ASIAN POPULATION STUDIES SERIES
No. 35

POPULATION ASPECTS OF MANPOWER AND EMPLOYMENT



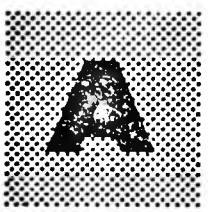
A REGIONAL OVERVIEW



UNITED NATIONS

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A REGIONAL OVERVIEW

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC
Bangkok, 1976

UNITED NATIONS

FOREWORD

This is the first phase of the ESCAP continuing study on the population aspects of manpower. The main objectives were to find out factors associated with labour force participation rates and to assess consequences of population change for manpower and employment. The analysis included as many countries of the region as the availability of data permitted. Most observations cover all or part of the First United Nations Development Decade, 1961-1970.

The second phase of the study, which is under preparation, will focus on the analysis of the relationship between fertility and mortality and female labour force participation in five countries: Indonesia, Malaysia, the Philippines, the Republic of Korea and Sri Lanka.

The study was designed as a follow-up of the joint ESCAP/ILO Seminar on the Interrelation between Population and Manpower Problems, held at Bangkok in January 1971.

This report has been prepared by the Population Division of ESCAP in consultation with the ILO Regional Office, Bangkok.

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Chapter I

INTRODUCTION

Population, labour force and employment are closely interrelated. A change in the size, composition and distribution of the population will alter the demographic structure of the labour force. In turn, a change in the size of labour force, level of unemployment and job opportunities will affect components of population change, particularly fertility and migration.

The interrelationship of population, labour force and employment is complex and has been the subject of numerous and intensive studies. The First Asian Population Conference, held at New Delhi in December 1963, recognized that the development of manpower resources and employment opportunities is an essential part of efforts to cope with the population problems facing countries of the ESCAP region. It recommended that "measures designed to promote fuller utilization of human resources should be accorded the same importance and urgency as those aimed at moderating population growth".[1/] The joint ESCAP/ILO Seminar on the Interrelation between Population and Manpower Problems, held in January 1971 at Bangkok, examined the impact of population growth on manpower, labour force and employment needs, with special reference to countries of the ESCAP region and gave expert consideration to techniques of assessing, analysing, and interpreting data on the interrelationship of population and manpower problems in the context of development planning. The Seminar recognized that current information about population and manpower problems, their interrelations and their links with other economic and social problems was not adequate for formulating effective integrated policies and action programmes within the framework of national development plans.[2/] As a follow-up of this Seminar, ESCAP undertook this comparative study on population aspects of manpower and employment.

The outline for this study was developed on the basis of the recommendations of the ESCAP/ILO Seminar cited above, and in consultation with Professor John Durand, University of Pennsylvania, the ILO Regional Office in Bangkok and other experts working in the field of labour force and employment. The study is a part of the

/continuing

1/ Report of the Asian Population Conference and Selected Papers (United Nations publication, Sales No. 65.11.F.11), p.54.

2/ Interrelation between Population and Manpower Problems, Report and the Selected Papers of a Regional Seminar, Asian Population Studies No. 7 (Bangkok, ESCAP, 1972), p.10.

continuing staff work and is being carried out in phases. The first two phases are: (a) a regional overview, and (b) an in-depth study of five selected countries.

The first phase consists of a review of salient aspects of the interrelationship between the growth and structural change of population, labour force and employment in the context of economic and social development. Owing to the lack of information concerning certain characteristics of labour force and employment in countries of the ESCAP region, this regional study is confined to the following main topics: (a) the concept and measurement of labour force and employment; (b) availability of data; (c) the association between the growth of population, population of working age and labour force; (d) the impact of population growth on the labour force, by sex and age group; (e) the relationship between marital status and fertility and economic activity of women; (f) the interrelationship between the growth of urban and rural population and labour force change in agricultural and non-agricultural sectors; and (g) the association between unemployment and population growth.3/

The second phase of this project consists of in-depth country studies aimed at verifying, at national level, some of the findings of the regional study and analysing the impact of variables other than those included in the regional study.

Most of the basic data on labour force and population used in this study were obtained from national population censuses and, in the case of a few countries, from labour force and socio-economic surveys. Differences in the definitions and concepts used were considered, and, for some countries, data were adjusted in order to take into account varying definitions and concepts.

Owing to the lack of reliable data, it has not been possible to include all countries of the ESCAP region in the study. The number of countries included for analysis also varies from one topic to another depending on the availability of data. Most data obtained from the 1970-1971 round of population censuses have been included in the study.

/Chapter II

3/ A summary of the preliminary findings was presented to the Second Asian Population Conference held in Tokyo in November 1972. See "Population growth, manpower and employment in countries of Asia and the Far East" in Population Strategy in Asia, Asian Population Study Series, No. 28 (Bangkok, ESCAP, 1974), pp.152-162.

Chapter II

CONCEPTS AND DEFINITIONS

A. LABOUR FORCE AND EMPLOYMENT

Studies on labour force, employment and related variables are handicapped more by differences in definitions and concepts and the scarcity of reliable data than by a lack of techniques of analysis.[1/] In this chapter, alternative concepts and definitions of labour force, employment, underemployment, the economically inactive population and the labour supply will be reviewed.

In censuses and surveys, either the gainful worker or the labour force approach is generally used to collect information on labour force and employment characteristics.[2/] According to the gainful worker approach, all persons who have a profession, occupation or trade are considered workers and the aggregate of such persons constitutes the work force. A gainful occupation is defined as one by which the person who pursues it earns money or its equivalent or assists in the production of marketable goods. The gainful worker approach has several limitations, such as: (a) the lack of a specific or explicit time-reference for reporting activity; (b) the exclusion of persons seeking employment for the first time; (c) the over-reporting of activity by persons who are not actually working or seeking work, such as retired persons.

The labour force approach has been used recently in most countries of the ESCAP region. In this approach, a person is asked to report his actual activity during a specified reference period, usually the week or the month prior to the date of enumeration or survey. The labour force then comprises those individuals of either sex who were working (employed) or seeking work (unemployed) during the reference period. Occupations, although included in the census or survey questionnaire, are no longer the principal basis for determining labour force participation.

Although the concepts adopted for measuring labour force are behaviouristic in approach, the complex nature of employment and unemployment as it actually exists in the economy does not permit a rigid adherence to these concepts.[3/]

Employed

1/ For an extended discussion of the problems of international comparability, see Demographic Aspects of Manpower, United Nations Population Studies, No.23 (United Nations publication, Sales No. 61.XIII.4), chapter 1.

2/ See Philip M. Hauser, "The measurement of labour utilization", The Malayan Economic Review, vol. XIX, No.1, April 1974.

3/ See annex III of this study.

Employed persons, for example, include not only those who are actually at work during the reference period, such as employers, persons who work on their own account, wage-earners, salaried employees and unpaid family workers, but also those who had a job in which they had already worked but from which they were temporarily absent. Such temporary absence may have been the result of illness or injury, an industrial dispute, vacation or other leave of absence, absence without leave or temporary disorganization of work due to bad weather or mechanical breakdown.[4/] The definitions of employment adopted by some countries of the region are summarized in annex I.

B. UNEMPLOYMENT

Unemployed persons include not only all persons actively seeking work for pay or profit, including those who have never worked before, but also those who are temporarily out of work because of illness or because they are making arrangements to start a new job, or because they are on lay-off without pay.[5/] There are also difficulties in suitably classifying those who work for less than a certain number of hours per week; those who work without pay for an undetermined number of hours per week; and persons who are seasonally inactive. The definitions of unemployment adopted by some countries are summarized in Annex II.

C. UNDEREMPLOYMENT

The concept of underemployment is more elusive than that of unemployment. Generally speaking, underemployment exists when persons are employed either for less than the average number of hours of work that they are able and willing to perform, or in an occupation which does not fully utilize their skills, experience, training or other capacities. The Ninth International Conference of Labour Statisticians defined underemployment as "the difference between the amount of work performed by persons in employment and the amount of work they would normally be able and willing to perform ."[6/]

/In

4/ For details, see for example: The International Standardization of Labour Force (Geneva, ILO, 1959); and Principles and Recommendations for the 1970 Population Census (United Nations publication, Sales No. 67.XVII.3), p. 62.

5/ Ibid.

6/ Measurement of Underemployment, Report No. 4, Ninth International Conference of Labour Statisticians (Geneva, ILO, 1957), p.17.

In the labour utilization approach, the underemployed fall into three categories: (a) the inadequately utilized by hours of work; (b) the inadequately utilized by level of income and (c) the inadequately utilized by mismatch of occupation and education.7/

It is difficult to determine a basis for measuring underemployment. While "working time" in the industrial sector is relatively easy to establish in terms of hours, days or weeks, it is not easy to determine the standard working time in the agricultural sector where the quantum of work to be done or that can be done varies from one season to another.8/ Moreover, it is also quite difficult to establish a norm for a worker's productivity, which usually depends on several factors, such as the worker's health, physical fitness, income and conditions of work.

Several alternative measures of underemployment have been proposed. The underemployment rate may be estimated as the difference between the number of workers needed for current production (if they work fully and at high productivity) and the number of workers actually engaged.

The labour force can be viewed as an inventory of a country's supply of labour engaged in or available for income-producing activities. But the size of the labour force is only a first approximation of the labour supply, since it does not take into account the quantity and quality of the work that members of the labour force are willing or able to do. Labour supply depends, in effect, on the customary weekly hours of work and the number of workers available only for part-time, seasonal or irregular employment and also on such factors as the frequency of holidays, the worker's state of health and the incidence of disabilities. The effective supply of labour is also affected by the relative skill and educational distribution of the members of the labour force. On the other hand, job opportunities and family income may influence greatly the supply of labour. For example, many persons who are

/inactive

7/ Philip M. Hauser, "Population change and developments in manpower, the labour force, employment and income", in Population Aspects of Social Development, Asian Population Studies Series, No.11, (Bangkok, ESCAP, 1972), p.96.

8/ For detailed discussion, see Ronald G. Ridker, "Employment and unemployment in Near East and South Asian countries: A review of evidence and issues" in Employment and Unemployment Problems of the Near East and South Asia, (Delhi, Vikas Publications, 1971), vol. 1, p.16.

inactive or do not seek work would be actively seeking work if labour demands were greater. There are others who would withdraw from the labour force in order to work in family enterprises or, when family incomes improve, to continue with their studies.9/

/Chapter III

9/ The Council for Asian Manpower Studies (CAMS) and the Organization of Demographic Associates (ODA) has proposed new approaches in order to correct some inadequacies of the gainful worker and labour force approaches for the measurement of the work force, particularly unemployment and underemployment. They are now being tested in the field and may be suitably modified after trial. For details, see:

Philip M. Hauser, "Population change and development in manpower, the labour force, employment and income", op.cit.;

International Labour Organisation, "Measurement of employment, unemployment and underemployment", paper presented at the Conference of Asian Statisticians (organized by ESCAP), New Delhi, December 1973;

Teresa A. Sullivan, "New approaches to labour force measurement: Uses for census data", Census Newsletter, vol.1, No.1, East West Center, Honolulu, Aug. 1974.

Chapter III

AVAILABILITY AND COMPARABILITY OF DATA

A. POPULATION AND LABOUR FORCE

Population and labour force data have been mainly provided by population censuses and labour force surveys, and are normally available in national reports or in international statistical publications.

Data relating to the labour force by sex, age, status, industry (branch of economic activity), and occupation group are available for most countries. However, time-series data are seldom available, since in many countries censuses and surveys were not carried out over a period of time. Estimates and projections of the labour force and employment are available for many countries. But the methodologies and assumptions used are often dubious.

The reliability of the data relating to the population and labour force varies greatly between countries. Data collected from censuses or surveys may contain significant errors and biases due to carelessness, ignorance and erroneous preconceptions on the part of both field surveyors and respondents. Errors and biases are generally most significant for marginal categories of the labour force, including women, children and youth, men near or beyond the age of retirement and unpaid family workers.[1/]

The non-comparability of measures between countries of the region on the one hand, and between censuses or surveys within a country on the other, have made comparisons over time and between countries difficult. For example, the minimum age used for defining the labour force in the latest censuses varied

/from 5 years

1/ For a discussion on reliability of census data on labour force, see The Determinants and Consequences of Population Trends (United Nations publication, Sales No. E.71.XIII.5), vol.I, pp.294-295.

from 5 years in Sri Lanka to 15 years in Brunei, Nepal, Fiji and Japan (annex III). As examples of these differences within a country, it may be noted that Pakistan adopted a minimum age of 12 years in 1951 and 10 years in 1961; Thailand adopted a minimum age of 15 years in 1956 and 11 years in 1960 and 1970; the Republic of Korea adopted a minimum age of 14 years in 1955, 13 years in 1960 and 14 years again in 1966 and 1970.[2/] No upper age limit for labour force participation is used in countries of the region, and all persons above the lower limit of the working age may be included in the labour force.[3/]

In some countries, members of the armed forces, inmates of institutions, persons living on reservations, persons seeking work for the first time, seasonal and part-time workers and unemployed persons are considered as inactive population.[4/] The extent to which family workers assisting in family enterprises are included among the economically active population varies considerably from one country to another.

Another important factor of difference is the reference period. In some countries, data on the economically active population, classified according to industry, occupation or organization status, refer to the actual position of each individual on the day of the census (or survey) or during a brief specific period,

/such as

2/ Countries have been urged to adopt the minimum age-limit for the census questions on economic activity, in accordance with the social and economic conditions in each country. Those countries which have a large proportion of labour force in agriculture will need to select a lower minimum age than industrialized countries where child employment is rare. See Principles and Recommendations for the 1970 Population Censuses (United Nations publication, Sales No. E.67.XVIII.3),p.26.

3/ However, the Republic of Korea in 1955 excluded unemployed persons aged 60 and over from the labour force.

4/ Unemployed persons were often excluded from the labour force (Brunei in 1960 population census, India 1961 and 1971, Malaysia in 1957 and 1960). Armed forces were sometimes not included in the labour force (the Republic of Korea in the 1960 population census, Pakistan in 1961, Philippines in 1960, Australia in 1961 in respect of armed forces stationed outside the country). In the 1961 population census, India did not include persons who sought work for the first time. Australia, in the 1961, 1966 and 1971 population censuses, excluded full-blooded aborigines. Fiji, in the 1956 census, excluded female unpaid domestic workers, some of whom undoubtedly assisted in family enterprises. For details see annex III.

such as the week immediately prior to the date of census (or survey), while, in other countries, data refer to the usual position of each person, without reference to any given period of time.5/

It is especially difficult to compare data on the economically active population of females, since, in several countries, relatively large numbers of women assist on farms or in other family enterprises without pay, and the criteria adopted for determining the extent to which such workers are counted as economically active differ from one country to another. In addition, cultural norms might inhibit reporting women as working although they perform activities that are identical with those of other workers.

Classification by organizational status often differs between countries. Managers and directors are classified as salaried employees in some and as employers in others. Family workers are defined according to different criteria, although they are usually counted among the economically active. Separate data for employers, own-account workers, salaried employees and wage-earners are not available for all countries. Unemployed persons, usually included in salaried employees and wage-earners, are classified in some countries as "other and status unknown".6/

Classifications by industrial and by occupational groups also differed owing to variations in definitions and methods of tabulation between countries. The unemployed were often not classified by branch of economic activity or occupation, but were included under "activities not adequately described".7/

B. EMPLOYMENT, UNEMPLOYMENT AND UNDEREMPLOYMENT

Labour force surveys can provide regular information on employers, employees, unpaid family workers, seasonal workers and own-account workers. Some employment data can also be obtained from reports of establishments and records of compulsory social insurance. Statistics of establishment provide the number of workers and

/often the

5/ For detailed discussion, refer to Yuki Miura, "A comparative analysis of operational definitions of the economically active population in Africa and Asian statistics", Report of World Population Conference, 1965, vol. IV, pp. 372-379.

6/ Yearbook of Labour Statistics (Geneva, ILO, 1973), p.4.

7/ Ibid.

often the number of hours worked during a specific pay period. Such data are usually collected from all establishments employing a specified minimum number of workers.[8/] However, in most developing countries, establishment data cover a relatively small fraction of the economic activities.[9/] Therefore, these data might be subject to some bias, since establishments which do not fulfil the conditions required are excluded from the coverage. Further bias could be introduced by changes over time in the growth of individual establishments and changes in the levels of activity in some sectors of the economy.

Apart from labour surveys, unemployment data are available from records of compulsory unemployment insurance, trade union benefit funds and employment offices. Unemployment insurance statistics, with broad industrial coverage, generally provide data relating to wage-earners and salaried employees.[10/] The comparability of unemployment data between countries and within a country is affected by differences and changes in social insurance legislation and administration regulations. Moreover, compulsory social insurance often excludes from coverage persons who work for a short time or receive a very low salary.

Unemployment data obtained from trade union benefit funds are often affected by the growth or contraction of the trade unions and their benefit funds. It is also quite difficult to determine the extent to which unemployment data reported are representative of the general state of unemployment.

In some countries, a good deal of the data relating to unemployment provided by the national employment offices is based on the number of applicants for work or unemployed persons registered for work at these offices. The reliability of these unemployment data depends mainly on the completeness of the registration and the quality of record keeping. Unfortunately, data from employment offices are often incomplete, particularly since registration in most countries is not compulsory and because the employment offices are not widely used by unemployed seeking work or by employers seeking workers. In many countries, the proportion of workers who are registered is generally higher in the

/manufacturing

8/ The specified minimum number varies, depending on the legal provisions of each country.

9/ These statistics are available in many countries of the region, such as Hong Kong, India, Japan, Republic of Korea, Pakistan, Philippines, Singapore, Australia, New Zealand. For details, see Yearbook of Labour Statistics, 1973, op. cit.

10/ Unemployment rates are calculated by comparing the number of insured unemployed to the total insured employed.

manufacturing than in other sectors, such as commerce, transport, and services. The proportion is lowest for workers in agriculture living in less populous areas. Generally, intra-country comparison of unemployment rates based on records from employment offices is not possible. This is brought out in annex II.

The labour force survey is the most widely used technique for obtaining measures of unemployment. When the survey is adequate and well-designed, reliable data on unemployment, especially the number of persons seeking work for the first time, can be obtained from it. These data are usually not available from other sources. Moreover, the labour force survey is not affected by changes over time in legislation and administrative regulations.

For most countries of the ESCAP region, data concerning underemployment are limited and generally refer to involuntary part-time workers. Several countries do not differentiate between a fully-employed person and a partly-employed person. Most of the data on part-time workers are usually provided by labour force surveys, but often they are subject to important variations.

/Chapter IV

Chapter IV

GROWTH OF POPULATION AND LABOUR FORCE

A. INTRODUCTION

This chapter deals with growth rates of population and labour force. The levels and variations in these rates will first be examined and then the association between population growth and labour force growth in the region will be analysed.

The growth of a country's population during a specified time period is determined by the number of births, deaths and net international migration during that same period. In contrast, a country's labour force growth is determined by three components: (a) new entries into the labour force of (i) young people who reach working age or complete education or training and (ii) immigrants; (b) entries into the labour force of economically inactive persons of working age; and (c) withdrawals from the labour force due to death, disability, retirement, emigration and other causes. The first component of labour force growth depends primarily on the growth of the population and the availability of educational and training facilities during the past one or two decades and current patterns of international migration. The second component largely depends on such factors as the need for additional family income and changes in family structure. The third component is determined by both demographic and socio-economic factors.

The linkage between population change and labour force change is complex and depends upon a combination of demographic, social and economic factors. As noted by Selvaratnam:

> "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." 1/

/E.

1/ S. Selvaratnam, "Potentials and problems of manpower in Ceylon" in National Seminar on Manpower Assessment and Educational Planning: Summary Record of Proceedings, (Colombo Plan Bureau, 1966), p. 30.

B. COMPARISON OF GROWTH RATES OF POPULATION AND LABOUR FORCE

Table 1 presents rates of growth for 13 selected countries, covering the period 1955-1971.[2/] These growth rates are calculated for total population, population of working age (15-59), total labour force and labour force of working age. The summary measures are presented at the bottom of the table.

(a) Population growth rates

Population growth rates in this study for both sexes varied from a high of 3.2 per cent in Fiji (1956-1966) to a low of 1.1 per cent in Japan (1955-1970). The mean value was 2.4 per cent and the standard deviation was 0.5 per cent. The average of male growth rates was 2.3 per cent and the average for females was 2.5 per cent. The corresponding standard deviations were 0.5 per cent and 0.6 per cent respectively.

Working age (15-59) population growth rates for both sexes varied from a high of 3.4 per cent in the Philippines (1960-1970) to a low of 1.3 per cent in Indonesia (1961-1971). The mean of the growth rates was 2.4 per cent and the standard deviation was 0.7 per cent. The average of growth rates was 2.5 per cent for both males and females. The corresponding standard deviations were 0.6 per cent and 0.7 per cent respectively. Thus, the average growth rates of population and working age population are approximately equal for both sexes and for each sex considered separately. The growth rate of female population is slightly higher than the rate for males. This is probably due to the reduction in the differentials in mortality and coverage in the censuses between the two sexes.

