of women in prohibited kinds of night work, facilities to ensure working women's health and safety, maternity leave benefits, free family planning services, and a provision directing the Secretary of Labour to develop and prescribe incentive bonus schemes to encourage family planning among female workers. There are new provisions on women who work in night-clubs, bars and similar kinds of establishments, household helpers and homeworkers.

To correct unequal treatment of working women, the Code prohibits in explicit terms discrimination against any women with respect to terms and conditions of employment on account of her sex, makes it unlawful to stipulate against marriage as a condition of employment and enumerates other prohibited acts, like discharging a woman on account of pregnancy or while on maternity leave and refusing to readmit her upon returning to work. Explicit provision is made that "Equal remuneration shall be paid to both men and women for work of equal value".

According to the November 1973 Labour Force Survey, 14,559,000 of the household population 10 years old or over were in the labour force. Of these 13,865,000 were fully or partially employed. Females accounted for 4,830,000 or roughly one third of this labour force. It will be seen from table 231 that nearly 47 per cent of the women in the labour force were married while about 45 per cent were never-married. Nearly 95 per cent of all women in the labour force were employed, while the remaining 5 per cent were unemployed.

It is also clear from table 232 that of the 4,582,000 employed women 38.5 per cent were engaged in agriculture, fishing and related occupations, 17.2 per cent were sales workers, 16.8 per cent were engaged in services, sports and related occupations, 12.2 per cent were in manufacturing, 9.1 per

31 Presidential Decree No. 442 (1974).

Table 231. Marital and employment status of females in the labour force, November 1973

Employment status	Total	Never married	Married	Widowed	Divorced or separated
In the labour force	4,830,000	2,165,000	2,269,000	320,000	76,000
Employed	94.9	92.1	97.1	97.5	95.4
Unemployed	5.1	7.9	2.9	2.5	4.6

Sources: *Labour Force Survey, November 1973,* BCS Survey of Households Bulletin No. 40 (Manila, Bureau of the Census and Statistics), p. 10.

Table 232. Employed persons by occupational group and sex, November 1973

Major occupation group	Both sexes (in thousands)	Females	
		Number (in thousands)	Percentage
Professional, technical and related workers	701	415	59.2
Administrative, executive, and managerial workers	131	30	22.9
Clerical workers	518	236	45.6
Sales workers	1,357	786	57.9
Farmers, farm labourers, fishmermen, hunters and related workers	7,707	1,762	22.9
Miners, quarrymen and related workers	28	2	7.1
Workers in transport and communication occupations	504	11	2.2
Craftsmen, production process workers and related workers	1,499	557	37.2
Manual workers and NEC[a] labourers	249	6	2.4
Services, sports and related workers	1,139	770	67.6
Occupation not reported	30	10	33.3

Source: Same as for table 231.

a Not elsewhere classified.

cent were professional or technical workers and 5.2 per cent were clerical workers. The average weekly earnings of all salary and wage earners in government and private enterprise as at August 1974 was 69.00 pesos for males and 44.00 pesos for females. In other words, women earned or were paid an average of two thirds of what men were getting.[32]

For income tax purposes, husband and wife are required to file joint returns. Usually, as head of the family the husband files the returns and claims the allowances for personal exemptions and deductions.[33] In case of legal separation, the spouse file their returns separately and may qualify as head of the family if they have dependents. In any case a maximum of four dependents is set for additional personal exemptions. A concession has been extended to a married couple in case the wife earns income, by way of a standard deduction of 10 per cent of the wife's gross income but not exceeding 500 pesos.

Of the 4,830,000 women in the labour force, 391,000 or about 8 per cent were heads of households. Of the female heads of households, about 63 per cent were widows, while married working women constituted less than .09 per cent. However, among the working women who were non-heads of households, as many as 50 per cent were married women and 46 per cent were single women.

32 *National Sample Survey of Households Bulletin,* Series No. 43, (Statistical Board, Nation Labour Relations Commission, 1974).

33 Tax Code, sect. 23 (b).

G. CONCLUSION

The status of women in the Philippines may be viewed horizontally vis-a-vis the men and measured against the yardstick of equal protection of the laws and provisions of the Constitution. However, there is no guarantee of absolute equality under the law, and reasonable classifications may be made on the basis of real and substantial differences. Thus, sex is a basis of classification under the law as is evident, for instance, from the provisions prohibiting the execution of a pregnant women or those granting maternity leave and benefits.

Viewed vertically and separately from the men, women in the Philippines are found to have no uniform status. The married are subject to legal restrictions which do not operate on the unmarried. Again, even regarded as a dichotomy of the married compared with the unmarried, all those belonging to one group may still not enjoy the same status, for the educational, economic, social and other factors would come into play. The advantaged will enjoy a higher status than the disadvantaged regardless of legal rules applicable to both.

Measured by the United Nations Declaration on the Elimination of Discrimination against Women, the Philippines would be well on the way to removing from its statute books laws discriminating against women.

A National Commission on the Role of Filipino Women has been established. The functions assigned to this Commission shift emphasis from the raising of the status of women to their integration as full and equal partners with men in the total development effort. While achieving legal equality is not neglected, what is underscored is the role that women can play.[34]

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34 Presidential Decree No. 633 (1975).

Annexes

Annex I

SOURCES OF DEMOGRAPHIC DATA

A. INTRODUCTION

The importance of demographic data for national planning and development need hardly be emphasized. The size, composition, distribution and growth of the population are basic information required for sound socio-economic planning. A systematic study of population dynamics and the formulation and implementation of population policies and programmes would also call for accurate, adequate and up-to-date demographic data as well as for comprehensive analysis of such data.

In the Philippines, the major sources of demographic data are: (a) the population censuses; (b) the civil registration system; (c) sample surveys; and (d) the dual records system (combination of the civil registration and retrospective survey). While the population censuses provide the bench-mark data on the size and composition of the population, intercensal information relating to growth and composition as well as more detailed information on certain characteristics are mostly obtained through sample surveys. Although the civil registration system should, theoretically, be the best source of data on fertility, mortality and nuptiality, deficiencies with regard to coverage in terms of both area and subject diminish the accuracy and usefulness of the data from this source.

In the sections which follow, an attempt has been made to discuss the nature and regularity of the data available from each of the four main sources mentioned above.

B. POPULATION CENSUSES

1. Introduction

Census taking had its beginning in Egypt, Babylonia, China, Palestine and Rome. Few of the results of these enumerations are, however, available today. By and large, the purpose of these counts was to provide a basis for determining fiscal, labour and military obligations, and hence they were usually limited to heads of households, males of military age, taxpayers or adult citizens.[a] Women and children were seldom counted. Nevertheless, through the years the scope of censuses has changed and expanded and the sphere of their utility has been enlarged. Censuses have now come to be considered in most countries as broad inquiries concerning the many scientific, social and economic aspects of the general problems of the population. The questionnaires used reflect the increasing interest in such factors as migration, economic characteristics, fertility and social security which has accompanied the socio-economic development of these countries.

2. Censuses and estimates before 1900

In the Philippines, interest in population count dates back to the time of the conquest of the Islands about 1570. The total number of people was then estimated at about half a million.

A second estimate was made for the year 1591 based upon the number of tributes comprised in the *encomiendas*, pieces of territories including the people and resources which the King of Spain granted to the colonizers as a reward for their services to the Crown. There were counted 166,903 tributes, each of which represented four persons, giving a total population of 667,612.

When the *encomiendas* went out of existence in 1600, the various religious orders of the Catholic Church took over, and the people were distributed among them into parishes. Each friar enumerated the people of his parish and kept a close record of baptisms, marriages and deaths. A close approximation of the "civilized" or Christian population was estimated by only adding up the figures for the several parishes and for the several orders, of which there were five established in the Islands. A fairly accurate count of the population was possible. Unfortunately, the records for the seventeenth and eighteenth centuries were lost, except for the year 1735, when the population was estimated at 837,182. This figure showed an increase of only 169,570 over

a Henry S. Shryock, Jacob S. Siegal and Associates, *The Methods and Materials of Demography*, vol. 1 (Washington, DC, Department of Commerce, 1971), p. 16.

the estimate made 144 years earlier, in 1591. In 1799, the population was estimated at 1,502,574.[b]

The first official enumeration of the population was ordered by Royal Decree to be taken as at midnight, 31 December 1877. Royal Decrees issued at decennial intervals ordered similar censuses to be taken in 1887 and 1897. Of these three censuses, those taken in 1877 and 1887 were actually completed. The Christian population in 1877 was reported as 5,567,685. In 1896, a study based on the partial census placed the population at 6,261,339. The census planned for 1897 was never completed because of the outbreak of the Spanish-American War.[c]

Another source of information on the population of the Philippines during Spanish times is the *cedula*, a *per capita* tax which was obligatory upon all males between certain ages. The number of *cedulas* issued multiplied by a certain factor gave an estimate of the number of males in those ages.

Table 233 gives the available estimates of population for various years.[d]

The estimates presented in table 233 are subject to severe limitations in that they included only the Christian population. In some cases, the population is plainly too large or too small to be possible. Table 233 shows that 23 estimates are believed to be most probably correct between 1799 and 1899.

Although in the past several estimates of the population were made, the first census in the modern sense of the term was taken only in 1903. It was followed by six others carried out in 1918, 1939, 1948, 1960, 1970 and 1975.

3. Census of 1903

The first complete returns of the population of the archipelago were in 1903. The objective of the 1903 census was not only to determine the number of Filipino people entitled to the assembly but also to ascertain their social and industrial conditions as a basis for legislative action with regard to the development of the Islands.

During the enumeration, two sets of schedules were used. The first schedule (Schedule No. 1 – Population) was used for the enumeration of the Christian or "civilized" population and included questions relating to relationship to head, colour, sex, age, whether the person was insane, deaf, dumb, or blind, nationality, citizenship, occupation, education and ownership and character of homes. A second schedule (Schedule No. 7 – Population, school, agriculture used in the enumeration of "wild" people) did not enumerate the individuals as such, but asked for the total number of inhabitants by sex and by age over and under 15 years of age in a *rancheria* or village as a whole. The second schedule also asked about births, deaths, schools, agriculture and other industrial products.

The census taking lasted for about two months and the population then was placed at 7,635,426, which comprised 6,987,686 Christians or "civilized" persons and 647,740 "wild" persons.[e]

The 1903 census results were published in four volumes: the first volume covering geography, history and climatology, the second volume was on population, the third volume included mortality, defective classes, education, families and dwellings and the fourth volume was on agriculture, social and industrial statistics.

4. 1918 census

The second census of the Philippines under the American regime was taken on 31 December 1918, almost 15 years after the first census.

The schedule used in the enumeration was similar to the one adopted in 1903 census. The scope of the schedule was expanded to include questions on number of families; number of children born and also currently living; ability to speak, write and read mother dialect, English and Spanish; highest grade completed; professional or academic degree; etc. The 1918 count showed a population of 10,314,310 or an increase of 2,678,884 in 15 years.[f]

The results of the 1918 census were published in two volumes: the first one contained social, judicial and industrial statistics while the second was on population and mortality.

5. 1939 census

The first National Assembly of the Commonwealth Government undertook the 1939 census to

b Census of the Philippines Islands, 1903, vol. II (Washington, DC, United States Bureau of the Census, 1905), p. 17.

c Administrative Report: 1970 Census of Population and Housing (Bureau of the Census and Statistics), p. 2.

d Census of the Philippine Islands, 1903, p. 18.

e Census of the Philippine Islands, 1903, p. 123.

f Census of the Philippines, 1918.