(b) Labour force growth rates

Labour force growth rates in this study for both sexes varied from a high of 3.5 per cent in Sri Lanka (1963-1971) to a low of 1.5 per cent in Indonesia (1961-1971). The average of the growth rates was 2.6 per cent and the standard deviation was 0.6 per cent. The male labour force growth rates varied from a high of 2.7 per cent in Fiji (1956-1966) to a low of 1.4 per cent in Australia (1961-1971).

/Table 1.

2/ The basic data from which this table is derived are contained in appendix tables I and II.

Table 1. Annual intercensal growth rates of population and labour force for all ages and for ages 15-59, by sex, for selected countries of the ESCAP region, 1953-1971

(in percentages)

Country	Census years		Population						Labour force					
			All ages			Ages 15 - 59			All ages			Ages 15 - 59		
	I	II	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Australia	1961	1971	1.94	1.88	1.99	2.20	2.11	2.29	2.32	1.39	4.68	2.43	1.45	4.83
Fiji	1956	1966	3.21	3.08	3.36	3.33	3.17	3.51	2.99	2.77	6.22	3.26	3.04	6.29
Hong Kong	1961	1971	2.29	2.19	2.41	2.36	2.42	2.30	3.11	2.38	4.74	2.63	1.94	4.20
Indonesia	1961	1971	2.07	2.05	2.09	1.36	1.27	1.45	1.48	0.70	3.27	1.09	0.30	2.93
Iran	1956	1966	2.80	2.97	2.62	1.52	1.64	1.40	2.23	1.82	5.52	1.50	1.17	4.41
Japan	1955	1970	1.06	1.05	1.07	1.79	1.84	1.75	1.91	1.89	1.94	1.82	1.79	1.86
Malaysia: West Malaysia	1957	1970	2.58	2.38	2.78	2.33	1.98	2.70	2.17	1.39	4.18	2.12	1.33	4.15
New Zealand	1956	1966	2.08	2.06	2.10	2.00	2.00	1.99	2.28	1.80	3.68	2.29	1.79	3.69
Philippines	1960	1970	3.01	2.86	3.15	3.41	3.21	3.60	2.85	2.17	4.62	2.85	2.12	4.73
Rep. of Korea	1960	1970	2.29	2.29	2.29	2.55	2.99	2.14	3.19	2.26	5.19	3.30	2.39	5.26
Singapore	1957	1970	2.78	2.55	3.03	3.08	2.68	3.53	3.19	2.42	5.95	3.17	2.35	6.17
Sri Lanka	1963	1970	2.62	2.38	2.87	3.22	2.78	3.70	3.50	2.45	6.89	3.95	2.85	7.43
Thailand	1960	1970	2.70	2.64	2.76	2.27	2.13	2.41	1.97	2.21	1.71	1.77	2.02	1.49
Arithmetic mean			2.42	2.34	2.50	2.42	2.32	2.52	2.55	1.97	4.51	2.48	1.89	4.42
Standard deviation			0.54	0.51	0.58	0.65	0.58	0.79	0.59	0.54	1.49	0.79	0.70	1.63

Source: Appendix tables I and II.

C. ASSOCIATION BETWEEN GROWTH RATES OF POPULATION AND LABOUR FORCE

The scatter of points which result when growth rates of population are plotted against growth rates of labour force are shown in graphs 1.a - 1.f. These graphs indicate that there is a positive linear relationship between the variables. In order to determine the degree of association between these variables, linear correlation coefficients were calculated. These are shown in table 2.

Table 2. Coefficients of correlation between population and labour force for corresponding age-sex groups for 13 selected countries

Group	Correlation coefficient	
	All ages	Working ages
Both sexes	.46[a/]	.87
Males	.41[a/]	.87
Females	.60	.68

Source: Table 1.

a/ Not statistically significant at the .05 level of probability.

From this table it may be concluded that:

(a) There is a statistically significant positive relationship between growth rates of population and labour force when corresponding age/sex groups are considered.

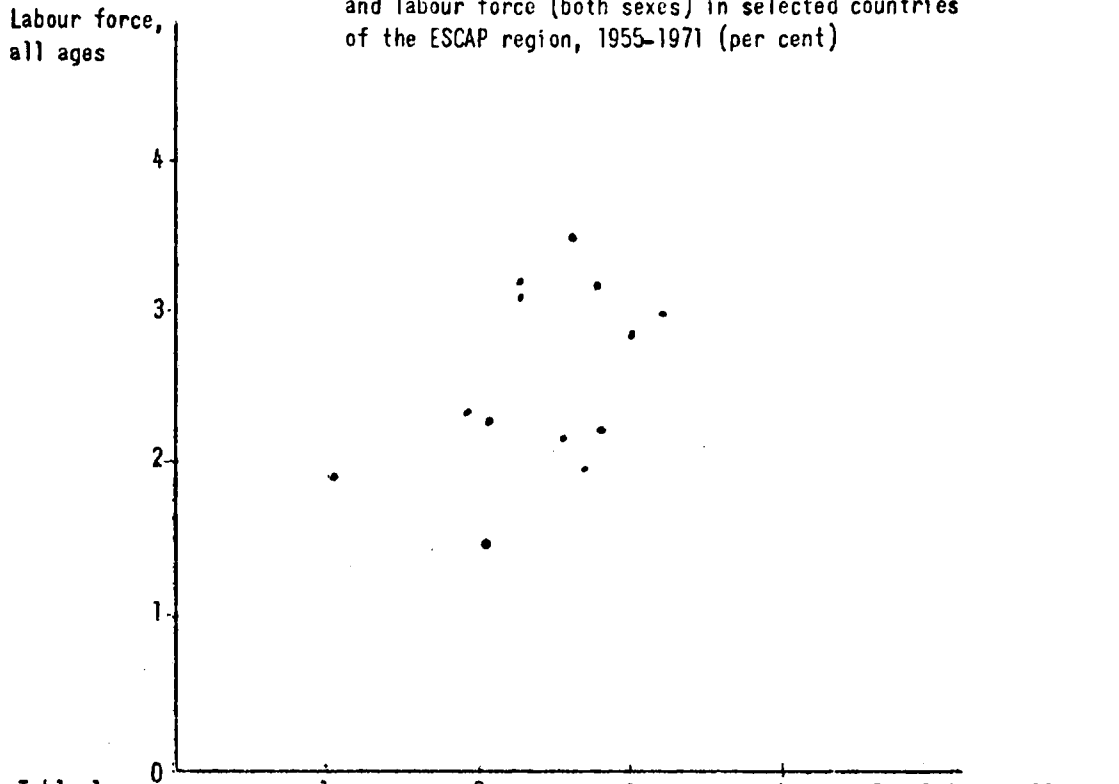
(b) The association is stronger in the case of working ages (15-59) than in the case of all ages. The difference is much larger in the case of males.

(c) For all ages, the association is less marked in the case of males than in the case of females. For working ages, however, the degree of association is greater in the case of males.

(d) The degree of association in the case of both sexes taken together is approximately the same as the degree of association for males.

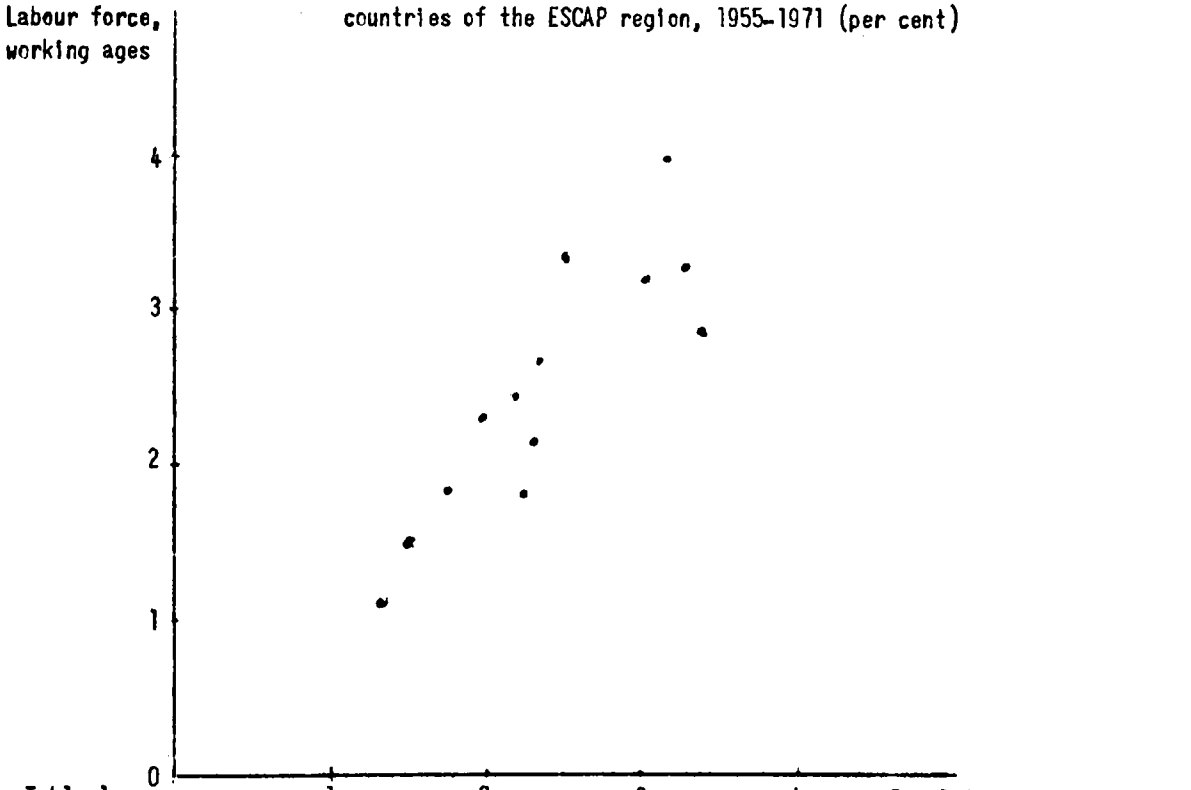
/The fact

Graph 1.a. Intercensal annual growth rates of total population and labour force (both sexes) in selected countries of the ESCAP region, 1955-1971 (per cent)



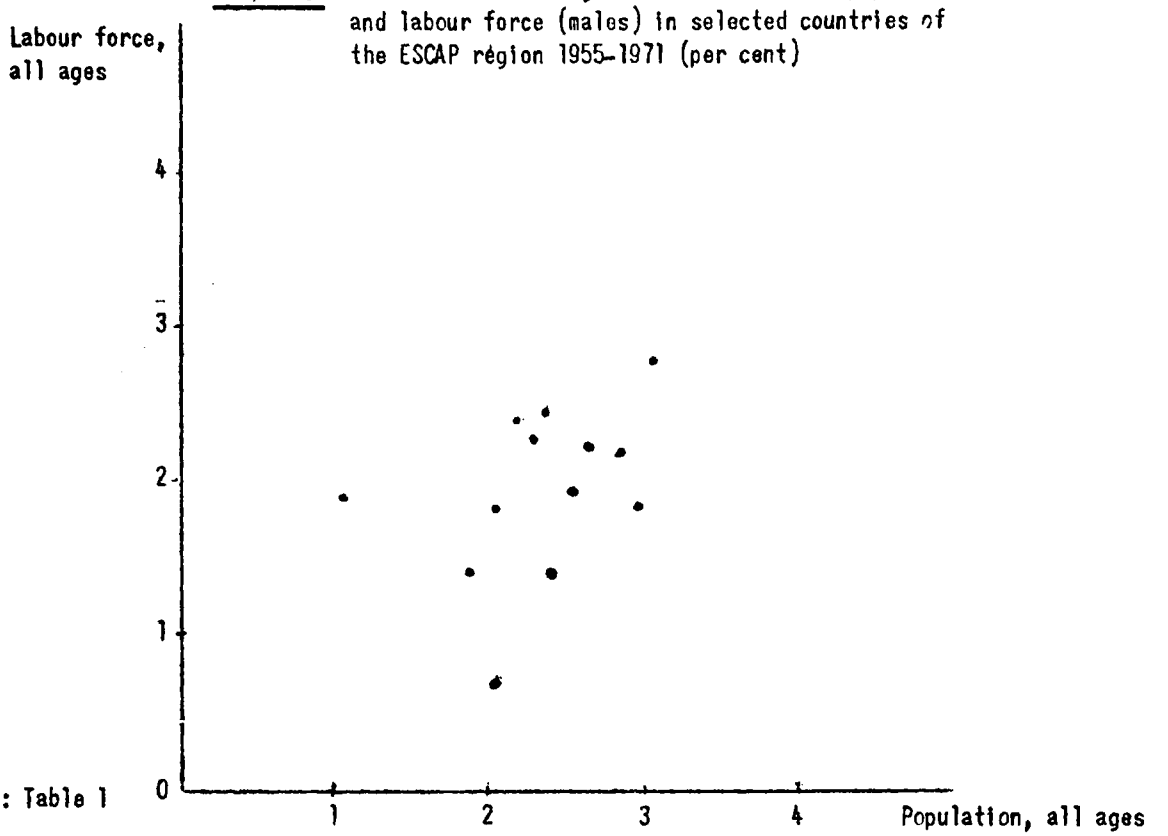
Source: Table 1

Graph 1.b. Intercensal annual growth rates of working age (15-59) population population and labour force (both sexes) in selected countries of the ESCAP region, 1955-1971 (per cent)



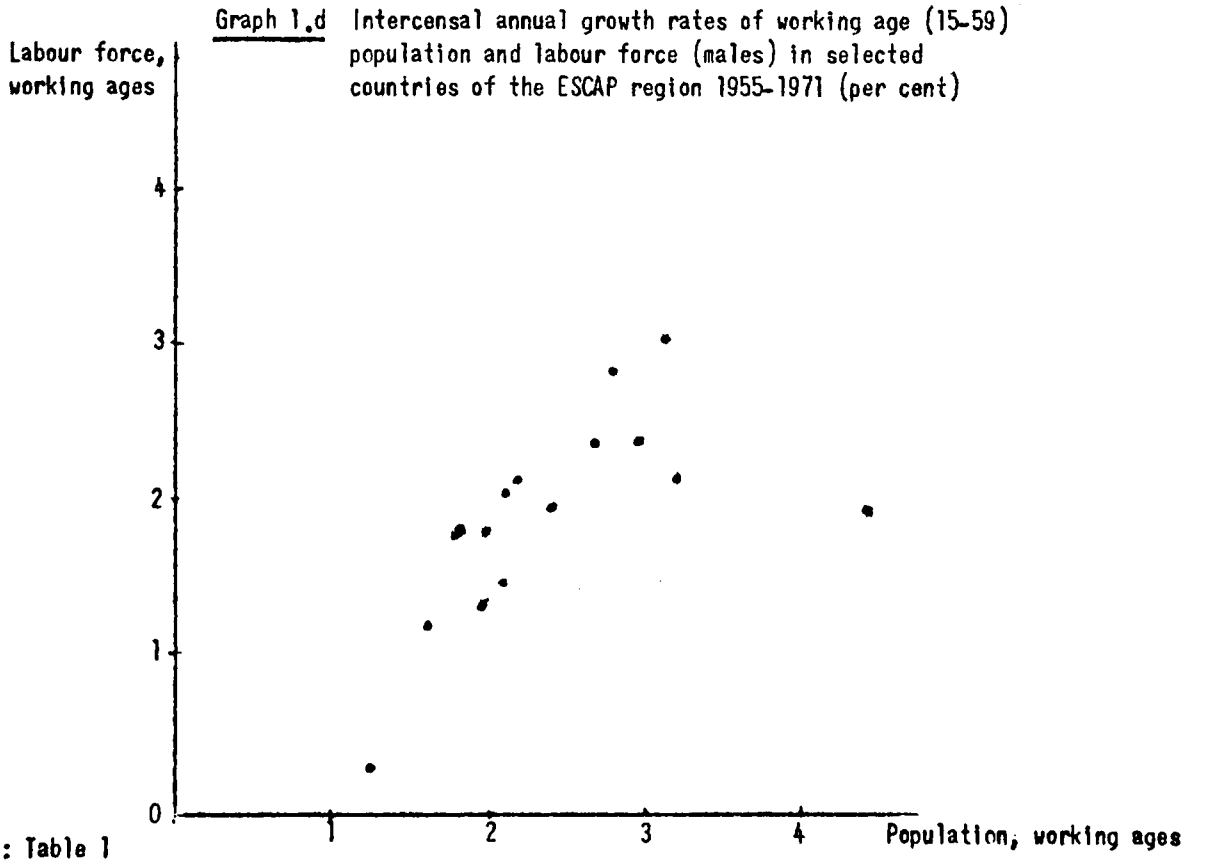
Source: Table 1

Graph 1.c Intercensal annual growth rates of total population and labour force (males) in selected countries of the ESCAP region 1955-1971 (per cent)



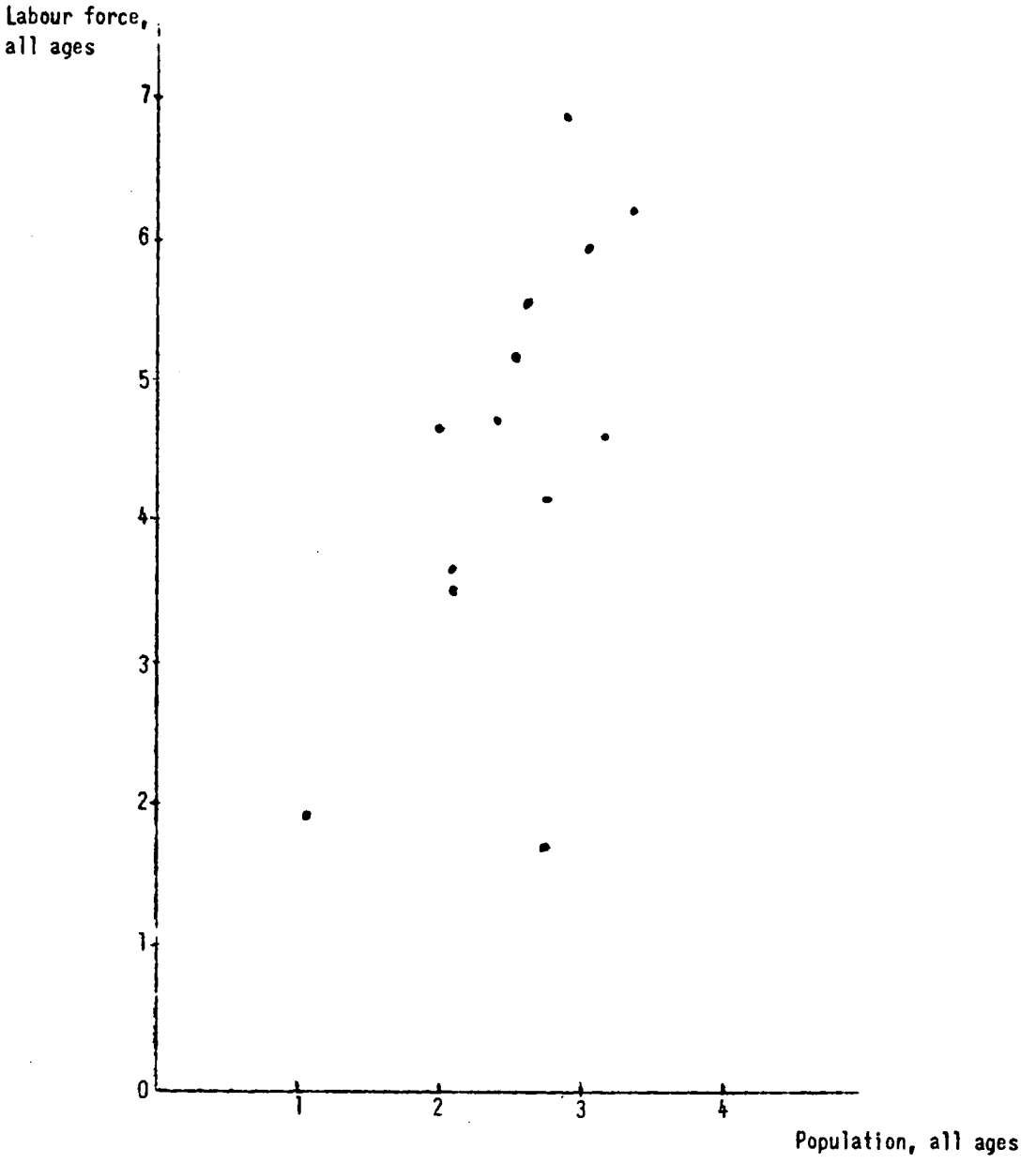
Source: Table 1

Graph 1.d Intercensal annual growth rates of working age (15-59) population and labour force (males) in selected countries of the ESCAP region 1955-1971 (per cent)



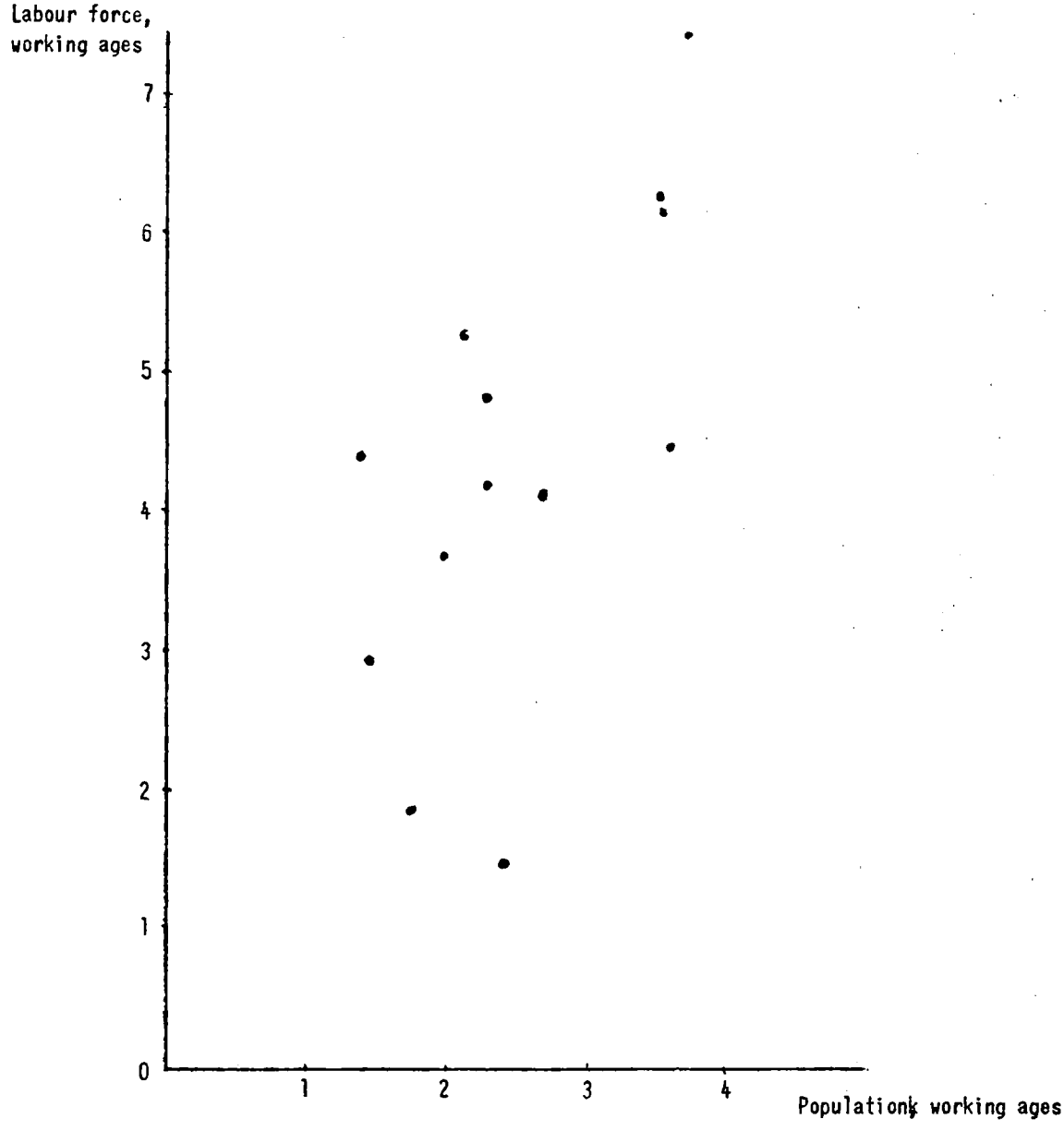
Source: Table 1

Graph 1.c. Intercensal annual growth rates of total population and labour force (females) in selected countries of the ESCAP region, 1955-1971 (per cent)



Source: Table 1.

Graph 1.f Intercensal annual growth rates of working age (15-59) population and labour force (females) in selected countries of the ESCAP region, 1955-1971 (per cent)



Source: Table 1

The fact that the degree of association between population and labour force of working age is less in the case of females indicates that female labour force participation is less influenced by demographic factors and more influenced by socio-economic factors than male labour force participation. The average of the male growth rates was 1.97 per cent and the standard deviation was 0.5 per cent. The female labour force growth rates varied from a high of 6.9 per cent in Sri Lanka (1963-1971) to a low of 1.9 per cent in Japan (1955-1970). The average of the female labour force growth rates was 4.5 per cent and the standard deviation was 1.5 per cent.

Thus, the average of growth rates of the labour force for both sexes considered together was approximately the same as the rate of growth of population However, the rate of growth of male labour force was 0.3 percentage points less than the growth of male population, while growth of the female labour force was 2.0 percentage points greater than the growth rate of female population. The growth rate of female labour force was thus more than twice the rate of growth of male labour force.

Growth rates of the labour force of working ages (15-59), for both sexes combined, varied from a high of 3.6 per cent in the Philippines (1960-1970) to a low of 1.4 per cent in Indonesia (1961-1971). The mean of the growth rates was 2.5 per cent. The standard deviation was 0.8 per cent. For both sexes combined, the rate of growth of working age labour force was approximately equal to the rate of growth of total labour force and of total population.

The rate of growth of male labour force in the working ages (15-59) varied from a high of 3.0 per cent in Fiji (1956-1966) to a low of 1.2 per cent in Iran (1956-1966). The average of the growth rates was 1.9 per cent and the standard deviation was 0.7 per cent. The rates of growth of the female labour force of working age varied from a high of 6.3 per cent in Fiji (1956-1966) to a low of 1.2 per cent in Iran (1956-1966). The average of the growth rates was 4.4 per cent and the standard deviation was 1.6 per cent. The growth rate of males of working age in the labour force was approximately equal to the growth rate of the total male labour force, and the growth rate of female labour force of working age was approximately equal to the growth rate of the total female labour force. The growth rate of working age female labour force was more than double the growth rate of working age male labour force. This is due to the fact that male labour force growth depends primarily on population growth, whereas female labour force growth is associated primarily with socio-economic changes.

Chapter V

LEVELS AND VARIATIONS IN LABOUR FORCE PARTICIPATION RATES

A. INTRODUCTION

The size of the labour force may be calculated as the product of population multiplied by the labour force participation rate. This rate thus serves as the link between the growth of labour force and population. If this rate were constant, the two variables would always change in the same proportion. It follows that all differences between the two rates of growth involve changes in the labour force participation rate.

In this chapter, data on labour force participation rates of 20 countries of the ESCAP region will be presented and analysed. The analysis will proceed in two stages: (a) that of data for all age groups, and (b) that of data for the working ages (15 to 59 years).

B. ALL AGE GROUPS

Table 3 provides data on (a) the proportion of the population in the labour force and (b) the annual rate of intercensal variation of this proportion for the total population as well as for each sex considered separately for selected countries during the period 1953-1971.[1/] The table also indicates the census year and the lower limit of age used in the definition of the labour force.

Table 4 presents a distribution of the countries classified by level of labour force participation rates. It is clear that the distribution of labour force participation rates of females is clustered under 30 per cent, whereas the labour force participation rates of males is clustered between 40 and 60 per cent. The distribution of labour force participation rates for both sexes, which clusters in the range of 30 to 40 per cent, is thus a weighted average of two quite distinct sub-distributions which differ in both location and dispersion. Hence, it is necessary that the labour force participation rates of the two sexes be analysed separately.

/Table 3.

1/ The basic data from which all the tables in this chapter are derived are given in appendix tables I and II.

Table 3. Labour force participation rates and their annual rates of intercensal variation, by sex, in selected countries of the ESCAP region, 1953-1971

Country	Census year	Lower age limit of labour force	Labour force participation rates			Annual rates of intercensal variation on labour force participation rates		
			Both sexes	Male	Female	Both sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Australia	1961	10	40.2	59.6	20.4			
	1966	15	40.0	58.8	25.0	-0.2	-0.8	4.6
	1971	15	41.8	56.8	26.7	1.8	-2.0	1.7
Brunei	1960	15	29.6	47.3	10.4			
	1965	...	29.1	46.4	10.2	-0.5	-0.9	-0.2
	1967	...	29.6	47.1	11.3	0.5	0.7	1.1
Burma	1953	10	36.5	52.2	20.3			
	1957	10	36.1	53.8	18.9	-0.4	1.6	-1.6
Fiji	1956	15	27.0	49.4	3.0			
	1966	15	26.4	48.0	4.0	-0.6	-1.4	1.0
Hong Kong	1961	6	38.7	53.8	22.8			
	1966	5	39.2	51.9	26.2	0.5	-1.9	3.4
	1971	10	42.0	54.8	28.8	2.8	2.9	2.6
India	1951	...	39.5	54.3	23.7			
	1961	0	43.5	57.1	28.0	4.0	2.8	4.3
	1971	0	32.9	52.5	11.9	-10.6	-4.6	-16.1
Indonesia	1961	10	35.9	52.7	19.6			
	1971	10	33.9	46.0	22.0	-2.0	-6.7	2.4
Iran	1956	10	32.0	56.9	6.2			
	1966	10	30.2	50.7	8.3	-1.8	-6.2	2.1
Japan	1955	15	44.8	55.7	34.3			
	1960	15	47.1	58.5	36.2	2.3	2.8	1.9
	1965	15	49.1	61.2	37.5	2.0	2.7	1.3
	1970	15	50.4	62.4	38.7	1.3	1.2	1.2

Table 3. (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Malaysia (West)	1957	10	34.5	50.5	17.4	.	.	.
	1962	...	33.5	44.8	21.2	-1.0	-5.7	3.8
	1970	10	32.7	44.4	20.9	-0.8	0.1	0.3
Nepal	1954	...	50.3	60.7	40.5	.	.	.
	1961	15	45.8	55.3	36.5	-4.5	-5.4	-4.0
	1971	...	42.0	59.0	24.7	-3.8	3.7	-11.8
New Zealand	1956	...	37.6	57.0	18.0	.	.	.
	1961	...	37.1	55.3	18.7	-0.5	-1.7	0.7
	1966	...	38.3	55.5	21.0	1.2	0.2	2.3
	1971	15	39.1	54.9	23.3	0.8	-0.6	2.3
Papua New Guinea	1966	...	31.9	36.2	27.2	...	...	...
	1971	10	20.9	27.8	13.5	-9.0	1.6	-13.7
Pakistan	1951	12	30.7	54.6	3.8	...	...	...
	1961	10	33.5	55.7	8.8	2.8	1.1	5.0
Philippines	1960	10	31.5	46.5	16.3	.	.	.
	1965	...	33.3	43.9	22.5	1.8	-2.6	5.2
	1970	10	31.0	43.4	18.8	-2.3	-0.5	-3.7
Rep. of Korea	1960	13	30.2	42.9	17.3	.	.	.
	1966	14	29.7	40.7	18.5	-0.5	-2.2	1.2
	1970	14	33.0	42.8	23.2	3.3	2.1	4.7
Singapore	1957	10	33.2	57.6	12.7	.	.	.
	1966	10	29.9	45.2	14.0	-3.3	-12.4	1.3
	1970	10	35.5	50.8	18.5	5.6	5.6	4.5
Sri Lanka	1953	...	36.8	53.0	18.8	.	.	.
	1963	5	32.7	49.8	14.1	-4.1	-3.2	-4.7
	1971	10	34.8	50.1	18.7	2.1	0.3	4.6
Thailand	1956	15	51.0	52.3	49.7	.	.	.
	1960	11	52.7	54.3	51.1	1.7	2.0	1.4
	1970	11	49.0	52.0	46.0	-3.7	-2.3	-5.5
Western Samoa	1961	...	24.4	42.9	4.9	-	-	-
	1966	...	26.9	41.4	11.3	2.5	-1.5	6.4

/ Arithmetic

Table 3. (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Arithmetic mean			36.5	51.1	21.2	-0.36	-0.89	0.29
Mean absolute (intercensal change)						2.5	2.7	3.8
Standard deviation			6.9	6.7	11.1	3.3	3.5	5.2
Arithmetic mean for Australia, Japan and New Zealand			42.3	57.8	27.3			

Source: Appendix tables I and II.

/Table 4.

Table 4. Distribution of selected countries of the ESCAP region according to the average labour force participation rates

Rates	Both sexes	Male	Female
< 30	Fiji Western Samoa Rep. of Korea Singapore		Fiji Iran Pakistan Western Samoa India Singapore Sri Lanka Rep. of Korea Burma New Zealand Malaysia (West) Indonesia Philippines Malaysia (Sabah) Australia Hong Kong Papua New Guinea
30 - 39.9	Iran Papua New Guinea Sri Lanka India Philippines Pakistan Malaysia (West) Indonesia Burma New Zealand Malaysia (Sabah) Hong Kong	Papua New Guinea	Nepal Japan
40 - 49.9	Australia Nepal Japan	Rep. of Korea Western Samoa Philippines Malaysia (West) Singapore Indonesia Brunei Fiji Sri Lanka	

Table 4. (Cont'd)

Rates	Both sexes	Male	Female
>50	Thailand	Iran Hong Kong Malaysia (Sabah) India Burma Thailand Nepal New Zealand Pakistan Australia Japan	Thailand

Source: Table 3.

/1. Levels

1. Levels of labour force participation

Activity rates, or the proportion of the total population in the labour force, varied from a high of 52.7 per cent in Thailand (1960) to a low of 20.9 per cent in Papua New Guinea (1971). The unweighted arithmetic mean of the rates was 36.5 per cent. The standard deviation was 6.9 per cent. The unweighted arithmetic mean for the more developed countries in the study, Japan, Australia and New Zealand, was 42.3 per cent. This is considerably greater than the average for all countries in the study. However, it should be noted that the activity rates for two developing countries, Thailand and Nepal, were still higher due to the higher labour force participation of females in those countries.

The proportion of the male population in the labour force ranged from a high of 62.4 per cent in Japan (1970) to a low of 27.8 per cent in Papua New Guinea (1971). The unweighted arithmetic mean of the rates was 51.1 per cent. The standard deviation was 6.7 per cent. The corresponding arithmetic mean for the three developed countries cited above was 57.8 per cent. This is also considerably greater than the average for all countries in the study. None of the developing countries has a male labour force participation rate higher than this figure.

The proportion of the female population in the labour force ranged from a high of 51.1 per cent in Thailand (1960) to a low of 3.0 per cent in Fiji (1956). The unweighted arithmetic mean of the rates was 21.2 per cent. The standard deviation was 11.1 per cent. The corresponding arithmetic mean for the three developed countries was 27.3 per cent. This was only slightly higher than the average for all countries in the study.

For all countries, the average of labour force participation rates was almost 30 percentage points higher for males than for females. Thus, the labour force participation of males on average was more than twice the average for females. In the case of the three developed countries, the average for males was also 30 percentage points higher than that for females. There is greater dispersion among the participation rates of females than among those of males, the standard deviation being 10.9 per cent in the case of the former and 6.5 per cent in the case of the latter.

/2. Annual

2. Annual rates of intercensal variation

Activity rates have varied over time in these countries, but there was no over-all regional trend.[2/] For the population as a whole, the average intercensal change in labour force participation was -0.36 per cent. The corresponding figure for males was -0.89 per cent. For females it was 0.29 per cent. The average absolute deviation was 2.5 per cent for the population as a whole. It was 2.7 per cent in the case of males and 3.8 per cent in the case of females. The standard deviation of the intercensal variations in activity rates was 3.3 per cent for the total population. It was 3.5 per cent in the case of males and 5.2 per cent in the case of females.

The limited number of observations over time, and the fact that several of those variations might be due to the changes in definitions and errors of enumeration, militate against a trend analysis of labour force participation in each country and the comparative study of the labour force change among countries.[3/] However, it can be noted that the downward trend in over-all activity rates, observed in several developed countries elsewhere,[4/] has not been duplicated by the experience in most Asian countries, especially those which are most developed. On the contrary, the upward trend of the labour force participation is particularly significant in Japan, Hong Kong, Australia, New Zealand and several other countries in the region (partly because of the increase of the female labour force participation). Graphs 2.a, 2.b and 2.c illustrate the time paths of activity rates as presented in table 3 for both sexes, males and females respectively.

/C. POPULATION

2/ India has been excluded from this portion of the analysis since there were important changes in the definition of labour force used in the 1961 and 1971 censuses. See A. Chandra Sekhar, Provisional Population Census (Paper I of 1971 Census of India, New Delhi, 1971), pp. 28-29.

3/ Increases in the activity rates were found for India (1951-1966), Philippines (1948-1960) and Pakistan (1951-1961), but these increases may have been caused by changes in the definitions of labour force adopted in succeeding censuses. See John Durand, Interrelation between Population and Manpower Problems, op.cit., p. 65.

4/ Ibid.

C. POPULATION AND LABOUR FORCE OF WORKING AGE

Differences in labour force participation rates are in part a reflection of differences in the minimum age of entry into the labour force and differences in the age structure of the countries within the region. In order to isolate the influence of the minimum age of entry and the age structure, special attention is given to that part of the population and the labour force that is aged 15 to 59.

The total labour force participation rate is equal to the ratio of labour force aged 15 to 59 to total population divided by the ratio of labour force aged 15 to 59 to total labour force.[5/] Trends in labour force participation rates discussed earlier in this chapter must therefore be a reflection of changes in one or both of these ratios.

Table 5 provides data on the proportion of the population, aged 15 to 59 years, and the proportion of the total population who are members of the labour force, aged 15 to 59 years, for selected countries during the period 1953 to 1971.

1. The working age population as a proportion of total population

The proportion of the population aged 15 to 59 years varied from a high of 68.8 per cent in Japan to a low of 44.5 per cent in Western Samoa. The unweighted arithmetic mean of this proportion was 54.1 per cent. The standard deviation was 4.3 per cent. The unweighted arithmetic mean for the three more developed countries was 59.4 per cent.

The proportion of the male population aged 15 to 59 years ranged from a high of 68.8 per cent in Japan to a low of 44.3 per cent in Western Samoa. The unweighted arithmetic mean of the ratios was 54.1 per cent. The standard deviation was 4.6 per cent. The corresponding arithmetic mean for the three developed countries was 59.8 per cent.

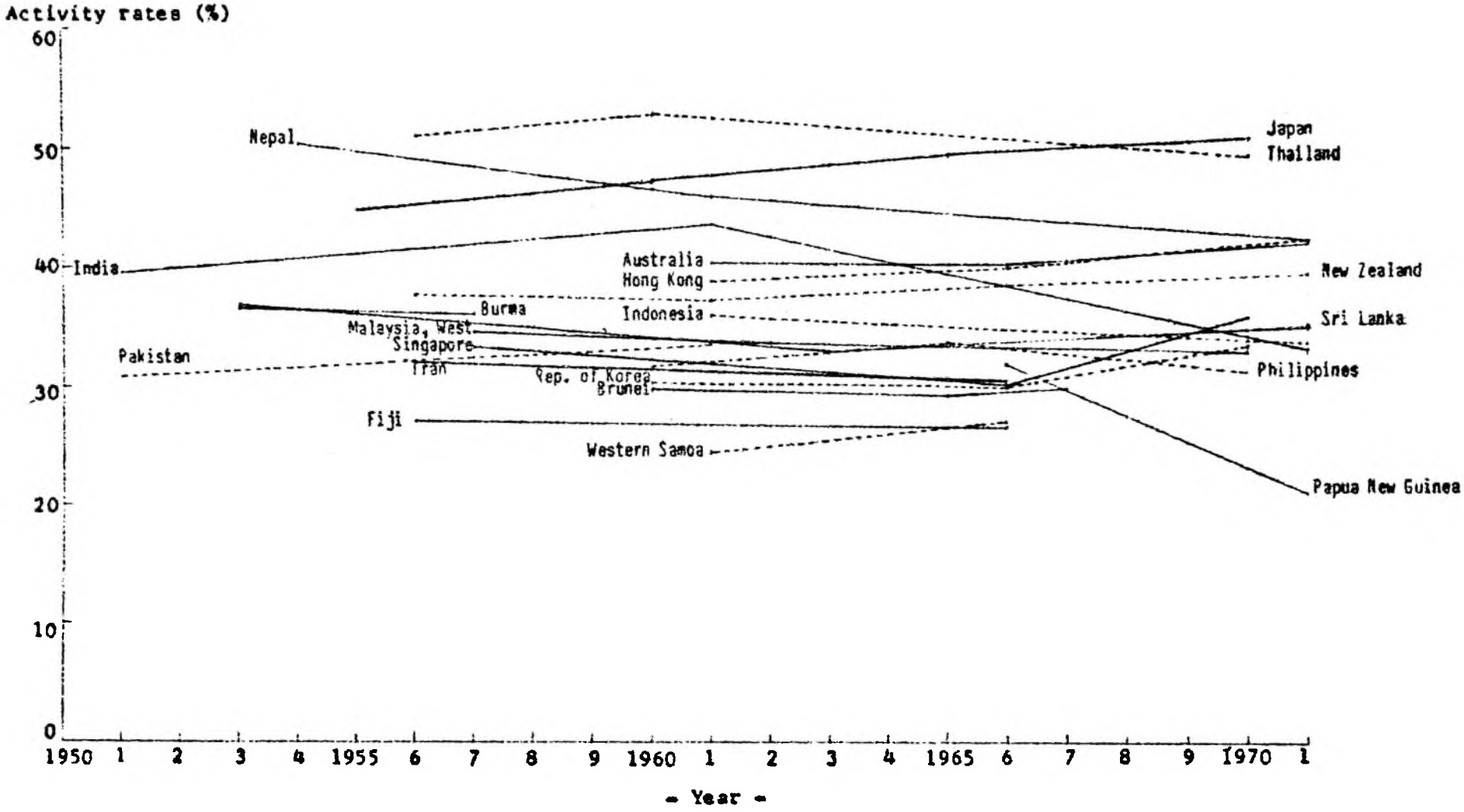
/Table 5.