Table 233. Population estimated by different authorities, 1591-1899

Year	Population	Authority	Percentage of annual increase[a]	Remarks
1899[b]	6,703,311	Father Algue	0.6	
1898	9,703,311	Ob. Filip Repus		
1898	5,279,955	Guia official		)
1897	5,490,229	Guia official		) Evidently incomplete
1896	5,477,683	Guia official		)
1896	6,261,339	Estimate on partial census by Prof. Plehn		
1895	5,658,055	Guia official		Incomplete
1894[b]	6,490,584	Church	2.5	
1894	6,643,759			
1893[b]	6,333,584	Guia official	0.6	
1892	5,884,584	Guia official		
1891[b]	6,252,987	Guia official	1.1	
1891	6,101,682	Centro de esta-distica		
1887[b]	5,984,727	Civil census	1.2	
1885[b]	5,839,383	Church	1.0	
1880	6,098,364	Sheinagel		
1879[b]	5,487,218	Guia official	- 0.7	
1879	5,817,268	Church		Not including 632,645 infieles
1877	5,233,507	Church		
1877[b]	5,567,685	Civil Census	1.2	Not including 602,853 infieles
1876[b]	5,501,356	Church	2.6	
1873	6,195,000	Siansianko		
1873	7,391,106	J.P. de Pan		)
1871	5,682,012	Guia official		) Includes estimates of wild tribes
1870	4,489,995	Cavada		
1870[b]	4,712,006	Guia official	0.8	
1870	4,698,477	Civil authorities		Not including 393,300 infieles
1864	7,291,314	Jager		Probably includes infieles greatly over-estimated
1862	4,734,533	Church		
1858[b]	4,290,381	Bowring	1.3	
1850[b]	3,857,424	Buzeta	1.5	
1848[b]	3,745,803	Arenas	2.9	
1845[b]	3,434,007	Buzeta	2.1	
1840	3,695,761	Guia official		
1840[b]	3,096,031	Local official	1.6	
1840	3,209,077	Guia de Espanila		Including 113,000 infieles
1833	3,153,290	Church		
1829[b]	2,593,287	Church	2.1	
1819[b]	2,106,230	Cedulas	1.0	
1818	2,106,836	Cedulas		
1818	2,026,230	Buzeta, from cedulas		
1817[b]	2,062,805	Cedulas	0.2	
1815[b]	2,052,994	Cedulas	2.0	
1812[b]	1,933,331	Cedulas	2.7	
1810	2,526,406	Comyn		
1808[b]	1,741,234	Cedulas	1.4	
1800[b]	1,561,251	Zuñiga	3.9	
1799	1,522,224	Cedulas		
1799[b]	1,502,574	Buzeta		
1791	1,649,678			
1739	418,718	Felipe V		
1735	837,182	Church		
1591	667,612	Encomiendas		

a Increase based on estimates considered as probably correct.

b Estimate considered as probably correct.

furnish the necessary basis for legislation and proper administration in the solution of many social and economic problems facing the Commonwealth. The count also provided the legal and constitutional basis for representation in the National Assembly.

A temporary organization, the Commission of the Census, was set up to undertake the census. An expert from the United States Bureau of the Census was made available to the Philippines to advise on census matters.

This census was the first to obtain complete data in respect of all the people in the country. The same information obtained from persons in Manila was also collected from persons in Mountain Province, in Palawan and in every other province.

At the 1939 census, additional information relating to usual activity, employment status, wages or salary, additional occupation, income from the additional occupation, ownership of radio, and lighting and water facilities were also collected. However, questions on place of birth, number of families, number of children currently living, degree obtained in college or university and type of occupancy of house and land were omitted from the 1939 census schedule.

For the first time electric tabulating machines were used for processing the data. The enumerated population of 16,000,303 persons at the census implied an annual increase of 2.2 per cent since 1903.[g]

The results of the 1939 census of population were published in only one language, English, in a series of 50 bulletins, one for each province. The bulletins for the province presented data by *barrios* and municipalities, and those were later bound together into four parts to comprise volume I of the 1939 census report. In volume II, the smallest political unit for which data is shown is the province.[h]

6. 1948 census

After the Second World War, the country was rebuilding its society and economy and the census of 1 October 1948 was taken to provide data necessary for formulating social, economic and political development policies and strategies. This was the first census taken under the Republic of the Philippines, and was carried out by the Bureau of the Census and Statistics with an all-Filipino staff.

Provincial, city and municipal census boards were established to assist in the census taking. Of the 25,902 census enumerators who were utilized for the field enumeration, 18,750, or 72.4 per cent, were public school teachers.

Essentially, the format of the 1948 census was the same as that of the 1939 census. A very significant stride forward this time was that every step of the census taking, including machine processing, was done by Filipinos without any outside or foreign assistance.

The population of the Philippines as at 1 October 1948 was 19,234,182 or an average annual increase of 1.91 per cent over that of 1939.[i] The census results were published in three volumes: the first volume was in respect of the individual provinces; the second volume was on agriculture; and the third volume was the summary report.

7. 1960 census

The 1960 population census was one phase of the 1960 round of censuses and included the simultaneous collection of information on housing characteristics more detailed than those obtained in the 1939 and 1948 censuses. This census provided comprehensive statistics on the Filipino people, their homes and their economic activities. It also provided the sampling frame for the census of agriculture which was taken in April 1960.

Some new features were introduced during the planning stage of the 1960 population census. A prelisting of buildings was undertaken for purposes of ensuring that all houses were included in the enumeration and the work was evenly distributed among all enumerators. No appropriation, however, was provided for the pre-listing operation because this phase of the census work was overlooked during the budget preparation. Hence, this was carried out without any remuneration by the mayors, members of the municipal and city councils, policemen and *barrio* lieutenants.

For the first time, a deviation from the traditional procedure of complete enumeration in the collection of all census items was made and sampling

g *Summary and General Report, 1939 Census*, vol. II (Manila, Commission of the Census), p. 42.

h *Summary and General Report, 1939 Census*, p. 9.

i *Summary and General Report on the 1948 Census of Population and Agriculture*, vol. III (Manila, Bureau of the Census and Statistics, 1954), p. 11.

on a reasonable scale was introduced in the 1960 census. There were 11 items, including fertility, and employment activity and status of all members 10 years old and over, in respect of which information was collected from every tenth household.

Finally, this was also the first census in which the labour force concept was adopted for purposes of collecting information on the economic activity of the population.

There were also several additional items included in the 1960 census schedule: place of birth; cooking fuel facilities; age at marriage; number of children living; place of residence in 1948 (province); last-week type of activity, occupation, industry and status; type of building; number of dwelling units; period of construction; and type of occupancy.

For the purposes of the 1960 census field operation, the country was divided into 10 regional areas, each under the charge of a regional director from the central office who had the ultimate authority on all census matters during the enumeration period. Under the regional directors were the district census supervisors, one for each congressional district, and the municipal census supervisors, one for each municipality. The total population of the country as at 15 February 1960 was 27,087,685.[j]

The results of the 1960 census were published in two volumes. The first volume contains detailed data for the individual province on age, sex, marital status, citizenship etc., and the second volume contains the summary report of the provinces.

8. 1970 census[k]

The censuses of 1970 constitute the third national census taking since the Second World War.

The legal basis for the 1970 census of population and housing, like the censuses of 1948 and 1960 is Commonwealth Act 591, which authorizes the Bureau of the Census and Statistics "to prepare for and undertake all censuses of population, agriculture, industry and commerce".[l]

The President of the Philippines ordered a listing of buildings and dwellings in connexion with the 1970 censuses of population and housing, agriculture and fisheries. Although 31 August 1969 was set as the date for the listing of buildings and dwellings in each *poblacion, barrio* or district of every chartered city, municipality or municipal district, the operations had to be postponed until 7 January 1970, owing to some difficulties experienced in the early release of funds by the Government.

Preparations for the 1970 round of censuses started as early as July 1967 with the setting-up of the 1970 census committee, which was entrusted with the responsibility for over-all planning. Sunday, 15 February 1970 and Wednesday 15 April 1970 were designated as the dates for the census of population and housing and the census of agriculture and fisheries, respectively.

In planning the census operations, several factors were taken into consideration: national needs and international comparability; quality of the data collected; early release of the results by reducing the time gap between enumeration and publication of the results; and data useful to the subnational social and economic development programmes.

The interest and active participation of the national Government in socio-economic planning at the local and subnational government levels resulted in greater provision in the 1970 census for small area data particularly useful to planners, researchers, demographers and other social scientists.

In order to increase the efficiency of the census operation and to ensure the collection, tabulation and early publication of relevant data of good quality, the Bureau of the Census and Statistics adopted several innovative measures. Firstly, an evaluation was made of the experience and problems encountered during the 1960 censuses so that these problems could be avoided in 1970. Among these problems were: (a) political interference in the recruitment of field-workers; (b) *barrio* maps used were not properly delineated; (c) questionnaires, procedures and instructions were prepared close to the census date; and (d) because of the separate processing of the population and housing schedules, the discrepancies in the number of households reported in the two schedules could not be determined properly.

Secondly, the types of data collected in the past censuses, the concepts and definitions adopted, the enumeration procedures and techniques of

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j *Census of the Philippines, 1960,* vols. I and II (Manila, Bureau of the Census and Statistics), p. 2.

k *Administrative Report: 1970 Census of Population and Housing* (Manila, Bureau of the Census and Statistics), pp. 6-133.

l *Primer* (Manila, Bureau of the Census and Statistics, revised June 1973), p. 1.

tabulation used, and the type of information published were studied. Also studied were the census methods and techniques of other countries. Consequently, it was possible for the Bureau to institute innovations in the census questionnaires and introduce improved methods for the collection, processing and tabulation of the census returns.

Thirdly, in determining the scope of the 1970 censuses, the national requirements were the primary consideration. Topics or items which were felt to be most useful to the country (at the national as well as local level) and geared to the need for social and economic development were included as also those that were generally recognized from census experience to be of basic value and of universal interest. These were "recommended" topics proposed by the United Nations to be investigated in censuses in order to achieve regional and world-wide comparability of census data.[m] Other factors that were considered in the selection of the topics to be covered were the feasibility of collecting the data and the total resources available for enumeration, processing, tabulation and publication.

Fourthly, to reduce cost, ensure the quality of the census data and speed up the publication of the census results, the sampling technique was utilized in the phases relating to the collection of data, post-enumeration field checks, quality control of data processing and advance tabulation of selected topics.

In accordance with the sampling design adopted for the census of population and housing, during the field enumeration, a census enumerator visited every dwelling unit in his area of assignment to obtain information on the name, age, sex, marital status and other personal characteristics of each individual member of the household. Only one out of 20 households (5 per cent), however, was asked additional questions relating to literacy, migration, fertility and employment status of household members aged 10 years and over.

Fifthly, one of the devices adopted to ensure the completeness of coverage in the censuses was the listing of buildings undertaken in January 1970. Every building structure in the country, whether commercial, industrial, institutional or residential, was listed and information on the type and number of dwelling units was obtained. During the main enumeration for population and housing the census enumerator was supplied with such a list. He was instructed to visit every dwelling unit indicated in the list plus other dwelling units that had been missed or were constructed since the listing of buildings.

Sixthly, another significant innovation in the design of the questionnaire formats for the 1970 censuses was the use of pre-coded entries. The pre-coded schedule was aimed at speeding up the tabulation process as well as eliminating coding errors, as each possible entry was already indicated in the questionnaires. Enumerators were thus relieved of the tedious task of memorizing or constantly referring to the numerous codes that would otherwise have to be provided if the codes were not printed on the questionnaires. Also, in the manual processing of the schedule in the central office, the work of the coders was reduced to a minimum because even under items where the enumerator had to make "write-in" entries, he was instructed to enter the codes corresponding to the entries.