5/ Let P = population of all ages
P' = population aged 15-59
L = labour force of all ages
L' = labour force aged 15-59

then $\frac{L}{P} = (\frac{L'}{P}) \div (\frac{L'}{L})$

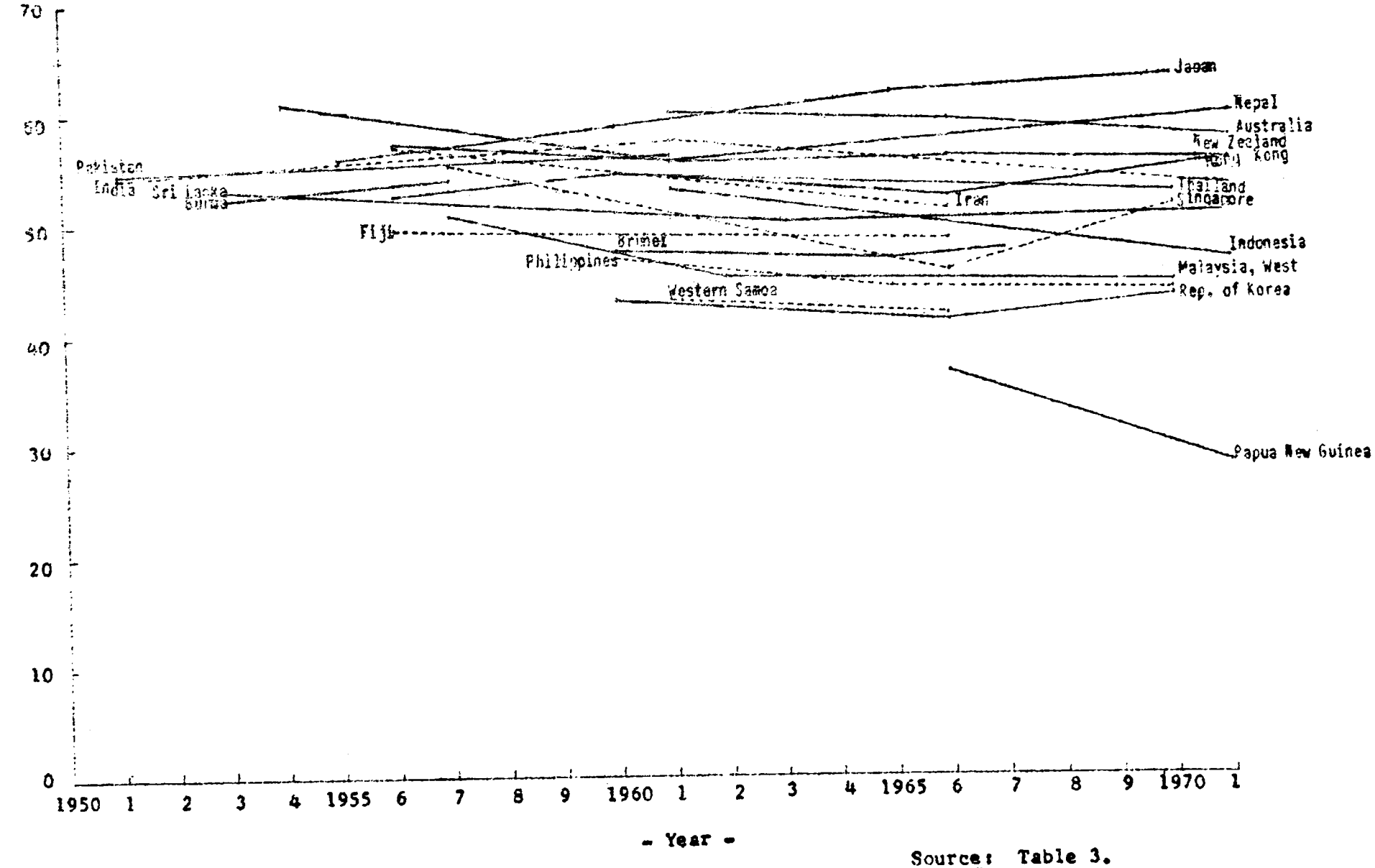
and $\% \Delta \frac{L}{P} = \% \Delta (\frac{L'}{P}) - \% \Delta (\frac{L'}{L})$

Graph 2.a. Time path of activity rates (both sexes) in selected countries of the ESCAP region, 1953-1971



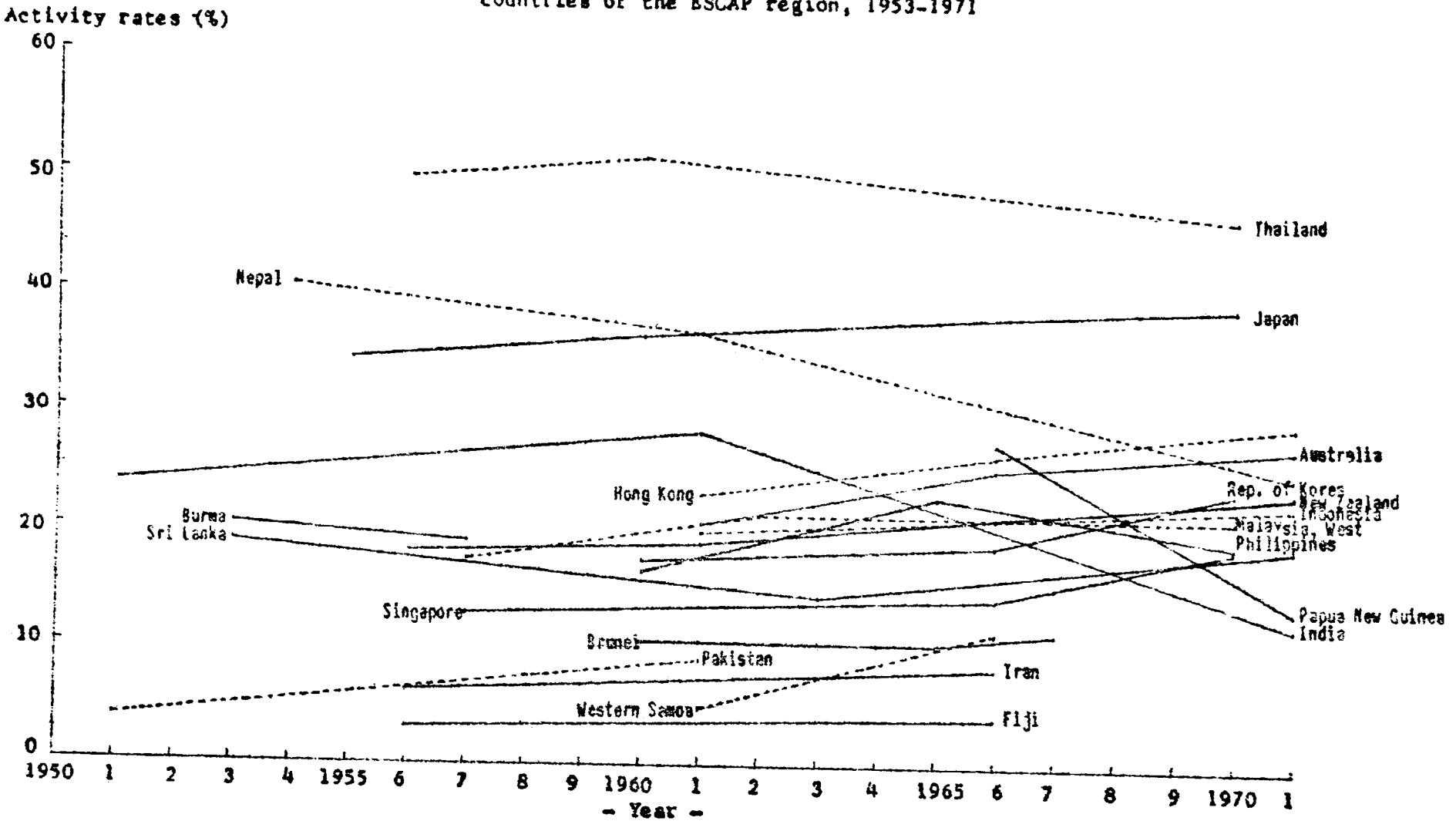
Source: Table 3.

Graph 2.b. Time path of male activity rates in selected countries of the ESCAP region, 1953-1971



Source: Table 3.

Graph 2.c. Time path of female activity rates in selected countries of the ESCAP region, 1953-1971



Source: Table 3.

Table 5. Ratio of population aged 15-59 and labour force aged 15-59 to total population, and ratio of labour force aged 15-59 to population aged 15-59 and its annual rate of intercensal variation, by sex, in selected countries of the ESCAP region, 1953-1971

Country	Census year	Ratio of population aged 15-59 to total population			Ratio of labour force aged 15-59 to total population			Ratio of labour force aged 15-59 to population aged 15-59			Annual rate of intercensal variation in ratio of labour force aged 15-59 to population aged 15-59		
		Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Australia	1961	57.6	58.5	56.3	37.2	54.6	19.3	64.6	93.3	34.3	.	.	.
	1966	58.4	62.0	57.3	39.2	56.7	23.9	67.1	91.5	41.7	2.5	1.9	7.4
	1971	58.9	59.9	58.0	39.0	52.3	25.6	66.2	87.3	44.1	-0.9	-4.1	2.4
Fiji	1956	48.9	48.8	48.9	24.9	45.5	2.9	50.9	93.2	5.9	.	.	.
	1966	49.4	49.2	49.7	25.0	45.3	3.9	50.6	92.1	7.9	-0.3	-1.2	1.9
Hong Kong	1961	54.4	55.6	53.2	36.1	50.9	28.6	66.4	91.6	38.7	.	.	.
	1966	53.9	55.8	52.9	35.6	48.9	23.0	66.1	87.6	43.5	-0.3	-3.9	4.8
	1971	56.8	57.9	55.1	38.2	50.3	25.3	67.3	86.9	45.9	1.2	-0.8	2.4
Indonesia	1961	53.4	52.3	54.4	31.8	46.7	17.1	59.6	89.3	31.4	.	.	.
	1971	51.5	50.2	52.7	29.4	40.8	19.1	57.1	81.3	36.2	-2.5	-8.0	4.8
Iran	1956	51.5	51.2	51.9	27.2	48.6	5.0	52.8	94.9	9.6	.	.	.
	1966	47.4	46.9	47.8	24.7	42.1	6.1	52.1	89.8	12.8	-0.7	-5.2	3.1
Japan	1955	58.5	55.7	59.0	41.2	48.8	32.0	70.4	87.6	54.2	.	.	.
	1960	61.1	60.6	61.6	43.2	53.1	33.9	70.7	87.6	55.0	0.3	0.0	0.8
	1965	64.7	64.4	65.0	44.3	54.3	34.6	68.5	84.3	53.2	-2.2	-3.3	-1.8
	1970	68.8	68.8	68.7	48.1	59.0	37.4	69.9	85.8	54.4	1.4	1.4	1.2
Malaysia, West	1957	51.5	51.8	51.2	31.4	45.9	15.8	61.0	88.6	30.9	.	.	.
	1962	...	-	-	...		...						
	1970	49.9	49.2	50.7	29.7	40.2	19.0	59.5	81.7	37.5	-1.5	-6.9	6.6
Nepal	1954	55.9	55.0	56.7	...	...							
	1961	54.6	53.8	55.4	43.4	52.2	34.9	79.5	97.0	63.0	.	.	.
	1971	53.9	53.7	54.1	34.5	49.1	19.7	64.0	91.4	36.4	-15.5	-5.6	-26.6

/New Zealand

Table 5. (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10	(11)	(12)	(13)	(14)
New Zealand	1956	55.8	56.4	55.3	35.0	52.7	19.7	62.7	93.4	35.6	.	.	.
	1961	54.7	55.4	54.0	34.6	51.2	17.9	63.3	92.4	33.2	0.5	-1.0	2.5
	1966	55.4	56.0	54.7	35.7	51.1	20.1	64.4	91.3	36.8	1.2	-1.2	3.6
Philippines	1960	50.0	48.9	51.0	28.0	41.3	14.2	56.0	84.5	27.8	.	.	.
	1965	49.2	49.0	49.3	31.2	40.7	21.4	63.4	83.1	43.4	7.4	-1.4	15.6
	1970	51.4	50.1	52.7	27.1	37.9	16.5	52.7	75.7	31.3	-10.7	-7.4	-12.1
Rep. of Korea	1960	51.1	48.6	53.6	28.0	39.7	16.1	54.8	81.7	30.0	.	.	.
	1966	51.3	51.0	51.6	28.0	38.3	17.6	54.6	75.1	34.1	-0.2	-6.6	4.1
	1970	52.5	52.1	55.1	30.9	40.1	21.6	58.9	77.0	39.2	4.3	1.9	5.1
Singapore	1957	53.4	54.9	51.8	31.5	49.2	11.7	59.0	89.6	22.6	.	.	.
	1966	51.2	51.2	51.1	28.2	42.7	13.1	55.1	83.4	25.6	-3.9	-6.2	3.1
	1970	56.2	55.8	55.1	33.6	48.0	17.6	59.8	86.0	31.9	4.7	2.6	6.3
Sri Lanka	1953	54.9	56.2	53.5	33.0	48.5	16.4	60.1	86.3	30.7	.	.	.
	1963	51.9	52.5	51.4	30.7	45.9	14.4	59.2	87.4	28.0	-1.0	1.1	-2.6
	1971	54.2	54.0	54.5	32.1	45.9	17.8	59.2	85.0	32.7	0.1	-2.4	4.6
Thailand	1956	55.1	54.2	56.0									
	1960	52.1	52.1	52.1	46.1	47.7	44.5	88.5	91.6	85.4	.	.	.
	1970	50.0	49.7	50.3	42.0	44.9	39.1	84.0	90.3	77.7	-4.5	-1.2	-7.7
Arithmetic mean		54.1	54.1	54.2	34.0	47.3	20.7	62.7	87.5	37.4	-0.9	-2.5	1.3
Standard deviation		4.3	4.6	4.1	6.2	5.3	9.6	8.5	5.1	16.5	4.6	3.2	7.9

Source: Appendix tables I and II.

/The proportion

The proportion of the female population aged 15 to 59 years ranged from a high of 68.7 per cent in Japan to a low of 44.7 per cent in Western Samoa. The unweighted arithmetic mean of the ratios was 54.2 per cent. The standard deviation was 4.1 per cent. The corresponding arithmetic mean for the three developed countries was 59.0 per cent.

There is little difference between the sexes in regard to the proportion of the population in the 15 to 59 age group. For all countries, the average proportion of the population aged 15 to 59 was 0.1 percentage points higher in the case of males than females. In the case of the three developed countries, the average for males was 0.08 percentage points higher than for females. However, this analysis does indicate that a greater proportion of the population is in the working ages (15-59) in the developed countries.

2. Labour force aged 15-59 as a proportion of total population

There are significant differences between countries and between sexes in regard to the proportion of the total population aged 15 to 59 years who are members of the labour force. According to the data presented in table 5 for both sexes, the proportion ranges from a high of 48.1 per cent in Japan to a low of 24.7 per cent in Iran. The mean value of the ratio is 34.0 per cent and the standard deviation is 6.2 per cent. The corresponding mean value for the developed countries is 39.8 per cent.

In the case of males, the ratio of labour force aged 15 to 59 to total population ranges from a high of 59.0 per cent in Japan, to a low of 37.9 per cent in the Philippines. The mean value is 47.3 per cent and the standard deviation is 5.3 per cent. The mean for the three developed countries is 53.4 per cent. In the case of females, the range of the ratios varies from a high of 44.5 per cent in Thailand to a low of 2.9 per cent in Fiji. The mean value is 20.4 per cent and the standard deviation is 9.6 per cent. The mean for the three developed countries is 26.4 per cent.

/The conclusions

The conclusions based on an analysis of the over-all labour force participation rates are also applicable in the case of the ratio of labour force 15 to 59 years of age to total population. Male labour force participation is 26.9 percentage points higher than female labour force participation in this age group. The ratio is more widely dispersed in the case of females. The standard deviation is 4.3 percentage points greater for females than males. For both males and females, labour force participation is, on average, higher in the developed countries.

3. Labour force aged 15 to 59 as a proportion of population aged 15 to 59

If the ratio of labour force aged 15 to 59 to total population is divided by the ratio of population aged 15 to 59 to total population, the quotient is equal to the proportion of the population aged 15 to 59 who are members of the labour force.[6/] This ratio may be taken as a rough indicator of the ratio of the actual to the potential labour force. Table 5 also provides data on the proportion of the population aged 15 through 59 who are members of the labour force. For both sexes, this ratio varies from a high of 88.5 per cent in Thailand to a low of 50.1 per cent in Fiji. The mean value is 62.7 per cent. The standard deviation is 8.5 per cent. The mean value for the developed countries is 66.8 per cent.

For males, this ratio varies from a high of 97.0 per cent in Nepal to a low of 75.1 per cent in the Republic of Korea. The mean value is 87.5 per cent. The standard deviation is 5.1 per cent. The mean value for the developed countries is 89.5 per cent. For females, the ratio varies from a high of 85.4 per cent in the case of Thailand to a low of 5.9 per cent in the case of Fiji. The mean value is 36.3 per cent. The standard deviation is 16.5 per cent. The mean value for the developed countries is 44.3 per cent.

The conclusions arrived at on the basis of the ratio of total labour force to total population, and of labour force aged 15 to 59 to total population are given greater force by using population aged 15 to 59 as the denominator. The level of labour force participation among men is 48.8 per centage points higher than the

/level

6/ $\frac{L'}{P'} = (\frac{L'}{P}) \div (\frac{P'}{P})$

level among women. However, the standard deviation for females is 11.5 percentage points greater than the standard deviation in the case of males. Labour force participation rates for the developed countries exceed the average for all countries in the study.

4. Annual rate of intercensal variation

An analysis of the intercensal variation in the proportion of the population aged 15 to 59 in the labour force indicates a slight decline in the case of males and a slight increase in the case of females. For the population as a whole, the average intercensal change was -0.9 percentage points. The corresponding figure for males was -2.5 percentage points. For females, it was 1.3 percentage points. The standard deviation of the intercensal variations in activity rates was 4.6 per cent for the total population. It was 3.2 per cent in the case of males and 7.9 per cent in the case of females.

D. CONCLUSIONS

On the basis of the evidence examined thus far, the following conclusions may be drawn:

(a) Male labour force participation rates are substantially higher than female labour force participation rates;

(b) Female labour force participation rates vary more widely than male labour force participation rates;

(c) The differences cited in (a) and (b) are accentuated when the analysis is restricted to population and labour force of working age;

(d) On average, labour force participation rates are higher in the developed countries than in the less developed countries of the region for both sexes;

(e) There has been no over-all trend in labour force participation rates during the period 1953-1971. This is true for both sexes.

Chapter VI

GROWTH RATES OF POPULATION AND LABOUR FORCE FOR SPECIFIC AGE-SEX GROUPS

A. INTRODUCTION

A detailed analysis of the structural changes of population and labour force at the regional level is not possible since reliable time-series data are not available for most countries of the ESCAP region. This chapter is therefore limited to a comparison of rates of growth of population and labour force in specific age-sex groups.

This analysis will deal with each sex considered separately. There will be no analysis of both sexes taken together since the level and variability of female labour force participation is quite different from that of males. Table 6 presents annual rates of intercensal change of population and labour force by sex and age groups in 13 selected countries of the ESCAP region. The table includes data extending over the period 1950-1971.[1/]

Graphs 3.a-3.k portray the profiles of growth rates of population and labour force by age groups for the 13 countries. These graphs indicate a close association between growth rates of population and growth rates of labour force.

/Table 6.

1/ The data from which the tables of this chapter were derived is contained in appendix table III.

Table 6. Annual rate of intercensal change of population and labour force, by sex and age class, for selected countries of the ESCAP region, 1956-1971

Country	Census year I	Census year II	Age group	Male		Female	
				Population	Labour force	Population	Labour force
(1)	(2)		(3)	(4)	(5)	(6)	(7)
Australia	1961	1971	All ages	1.88	1.39	1.99	4.68
			15+	2.07	1.42	2.22	4.75
			15-19	3.14	0.92	3.19	1.06
			20-24	4.34	3.72	4.72	6.15
			25-34	2.04	1.66	2.35	6.55
			35-44	0.65	0.30	0.44	5.23
			45.54	1.52	1.13	1.77	5.63
			55-59	2.36	1.88	2.99	5.39
			60-64	2.45	1.93	2.05	3.89
			65+	1.51	0.24	1.92	1.27
Fiji	1956	1966	All ages	3.08	2.77	3.36	6.22
			15+	2.83	2.77	3.36	6.22
			15-19	3.30	2.56	3.37	3.89
			20-24	3.12	3.04	3.58	6.55
			25-29	2.98	2.99	3.54	8.10
			30-34	3.24	3.28	3.17	7.34
			35-39	2.51	2.57	2.69	6.25
			40-44	2.19	2.19	2.94	4.93
			45-49	3.92	3.97	5.00	6.67
			50-54	5.04	5.09	5.08	8.18
			55-59	3.02	3.15	3.66	6.80
			60-64	-0.50	0.12	1.66	3.64
			65+	-0.43	-1.79	1.68	4.10
Hong Kong	1961	1971	All ages	2.19	2.38	2.41	4.74
			15+	3.05	2.40	3.17	4.68
			15-19	8.90	8.16	10.23	11.86
			20-24	4.43	4.54	5.78	8.86
			25-34	-2.16	-2.09	-2.72	-1.17
			35-44	1.32	1.35	1.36	1.55
			45-54	3.78	3.75	3.24	2.44
			55-64	7.38	7.25	4.37	6.22
			65+	8.17	6.63	6.51	8.88
Indonesia	1961	1971	All ages	2.05	0.70	2.09	3.27
			15+	1.60	0.59	1.82	3.14
			15-19	3.86	0.77	3.95	3.29
			20-24	0.30	-1.01	0.15	1.65
			25-34	0.48	0.15	0.78	3.52
			35-44	2.05	1.70	2.79	4.95
			45-54	1.86	1.26	1.86	2.71
			55-64	1.05	0.06	1.96	1.19
			65+	1.80	-0.04	2.24	0.27

/Iran

Table 6. (Cont'd)

(1)	(2)		(3)	(4)	(5)	(6)	(7)
Iran	1956	1966	All ages	2.97	1.82	2.62	5.52
			15+	2.22	1.45	1.97	4.56
			15-19	4.01	2.30	4.09	6.56
			20-24	1.26	0.90	1.09	5.33
			25-34	1.45	1.33	1.22	4.86
			35-44	3.51	3.39	3.29	5.77
			45-54	1.35	0.94	0.42	1.59
			55-64	0.81	-0.90	1.34	0.57
			65+	2.73	-1.87	2.31	-0.21
Japan	1960	1970	All ages	1.13	1.91	1.14	1.80
			15+	2.00	1.91	1.93	1.80
			15-19	-0.12	-3.42	-0.19	-3.55
			20-24	2.59	2.21	2.50	2.61
			25-29	1.05	1.27	1.12	-0.09
			30-34	1.18	1.33	1.14	0.33
			35-39	4.08	4.21	2.29	2.56
			40-44	4.84	4.96	2.99	4.03
			45-49	1.78	1.92	2.30	3.59
			50-54	0.63	0.85	2.11	3.64
			55-59	1.31	1.83	2.66	4.18
			60-64	2.06	2.52	2.84	3.80
			65+	3.35	3.33	3.15	2.26
Malaysia (West)	1957	1970	All ages	2.38	1.39	2.78	4.18
			15+	2.12	1.35	2.81	4.17
			15-19	3.46	2.40	3.68	4.90
			20-24	2.62	2.13	2.76	4.99
			25-29	1.71	1.38	1.59	4.06
			30-34	2.58	2.30	2.93	4.80
			35-39	1.21	0.92	2.01	3.18
			40-44	1.26	0.93	2.43	3.35
			45-49	-0.05	-0.44	2.08	2.93
			50-54	0.55	-0.06	2.80	3.38
			55-59	1.28	0.05	3.65	3.54
			60-64	3.44	1.72	4.73	5.12
			65+	3.76	1.56	3.54	4.32
New Zealand	1961	1966	All ages	2.04	2.12	2.08	4.42
			15+	2.17	2.12	2.24	4.42
			15-19	5.47	4.68	5.56	4.92
			20-24	3.92	3.72	3.57	4.76
			25-29	2.86	2.88	3.19	5.83
			30-34	-1.36	-1.33	-0.84	1.36
			35-39	0.94	1.04	0.29	2.74
			40-44	2.66	2.81	1.59	4.92
			45-49	0.30	0.33	0.90	3.14
			50-54	1.34	1.38	2.26	4.76
			55-59	2.80	3.03	3.25	5.98
			60-64	3.35	4.15	2.25	4.92
			65+	0.83	2.18	1.73	3.85

/Philippines

Table 6. (Cont'd)

(1)	(2)		(3)	(4)	(5)	(6)	(7)
Philippines	1960	1970	All ages	2.86	2.17	3.15	4.62
			15+	3.40	2.21	3.82	4.72
			15-19	2.33	-0.10	3.46	2.48
			20-24	2.91	1.52	3.77	4.03
			25-29	4.09	3.23	3.82	5.82
			30.34	4.21	3.38	3.55	5.61
			35-39	3.32	2.48	2.23	4.87
			40-44	2.76	1.91	2.86	5.51
			45-49	1.54	0.61	2.75	4.73
			50-54	3.44	2.36	5.07	6.42
			55-59	5.74	4.66	7.13	7.77
			60-64	4.50	3.21	6.70	6.85
			65+	5.75	3.43	5.79	2.67
Rep. of Korea	1960	1970	All ages	2.29	2.26	2.29	5.20
			15+	2.80	2.27	2.45	5.23
			15-19	2.35	2.49	2.93	7.53
			20-24	4.92	0.82	1.07	4.66
			25-29	3.43	2.84	1.00	2.76
			30-34	4.46	4.45	2.64	4.87
			35-39	2.93	2.96	2.53	5.21
			40-44	1.44	1.34	2.72	5.78
			45-49	1.95	1.83	2.42	5.64
			50-54	0.99	1.08	1.59	4.80
			55-59	2.50	2.14	2.91	5.80
			60-64	1.63	1.18	0.76	5.47
			65+	0.37	-0.76	2.14	3.53
Singapore	1957	1970	All ages	2.55	2.42	3.03	5.95
			15+	2.94	2.44	3.70	6.09
			15-19	4.53	4.03	4.66	9.32
			20-24	4.01	4.06	4.23	10.76
			25-29	0.84	0.84	1.85	6.67
			30-34	2.39	2.37	4.12	6.21
			35-39	1.76	1.75	3.14	2.59
			40-44	1.75	1.75	2.66	-0.32
			45-49	1.20	1.14	2.01	-2.15
			50-54	1.97	1.51	3.04	-0.79
			55-59	3.88	2.79	4.74	1.49
			60-64	5.64	4.21	5.14	3.29
			65+	6.98	5.46	5.60	5.33

/Sri Lanka

Table 6. (Cont'd)

(1)	(2)		(3)	(4)	(5)	(6)	(7)
Sri Lanka	1963	1971	All ages	2.53	2.39	2.93	6.20
			15+	2.57	2.46	3.05	6.36
			15-19	3.57	4.12	3.60	6.23
			20-24	4.55	5.20	4.47	9.29
			25-29	3.03	3.40	3.18	7.83
			30-34	0.84	0.99	1.41	5.65
			35-39	0.83	0.92	1.81	4.80
			40-44	2.43	2.52	3.07	5.24
			45-49	2.00	2.00	3.24	4.85
			50-54	1.97	1.92	-5.12	4.66
			55-59	2.69	1.69	4.13	4.17
			60-64	1.03	-0.81	1.66	1.20
			65+	4.27	1.73	4.52	3.61
Thailand	1960	1970	All ages	2.64	2.21	2.76	1.71
			15+	2.20	1.98	2.49	1.44
			15-19	3.72	3.80	4.22	3.30
			20-24	0.87	0.97	1.23	0.30
			25-29	0.69	0.63	0.89	0.09
			30-34	1.70	1.59	2.14	1.35
			35-39	3.20	3.07	3.42	2.63
			40-49	2.57	2.43	2.65	1.74
			50-59	1.74	1.42	1.87	0.46
			60+	3.20	1.88	3.58	0.67

Source: Appendix table III.

Table 7 presents the simple linear correlation coefficients between growth rates of population and labour force in each of the 13 countries. The coefficients of correlation between male population growth and male labour force growth rates varied from a high of 0.99 in Hong Kong to a low of 0.48 in Iran. The mean of the correlation coefficients was 0.83. The standard deviation was 0.16.

The simple linear correlation coefficient between the growth rates of female population and female labour force ranges from a high of 0.96 in Hong Kong to a low of 0.06 in Australia. The average of the correlation coefficients was 0.56. The standard deviation was 0.26.

/Rates of

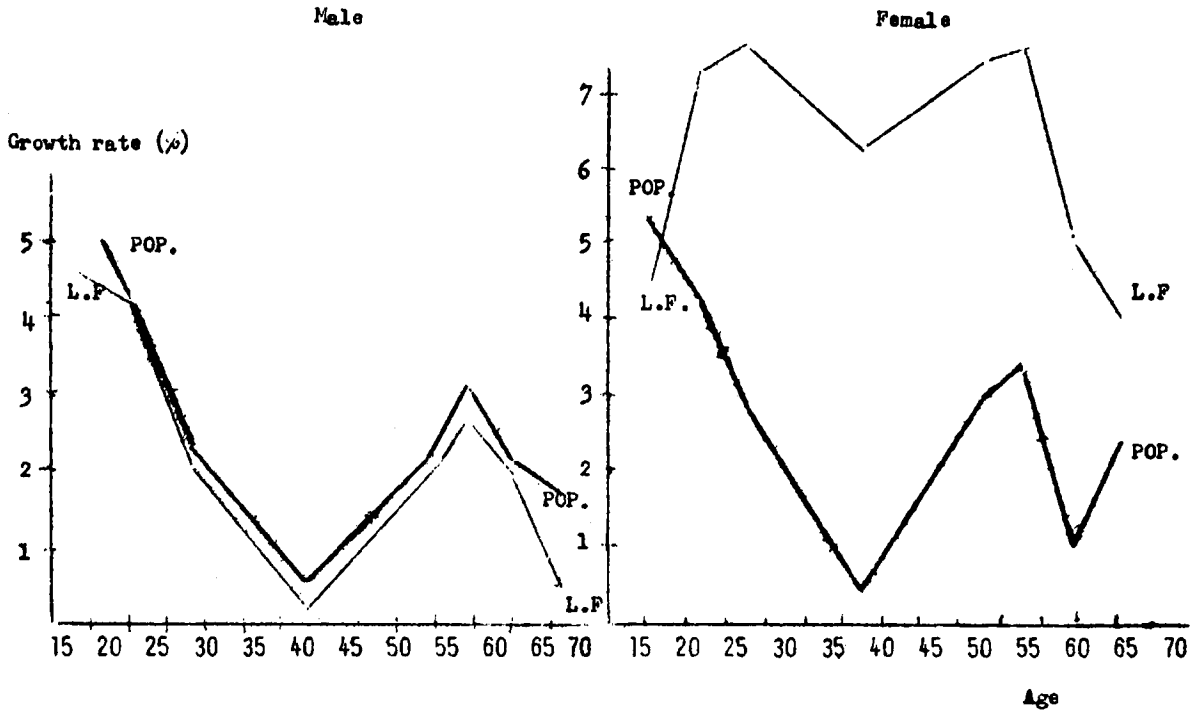
Rates of growth of labour force corresponded more closely to rates of growth of population in the case of males. The average value of the correlation coefficients for males was 0.27 percentage points higher than the average of correlation coefficients for females. This pattern was also more uniform in the case of males. The standard deviation of the correlation coefficients for males was 10 percentage points less than the standard deviation of correlation coefficients for females. This reflects greater variability in the labour force participation rates of females.

B. MALE POPULATION AND LABOUR FORCE

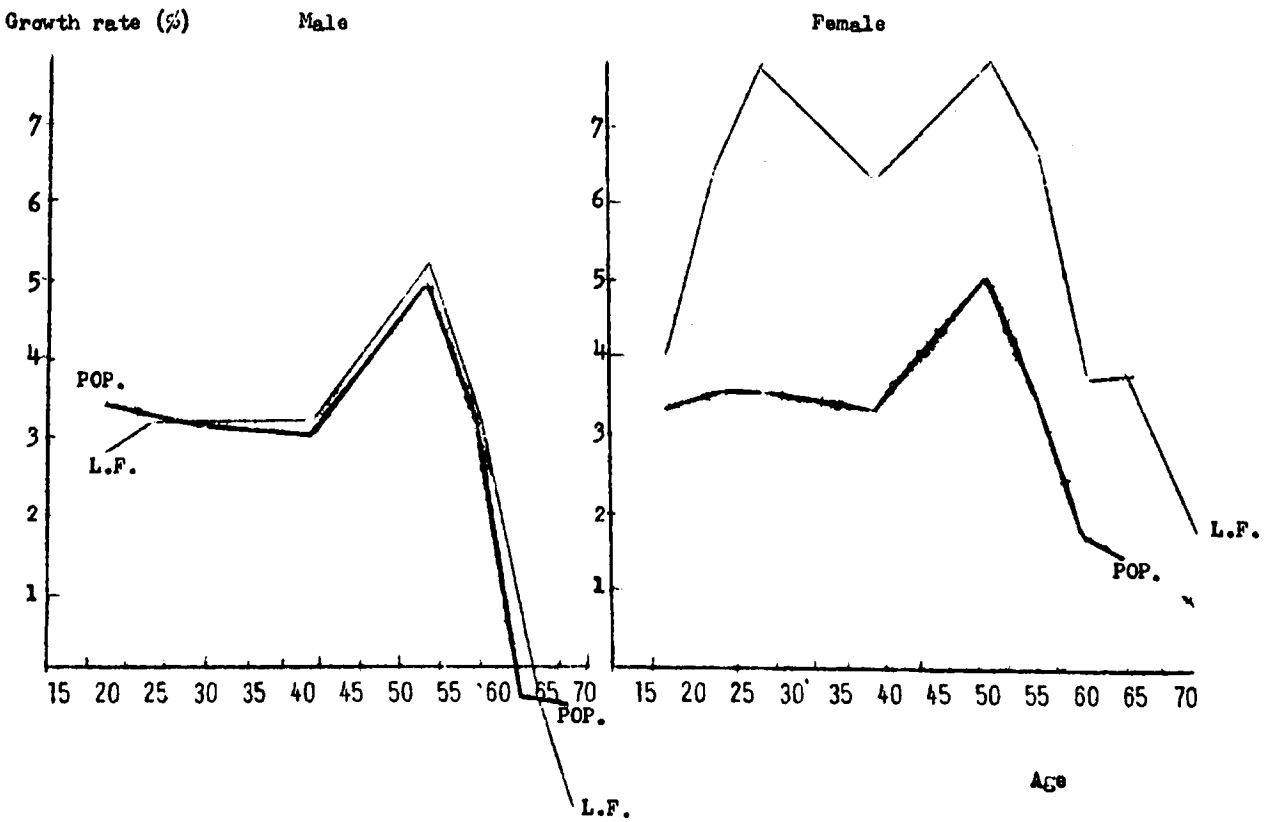
For purposes of analysis, population and labour force have been divided into four age classes (15-24, 25-54, 55-64, and 65+). Rates of growth of male population and labour force for these age classes are shown in table 8. At the bottom of the table are shown the simple linear correlation coefficients between the growth rate of population and the growth rate of labour force for each age group.

/Table 7.

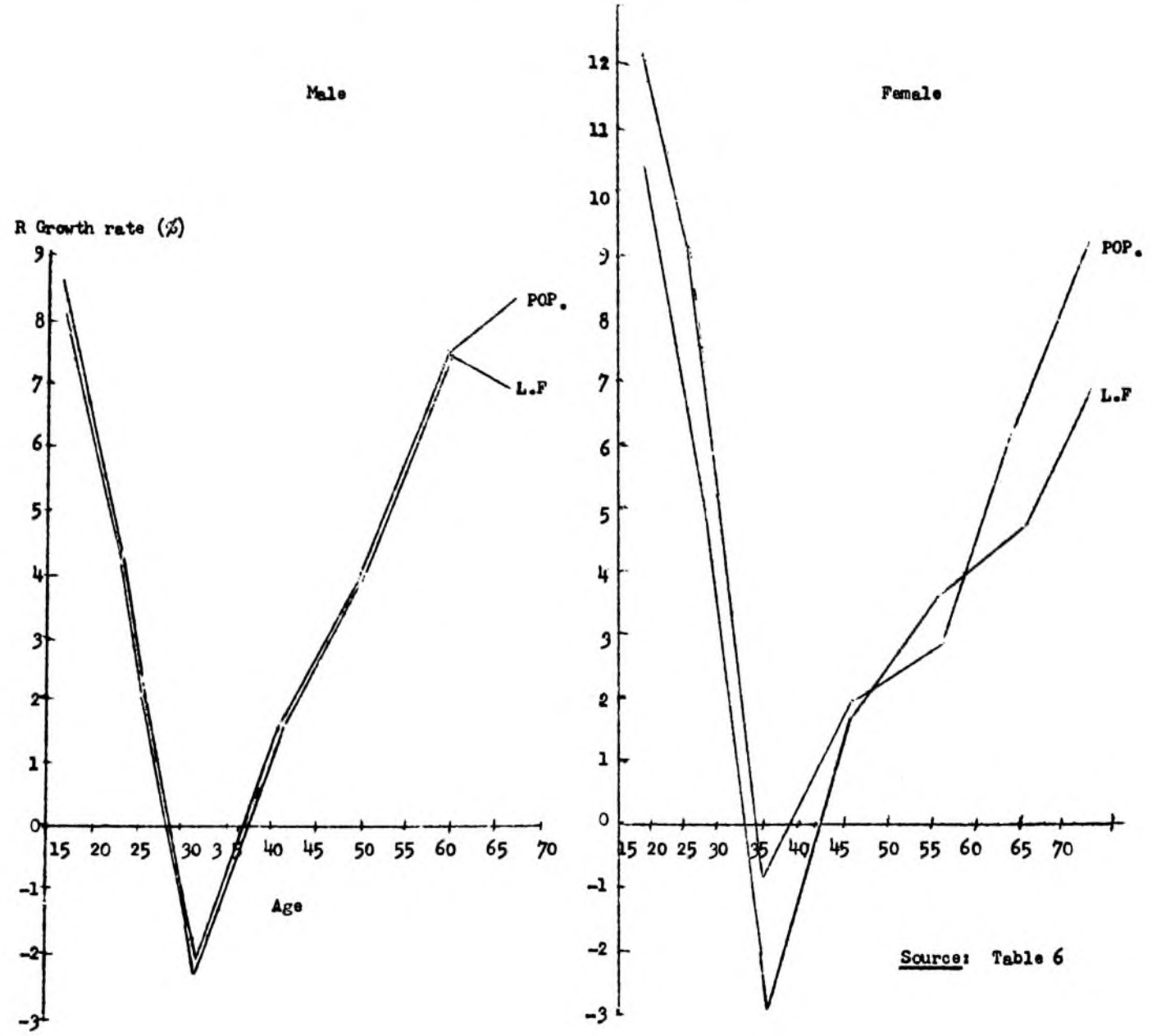
Graph 3.a Growth rates of population and labour force, by sex and age group, Australia, 1961-1971



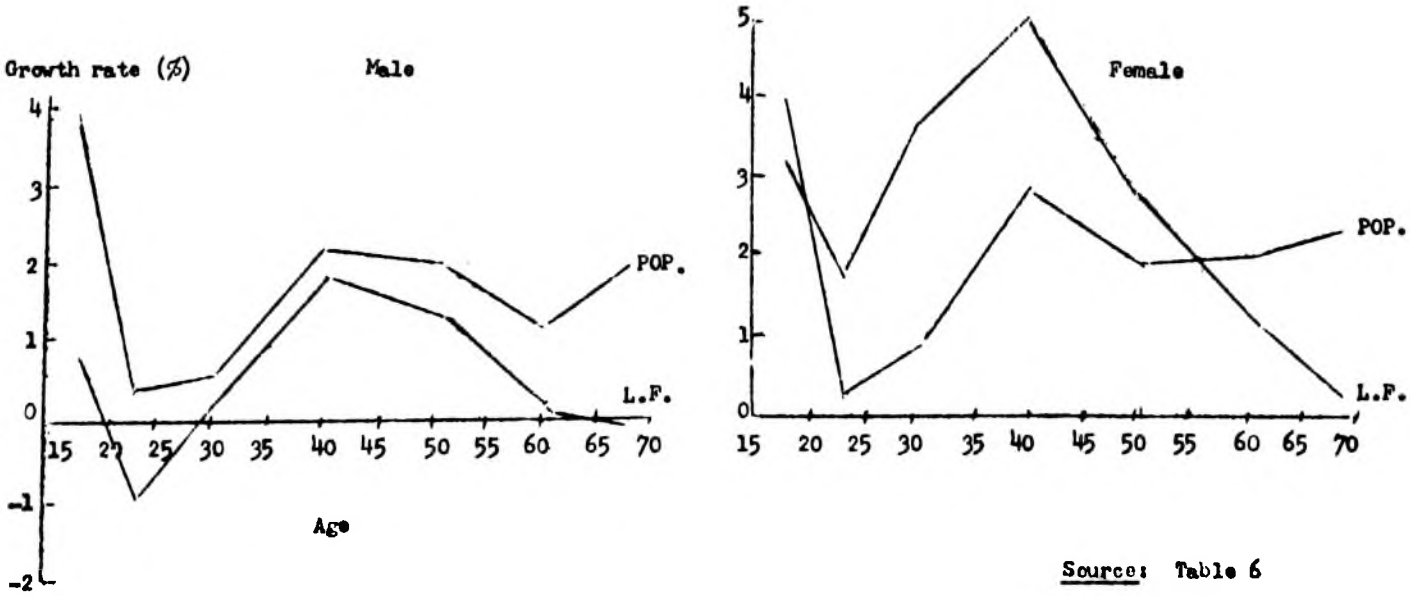
Graph 3.b Growth rates of population and labour force, by sex and age group, Fiji, 1956-1966