Seventhly, a high-speed electronic computer system (IBM 5/360), among the most modern and advanced machine data processing equipment available in the country, was used to tabulate the returns of the 1970 censuses. The use of an electronic computer not only offered opportunities for reduction in unit costs, faster speed and reduction of errors in large-scale machine data processing but also enhanced the timeliness of release of the census data to the general public. With the use of the IBM 5/360, advance preliminary reports were released six or seven months after the termination of the nation-wide house-to-house enumeration, whereas in the past it took the Bureau two years to make preliminary releases of the census results.[n]

Further, unlike in previous censuses, where the Bureau had to rely on temporary personnel to direct, supervise and control the field enumeration, field offices of the Bureau of the Census and Statistics were organized in preparation for the 1970 censuses. Each province has a provincial census office, manned by the census officer and his staff. The provincial census offices were responsible for the field operation of the 1970 censuses as well as all other established operations and surveys conducted

m *Handbook of Population Census Methods* (United Nations publication, Sales No. 58.XVII.6).

n In the 1948 and 1960 censuses, the final reports were released several years after, thus affecting seriously the usefulness of the census data.

by the Bureau in the field. With the establishment of the census field offices, better quality data and more expeditious transmittal of census and survey materials from the field were effected, making possible the early release of preliminary figures on the population of the country.

An important function of the census field office during the enumeration was the field editing of the census questionnaires for quality control. The field editing was aimed at determining whether there were any omissions, major defects or gross inconsistencies in the completed schedules submitted by the census enumerators. Correcting deficiencies of the questionnaires at the source rather than at the central office greatly improved the quality of the 1970 census data.

During the enumeration period for the censuses of population and housing a field force of 38,000 census enumerators, 110 district census supervisors and 1,500 municipal/city census supervisors were employed.

Before the start of the census operation, provincial and municipal census boards were set up by Executive Order composed of local officials with the provincial governor and the municipal mayor as chairman and vice-chairman, respectively. These bodies advised the local census officials on administrative aspects of the census work and assisted in ensuring the completeness of area coverage. Where no qualified enumerators were available, public school teachers, because of their familiarity with the locality and their acceptability, were deputized as enumerators during the census head counting in most cities and *poblaciones* and in some *barrios*.

An important device used to measure the accuracy of the 1970 censuses data was the post-enumeration survey, which in fact was a re-enumeration of a sample of the households made immediately after the censuses. The post-enumeration check served two purposes: firstly, to inform users of data of the accuracy attached to census figures, and, secondly, to aid census officials in the improvement of subsequent censuses. The post-enumeration survey gave an indication of the extent of coverage and content errors. The types of discrepancies made by the census enumerators as well as the causes of these errors were identified so that a better evaluation of the census results was made possible.

The items for the 1970 enumeration resembled closely those of the 1939, 1948 and 1960 censuses, the differences being the omission of items relating to race; wages, salaries and income from additional occupation and physical disability; and the addition of such items as number of families in the household; ownership of television and refrigerator; highest degree obtained in college/university; vocational/technical skill; place of previous residence in 1965 and 1960; construction materials of the roof and wall; and number of rooms and occupants.

Two basic schedules were used for the 1970 censuses of population and housing.

(a) The ordinary Household Schedule (PH Form 2) contained 10 items on population and 15 items on housing;

(b) The Sample Household Schedule (PH Form 2-A) contained 24 more items than those found in the ordinary household schedule.

Only a small segment (5 per cent) of the households were asked questions on all items of the population and housing schedules, 25 items on the population schedules were collected selectively on a 100 per cent basis while, under the sampling scheme adopted, 5 per cent of the estimated 6,360,000 households were asked to furnish information on the rest of the items in the schedule.

The population count was 36,684,486 or an increase of 9,596,801 over the last enumeration.

The reults of the 1970 census were published in the following publications:

(1) Report on Population by Province. This report presented the population of the 66 provinces of the Philippines by municipality and city and also the City of Manila by district/area;

(2) Advance Report on Population and Housing. This report is for each province and consists of eight statistical tables on household population and two statistical tables on housing based on data collected on a 5 per cent sample, giving the household population by municipality, age and sex distribution, labour force data and the number of buildings containing one or more households by type and by kind of construction materials;

(3) National Summary for the Advance Report. This presents the summary of the data contained in all the advance reports on

population and housing for the 66 provinces and the City of Manila;

(4) Final Provincial Report on Population. It shows the number of inhabitants and demographic and economic characteristics of the population. This volume contained 74 statistical tables on population and 15 tables on housing;

(5) National Summary for the Final Provincial Reports on Population. This presents a summary of the data contained in the final provincial reports on population plus nine additional tables.

9. 1975 census

A quinquennial census was conducted on 1 May 1975 to collect current data on the Philippine population required for national social and economic planning and for the formulation of national and sectoral policies on manpower development and utilization, health, education, housing and population control etc.

The census was carried out by the National Census and Statistics Office (NCSO), formerly the Bureau of the Census and Statistics (BCS). NCSO has 11 regional offices each headed by a regional census officer, who has jurisdiction over 5 or more provincial offices in turn headed by provincial census officers. There are also municipal census officers and assistants for cities and municipalities. These census officers controlled and supervised the 1975 field enumeration in their respective areas of assignment.

The 1975 census was conducted in two phases:

Phase I – Enumeration of every individual in the population from 1 to 10 May 1975 asking limited demographic questions on sex, date of birth, age, marital status etc.;

Phase II – Complete listing of households in the sample *barangays* to provide the sampling frame for the selection of sample households in respect of which detailed enumeration of economic activities were carried out.

The method of taking a census has in essence remained the same through the years. The basic unit is the *barrio* or *barangay* an area assigned to one enumerator.

Table 234 summarizes the items or topics on which data were collected at the various censuses. It will be noted that in all the censuses information regarding the name, sex, age, marital status and relationship to the head of household was collected in respect of each person. In the censuses held from 1918 to 1970 information was collected on six similar topics, namely, citizenship, religion, ability to speak English and Spanish, literacy and number of children born. The question on "number of children living" was asked together with "number of children now dead" after 1918. However, this question alone was dropped in the censuses of 1939 and 1948 and was restored in 1960, 1970 and 1975 censuses because of its importance to fertility and mortality studies. Because of their importance to age estimation and fertility studies the questions on "date of birth" and "family nucleus" were asked for the first time in 1975.

The question on "physical disabilities" was included in the schedules of the censuses held from 1903 to 1948, but was dropped subsequently.

C. CIVIL REGISTRATION

1. History

The second customary source of demographic data is the civil registration system. There is, however, no evidence that during the Spanish period any of the laws and decrees issued was concerned with civil registration. The various religious orders of the Catholic Church maintained full records of baptisms, marriages and deaths, but these records were only kept and carefully preserved in the parochial archives. The records for the earlier years have disappeared, and only those for the year 1876 and from 1885 to 1898 inclusive are available and, even for these years, only those for 1876 and 1885 are complete.[o]

During the last quarter of the nineteenth century, the Central Statistics Office (Centro de Estadistica) was established as a dependency of the Bureau of Civil Administration (Direccion General de Administracion Civil). With the creation of this office, the parish priests were required to send to the statistics office in Manila a detailed statement of the births, marriages and deaths that had occured in their parish during the year immediately preceding the report.[p] The register of births covered the following data: (a) place of birth; (b) name of child; and (c) race. The marriage register covered the following

o *Census of the Philippine Islands, 1903*, vol. III, p. 11.

p Manuel E. Buenafe, *Civil Registry and Vital Statistics*, Technical Series No. 2 (Manila, Bureau of the Census and Statistics, 1962).

Table 234. Topics on which data were collected in the population and housing censuses in the Philippines, 1903-1975

Topics	1975 (1 May)	1970 (6 May)	1960 (15 Feb.)	1948 (1 Oct.)	1939 (1 Jan.)	1918 (31 Dec.)	1903 (2 Mar.)
Geographic characteristics							
Place where found at time of census and/or/ place of usual residence:							
Census building number	x	x	-	-	-	-	-
Enumeration district/*barangay* number	x	x	-	-	-	-	-
Urban or rural	x	x	-	-	-	-	-
City district/*poblacion/barrio*	x	x	x	x	x	x	x
City/municipality/municipal district	x	x	x	x	x	x	x
Province	x	x	x	x	x	x	x
Island	-	x	x	x	x	x	x
Personal characteristics							
Sex	x	x	x	x	x	x	x
Date of birth	x	-	-	-	-	-	-
Age	x	x	x	x	x	x	x
Marital status	x	x	x	x	x	x	x
Citizenship	-	x	x	x	x	x	x
Race	-	-	-	x	x	x	-
Colour	-	-	-	-	-	-	x
Place of birth	-	x	x	-	-	x	x
Household and family information							
Relationship to head of household	x	x	x	x	x	x[a]	x[a]
Family nucleus	x	-	-	-	-	-	-
Number of families in the household	-	x	-	-	-	x[a]	-
Ownership of:							
Radio	-	x	x	x	x	-	-
Television	-	x	-	-	-	-	-
Refrigerator	-	x	-	-	-	-	-
Cooking fuel facilities	-	x	x	-	-	-	-
Type of lighting	-	x	x	x	x	-	-
Water supply facilities	-	x	x	x	x	-	-
Toilet facilities	-	x	x	x	-	-	-
Marriage and fertility							
Age at marriage	-	x	x	-	-	-	-
Number of children born alive	x	x	x	x	x	x	-
Number of children now living	x	x	x	-	-	x	-
Cultural characteristics							
Mother tongue	x	x	x	x[b]	x[b]	x[b]	-
Religion	-	x	x	x	x	x	-
Language:							
Tagalog	-	x	x	x	x	-	-
Spanish	-	x	x	x	x	x	-
English	-	x	x	x	x	x	-

Table 234. *(continued)*

Topics	1975 (1 May)	1970 (6 May)	1960 (15 Feb.)	1948 (1 Oct.)	1939 (1 Jan.)	1918 (31 Dec.)	1903 (2 Mar.)
Educational characteristics							
School attendance	x	x	x	x	x	x	x
Highest grade completed	x	x	x	x	x	x	-
Highest degree obtained in college/university	x	x	-	-	-	x	-
Literacy	-	x	x	x	x	x	x
Vocational/technical skills	x	x	-	-	-	-	-
Social data							
Place of previous residence	x[c]	x[d]	x[c]	-	-	-	-
Physical disability	-	-	-	x	x	x	x
Economic characteristics							
Labour force concept:							
Type of activity	-	x	x	-	-	-	-
Occupation	-	x	x	-	-	-	-
Industry	-	x	x	-	-	-	-
Status	-	x	x	-	-	-	-
Gainfully occupied concept:							
Usual activity	-	-	-	x	x	-	-
Occupation	x	x	-	x	x	x	x
Industry	x	-	-	x	x	x	-
Status	x	-	-	x	x	-	-
Wage or salary	-	-	-	x	x	-	-
Additional occupation	-	-	-	x	x	-	-
Income from additional occupation	-	-	-	x	x	-	-
Housing characteristics							
Type of building	-	x	x	-	-	-	-
Number of dwelling units	-	x	x	-	-	-	-
Construction materials:	-	-	x	x	x	x	-
Roof	-	x	-	-	-	-	-
Wall	-	x	-	-	-	-	-
Period of construction	-	x	x	-	-	-	-
Number of rooms	-	x	-	-	-	-	-
Number of occupants	-	x	-	-	-	-	-
Type of occupancy	-	x	x	-	-	x	x

Notes: x denotes that the information was collected.
- denotes that the information was not collected.

a Refers only to families.
b Includes a question on other dialects and languages spoken.
c In the year of the preceding census.
d In the 1970 census two questions were asked: the place of residence in February 1960 and the place of residence in February 1965.

particulars: (a) full name of contracting partners; (b) age; (c) sex; (d) race; (e) birth-place; and (f) remarks. The death record contained data similar to those given for births, with the addition of age of deceased.

The Philippine Revolution in 1898 brought with it the separation of the church and the State and one of the early actions of the independent Government was the promulgation of a decree reorganizing the towns under its control. The Decree provided also for the election of a Delegate of Justice and Civil Registration to assist the Chief (of the *pueblo*) in the preparation of the record book of births, deaths and marriage and the census.