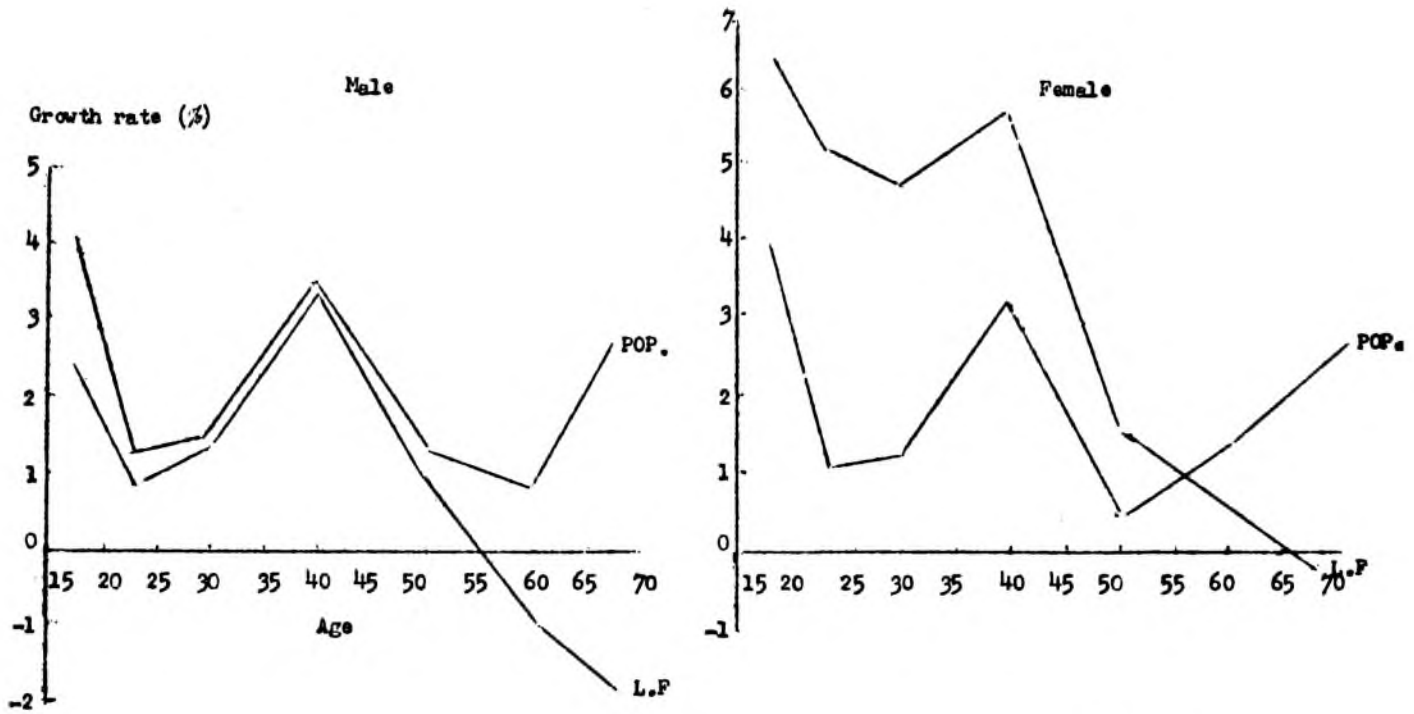
Graph 3.c Growth rates of population and labour force, by sex and age group, Hong Kong, 1961-1971



Graph 3.d Growth rates of population and labour force, by sex and age group, Indonesia, 1961-1971

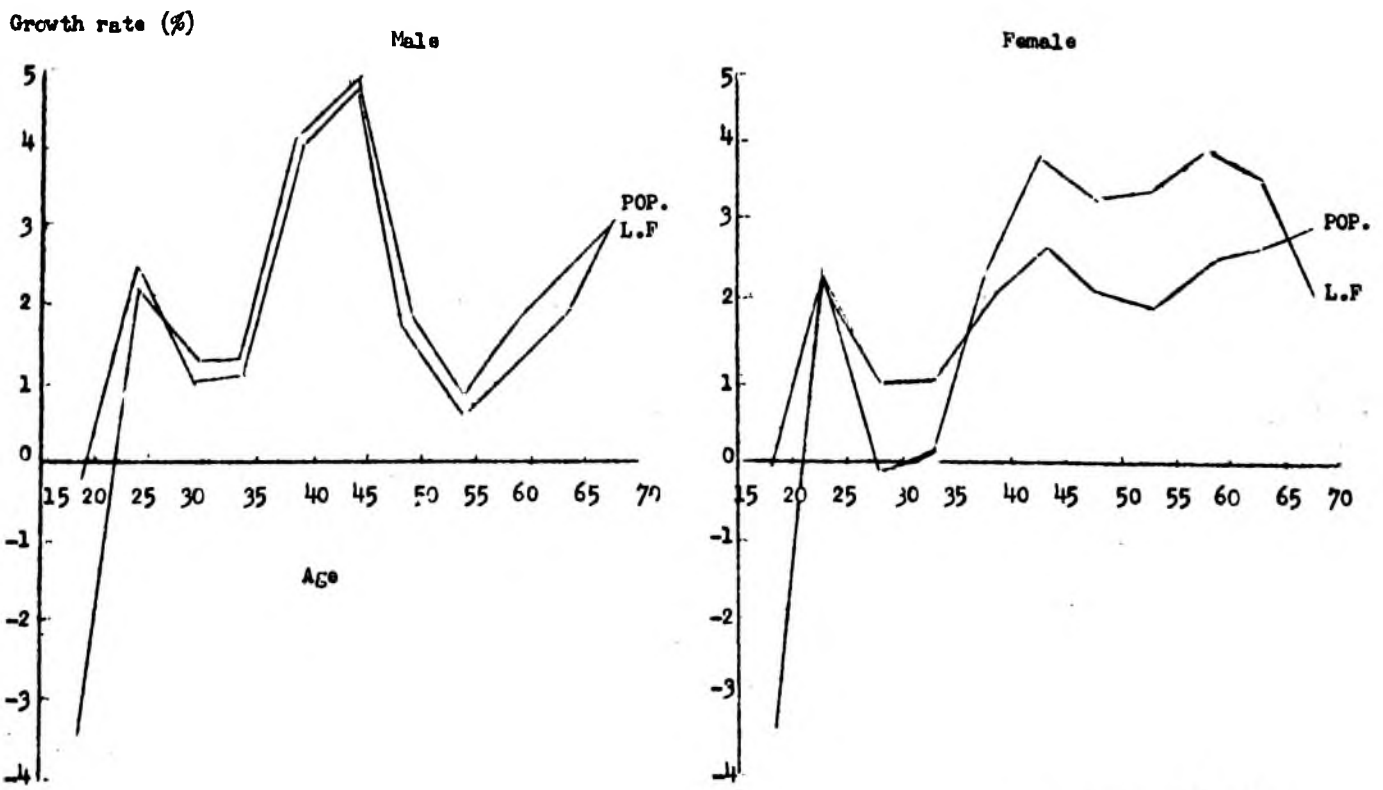


Graph 3.e Growth rates of population and labour force, by sex and age group, Iran, 1956-1966



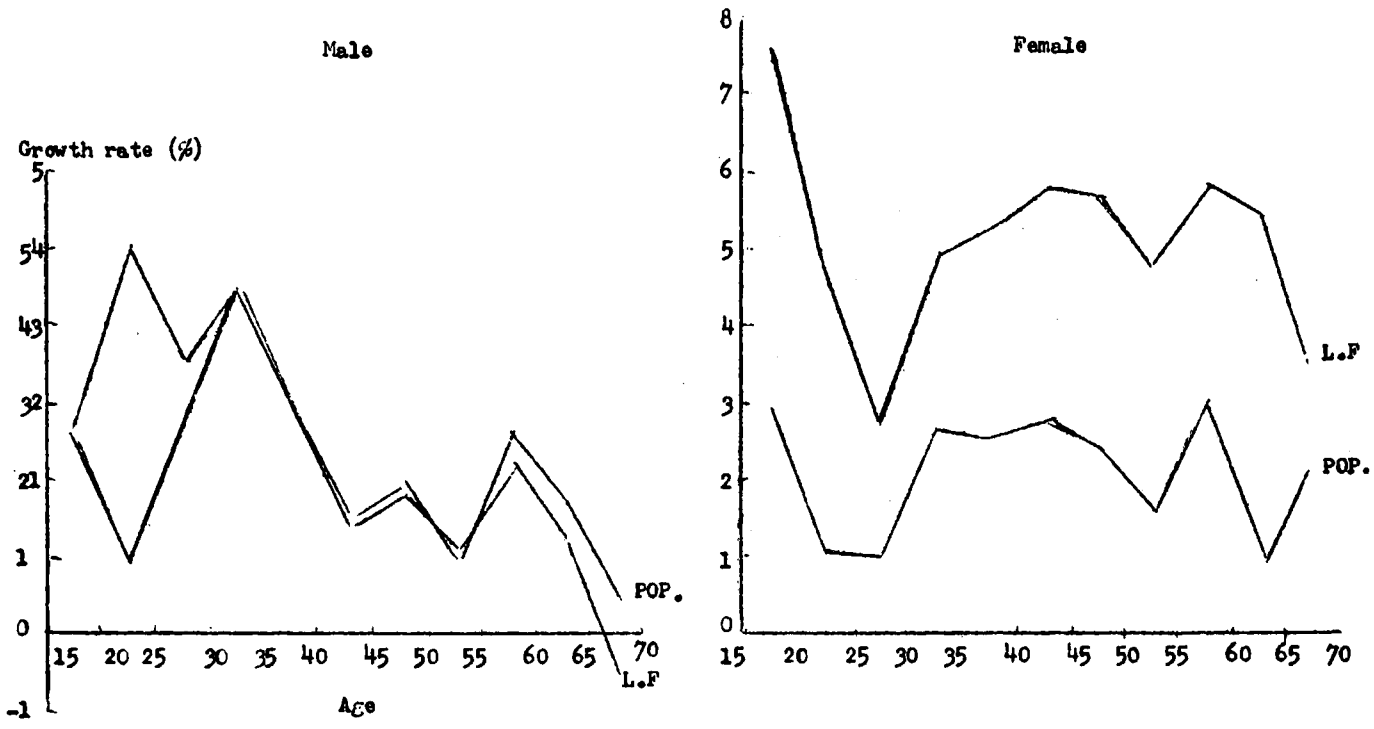
Source: Table 6

Graph 3.f Growth rates of population and labour force, by sex and age group, Japan 1960-1970



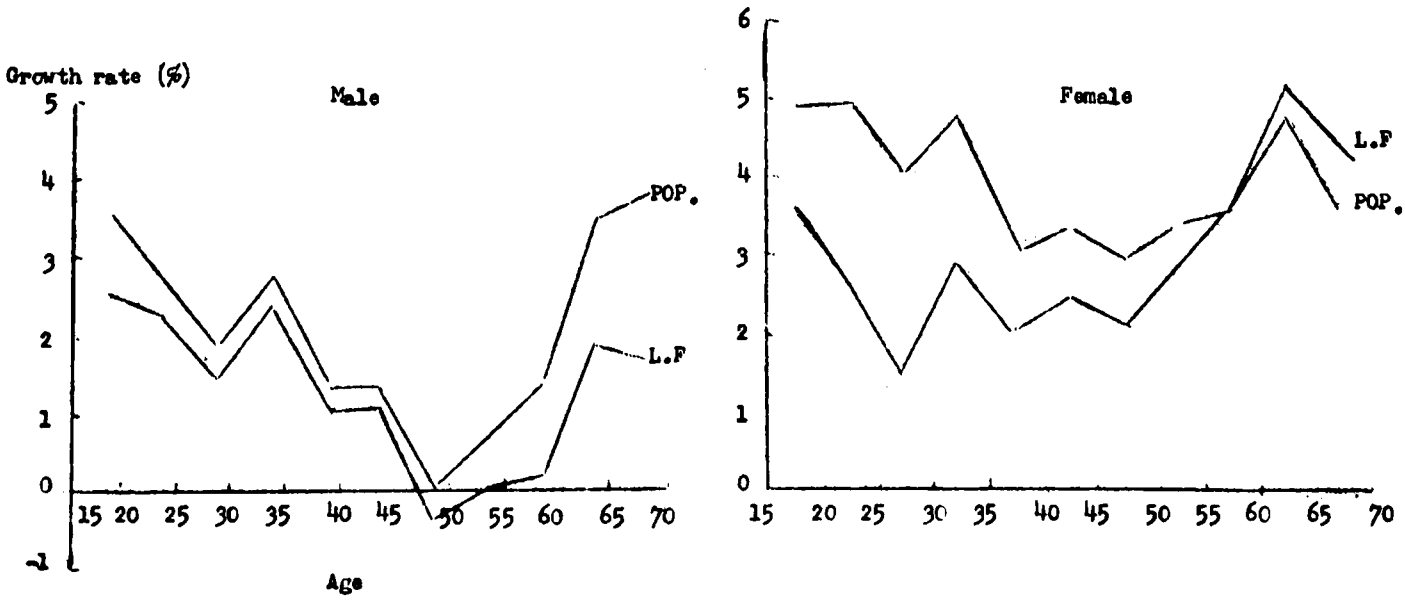
Source: Table 6

Graph 3.g Growth rates of population and labour force, by sex and age group, Rep. of Korea, 1960-1970



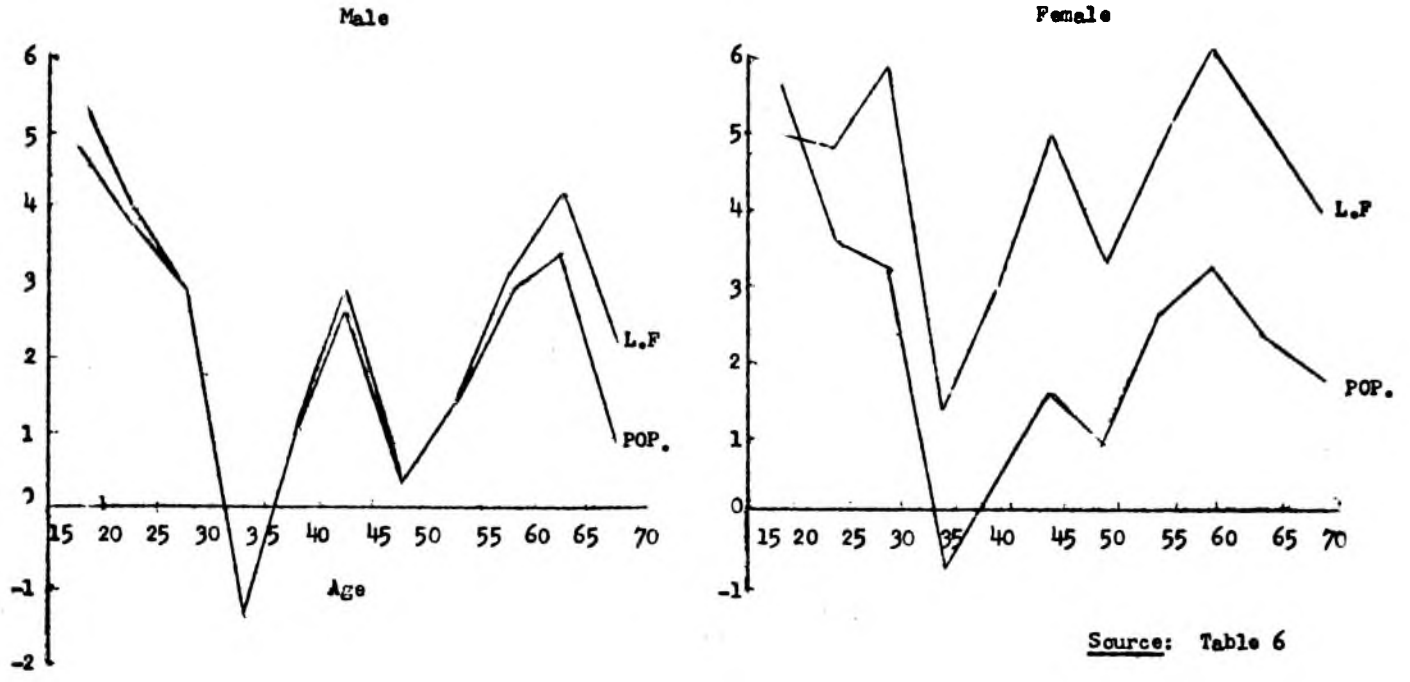
Source: Table 6

Graph 3.h Growth rates of population and labour force, by sex and age group, Malaysia (West), 1957-1970



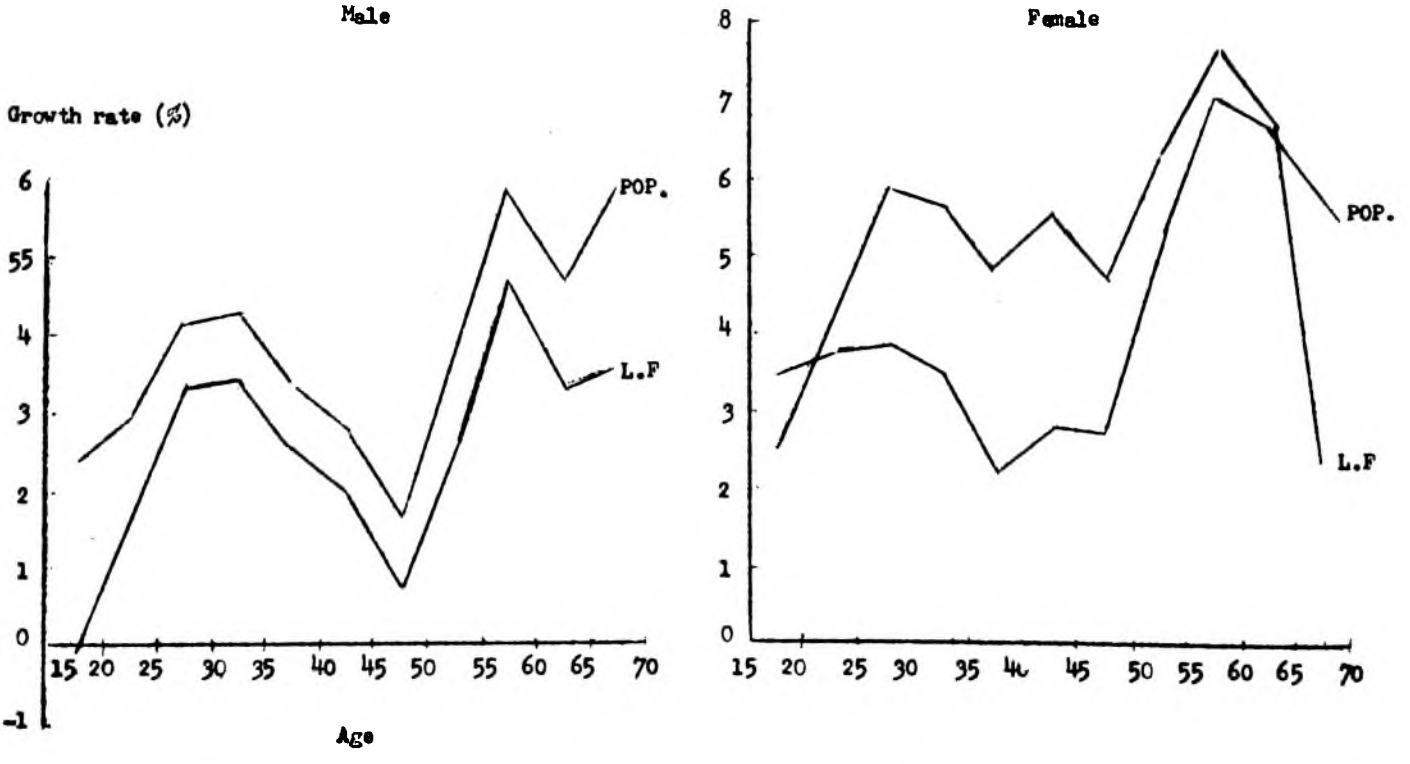
Source: Table 6

Graph 3.i. Growth rates of population and labour force, by sex and age group, New Zealand, 1961-1966



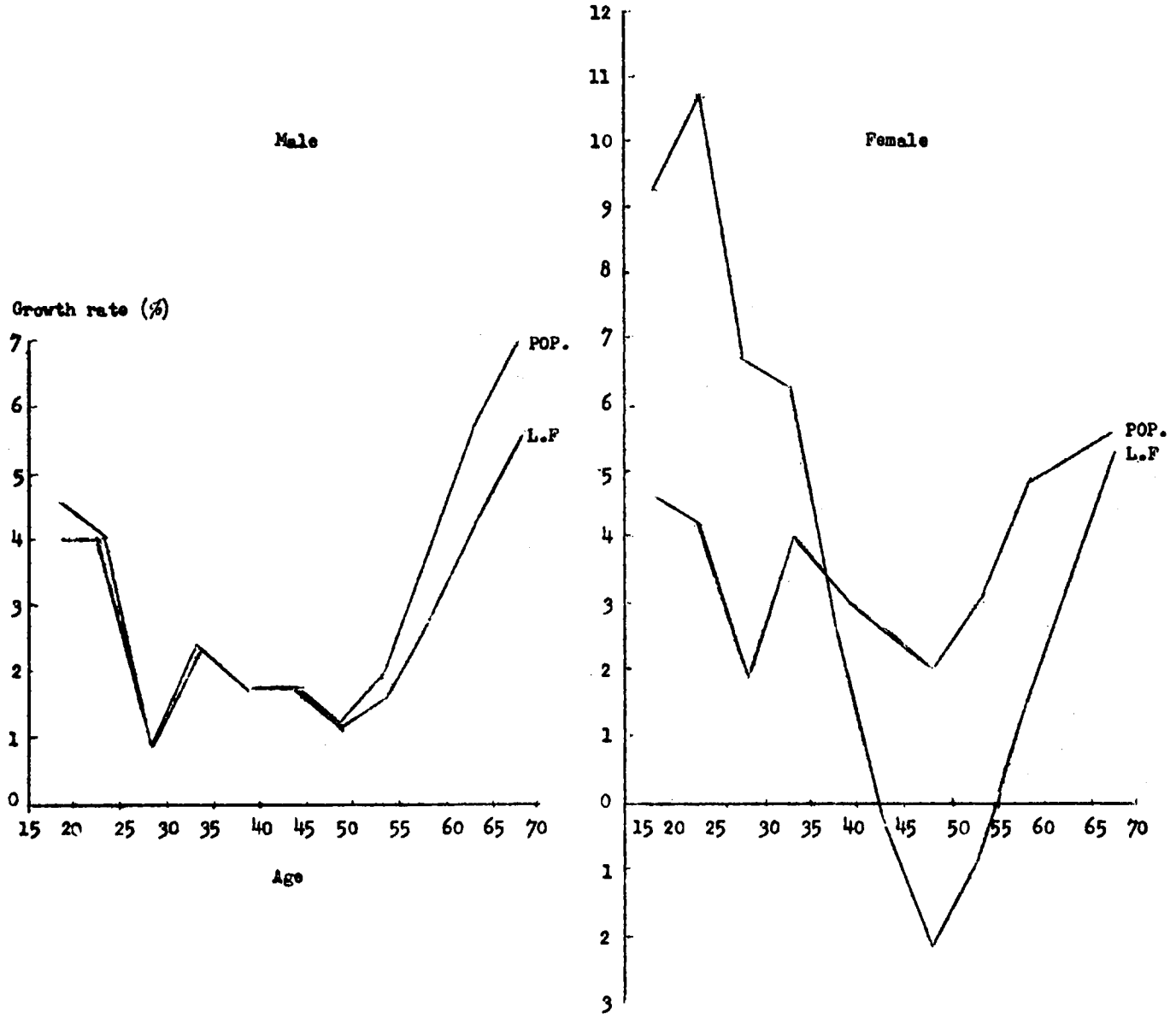
Source: Table 6

Graph 3.j Growth rates of population and labour force, by sex and age group, Philippines, 1960-1970



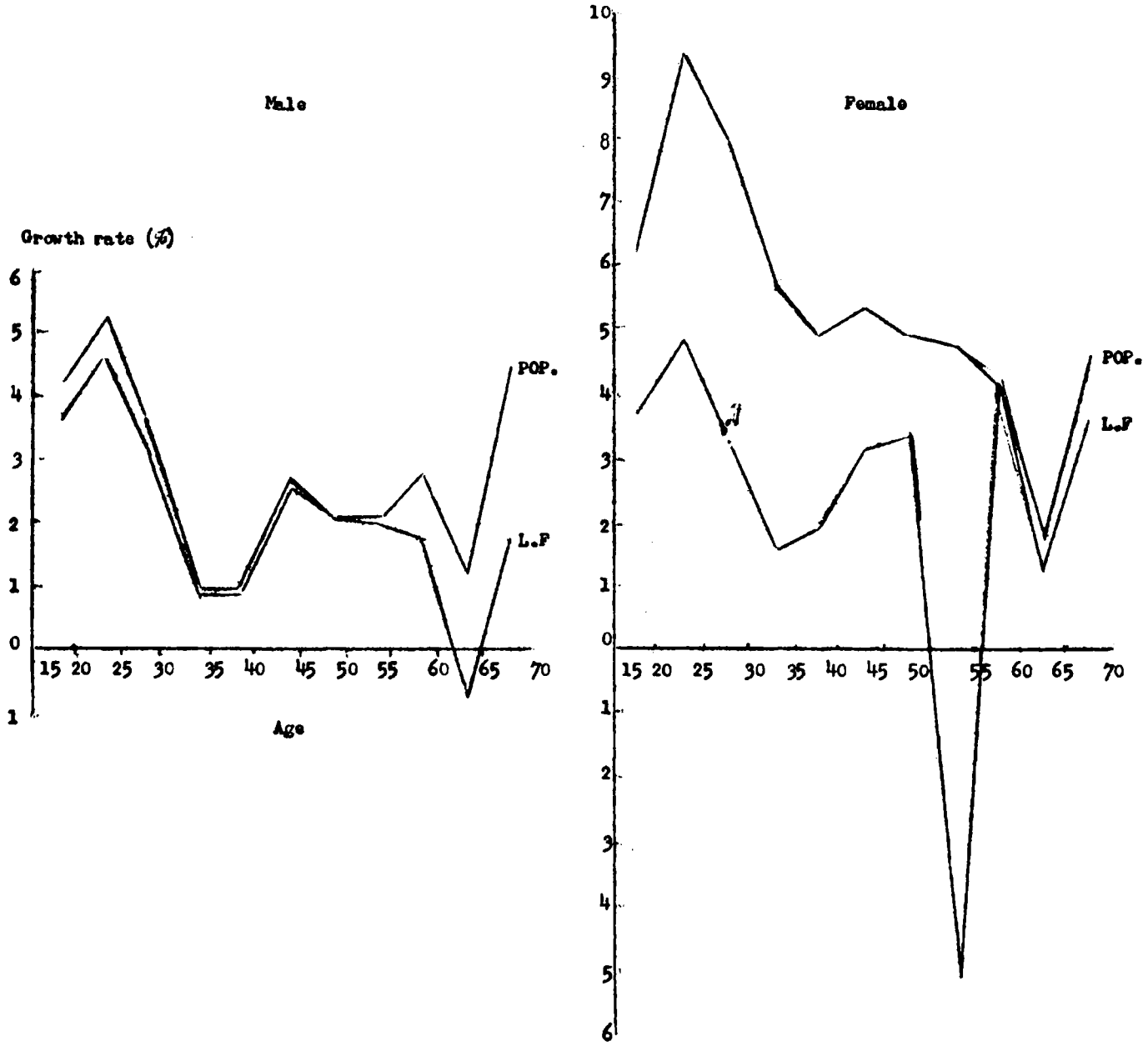
Source: Table 6

Graph 3.k Growth rates of population and labour force, by sex and age group, Singapore, 1957-1970



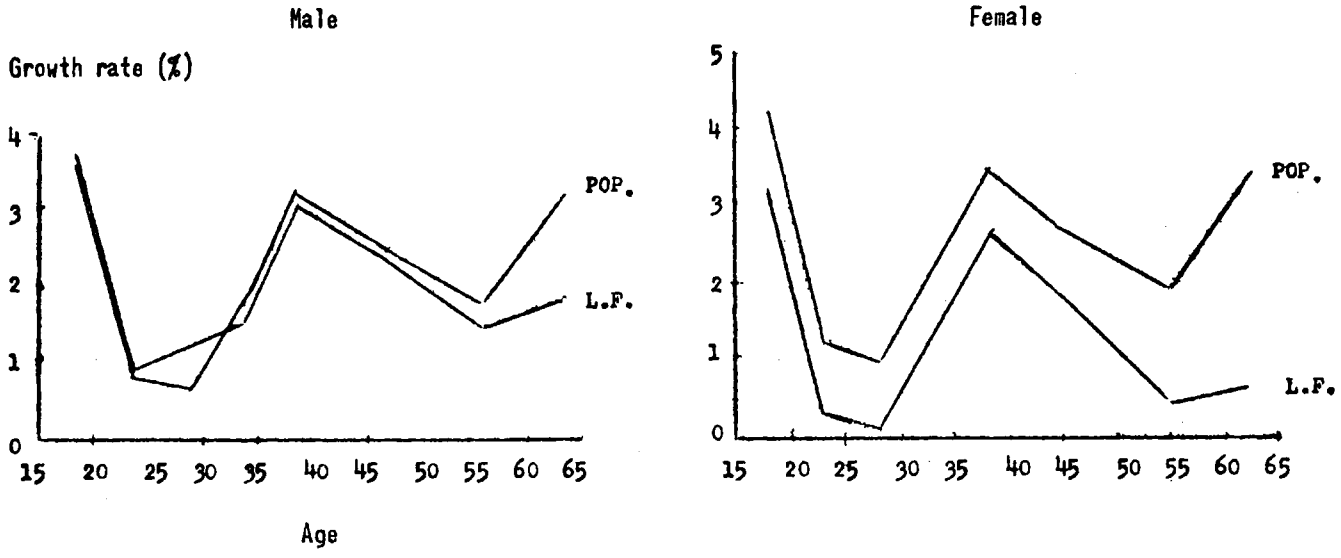
Source: Table 6

Graph 3.1 Growth rates of population and labour force, by sex and age group, Sri Lanka, 1963-1971



Source: Table 6

Graph 3.m. Growth rates of population and labour force, by sex and age group, Thailand, 1960-1970



Source: Table 6

Table 7. Linear correlation coefficients between rates of growth of population and rates of growth of labour force for specified age classes by country and by sex

Country	Correlation coefficients	
	Male	Female
Australia	0.81	0.06
Fiji	0.96	0.71
Hong Kong	0.99	0.96
Indonesia	0.59	0.28
Iran	0.48	0.47
Japan	0.89	0.91
Malaysia (West)	0.86	0.59
New Zealand	0.96	0.80
Philippines	0.91	0.43
Rep. of Korea	0.61	0.56
Singapore	0.97	0.42
Sri Lanka	0.78	0.23
Thailand	0.91	0.81
Mean	0.83	0.56
Standard deviation	0.16	0.26

Source: Table 6.

Table 8. Growth rates of male population and labour force, by age group and sex, in selected countries of the ESCAP region, 1956-1971

(in percentages)

Country	Census year I	Census year II	Age group 15-24 Population	15-24 Labour force	25-54 Population	25-54 Labour force	55-64 Population	55-64 Labour force	65+ Population	65+ Labour force
Australia	1961,	1971	3.72	2.53	1.41	1.04	2.40	1.90	1.51	-0.24
Fiji	1956,	1966	3.22	2.80	3.14	3.17	1.35	1.79	-0.43	-1.79
Hong Kong	1961,	1971	6.68	5.88	0.68	0.69	7.38	7.25	3.17	6.63
Indonesia	1961,	1971	2.33	-0.15	1.35	0.95	1.05	0.06	1.80	-0.04
Iran	1956,	1966	2.74	1.57	2.15	1.97	0.81	-0.90	2.73	-1.87
Japan	1960,	1970	1.03	0.35	2.27	2.50	1.99	2.35	3.14	2.99
Malaysia (West)	1957,	1970	3.09	2.25	1.35	1.00	2.21	0.72	3.76	1.56
New Zealand	1961,	1966	4.78	4.16	1.12	1.18	3.04	3.45	0.83	2.18
Philippines	1960,	1970	2.60	0.81	3.42	2.53	5.17	4.01	5.75	3.43
Rep. of Korea	1960,	1970	3.43	1.66	2.78	2.64	2.12	1.77	0.37	-0.76
Singapore	1957,	1970	4.29	4.05	1.63	1.57	4.58	3.27	6.98	5.46
Sri Lanka	1963,	1971	3.77	4.51	1.59	1.73	2.10	0.77	4.47	1.38
Thailand	1960,	1970	2.43	2.42	1.99[a/]	1.89[a/]	1.74[b/]	1.42[b/]	3.20[c/]	1.88[c/]
Correlation coefficient			0.88		0.93		0.93		0.85	
Mean			3.39	2.53	1.91	1.76	2.76	2.14	3.25	1.60
Standard deviation			1.32	1.67	0.78	0.75	1.80	1.90	2.42	2.23

Source: Appendix table III.

a/ For age-group 25-49.

b/ For age-group 50-59.

c/ For age-group 60 and over.

For males aged 15-24, rates of growth of population varied from a high of 6.68 per cent in Hong Kong to a low of 1.03 per cent in Japan. The average annual rate of growth was 3.39 per cent. The standard deviation was 1.32 per cent. Rates of growth of labour force varied from a high of 5.88 per cent in Hong Kong to a low of -0.15 per cent in Indonesia. The average rate of growth of labour force was 2.53 per cent. The standard deviation was 1.67 per cent. The correlation coefficient between the two variables was 0.88. The fact that the average rate of growth of population was 1.62 percentage points higher than the average rate of growth of the labour force may have been due to an increase in the number of years of schooling given young males in those countries resulting in a decline in the labour force participation rates.

For the age group 25 to 54, rates of population growth varied from a high of 3.42 per cent in the Philippines to a low of 0.68 per cent in Hong Kong. The average annual rate of growth of male population was 1.91 per cent. The standard deviation was 0.78 per cent. Rates of growth of labour force varied from a high of 3.17 per cent in Fiji to a low of 0.69 per cent in Hong Kong. The average rate of growth of labour force was 1.76 per cent. The standard deviation was 0.75 per cent. The coefficient of correlation between the growth rate of population and labour force in this age group was 0.93.

For the age groups 55-64, rates of population growth varied from a high of 5.17 per cent in the Philippines to a low of 0.81 per cent in Iran. The average rate of growth of population was 2.76 per cent. The standard deviation was 1.80 per cent. Rates of growth of labour force varied from a high of 7.25 per cent in Hong Kong to a low of -0.90 per cent in Iran. The average rate of growth of labour force was 2.14 per cent. The standard deviation was 1.90 per cent. The coefficient of correlation between the growth rate of population and labour force in this group was 0.93. In age groups 25 to 54 and 55 to 64, male population grew more rapidly than labour force on average, thus indicating a decline in male labour force participation rates. This pattern was closely adhered to by most countries in the study, as evidenced by the high coefficients of correlation between rates of growth of population and labour force in both age groups.

For age group 65+, rates of population growth varied from a high of 8.17 per cent in Hong Kong to a low of -0.43 per cent in Fiji. The average rate of growth of the population was 3.25 per cent. The standard deviation was 2.42 per cent.

/Rates of

Rates of growth of labour force varied from a high of 6.63 per cent in Hong Kong to a low of -1.87 per cent in Iran. The average rate of growth of the labour force was 1.60 per cent. The standard deviation was 2.23 per cent. The coefficient of correlation between the two variables was 0.85. For this age group, the average growth rate of labour force was less than half of the average growth rate of total population. This may be due to the expansion of modern industries which stipulate maximum age limits for employment and the withdrawal of older persons from the labour force. This may be due to the increasing number of entrants of persons at younger ages, combined with employer's preference for young persons who are more amenable to technological change, and the increased availability of social security benefits for retired older persons.

C. FEMALE POPULATION AND LABOUR FORCE

For purposes of analysis and comparison, female population and labour force were divided into age classes corresponding to those used in the case of males. Rates of growth for these age classes are shown in table 9. At the bottom of the table are shown the simple linear correlation coefficients between the growth rates of population and the growth rates of labour force in each age group.

For females in age group 15-24, rates of growth of population ranged from a high of 8.03 per cent in Hong Kong to a low of 1.04 per cent in Japan. The average rate of growth of population was 3.55 per cent. The standard deviation was 1.63 per cent. Rates of growth of labour force varied from a high of 10.27 per cent in Hong Kong to a low of 0.73 per cent in Japan. The average rate of growth of the female labour force was 5.17 per cent. The standard deviation was 2.81 per cent. The correlation coefficient between the two variables was 0.71. The fact that the average rate of growth of labour force was 1.62 percentage points higher than the average rate of growth of population may have been due to an increasing age of marriage for females resulting in increased female labour force participation rates, particularly for those aged 15-24 years.

The average rate of growth of female population in this age group was only 0.16 percentage points greater than the average rate of growth of male population in this group. Yet the average rate of growth of female labour force aged 15-24 was 2.62 percentage points greater than the average rate of growth of the male labour force.

/Table 9.

Table 9. Growth rates of female population and labour force, by age group and sex, in selected countries of the ESCAP region, 1956-1971

(in percentages)

Country	Census year		Age group							
	I	II	15-24		25-54		55-64		65+	
			Population	Labour force	Population	Labour force	Population	Labour force	Population	Labour force
Australia	1961,	1971	3.93	3.42	1.52	5.79	2.55	4.88	1.92	1.27
Fiji	1956,	1966	3.46	5.40	3.53	7.06	2.76	5.66	1.68	4.10
Hong Kong	1961,	1971	8.03	10.27	0.47	0.91	4.37	6.22	6.51	8.88
Indonesia	1961,	1971	2.12	2.50	1.66	3.82	1.96	1.19	2.24	0.27
Iran	1956,	1966	2.61	6.01	1.70	4.44	1.34	0.57	2.31	-0.21
Japan	1960,	1970	1.04	0.73	1.99	2.40	2.83	3.72	2.81	2.32
Malaysia (West)	1957,	1970	3.27	4.94	2.26	3.71	4.14	4.16	3.54	4.32
New Zealand	1961,	1966	4.67	4.85	1.21	3.85	2.79	5.63	1.73	3.85
Philippines	1961,	1970	3.61	3.23	3.33	5.47	6.94	7.39	5.79	2.68
Rep. of Korea	1960,	1970	2.05	6.08	2.11	4.80	1.89	5.68	2.14	3.53
Singapore	1957,	1970	4.46	10.03	2.81	2.76	4.91	2.14	5.60	5.33
Sri Lanka	1963,	1971	4.05	7.79	2.59	5.78	3.44	2.99	4.80	2.71
Thailand	1960,	1970	2.86	1.91	2.21[a/]	1.39[a/]	1.87[b/]	0.46[b/]	3.39[c/]	0.67[c/]
Correlation coefficient			0.71		0.55		0.53		0.57	
Mean			3.55	5.17	2.11	4.01	3.21	3.90	3.42	3.06
Standard deviation			1.63	2.81	0.81	1.74	1.48	2.19	1.63	2.31

Source: Appendix table III.

a/ For age-group 25-49.

b/ For age-group 50-59.

c/ For age-group 60 and over.

For the age group 25-54, the largest rate of growth of population was 3.53 per cent in Fiji and the smallest rate of growth was 0.47 per cent in the case of Australia. The average rate of growth of female population was 2.11 per cent and the standard deviation was 0.81 per cent. For females in age group 25-54, the largest rate of growth of the labour force was 7.06 per cent in Fiji and the smallest rate of growth was 0.91 per cent in the case of Hong Kong. The average rate of growth of labour force was 4.01 per cent. The standard deviation was 1.79 per cent. The coefficient of correlation between population and labour force was 0.55. Thus, the average rate of growth of labour force was 1.90 percentage points greater than the average rate of growth of population. This stands in sharp contrast to the pattern for males aged 25-54 where the average growth rates of population exceeded labour force.

For the age group 55-64, the largest rate of growth of the population was 6.94 per cent in the Philippines and the smallest rate of growth was 1.34 per cent in Iran. The average rate of growth of population was 3.21 per cent and the standard deviation was 1.48 per cent. The highest rate of growth of labour force for females aged 55-64 was 7.39 per cent in the Philippines and the lowest rate of growth was 0.57 per cent in Iran. The average rate of growth of the labour force was 3.90 per cent. The standard deviation was 2.19 per cent. The coefficient of correlation between population and labour force was 0.53. Thus, the average rate of growth of the female labour force aged 55-64 was 0.69 percentage points greater than the average rate of growth of the female population of that age group. This also stands in sharp contrast to the pattern for males aged 55-64 where the average growth rate of population also exceeded that of the labour force.

For the age group 65+, the largest rate of growth of the population was 6.51 per cent in Hong Kong. The smallest rate of growth was 1.68 per cent in Fiji. The average rate of growth of female population aged 65+ was 3.42 per cent. The standard deviation was 1.63 per cent. The largest rate of growth of labour force for females in the same age group was 8.8 per cent in Hong Kong. The largest rate of decline of labour force for females was -0.21 per cent in Iran. The average rate of growth was 3.06 per cent and the standard deviation was 2.31 per cent. The coefficient of correlation between rates of growth of population and labour force was 0.57.

/The average

Table 10. Average annual rates of growth of population and labour force and correlation coefficients, by age class for selected countries of the ESCAP region

Age class	Average annual rates of growth				Correlation coefficients between rates of growth of population and labour force	
	Population		Labour force			
	Male	Female	Male	Female	Male	Female
15-24	3.39	3.55	2.53	5.17	0.88	0.71
25-54	1.91	2.11	1.76	4.01	0.93	0.55
55-64	2.76	3.21	2.14	3.90	0.93	0.53[a/]
65+	3.25	3.42	1.60	3.06	0.85	0.57

Source: Tables 8 and 9.

a/ Not statistically significant at the 05 level.

The average rate of growth of population is 0.36 percentage points more than the rate of growth of labour force in the 65+ age group. This parallels the pattern observed in the male population and labour force aged 65+ and may be attributed to a relative decline in employment opportunities for aged women in growing urban industries, combined with a lack of growth of suitable employment opportunities in rural sectors.