It is worthy to note that the provisions of the decree contained the essentials of the modern concept of registration and, indeed, they differ from the requirements now in force in only a few though important details.[q]

During the American occupation, the recording of vital statistics came to be installed in all dependencies of the civil administration. The activities of this office were placed under the control of the Board of Health, superseded by the Bureau of Health and later by the Philippine Health Service. At about this time the First Decennial Revision of the Manual of International Lists of Causes of Deaths had been completed in Paris by the International Commission. This revised manual was adopted as the working basis for all statistical compilation in the Philippines.

On 21 October 1901, the Bureau of Archives was established to become the central repository of civil registry records submitted monthly by the Municipal Secretary. However, it was since 1922 that the Bureau of Archives started to receive civil registry records. With the enactment of the Civil Registry Law in 1931 the Bureau was incorporated as a Division of Archives of the National Library. The municipal secretaries were required to report all civil registration to the Division of Archives every quarter.[r]

With the enactment of the Civil Registry Law (Act No. 3753), the Administrative Code of 1917 was amended and instead of the municipal secretaries, the municipal treasurers were designated as local civil registrars of their respective municipalities. In cities, the local civil registrar is either the city health officer or the secretary depending on what the Charter has provided.[s]

2. Administrative organization and registration procedures

In terms of the provisions of Commonwealth Act No. 591, the Bureau of the Census and Statistics was set up in August 1940. Since then the functions relating to civil registration performed by the National Library and those relating to vital statistics carried out by the Bureau of Health have been transferred to the Bureau of the Census and Statistics. The duties of administering the Civil Registry Law and the compilation of vital statistics thus became the responsibilities of the Bureau, now known as the National Census and Statistics Office.[t]

In the Philippines, a vital event is registered in the office of the local civil registrar of the place where the event occurred.[u] A birth should be reported for registration within 30 days of its occurence. It is the duty of the physician, nurse, midwife in attendance at birth, or the hospital or clinic administrator, or in default thereof, either parent of the newborn child, or any person who has knowledge of the birth to register it in accordance with the law.

The procedures to follow in registering a death event depend on the attendant at death and the circumstances surrounding its occurence. No human body shall be buried without a certificate of death issued within 48 hours after death by either the local health officer or attending physician. Registration shall be made in the office of the local civil registrar of the place of death within 30 days after death.

Marriage shall be registered by civil officers, priests, rabbis or ministers authorized to solemnize marriage within 15 days from the time of solemni-

q *Census of the Philippines, 1918*, vol. II, pp. 966-967.

r *Manual on Civil Registration and Vital Statistics* (Manila, Bureau of the Census and Statistics, 1967), p. 89.

s *Ibid.*, p. 28. The text of the Civil Registry Law has been also reproduced in the *Manual on Civil Registration* (Manila, 1975), pp. 57-60.

t *Manual on Civil Registration* (Manila, 1975), appendix C, pp. 88-91. The Executive Director of the National Census and Statistics Office is the Civil Registrar-General. As such, he promulgates rules and regulations and is vested with the necessary authority and jurisdiction for enforcement.

u "Civil registration and vital statistics practices in the Philippines", prepared by the Office of the Civil Registrar-General for the Conference on Vital Statistics Practices in Asia (Manila, May 1977), pp. 6-7.

The following paragraphs are mainly taken from the same paper (pp. 7-14).

zation, except marriages of exceptional character, which shall be registered within 30 days from the time the marriage was solemnized.

Registration is made by presenting to the office of the local civil registrar of the place where the event occurred an accomplished Certificate of Live-Birth (Municipal Form No. 102) or an accomplished Certificate of Death (Municipal Form No. 103) or Feotal Death (Municipal Form No. 103-A) signed by the informant, or an accomplished Marriage Contract (Municipal Form No. 97) submitted by the solemnizing officer.

Two copies of the document, the original and the duplicate, are submitted to the local civil registrar, who upon receipt verifies certificates for legibility, accuracy and completeness of data and enters them in the civil register. The local civil registrar retains the original and forwards the duplicate within the first 10 days of the following month to the office of the Civil Registrar-General for file and statistical processing.

At the office of the Civil Registrar-General, the duplicates are sorted and recorded by region. Pertinent information is posted in a control book indicating the municipality, city, number of documents, inclusive civil registry numbers and letters of transmittal. Letters of acknowledgement are sent to the local civil registrars in respect of reports already received. Then, the processing starts with the coding, punching, etc., to end with the yearly publication of the final tabulations in the "Vital Statistics Report".

3. Topics covered and data tabulations

The present civil registry documents are detailed and exhaustive. In the case of live births, the items in the certificate are:

(i) Characteristics of the event of child
- Attendant at birth
- Date of birth
- Date of registration
- Legitimacy
- Period of gestation
- Place of birth
- Name
- Sex
- Type of birth, i.e., single or plural issue
- Weight at birth

(ii) Characteristics of parents
- Name
- Age
- Birthplace
- Date and place of marriage of parents (for legitimate birth)
- Kind of business or industry of the father
- Nationality
- Number of previous deliveries to the mother
- Race
- Religion
- Usual residence of the mother
- Usual occupation of the father

The items covered by the certificate of foetal death are:

(i) Characteristics of product
- Cause of foetal death
- Certifier or attendant
- Date of occurrence (of foetal delivery)
- Date of registration
- Legitimacy
- Period of gestation
- Place of occurrence
- Sex
- Type of birth, i.e., single or plural issue
- Weight at delivery
- Circumstances of burial, cremation

(ii) Characteristics of parents
- Name
- Age
- Kind of business or industry of the father
- Nationality
- Number of previous deliveries to the mother
- Place of birth
- Race
- Usual residence of the mother
- Usual occupation of the father

In the certificate of death, the following items are included:

(i) Characteristics of the event
- Circumstances of death
- Cause of death
- Autopsy

Certifier or attendant
Date of occurrence
Date of registration
Place of death
Circumstances of burial, cremation, removal

(ii) Characteristics of the deceased

Name
Age
Birthplace
Business or industry
Citizen of what country
Marital status
Race
Sex
Usual occupation
Usual residence
Parents' names
If married, name and address of surviving spouse

For marriage contracts, the following items are included:

(i) Characteristics of event

Date of occurrence
Date of registration
Place of occurrence
Solemnizing officer

(ii) Characteristics of bride and groom

Age
Previous marital status
Nationality
Residence

(iii) Characteristics of parents

Nationality

Information relating to marriages, births and deaths from civil registration data was first published in 1941 by the Bureau of the Census and Statistics in its *Yearbook of Philippine Statistics.* The information included yearly totals for the years 1928 to 1940. In addition, data on live births, marriages, deaths and foetal deaths by province and month for the year 1940 were given. Tabulations on selected characteristics of marriages, births and deaths by province and month were likewise shown. Vital statistics are also published by the Bureau of the Census and Statistics every quarter in the *Journal of Philippine Statistics.* Since 1956, consolidated reports following United Nations – recommended tabulations are published yearly in the vital statistics reports of the Bureau of the Census and Statistics.

The statistical series on marriages, births and deaths is presented in table 235.

D. SAMPLE SURVEYS

1. The statistical survey of households

The Statistical Survey of Households is a continuing activity of the National Census and Statistics Office[v] to collect up-to-date information on the composition and distribution of the population as well as on the principal characteristics of the country's labour force, and to set up a sound reporting system to maintain such data on a current basis.

The survey has been conducted biannually during the months of May and October since its inception in October 1955 and on a quarterly basis since 1971. The reference period of the survey is one week and the reference week is reckoned as the calendar week (Sunday to Saturday) preceding the visit of the field interviewer.[w] The personal data items on which information has been collected regularly since 1956 are: (a) relationship to head of household; (b) age at last birthday; and (c) sex and civil status. Additional data on family income and expenditure and demographic and socio-economic characteristics of the households were collected occasionally through these surveys.[x]

The results of these surveys are published in the National Sample Survey of Household Bulletin (Labour Force) series. The important tabulations available from the surveys are:

(a) Population 10 years old and over by employment status, by sex and by urban and rural areas;

(b) Persons in the labour force by employment status, by marital status and sex, by heads and non-heads of households, urban and rural; by percentage distribution of em-

v From its inception in October 1955 until July 1958, the survey was known as the Philippines Statistical Survey of Households (PSSH). Since then it has come to be called the Bureau of the Census and Statistical Survey of Households (BCSSH).

w It has, however, to be noted that the reference week is not the same in respect of all sampled households because not all of them can be interviewed during one and the same week.

x For detailed discussion of definitions and concepts used, see S. Selvaratnam, *The Philippines labour force data* (Bangkok, International Labour Organisation, Asian Regional Team for Employment Promotion, May 1974) (mimeo).

Table 235. Statistical series on marriage, birth and death

Marriage statistics

1. Number of marriages for the Philippines by province and month
2. Number of marriages for the Philippines by previous marital status of groom and bride
3. Number of marriages by previous marital status of contracting party
4. Number of marriages by type of ceremony
5. Number of intermarriages by nationality
6. Number of marriages by previous marital status and age of groom
7. Number of marriages by previous marital status and age of bride
8. Number of marriages by relative age of groom and bride
9. Number of marriages by month and age group of groom and bride
10. Number of marriages by type of ceremony according to age group of groom and bride

Birth statistics

11. Number of births by province and sex
12. Number of births by province and attendant at birth
13. Number of births by month of occurrence and by sex
14. Number of births by age of mother, legitimacy and sex
15. Number of births by age of father, legitimacy and sex
16. Number of births by legitimacy, sex and province
17. Number of births by relative age of parents
18. Number of births by age of mother and number of living issues
19. Number of births by age of mother and parity (birth order)
20. Number of births by parity (birth order) and province
21. Number of births by nationality of parents
22. Number of births by occupation and age of father, by sex
23. Number of births by province, place of occurrence and sex
24. Number of births by province and month of occurence

Death statistics

25. Deaths by province, sex and age group
26. Deaths by province, month and sex
27. Deaths by month, sex and age group
28. Deaths from all causes of 15 years old and over by civil status and sex
29. Deaths by nationality and age group
30. Deaths of 15 years old and over by occupation and sex
31. Deaths by province and type of attendance
32. Infant mortality (under 1 year of age) from each cause, by sex and small age group (based on the International List of Diseases and Causes)
33. Infant mortality (under 1 year of age) from each cause by sex and small age group (Bureau of Health List)
34. Foetal deaths by province and month
35. Foetal deaths by place of occurrence and nationality of foetus
36. Foetal deaths by place of occurrence and type of attendance
37. Foetal deaths by age of mother and birth order
38. Foetal deaths by birth weight, period of gestation and sex
39. Foetal deaths by age of mother, sex and legitimacy
40. Number of foetal deaths by age of mother, period of gestation and sex
41. Number of foetal deaths by cause and type of attendance
42. Foetal deaths by birth weight and cause of death
43. Number of foetal deaths by period of gestation, sex and cause
44. Death (under 5 years of age) from each cause by sex (based on the International List of Diseases and Causes)
45. Deaths from all causes by age group

Additional death statistical tables starting 1969

46. Number of deaths (exclusive of foetal deaths) cross-classified by causes and type of attendance
47. Number of deaths by age group, sex, month, province and city
48. Number of deaths 15 years old and over by province, city, civil status and sex
49. Mortality from selected causes of death by province and city
50. Infant mortality from selected causes of death by province, city and sex
51. Number of deaths under 1 year of age by age group, sex, province and city
52. Deaths of 15 years old and over by occupation and age group
53. Late foetal deaths by age of mother, birth order and legitimacy

Source: Compiled from certificates submitted to the Civil Registrar-General within the first 10 days of each month by all local civil registrars, namely, municipal treasurers, city health Officers and other persons designated by their city charter.

ployed persons at work; by desire for additional work and the number of hours worked during the survey week;

(c) Employed persons by major industry and occupation groups by sex for urban and rural areas; at work in agriculture and non-agricultural industries by desire for additional work; by number of hours worked; by class of worker; not at work by reasons for not working;

(d) Unemployed persons by age group, by work experience and sex; by number of weeks looking for work; by work experience;

(e) Employed and unemployed persons in the experienced labour force by major industry and occupation groups;

(f) Persons not wanting work by age group; by reason for not wanting work.

2. The National Demographic Surveys

In 1967, the Inter-Agency Committee on Demography and Vital Statistics identified the immediate need for a national-level demographic survey. The National Demographic Survey (NDS) of 1968 was conducted in response to the felt need.

"The National Demographic Survey was from the start a co-operative venture between the Population Institute of the University of the Philippines and the Household Survey Division of the Bureau of Census and Statistics (BCS). The BCS was to provide its extensive network of field personnel, including its permanent interviewing staff, and would allow the NDS to be attached as a rider to a round of the Bureau's bi-annual Philippine Statistical Survey of Households (PSSH). The Population Institute would process the data and take responsibility for the bulk of the analysis. Planning began mid-way in 1967 for a rider to the scheduled round of May 1968. As originally conceived, the rider was a single-page supplement to the BCS's regular labour force inquiry. But the final schedule – after the nation's many important demographic data needs had been considered – was a 17 page fertility questionnaire (a total of 92 items) together with a separate mobility schedule of 38 items".[y]

The NDS questionnaires included blocks on fertility (family and household composition, mortality of children, educational attainment, migration, socio-economic status and knowledge; attitudes and practices in respect of family planning) and a block of questions concerned with social mobility.

More than 7,000 households were interviewed and numerous articles and papers have been generated by the 1968 NDS data.[z] However, a post-enumeration survey showed that perfect agreement between interviews and reinterviews was obtained on only 73.0 per cent of the fertility blocks (i.e., where the entire block was matched correctly) and on only 63.1 per cent of the mobility blocks. These incomplete results counsel caution in the analysis of the survey results.

A National Demographic Survey was conducted again in 1973 jointly by the University of the Philippines Population Institute and the National Census and Statistics Office. The survey collected information on the relationship to household head and family head, age, sex, civil status, migration, school attendance, delineation concept of work, education and labour mobility, language, literacy, religion, work experience since marriage, marriage history and knowledge, attitudes and practices with regard to family planning.

E. DUAL RECORDS SYSTEM

The National Census and Statistics Office installed the dual system of recording and reporting vital events and movements from January 1971 to January 1974. The system covered 464 sample enumeration districts (EDs) with more than 96,000 households and a population of half a million people.[aa] The main objective of the project was to arrive at reliable estimates of birth and death rates in the country – at both the national and the regional levels. This was to be achieved by developing and maintaining a good civil registration system in the sample areas with registration coverage of at least 90 per cent.[bb] The scheme also made possible the estimation of migration patterns and other demographic characteristics of the population.

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y Wilhelm Flieger and Peter C. Smith, eds., *A Demographic Path to Modernity*, published for the Population Institute by the University of the Philippines Press, Quezon City, 1975. Appendix C, p. 265.

z *Ibid.*, pp. 273-275.

aa *On the Development and Maintenance of the Civil Registration System in the Philippines*, 1971 project report (National Census and Statistics Office).

bb Not only did the Project aim to estimate vital rates, it also hoped to detect regional variations in birth and death rates, if any.

The project, as its name indicates, adopted a system whereby vital events such as births and deaths were recorded from two separate and independent reporting schemes, namely, the continuous sample registration system[cc] and the periodic household enumeration usually conducted once or twice a year. Events recorded in one system were matched against those reported in the other, and on the basis of such matching, the total number of events, either births or deaths during a specified time period, was determined.

The first leg of the dual records system was termed the continuous reporting system (CRS). This system made use of the book of register of the local civil registrar (LCR) in the sample registration areas, in addition to the monthly reports of *barrio* captains and/or special reporters regarding the births and deaths occurring in their respective areas of assignment. These two reports were combined to obtain the total events recorded under CRS.

The periodic household enumeration (PHE) system constitutes the second leg of the dual records system. During the first year of operation a complete enumeration of household residents in all sample enumeration districts in the sample registration areas was carried out. The purpose of this enumeration was to establish the base population from which changes in regard to composition etc. could be observed. In the subsequent years, the periodic household survey collected information regarding both the demographic characteristics of the residents in the sample enumeration districts and the incidence of vital events. The base population, as determined from the survey, was used for the computation of the vital rates by the CRS and PHE.

Since its inception, the dual records system has collected information on (a) personal data such as relationship to household or family head, age, sex and civil status; (b) pregnancy history, including living and deceased children; (c) migration: date moved in/out, place of destination/previous residence, and reasons for moving; (d) birth data such as name of child, sex, birth order, place and date of birth, and name, age and place of usual residence of parents, and (e) death data such as name of deceased, sex, age, place and date of death and usual residence of deceased.

The results of the project have been incorporated in a report[dd] published by the National Census and Statistics Office.

cc The sample registration scheme or system was adopted in addition to the usual registration system to obtain more reliable information with regard to births and deaths in the country. The rationale behind this system is that with sample areas better administrative and technical control can be exercised, and that the better results that will emanate from the sample registration areas could be used to estimate regional and even national rates.

dd Tito A. Mijares, *Development and Maintenance of a Sample Vital Registration System in the Philippines*, POPCOM/NEDA/USAID/NCSO, Sub-Agreement No. 492-11-570-220 (003) (Manila, National Census and Statistics Office).

Annex II

EVALUATION OF THE QUALITY OF DEMOGRAPHIC DATA

A. INTRODUCTION

The census data on total population as well as age-sex distribution and the registration data on births and deaths are most commonly used as bases for socio-economic planning and programming. The accuracy and usefulness of these plans and programmes will therefore largely depend on the accuracy and completeness of the data upon which they are based. Determining the quality of the data is therefore crucial, though often difficult.

The statistics collected through the censuses, sample surveys and the registration system are not always accurate; they are subject to errors in coverage and also content, viz., under- and over-enumeration, mis-statement of age and other particulars, and under-reporting of vital events. "The reasons for these errors are many among which may be mentioned illiteracy of the population, lack of appreciation of the need for census or registration statistics, general apathy and absence of co-operation, superstitions about counting of persons, fears about the purposes of the census, and difficulties of transport and communication in the country".[a] The inadequate definitions of concepts and differences between definitions and their application in the field also contribute to the errors in the data collected.

The importance of errors, given their magnitude, depends on the purpose for which the data are used. "The degree of accuracy required in data is a relative thing and a function of the use of which the data are put".[b] Nevertheless, it is essential to evaluate the data for their completeness and accuracy.

B. APPRAISAL OF CENSUS DATA

1. Accuracy of census total

The changes in the size of the total population normally proceed in an orderly manner. Unless affected by unusual events such as epidemics, appreciable net migration, the rate of growth of the population for the whole country as well as for each province may be expected to change gradually from one intercensal period to another and to follow a more or less uniform trend. Thus, an evaluation of the intercensal growth rates may give an indication of the accuracy of the enumeration. It must, however, be noted that "this method by itself does not yield a measure of relative coverage, but it may lead to a more intensive investigation".[c]

As noted in chapter I, two censuses of the Christian population were carried out during the Spanish regime in 1877 and 1887. Considering the conditions that prevailed at that time, the chief inaccuracies were almost exclusively confined to areas that were in a disturbed condition, or were occupied by nomadic non-Christian peoples.

The severe epidemics of cholera that occurred in 1820, 1862, 1879, 1882, 1889 and 1902 seriously affected the population change. Between the years 1800 and 1903, there was an average annual increase in the population of approximately 1.5 per cent.[d]

In 1903, when the first population census was taken under the American regime, very little of the territory occupied by the non-Christians had been brought under government authority, and no passable roads or trails existed in the areas. The range of the census takers were also limited by difficulties of transportation as well as the lack of personal security.[e] Since 1903, six more censuses were taken, the last one being in 1975. The population of the Philippines as recorded at these censuses together with the intercensal growth rates are shown in table 2.

The 1903-1918 intercensal average annual rate of increase was 1.92 and this rate increased to 2.22 during the subsequent period, 1918-1939. The acceleration in the rate of increase since the turn of

a *Population of Sri Lanka*, ESCAP Country Monograph Series No. 4 (Bangkok, 1976), p. 376.

b Philip M. Hauser and Otis Dudley Duncan, "The data and methods" in Hauser and Duncan, eds., *The Study of Population* (Chicago, The University of Chicago Press, 1959), p. 65.

c Henry S. Shryock, Jacob S. Siegel and Associates, *The Methods and Materials of Demography*, vol. I (Washington, DC, Bureau of the Census, Department of Commerce, October 1971), p. 106.

d *Census of the Philippine Islands, 1903*, vol. II, p. 17.

e *Ibid.*, p. 18.

the century was attributed to the drop in the death rate, which was mainly due to the use of modern medical and sanitation measures rather than to any improvement in the level of living of the people. The control of epidemic diseases has been especially notable. Smallpox was brought under control in 1922. The last plague occurred in 1914 and cholera has been held in check. Malaria, tuberculosis and gastro-intestinal disease among children have been reduced to the minimum. Further improvements in medical and health services and socio-economic conditions were responsible for the continued reduction in the mortality rate.[f] These factors accelerated the rate of population growth from 1903 to 1939.

The 1939 census is generally regarded as the most complete and otherwise accurate census taken in the Philippines because there was almost perfect peace and order in all areas of the country. Furthermore, the January date of the 1939 census avoided the typhoon season, when travel and communication are most difficult.[g]

The destruction wrought by war and internal disorder caused by dissidents somewhat reduced the rate of population growth to an average of 1.91 per cent between 1939 and 1948. Further, the 1948 census was subject to errors owing to substitution at times of estimates of populations in place of enumerations; enumeration of the same persons more than once; mistakes in filling out the schedules by some census takers who were not able to master the intricacies of gathering census data within the three-day training; and, finally, inaccurate data furnished by respondents owing to fear of being enumerated in the census, impatience with it or positive hostility, in addition to failure to recall information needed. The census of 1948 was taken during the stormy typhoon season, not an ideal time for creating either respondent goodwill or enumerator enthusiasm.

The percentage changes for each intercensal period since 1903 until 1975 in respect of all provinces and the city of Manila is given in table 3. An examination of these data suggests a general undercount in some provinces in 1948 attributable to the fact that these areas were still in a state of restlessness and confusion arising from the shock of the Second World War; a number of homes in these provinces had been destroyed during the war and many of them had not yet been rebuilt.[h] The negative change in some of these provinces can be explained in terms of migration to the larger cities of the country. It is also possible that the 1939 census overcounted and the 1948 census underenumerated the population of these provinces.

2. Accuracy of age-sex distribution

(a) Introduction

The most basic demographic characteristics regarding which information is collected in practically all censuses are the age and the sex of the persons enumerated. They are simple and easy to report, and hence theoretically it should be possible to achieve a higher level of accuracy with regard to these two than to any other items included in the census schedule. Indeed, the quality of the age data could be considered as an index of the quality of the other data collected in a census.

The accuracy of the sex data is usually very high since the possibility of enumerators confusing males and females is somewhat remote. "The principal problem relating to the quality of the data on sex collected in censuses concerns the differential completeness of coverage of the two sexes. At least in the statistically developed countries misreporting of age is negligible; there appears to be little or no reasons for a tendency for one sex to be reported at the expenses of the other".[i] These observations apply equally to the Philippines.

The errors in the reporting of age have been common in practically all censuses in all countries, though the extent of such errors has varied from country to country and from one national census to the other. "Errors in the tabulated data on age may arise from the following types of errors of enumeration: coverage errors, failure to record age and misreporting of age. There is some tendency for the types of errors in age data to offset one another; the extent to which this occurs depends not only on the nature and magnitude of the errors but also on the grouping of data".[j]

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f Basilio B. Aromin, "The demographic situation in the Philippines", *The Statistical Reporter*, National Economic Council, vol. II, No. 3, July 1958, p. 3.

g Amos H. Hawly, *Papers in Demography and Public Administration* (Manila, Institute of Public Administration, University of the Philippines, 1954), p. 11.

h Francis C. Madigan, S.J., *Hindsight and Foresight: The Census of the Philippines of 1948 and 1960*, Ateneo de Cagayan, 1958.

i Shryock, Siegel and Associates, *op. cit.*, p. 189.

j *Ibid.*, p. 203.

(b) Under-enumeration of infants and children

It is well known that censuses everywhere have a tendency to under-enumerate infants and children, particularly those under five years of age. A fairly accurate method of ascertaining the extent of such under-enumeration is by comparing the population enumerated at each of the ages 0, 1, 2, 3 and 4 at the census with the number of surviving children estimated from births of the five-year period preceding the census and the deaths attributable to this cohort of births. However, the application of this method to the Philippine situation is hampered by the incompleteness of the registration data relating to births and deaths.

In the case of a population with a stable or gradually rising birth rate, the number of persons generally decreases with increasing age. Therefore, in the case of children under five years of age, the number aged 0 should be more than those aged 1 year, and those aged one year should be more than those aged 2 years and so on. Any deviation from this pattern may be attributed to under-enumeration at certain ages.[k] The numerical and percentage distribution of children aged under five years by single year of age as recorded at the various Philippine censuses from 1939 to 1970 is given in table 236. It will be seen from this table that the number of children generally increases with age up to age 2 years, thereby suggesting a considerable extent of under-enumeration at ages under 2 years.[l]

(c) Age heaping

The most common source of errors in age reporting, however, appears to be the tendency to state ages ending in certain digits while avoiding ages ending in other digits. "The tendency of enumerators or respondents to report certain ages at the expense of others is called age heaping, age preference or digit preference. The latter term refers to preference for the various ages having the same terminal digit. Age heaping is mot pronounced among populations or population sub-groups having a low educational status. The causes and patterns of age or digit preference vary from one culture to another, but preference for ages ending in '0' and '5' is quite widespread".[m]

The most common technique for determing the extent to which, and at what digits, age heaping is taking place is the method of "blending" an age distribution suggested by Myers.[n] Specifically, the method involves determining the proportion which the population ending in a given digit is of the total population 10 times, by varying the particular starting age for any 10-year age group. The assumption behind this method is that, all else being equal, the number of persons reporting ages ending in the same digit should be approximately equal to 10 per cent of the total reporting age. If the sum for any digit is in excess of 10 per cent, it indicates over-selection of ages ending in that digit or digit preference. Conversely, a negative deviation, or a sum that is less than 10 per cent of the "blended" total indicates under-selection of ages ending in that digit or digit avoidance.[o]

An over-all measure of the extent of digit preference and/or avoidance in a census age-distribution is the "index of preference", which is obtained by adding, irrespective of sign, the deviations from 10 per cent for each of the 10 terminal digits.[p] This index may be interpreted as the proportion of the population that would have to be redistributed in order for the sum at each digit to be equal to 10 per cent of the "blended" sum.

The Myers index of digital preference calculated for males and females on the basis of the age data recorded at the various censuses from 1939 to 1970 is shown in table 237. It will be seen that there is a tendency among both males and females to state their ages in digits ending in 0, 5, 8 or 2, with the digit 0 being the most preferred. There seemed to

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k "Errors in reporting ages for censuses", *An Outlook of the Studies of the Population Problems in Japan* (Japanese National Commission for UNESCO, July 1959).

l It has also to be noted that the deviation from the expected pattern may also be due to mis-statement of age, that is, some of those aged 0 being reported as being aged 1 and some of those being aged 1 year being reported as being aged 2.

m Shryock, Siegal and Associates, *op. cit.*, p. 204.

n Robert J. Myers, "Error and bias in the reporting of ages in census data", *Handbook of Statistical Methods for Demographers* (Washington, DC, Bureau of the Census and Statistics, 1951), pp. 115-120.

o It has, however, to be noted that very small deviations from the 10 per cent shown by various measures of heaping are not necessarily an indication of heaping and should be disregarded. The "true" population in any single year of age is by no means equal to exactly one tenth of the 10-year age group centring around the age, nor is there necessarily a gradual decline in the number of persons from the youngest to the oldest age in a broad group, as is assumed in the formula. The age distribution may have small irregular fluctuations depending largely on the past trend of births, deaths and migration. See Shryock, Siegel and Associates, *op. cit.*, p. 208.

p *Methods of Appraisal of Quality of Data for Population Estimates* (United Nations publication, Sales No. 56.XIII.2), p. 41.

Table 236. Numerical and percentage distribution of children aged 0-4 years by single year of age, census years 1939-1970

Age	Population				Percentage distribution			
	1970	1960	1948	1939	1970	1960	1948	1939
0-4	5,836,623	4,572,415	2,991,654	2,602,746	100.00	100.00	100.00	100.00
0	1,017,186	786,464	625,539	533,561	17.43	17.20	20.91	20.50
1	1,170,640	888,180	577,750	486,535	20.06	19.42	19.31	18.69
2	1,228,032	963,230	659,221	545,002	21.04	21.07	22.04	20.94
3	1,215,087	969,309	561,167	528,093	20.82	21.20	18.76	20.29
4	1,205,678	965,232	567,977	509,555	20.66	21.11	18.99	19.58

Source: Census reports for 1939, 1948, 1960 and 1970.

Table 237. Myer's index of digital preference and literacy rate in the Philippines, 1939-1970

Ending digit of age	Census year											
	1970			1960			1948			1939		
	Total	Males	Fe-males	Total	Males	Fe-males	Total	Males	Fe-males	Total	Males	Fe-males
0	14.52	14.34	14.72	16.06	15.78	16.33	16.81	15.43	18.16	17.55	15.52	19.58
1	7.68	7.82	7.56	7.22	7.38	7.07	6.41	6.74	6.10	6.33	6.80	5.87
2	10.22	10.44	10.03	10.00	10.21	9.79	9.97	10.35	9.61	9.74	10.16	9.33
3	8.80	8.82	8.79	8.47	8.54	8.39	7.95	8.27	7.63	7.86	8.47	7.26
4	8.72	8.71	8.74	8.35	8.36	8.33	7.98	8.11	7.85	7.74	8.15	7.2
5	12.03	11.96	12.11	12.72	12.62	12.83	14.28	13.70	14.84	14.41	13.50	15.32
6	9.20	9.09	9.13	8.58	8.50	8.65	8.49	8.57	8.40	8.10	8.24	7.96
7	9.07	9.24	8.92	8.86	9.02	8.71	8.64	8.97	8.32	8.60	9.03	8.17
8	11.18	11.05	11.33	11.26	11.12	11.40	12.71	13.06	12.36	11.91	11.87	11.96
9	8.58	8.53	8.65	8.49	8.46	8.51	6.76	6.80	6.73	7.74	8.27	7.21
Preference index	15.90	15.58	16.40	20.07	19.47	21.10	27.60	25.08	30.72	27.76	22.08	33.72
Literacy rate	83.4	84.6	82.2	72.0	72.6	70.6	59.8	62.8	56.9	48.8	54.3	43.2

Source: Computed from census reports.

be the greatest avoidance of those ages ending in 1 and to a lesser extent in 9, 4, 3, 7 and 6.

It will also be noted that the deviations of the terminal digit sums from 10 per cent were greater for females than males. As a result of these differences, in 1939 the index of preference for females (33.72) was approximately 53 per cent greater than the corresponding index for males (22.09). However, there has been a gradual narrowing of these differences and in 1970 the index of preference for females (16.40) was only 5.3 per cent greater than the index for males (15.58). There has also been a drop in the index of preference from 1939 to 1970, the drop being more accentuated in the case of females than males. The drop in the indices has kept pace with an increase in the literacy levels of the people. Moreover, the difference between the male and female literacy rates decreased during the period 1939-1970 and this also would have accounted for the narrowing in the difference between male and female indices of preference.

Province-wise, the index of preference for both sexes in 1970 was highest in Mountain Province (29.75) followed by Sulu (27.89), Ifugao (27.26), Cotobato (25.67) and Lanao del Sur (25.02). In these provinces, the literacy rate was around 50 per

cent. The lowest indices were recorded for Batanes (8.90), Pampanga (9.10), Laguna (9.36), Rizal (10.30) and Manila (10.92) and the literacy rates in these provinces were well over 80 per cent.

(d) Age ratio and sex ratio tests

A method adopted by the United Nations for testing the accuracy of the age distribution is to compare the age ratios and sex ratios computed for successive five-year age groups as recorded at the census. The age ratio is defined as the number of persons in one age group per 100 of the mean of the numbers in the two adjoining age groups. "In general, any considerable fluctuations of the age ratios indicate inaccuracies in age-reporting or incomplete enumeration. Some real variations in these age ratios may be expected, however, mainly owing to variations in numbers of births in the past or to variations in past rates of migration or in an age distribution of migrants. Variations in age ratios due to differences in age-specific mortality rates can be neglected since almost throughout the entire scale of ages, year to year changes in mortality rates are gradual and systematic".[q]

The age ratios for males and females computed on the basis of the age data collected at the various censuses from 1939 to 1970 are given in table 238. If ages are reported accurately, the age ratio should deviate very little from 100, except at very old ages, or, as stated earlier, owing to sharp fluctuations in past birth rates. As is evident from the table, the age ratios show marked deviations from 100 in most cases, thereby reflecting errors in the reported age distribution.

A summary measure of the degree of variability shown by the age ratios is derived by computing an age ratio score for each sex which is the mean deviation of the age ratio from 100 per cent irrespective of sign. Between 1939 and 1970, the age ratio score for males declined from 15.5 to 5.4 and that for

q "Accuracy tests for census age distributions tabulated in five-year and ten-year groups", *Population Bulletin* No. 2, (United Nations, Population Division, 1953), p. 60.

Table 238. Age ratios in five-year, age groups for census years 1939, 1948, 1960 and 1970

Age group	Age ratio as percentage							
	1970		1960		1948		1939	
	Males	Females	Males	Females	Males	Females	Males	Females
5-9	108.88	108.17	109.44	108.79	106.19	105.73	113.96	113.37
10-14	102.22	99.32	97.05	94.20	104.36	100.18	87.96	84.01
15-19	97.33	102.22	93.55	97.45	92.39	98.41	95.62	104.82
20-24	96.25	96.43	102.19	104.04	99.58	99.12	104.00	99.26
25-29	93.83	94.59	97.22	97.37	102.22	104.57	108.80	111.36
30-34	94.64	95.43	92.44	91.66	84.93	86.00	82.14	83.66
35-39	108.13	105.46	107.15	108.01	123.53	117.29	118.14	110.04
40-44	93.45	93.27	89.04	89.56	80.36	85.44	80.37	88.36
45-49	101.44	103.64	115.08	113.23	125.09	108.61	120.86	103.64
50-54	97.58	96.81	94.03	92.72	76.48	91.43	85.63	101.37
55-59	99.08	99.19	84.53	86.61	94.62	85.16	85.56	80.24
60-64	104.74	100.53	126.97	114.21	119.63	126.14	135.90	137.74
65-69	82.90	88.60	66.57	75.10	82.78	75.07	82.57	72.95
70-74	118.50	107.08	126.81	122.02	112.48	127.86	104.08	125.36
75-79	61.84	66.83	71.77	70.95	71.43	60.97	68.42	58.30
80-84	93.20	96.82	96.13	98.12	94.76	109.34	98.70	108.00
85 and over	157.16	146.49	-	-	-	-	193.39	197.17
Age ratio score[a]	5.4	4.3	11.3	9.5	13.1	10.9	15.5	13.4

Source: Computed from census reports.

a The age ratio score is the mean deviation of the age ratio from 100 irrespective of sign. Only age ratios for the 5-9 to 65-69 age groups have been taken into account for the present calculation of the age ratio score.

females from 13.4 to 4.3. Since a high score indicates greater inaccuracy in the age distribution than does a low score, it can be seen that in the Philippines errors in age distribution were more marked in earlier censuses.

Another way of testing the accuracy of the age distribution is to compare the sex ratios. The sex ratio is defined as the number of males per 100 females in the same age class. "If the distributions are accurate or if errors for males are as frequent and of the same kind as those for females, sex ratios will change very gradually from one age to another, as a result of sex differences in mortality and in rates of migration, but cannot vary abruptly or fluctuate violently. The presence of marked variations in these age ratios testifies to errors which are not the same for the two sexes".[r] The sex ratios by quinquennial age groups for all censuses from 1939 to 1970 are given in table 239. The fluctuations in the sex ratios and the deviations of the age ratios from 100 noted earlier are an indication of the errors in the five-year age distributions.

There is no plausible explanation for the very low over-all sex ratio in 1970, as discussed in chapter II. It may be therefore an indication of male undercount.

Furthermore, low sex ratios are concentrated between ages 15 and 34. This is not a genuine hollow because, census after census, it occurs for the same

r "Accuracy tests for census age distributions tabulated in five-year and ten-year groups", p. 60.

Table 239. Age-specific sex ratios and sex ratio score for census years 1939, 1948, 1960 and 1970

Age group	Sex ratios and differences[a]							
	1970		1960		1948		1939	
	Sex ratio	Difference	Sex ratio	Difference	Sex ratio	Difference	Sex ratio	Difference
All ages	99.0	-	101.8	-	100.7	-	101.6	-
0-4	103.3	-	106.1	-	106.0	-	104.4	-
5-9	103.7	0.4	106.6	0.5	106.1	0.1	105.2	0.8
10-14	102.8	- 0.9	105.8	- 0.8	105.3	- 0.8	105.1	- 0.1
15-19	94.6	- 8.2	96.9	- 8.9	94.2	- 11.1	93.4	- 11.7
20-24	94.0	- 0.6	94.4	- 2.5	93.7	- 0.5	99.4	6.0
25-29	93.5	- 0.5	95.1	0.7	92.0	- 1.7	96.7	- 2.7
30-34	94.7	1.2	96.7	1.6	94.7	2.7	98.2	1.5
35-39	98.2	3.5	96.8	0.1	101.3	6.6	105.5	7.3
40-44	97.2	- 1.0	98.9	2.1	98.4	- 2.9	98.3	- 7.2
45-49	95.4	- 1.8	103.3	4.4	110.3	11.9	112.3	14.0
50-54	97.7	2.3	106.0	2.7	91.3	- 19.0	93.3	19.0
55-59	99.5	1.8	107.2	1.2	107.0	15.7	107.1	13.8
60-64	103.0	3.5	116.4	9.2	103.1	- 3.9	109.8	2.7
65-69	97.3	- 5.7	99.6	- 16.8	111.9	8.8	118.3	8.5
70-74	106.3	9.0	104.6	5.0	98.3	- 13.6	93.2	- 25.1
75-79	92.3	- 14.0	102.7	- 1.9	111.4	13.1	96.6	3.4
80-84	84.6	- 7.7	95.3	- 7.4	88.9	- 22.5	80.3	- 16.3
85 and over	82.8	- 1.8	91.4	- 3.9	93.5	4.6	80.5	0.2
Sex ratio score[b]	-	3.8	-	4.9	-	8.2	-	8.3

Source: Computed from census reports.

a Differences between successive sex ratios.

b The sex ratio score is the average of the differences between sex ratios for the successive age groups, irrespective of sign.

age span. If it were peculiarity of a particular cohort, it would have moved forward approximately 10 years from one census to another. In the absence of any such shift we may conclude that this is a peculiarity of the age span rather than the peculiarity of a cohort. It is difficult to estimate how much of this "hollow" is due to mis-statement of age of women and how much to under-enumeration of men, though the latter appears to be a more plausible reason.

The age ratio score, the sex ratio score and the joint score computed for the Philippines are compared with those of selected countries in table 240.[s] It will be noted that the age distribution as obtained at the 1970 census in the Philippines seems to be more accurate than those of Iran, the Republic of Korea, Sri Lanka and Turkey.

s The definitions of these summary measures are given in the foot-notes to the table.

The summary scores for the various provinces in 1970 are shown in table 241. The five provinces that showed the least joint scores were Bohol (14.9), Cebu (16.8), Cavite and Quezon (both 21.0) and Albay (21.8). The highest scores were recorded for Lanao del Sur (67.3), Ifugao (58.2), Sulu (52.2), Batanes (50.2) and Agusan del Sur (47.5).

C. ACCURACY OF CIVIL REGISTRATION

1. Birth and death rates

During the Spanish régime, the Philippines was governed through the Church. The Church, through its various orders (Augustinian, Franciscan, Dominican and Recoleto), kept very close watch over changes and maintained full records of baptisms, marriages and deaths. The crude birth rates and death rates for the years 1879 to 1898 derived from these records are given in table 242.

Table 240. Sex ratio score, age ratio score and joint score, Philippines and selected countries

Country	Year	Sex ratio score[a]	Age ratio score[b]		Joint score[c]
			Males	Females	
Philippines	1939	8.3	15.5	13.4	53.8
	1948	8.2	13.1	10.9	48.6
	1960	4.1	11.3	9.5	33.1
	1970	3.8	5.4	4.3	21.1
Canada	1970	1.9	3.5	3.7	12.9
Cuba	1970	3.1	6.7	6.4	22.4
Finland	1970	3.0	6.6	5.8	21.4
France[d]	1968	2.3	3.7	3.7	14.3
Iran	1966	10.0	17.1	20.9	68.0
Japan	1970	2.8	5.8	4.2	18.4
Norway	1970	2.0	3.9	3.7	13.6
Republic of Korea	1970	5.3	6.5	5.5	27.9
Spain	1970	2.4	5.4	4.4	17.0
Sri Lanka	1971	4.1	5.4	7.9	25.6
Sweden	1970	2.0	5.6	5.5	17.1
Thailand	1970	1.9	3.3	3.4	12.5
Turkey	1965	5.1	12.9	12.6	40.8
United States	1970	2.2	3.6	3.6	13.8

Source: Computed from data published in the United Nations *Demographic Year Book* for the years 1970 to 1972.

a The sex ratio score is the average of the differences between sex ratios for the successive age groups, irrespective of sign.

b The age ratio score is the mean deviation of the age ratio from 100 per cent irrespective of sign.

c The joint score is derived by adding three times the sex ratio score to the sum of the two age ratio scores.

d In calculating the age ratio scores for France, the various peculiarities of the age structure of the population such as birth deficits due to the two world wars were taken into consideration.

Table 241. Sex ratio score, age ratio score and joint score by province, 1970

Province	1970				
	Population	Sex ratio score[a]	Age ratio score[b]		Joint score[c]
			Males	Females	
Philippines	36,684,486	3.8	5.4	4.3	21.1
Abra	145,508	4.5	7.3	6.4	27.2
Agusan del Norte	278,053	6.2	5.3	5.4	29.3
Agusan del Sur	174,682	10.2	8.4	8.5	47.5
Aklan	263,358	5.2	7.8	7.2	30.6
Albay	673,981	4.0	5.8	4.0	21.8
Antique	289,172	4.5	9.0	8.0	30.5
Bataan	216,210	3.9	7.0	5.6	24.3
Batanes	11,398	11.0	8.6	8.6	50.2
Batangas	926,308	3.5	6.4	5.2	22.1
Benguet	263,550	7.4	6.2	6.3	34.7
Bohol	683,297	1.9	5.0	4.2	14.9
Bukidnon	414,762	8.6	7.1	6.8	39.7
Bulacan	836,431	4.6	4.6	3.8	22.2
Cagayan	581,237	3.7	9.3	7.6	28.0
Camarines Norte	262,207	9.2	7.4	6.5	41.5
Camarines Sur	948,436	5.5	6.8	4.8	28.1
Camiguin	53,913	4.9	8.3	7.4	20.4
Capiz	394,041	5.3	10.9	8.4	35.2
Catanduanes	162,302	9.0	8.0	6.0	41.0
Cavite	520,180	3.5	5.7	4.8	21.0
Cebu	1,634,182	3.1	4.1	3.4	16.8
Cotabato	1,136,007	6.9	9.0	7.6	37.3
Davao del Norte	442,543	8.1	4.6	5.4	34.3
Davao del Sur	785,398	8.4	5.3	5.2	35.7
Davao Oriental	247,995	9.8	8.5	8.6	46.5
Eastern Samar	271,000	6.0	11.4	10.4	39.8
Ifugao	92,487	9.7	14.7	14.4	58.2
Ilocos Norte	343,427	3.6	6.2	5.1	22.1
Ilocos Sur	385,139	4.5	5.1	4.8	23.4
Iloilo	1,167,973	5.6	7.8	5.6	30.2
Isabela	648,123	5.7	9.4	6.1	32.6
Kalinga-Apayao	136,249	4.5	9.6	8.5	21.6
La Union	373,682	4.3	6.1	4.1	22.1
Laguna	699,736	4.4	5.8	5.0	24.0
Lanao del Norte	349,942	7.7	7.6	6.4	37.1
Lanao del Sur	455,508	13.4	12.7	14.4	67.3
Leyte	1,110,626	4.5	7.6	6.2	27.3
Manila	1,330,788	6.3	5.8	6.7	31.4
Marinduque	144,109	4.4	8.3	7.4	28.9
Masbate	492,908	7.5	7.6	5.5	35.6
Misamis Occidental	319,855	6.4	6.6	4.7	30.5
Misamis Oriental	472,756	5.1	6.4	5.9	27.6
Mountain Province	93,112	4.9	8.9	8.9	32.5
Negros Occidental	1,503,782	6.5	8.4	6.7	34.6
Negros Oriental	716,240	4.8	6.5	5.2	26.1
Northern Samar	306,114	7.3	9.5	8.7	40.1
Nueva Ecija	851,294	4.2	4.8	4.9	22.3
Nueva Vizcaya	221,965	6.0	7.5	5.9	31.4
Occidental Mindoro	144,032	6.7	8.0	6.9	35.0
Oriental Mindoro	328,364	5.7	7.9	7.6	32.6
Palawan	236,635	4.7	8.2	7.4	29.7
Pampanga	907,275	4.6	5.7	4.4	23.9
Pangasinan	1,386,143	3.9	6.1	5.3	23.1
Quezon	983,324	4.0	4.6	4.4	21.0
Rizal	2,844,689	6.9	5.1	6.0	31.8
Romblon	167,082	5.5	11.2	8.9	36.6
Sorsogon	427,047	5.4	6.3	5.2	27.7
South Cotabato	466,110	6.7	8.2	6.0	34.3
Southern Leyte	251,425	5.2	7.8	6.0	29.4
Sulu	425,617	9.1	13.4	11.5	52.2
Surigao del Norte	238,714	4.7	7.1	6.1	27.3
Surigao del Sur	258,680	6.5	7.9	6.9	34.3
Tarlac	559,708	4.8	5.7	4.3	24.4
Western Samar	442,244	7.8	9.7	7.4	40.5
Zambales	343,034	4.4	5.3	4.1	22.6
Zamboanga del Norte	409,379	5.2	7.8	6.4	29.8
Zamboanga del Sur	1,034,018	6.2	7.4	6.0	32.0

Source: Computed from census data.

a, b, c Same as for table 240.

Table 242. Crude birth and death rates, 1879-1898

Year	Birth rate	Death rate
1879	43.4	106.3
1885	50.5	28.9
1886	51.5	26.5
1887	53.7	26.5
1888	50.2	34.0
1889	45.3	58.2
1890	43.2	48.1
1891	46.1	36.7
1892	48.1	36.7
1893	47.8	33.4
1894	48.5	33.9
1895	47.5	34.7
1896	48.6	32.5
1897	49.0	31.8
1898	47.6	30.5

Source: Census of the Philippine Island, 1903, vol. III, p. 11.

It will be seen from the table that the average birth rate for the period 1879-1898 was 48.1 per thousand and that the average death rate during this period was 39.9. Excluding the years 1879, 1889 and 1890, when the islands suffered from severe epidemics of cholera and consequently the death rates were abnormally high, the average death rate works out to 32.2, which may be regarded as normal.

A system of civil registration was developed in the Philippines since the American occupation. However, there were inadequacies in the vital statistics derived from the civil registry records. On the basis of the available vital statistics records, the average birth and death rates for the period 1920-1940 have been estimated at 33.1 and 17.8 per thousand respectively. These rates are much lower than the rates derived on the basis of the records maintained by the churches during the Spanish period.

The crude birth rates and death rates based on the reports of the local registrars for the years since the Second World War are given in table 243. The average crude birth rate for the period 1946-1973 is 28.8 per thousand and the average death rate is 8.9 per thousand. It is also evident from the table that there has been an extraordinary decline in mortality from an average of 17.8 per thousand during 1920-1940 to around 8.9 per thousand after 1946. Such spectacular improvement in mortality could have been achieved as a result of rapid economic development or through a very intensive nation-wide public health programme. It is also possible for a population to have a very low level of crude death rate if it is a "young" population in that there is a large concentration of people in the young adulthood ages. But this is not the case with regard to Philippines and hence the crude death rate based on registration data does not reflect the true mortality levels in the country.

The recognition that the actual mortality levels in the Philippines are very much more than those computed on the basis of registered deaths prompted several scholars to prepare independent estimates of the birth and death rates. These estimates, which are summarized in table 244, show that the crude birth rates fluctuated between 41 and 50 per thousand during the period 1950-1970 and the crude death rates from 11 to 20 per thousand of the population during the same period.

The crude rates for the country were also estimated for 1971, 1972 and 1973 using data gathered by the dual records of the Commission on Population/National Census and Statistics Office (POPCOM/NCSO) project on the development and maintenance of a sample vital registration system. Table 245 shows the annual crude birth, death and growth rates for the three years.

The estimates indicate a quite moderate level of fertility for the three years and this may be due either to incompleteness of the data or to a genuine sharp decline in fertility that may have occurred during these years.

2. Extent and cause of under-registration

The low levels of the birth and death rates derived from the registry records indicate that there has been gross under-registration of vital events in the country despite the existence of legal provisions requiring compulsory registration of all births and deaths.

In 1939, Jaranillo estimated that the degree of under-registration was on the average 20.2 per cent for male births and 32.2 per cent for female births. In the case of deaths, Jaranillo's estimates indicated 14.8 per cent under-registration of male deaths and 13.1 per cent in respect of female deaths.[t]

t *Journal of Philippines Statistics*, vol. I, No. 3, September 1941 (Manila, Bureau of the Census and Statistics).

Table 243. Registered crude birth and death rates, 1946-1973

Year	Population (in thousands)	Births		Deaths	
		Number	Rate	Number	Rate
1946	18,434	533,283	28.9	278,546	15.1
1947	18,786	572,226	30.5	238,527	12.7
1948	19,114	602,415	31.5	234,467	12.3
1949	19.675	609,138	31.0	231,151	11.7
1950	20,275	642,472	31.7	226,505	11.2
1951	20,894	637,264	30.5	237,937	11.4
1952	21,533	648,725	30.1	241,020	11.2
1953	22,191	661,939	29.8	239,988	10.8
1954	22,869	702,662	30.7	217,650	9.5
1955	23,568	734,761	31.2	219,798	9.3
1956	24,288	542,249	22.3	205,581	8.5
1957	25,030	514,202	20.5	199,919	8.0
1958	25,795	484,592	18.8	185,437	7.2
1959	26,584	616,893	23.2	176,448	6.6
1960	27,389	628,502	22.9	192,643	7.0
1961	28,214	647,846	23.0	207,436	7.4
1962	29,064	775.146	26.7	169,880	5.8
1963	29,939	786,698	26.3	214,412	7.2
1964	30,841	802,648	26.0	222,097	7.2
1965	31,770	795,415	25.0	234,935	7.4
1966	32,727	833,942	25.2	236,396	7.2
1967	33,713	840,302	24.9	240,122	7.1
1968	34,728	898,570	25.9	261,893	7.5
1969	35,774	946,753	26.5	241,678	6.8
1970	36,852	966,762	26.2	234,088	6.4
1971	37,902	963,749	25.4	250,139	6.6
1972	38,991	968,385	24.8	285,761	7.3
1973	40,123	1,049,290	25.2	283,475	7.1

Source: National Census and Statistics Office, Demography Branch and Central Research Division, Civil Registration.

In 1958, the Department of Health carried out a study in Nueva Ecija, a province believed to have a relatively good vital registration system. The results of this study indicated that the under-registration of births was approximately 35 per cent and that of deaths 11 per cent. A later study on death registration by the same department confined to four health regions in Luzon Island showed that deaths were under-registered to the extent of 27.3 per cent in these region.[u]

The results of an experimental study on vital registration in the municipality of Imus, Cavite, carried out by the Statistical Center of the University of the Philippines in June 1963 revealed that the registration of births in the *barrios* of Imus varied from a low of 11 to a high of 72 per cent.[v]

A nation-wide sample survey on the extent of under-registration and its root causes was conducted by the Bureau of the Census and Statistics in October 1964. The survey, which covered 7,200 sample house-

u *Philippine Health Statistics: 1962 Annual Report* (Manila, Disease Intelligence Center, Department of Health).

v *Estimation of Births and Deaths in a Philippine Municipality*, abstract, 1963 (Manila, Statistical Center, University of the Philippines).

Table 244. Estimated vital rates for the Philippines, 1950-1970

Author	Reference year	Rate (per thousand)	
		Births	Deaths
Yun Kim et al[a]	1965-1969	45.06	14.94
	1960-1965	41.54	11.42
Frank W. Lorimer[b]	1965-1970	43.9-45.5	11.9-12.0
	1960-1965	45.6	13.3
Bureau of the Census and Statistics[c]	1955-1960	46.53	15.96
	1950-1955	48.55	17.98
Joint U.N. Philippine Government Study[d]	1947-1952	47.0-53.0	20.0
Elvira M. Pascual[e]	1950-1955	50.0	18.0
Frank S. Morrison[f]	1955	43.5	11.2
	1954	41.4	11.9
Basilio Aromin[g]	1948-1960	49.0	17.2
Francis C. Madigan et al[h]	1960	50.0	16.0
K.V. Ramachandran et al[i]	1965-1970	49.23	11.06
Luisa T. Engracia[j]	1970	41.82	10.37

Sources: a New Population Projections by Age and Sex for the Philippines and Each Province, 1970-2000 (Manila, Bureau of the Census and Statistics.

b "Analysis and projections of the population of the Philippines", *First Conference on Population, 1965*, Published for the Population Institute, Manila.

c "Population projections of the Philippines, 1960-1975", Mimeographed by the Demography Division.

d Population Growth and Manpower in the Philippines, a joint study by the United Nations and the Government of the Philippines, Series A/32, page 3.

e "Reinvestigation of birth and death statistics in the Philippines", *The Philippine Statistician*, vo. XI, No. 4, December 1962.

f "A study of vital statistics in the Philippines for 1954 and 1955 and their relation to annual national population increase", mimeographed report of ICA, Manila.

g "The trend of mortality in the Philippines, 1903 to 1960", *The Statistical Reporter*, vol. V, No. 3, July 1961.

h Philippine Fertility and Mortality with Special Reference to the North Mindanao Region: A Critique of Recent Estimates, Research Institute for Mindanao Culture, Xavier University, Cagayan de Oro City.

i "Population Projection for the Philippines, 1960-1980", *The Philippines Statistician*, vol. XII, No. 4, December 1963, Manila.

j "Estimates of the life table functions of the Philippines, 1970", UNFPA-NCSO Monographs, No. 1.

holds, showed that for the country as a whole only 60 per cent of the births and 70 per cent of the deaths were registered.[w] A similar national survey carried out in 1974 estimated that the extent of birth registration was approximately 79 per cent and

w Special Release No. 13, Series of 1965 (Manila, Bureau of the Census and Statistics, Birth and Death Registration, September 1965).

Table 245. National crude rates for permanent residents, 1971-1973

Crude rate (per thousand)	1971 (unadjusted)	1972 (unadjusted)	1973	
			Unadjusted	Adjusted[a]
Births	37.91	35.30	33.87	36.67
Deaths	6.55	8.66	8.63	9.55
Growth	31.36	26.64	25.24	27.12

a Adjusted to include events missed by both systems.

that of death was 77 per cent.[x] It will thus be seen that there has been an improvement in the registration of births and deaths between 1963 and 1973, the years in respect of which the two surveys collected information. Further, the results of the two surveys indicated that under-registration tends to be high when the vital events occur at "home" and also when the events are attended to by "non-medical" persons like the *hilots*, parents, relatives, *herbolarios* etc. By and large, non-registration appears to be due to negligence on the part of persons responsible for reporting the event.

An analysis of the sample data relating to those infants born and died in 1972 indicated that, for the country as a whole, a little less than one half (46.8 per cent) of these events were registered both as births and deaths; one third (33.2 per cent) were registered only as deaths but not as birth; one out of every 20 events (5.5 per cent) were registered only as births but not as deaths; and 14 out of every 100 such events were not registered either as births or as deaths.

According to the 1964 survey, non-registration of births and deaths was attributed by the respondents to a lack of interest, ignorance or "don't know where to register". The main cause for non-registration was reported as lack of interest: 37.1 per cent of births and 42.6 per cent of deaths. According to the 1974 survey, the most important cause for non-registration was "no interest". This broad category of cause included "forgot", "very busy" and "belief that the one who attended the event registered it". Nearly 39 per cent of the births and 44 per cent of the deaths that were not registered were due to "no interest". Approximately one tenth of the non-registered births and deaths were reported as having

x Tito A. Mijares, *Development and Maintenance of a Sample Vital Registration System in the Philippines*, table 17.

been due to the "belief that one who attended the event registered it". The other reasons for non-registration, according to the 1974 survey, were (a) "belief that baptism is already registration" and (b) ignorance, that is, "don't know where to register".[y]

The 1974 survey also showed that the respondents for a large proportion of the unregistered events had previous knowledge that the events should be registered. For example, about 95 per cent of the respondents in respect of unregistered births and about 56 per cent those with regard to unregistered deaths stated that they were aware that these events should be registered.

A further factor responsible for the high rate of under-registration of vital events in the Philippines may be found in the difficulties posed by distance, terrain and transportation in many parts of the country. The discontinous land area of the Philippines combined with its physical features characterized by intensive valleys, marshlands, coastal plains and mountainous peaks renders access to the registration centres difficult. Few roads pass through the mountains and some *barrios* can only be reached by trails which are long and winding. Approximately 15 per cent of the total *barrios* in the Philippines are accessible only by walking, while another 21 per cent of the *barrios* are accessible by transportation within distances of 10 kilometres and over from the *poblaciones.*

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y Doleres M. Mortel, "Causes of non-registration of vital events in the Philippines, 1973", *Development and Maintenance of a Sample Vital Registration System*, Seminar Proceedings, 15-16 May 1975, National Census and Statistics Office, Manila, p. 83.

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