D. COMPARISON OF MALE AND FEMALE RATES OF CHANGE OF POPULATION AND LABOUR FORCE BY AGE CLASS

Table 10 presents the average growth rates and correlation coefficients as contained in tables 8 and 9. It indicates that, for avery age class, the average of female population growth rates exceeds the average of male population growth rates. This may reflect a relatively more rapid improvement in female life expectancy as well as relatively improved techniques for enumerating female population.

In every age category, female labour force has been growing more rapidly than male labour force. The differentials are significantly greater than was the case for population growth rates. Since in every age category male population is growing more rapidly than male labour force, male activity rates must be declining in every age category. In the case of females, however, as the average of the annual rates of growth of labour force is greater than the average of annual rates of growth of population in every age category, female activity rates are increasing in every age category.

Male and female patterns differ markedly in regard to coefficients of correlation between rates of growth of population and rates of growth of labour force. For each age class the coefficient is considerably higher for males. Peak values of the correlation coefficients for males lie in the 25-64 age category, while the peak value for females lies in the 15-24 category. In general, the correlation coefficients are highest in those age-sex categories where labour force participation rates are highest.

Chapter VII

GROWTH OF POPULATION AND CHANGES IN AGE-SPECIFIC ACTIVITY RATES

A. INTRODUCTION

The age-specific activity rate, or the ratio of the economically active population in a specified age group to the total population in that age group, is the measure normally used to study the interrelationship between population and labour force by sex and age. In large measure, variations in this rate are the result of non-demographic factors. If it is assumed that age-specific activity rates are entirely independent of demographic forces, it would be possible to decompose labour force change into demographic and non-demographic components.1/

/This

1/ Let P_i = population of age class i,
L_i = labour force of age class i,
A_i = age specific activity rate of age class i,
$L_i = A_i \cdot P_i$

If A and P are assumed to be mutually independent variables, it follows that: $\frac{dL_i}{dt} = A_i \frac{dP_i}{dt} + P_i \frac{dA_i}{dt}$

$A_i \frac{dP_i}{dt}$ would be the demographic component of labour force change, and

$P_i \frac{dA_i}{dt}$ would be the non-demographic component of labour force change.

For small discrete changes, between time period o and t:

$A_{o,i}(P_{t,i}-P_{o,i})$ would be the demographic component and

$P_{o,i}(A_{t,i} - A_{o,i})$ would be the non-demographic compcnent.

This method is simple and practical in certain cases,[2/] but the assumption that activity rates are independent of rates of population growth may not be valid. For example, pregnancies and births may prevent women from working; overcrowding of population in certain areas or increasing pressure on arable land may favour migration which will result in changes in activity rates. Decrease in family per capita income caused by growth of family size may compel young people and women to engage in economic activity.

This chapter will be devoted to an analysis of age -specific activity rates and their relationship to population growth. It seeks to determine whether there is a significant degree of association between changes in population and changes in age -specific activity rates. The analysis will be conducted for each sex separately.

Table 11 presents age-specific activity rates by sex in selected countries of the ESCAP region, 1953-1971. This information is illustrated in graphs 4.a - 4.m. They indicate that, for most countries, male labour force participation rates rise rapidly after age 15 and reach a plateau which is maintained until after age 50. Thereafter, male labour force participation rates decline rapidly. The age pattern of female age-speicific activity rates varies sharply between countries. In the developed countries, Australia, New Zealand and Japan, peak activity rates are found near 20 years of age. Thereafter, activity rates decline rapidly. In the less developed countries of the region, female labour force activity rates tend to decline slowly with age.

2/ See James N. Ypsilantis, "The relationship between population changes and labour force changes: Implications for manpower projections", in Interrelation between Population and Manpower Problems, op.cit., pp. 98-111.

Table 11. Age-specific activity rates, by sex, in selected countries of the ESCAP region, 1953-1971

Country	Both sexes			Male			Female		
Australia	1961	1966	1971	1961	1966	1971	1961	1966	1971
All ages	40.2	42.0	41.8	59.6	58.8	56.8	20.4	25.0	26.7
15 +	57.4	59.5	58.7	85.7	83.9	80.3	28.9	35.2	37.1
15 - 19	67.1	64.2	54.0	69.6	66.2	55.8	64.4	62.2	52.1
20 - 24	73.7	76.7	74.1	94.9	93.8	89.1	50.8	58.9	58.6
25 - 34	65.0	66.4	67.6	98.4	97.4	94.8	25.5	33.3	38.9
35 - 44	63.7	68.1	70.5	98.3	97.3	94.9	27.5	37.0	44.4
45 - 54	62.9	65.5	66.9	96.8	95.5	93.0	27.2	34.9	40.0
55 - 59	58.5	59.7	58.2	92.7	91.2	88.4	22.3	27.2	28.3
60 - 64	44.9	47.7	45.0	79.6	79.5	75.6	13.3	16.5	16.0
65 +	13.9	13.3	11.7	26.4	24.9	22.2	4.4	4.9	4.2
Fiji	1956	1966		1956	1966		1956	1966	
All ages	27.0	26.4		49.4	48.0		3.0	4.0	
15 +	50.0	49.5		90.3	89.9		5.7	7.5	
15 - 19	40.3	39.5		78.2	72.6		6.0	6.3	
20 - 24	53.1	53.2		96.7	95.9		8.4	11.3	
25 - 29	53.0	53.5		98.0	98.2		6.0	9.4	
30 - 34	52.6	54.3		98.2	98.6		5.2	7.8	
35 - 39	52.8	53.7		98.0	98.5		4.9	6.9	
40 - 44	54.9	53.8		98.1	98.1		5.4	6.6	
45 - 49	55.0	54.1		97.6	98.1		5.1	6.1	
50 - 54	53.2	54.1		95.7	96.2		4.3	5.9	
55 - 59	52.3	52.1		92.4	93.6		3.9	5.3	
60 - 64	48.9	47.8		81.7	87.0		2.8	3.4	
65 +	35.7	29.0		57.3	49.9		1.7	2.2	

/3.

Table 11 (Cont'd)

Country	Both sexes			Male			Female		
Hong Kong	1961	1966	1971	1961	1966	1971	1961	1966	1971
All ages	38.7	39.2	42.0	53.8	51.9	54.8	22.8	26.2	28.8
15 +	64.1	63.6	64.0	90.4	86.1	84.7	36.8	41.0	42.8
15 - 19	51.4	51.9	53.3	54.3	52.4	50.4	47.9	51.3	56.4
20 - 24	72.0	77.5	80.2	89.2	92.1	90.2	51.1	60.8	69.5
25 - 34	68.2	69.7	72.0	97.8	98.6	98.4	33.9	36.8	39.6
35 - 44	69.7	71.7	70.2	98.3	98.9	98.6	38.0	43.6	38.7
45 - 54	69.7	70.5	68.8	96.9	97.6	96.6	42.1	42.7	38.9
55 - 64	51.2	52.7	57.9	85.3	81.6	84.2	28.2	30.9	33.9
65 +	20.8	19.7	21.7	46.4	39.5	39.8	9.9	11.3	12.6
Indonesia	1961	1971		1961	1971		1961	1971	
All ages	35.9	33.9		52.7	46.0		19.6	22.1	
15 +	59.2	57.1		88.9	80.4		31.2	35.6	
15 - 19	48.5	38.7		66.7	48.9		30.6	28.6	
20 - 24	53.9	51.8		87.2	76.5		27.4	31.8	
25 - 34	58.3	61.0		94.4	91.3		27.2	35.8	
35 - 44	66.0	67.2		96.8	93.4		33.3	41.3	
45 - 54	68.0	66.9		95.6	90.1		39.8	43.3	
55 - 64	64.7	57.9		89.6	81.1		39.1	36.2	
65 +	49.7	40.8		72.8	60.5		27.8	22.8	

Table 11 (Cont'd)

Country	Both sexes			Male			Female		
Iran	1956	1966		1956	1966		1956	1966	
All ages	32.0	30.2		56.9	50.7		6.2	8.3	
15 +	52.1	50.4		93.4	86.5		9.4	12.2	
15 - 19	46.4	41.7		80.7	68.0		12.1	15.5	
20 - 24	48.9	50.3		94.2	90.8		9.3	14.2	
25 - 34	53.1	55.0		98.3	97.2		8.6	12.4	
35 - 44	58.1	59.2		98.9	97.7		9.7	12.4	
45 - 54	55.1	55.6		97.8	93.8		10.1	11.4	
55 - 64	53.8	44.7		93.7	78.9		8.7	8.1	
65 +	41.4	27.0		74.1	46.8		5.8	4.5	
Japan	1960	1965	1970	1960	1965	1970	1960	1965	1970
All ages	47.1	49.1	50.9	58.5	61.2	63.2	36.2	37.5	38.7
15 +	67.4	66.0	67.1	85.0	83.4	84.3	50.9	49.8	50.3
15 - 19	49.8	38.1	36.1	50.7	38.6	36.5	48.9	37.6	35.0
20 - 24	77.5	78.4	77.2	86.8	87.1	83.6	68.4	69.7	69.2
25 - 29	73.0	72.0	71.5	96.0	97.9	98.2	50.1	46.4	44.4
30 - 34	73.8	73.4	72.9	97.1	98.6	98.6	50.7	48.0	46.8
35 - 39	74.0	78.3	77.5	97.2	98.4	98.5	54.4	58.3	55.9
40 - 44	75.2	78.5	81.0	97.1	98.3	98.3	57.0	62.1	63.6
45 - 49	75.3	78.6	79.9	96.7	97.8	98.1	56.5	62.6	64.3
50 - 54	72.9	75.8	77.2	95.1	97.2	97.3	51.9	57.3	60.5
55 - 59	67.4	71.3	72.6	89.5	93.8	94.2	45.8	50.1	53.4
60 - 64	60.1	61.4	63.3	81.9	85.3	85.8	39.1	39.3	43.1
65 +	35.8	34.0	34.9	54.5	55.1	54.4	21.4	17.5	19.6

Table 11 (Cont'd)

Country	Both sexes			Male			Female		
Malaysia (West)	1957	1970		1957	1970		1957	1970	
All ages	34.5	32.7		50.5	44.4		17.4	20.9	
15 +	59.7	57.2		87.3	78.9		29.9	35.6	
15 - 19	44.0	42.4		60.0	52.3		27.9	32.7	
20 - 24	61.6	63.8		92.7	86.9		31.2	41.7	
25 - 29	61.9	65.5		97.5	93.4		27.7	38.2	
30 - 34	64.5	66.2		97.8	94.3		30.4	38.8	
35 - 39	66.7	66.2		97.7	94.1		34.1	39.8	
40 - 44	68.5	66.3		97.2	93.1		35.3	39.8	
45 - 49	69.8	65.5		96.2	91.4		36.3	40.5	
50 - 54	68.4	61.8		93.7	86.6		33.7	36.4	
55 - 59	64.8	53.3		88.4	75.4		29.4	29.0	
60 - 64	55.5	45.1		81.3	65.0		22.3	23.5	
65 +	36.7	29.8		60.8	45.7		11.5	12.8	
New Zealand	1956	1961	1966	1956	1961	1966	1956	1961	1966
all ages	37.6	37.1	38.3	57.0	55.3	55.5	18.0	18.7	21.0
15 +	54.8	55.4	56.9	83.7	83.3	83.1	26.0	27.7	30.9
15 - 19	65.9	64.6	62.3	68.0	65.3	62.7	63.7	64.0	61.9
20 - 24	73.7	72.5	73.7	96.0	94.6	93.6	50.6	49.8	52.9
25 - 29	62.8	61.0	62.2	98.5	98.2	98.3	24.1	22.0	25.1
30 - 49	60.8	62.2	64.3	98.2	98.3	98.7	22.7	25.0	28.6
50 - 54	60.9	62.8	64.0	96.0	96.6	96.8	23.9	27.7	31.4
55 - 59	54.2	57.6	59.3	90.1	91.6	92.7	18.9	22.1	25.4
60 - 64	37.3	39.9	43.0	67.5	69.0	71.9	11.0	12.7	14.6
65 +	13.5	11.5	12.2	25.1	22.0	23.6	3.6	3.3	3.7

Table 11 (Cont'd)

Country	Both sexes			Male			Female		
Philippines	1960	1970		1960	1970		1960	1970	
All ages	31.5	31.0		46.5	43.4		16.3	18.8	
15 +	55.3	51.7		83.6	74.2		27.6	30.2	
15 - 19	44.4	36.1		59.3	46.5		29.6	26.9	
20 - 24	54.3	48.7		80.8	70.4		28.9	29.6	
25 - 29	57.9	57.5		91.3	83.8		26.1	31.9	
30 - 34	59.7	55.9		94.5	86.9		26.3	32.3	
35 - 39	60.1	61.9		95.5	87.8		26.8	34.8	
40 - 44	61.2	61.6		95.4	87.6		27.9	36.4	
45 - 49	62.4	59.7		95.1	86.7		28.9	35.3	
50 - 54	61.8	57.0		93.6	84.0		29.0	33.2	
55 - 59	60.7	55.0		91.7	82.4		28.3	30.2	
60 - 64	58.5	50.3		86.4	75.9		25.5	25.9	
65 +	43.7	33.9		66.8	53.0		21.2	15.5	
Rep.of Korea	1960	1966	1970	1960	1966	1970	1960	1966	1970
All ages	30.2	29.7	33.0	42.9	40.7	42.8	17.3	18.5	23.2
15 +	52.0	55.0	56.2	78.9	81.0	74.8	28.0	32.0	36.9
15 - 19	35.8	42.9	42.8	45.2	52.8	45.9	25.5	32.5	40.3
20 - 24	49.6	54.1	47.1	75.9	81.1	50.3	30.7	36.3	43.9
25 - 29	54.7	60.0	58.6	90.9	93.6	85.7	26.6	29.4	31.7
30 - 34	59.7	63.3	66.2	95.7	95.7	95.6	29.0	32.6	36.3
35 - 39	63.6	64.6	69.5	96.3	95.8	96.6	32.9	37.4	43.1
40 - 44	66.1	67.4	70.2	96.9	95.6	95.9	34.8	40.9	47.2
45 - 49	65.8	67.9	71.4	96.4	95.0	95.2	35.2	41.0	48.6
50 - 54	62.5	63.6	68.3	91.1	92.3	91.9	32.8	36.0	45.2
55 - 59	58.1	55.9	61.2	88.5	84.9	85.4	29.3	30.0	39.1
60 - 54	40.3	38.6	45.5	71.1	63.6	67.9	16.8	17.9	26.9
65 +	22.0	15.6	20.0	39.3	30.1	35.1	9.2	6.3	10.6

Table 11 (Cont'd)

Country	Both sexes			Male			Female		
Singapore	1957	1970		1957	1970		1957	1970	
All ages	33.2	35.5		51.6	50.8		12.7	18.5	
15 +	57.0	56.5		87.7	82.3		21.6	29.5	
15 - 19	42.0	49.5		59.4	55.7		23.4	43.0	
20 - 24	58.6	73.5		92.3	92.9		22.9	53.6	
25 - 29	60.1	64.5		98.0	98.0		16.5	30.8	
30 - 34	62.6	60.6		98.6	98.3		17.3	22.7	
35 - 39	64.5	60.3		98.5	98.4		20.8	19.3	
40 - 44	66.8	60.8		98.0	98.1		26.3	17.8	
45 - 49	67.9	60.0		96.9	96.2		30.1	17.5	
50 - 54	65.4	55.0		93.5	88.1		28.8	17.5	
55 - 59	57.9	46.2		85.1	73.9		24.7	16.2	
60 - 64	41.8	35.0		66.9	55.6		17.1	13.4	
65 +	19.5	17.7		38.9	31.9		6.7	6.5	
Sri Lanka	1953	1963	1971	1953	1963	1971	1953	1963	1971
All ages	51.6	45.9	48.0	73.0	69.2	68.5	26.9	20.0	26.0
15 +	59.4	54.4	56.9	84.2	82.0	81.2	30.3	23.6	30.7
15 - 19	37.4	34.1	37.6	46.5	46.2	48.3	27.7	21.6	26.7
20 - 24	55.8	56.9	66.2	81.3	84.4	88.9	28.7	29.3	43.1
25 - 29	63.2	61.3	68.7	94.7	94.1	96.9	28.5	27.7	40.2
30 - 34	65.7	62.8	67.5	95.1	96.5	97.7	30.1	25.0	35.2
35 - 39	66.9	63.1	65.6	95.8	96.8	97.5	32.2	25.9	32.9
40 - 44	68.9	64.4	66.2	95.3	96.1	96.8	34.6	25.9	30.8
45 - 49	69.7	64.7	64.7	95.3	95.7	95.7	35.6	26.0	29.5
50 - 54	69.1	61.4	61.4	93.8	92.7	92.3	35.8	21.4	24.7
55 - 59	67.1	58.1	52.5	91.2	87.8	81.1	34.1	17.5	17.6
60 - 64	59.7	48.9	42.0	84.2	76.7	66.2	30.1	11.4	11.0
65 +	47.2	31.3	25.7	67.8	52.2	42.6	23.3	6.0	5.6

Table 11 (Cont'd)

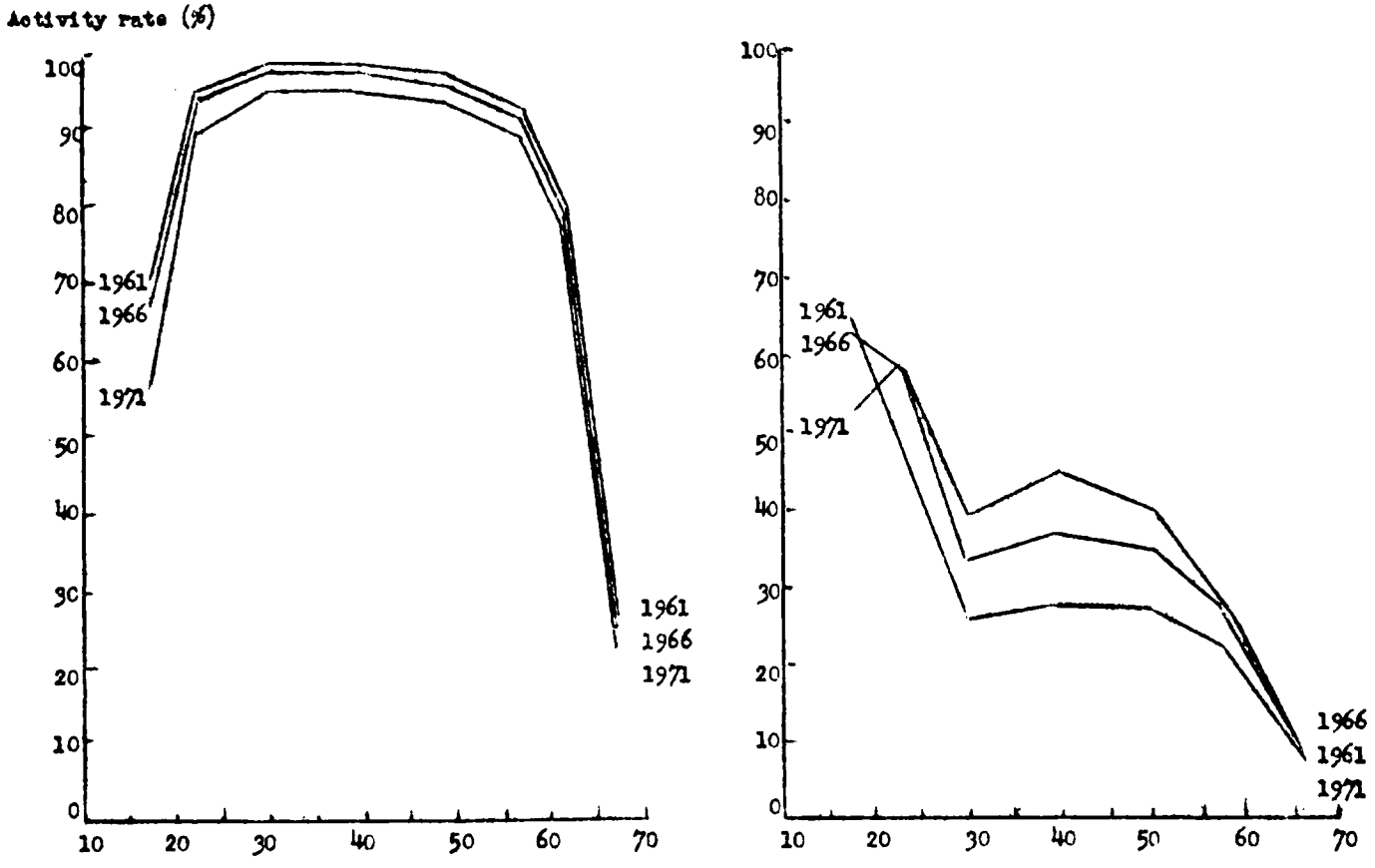
Country	Both sexes		Male		Female	
Thailand	1960	1970	1960	1970	1960	1970
All ages	52.7	49.0	54.3	52.0	51.1	46.0
15 +	85.4	80.3	89.5	87.6	81.4	73.2
15 - 19	80.7	77.3	76.9	77.4	84.7	77.2
20 - 24	87.4	84.0	88.2	89.2	86.6	79.0
25 - 29	90.4	86.8	96.0	95.4	85.0	78.4
30 - 34	91.4	87.5	97.5	96.5	85.2	78.7
35 - 39	92.3	88.3	97.8	96.6	86.6	80.1
40 - 49	92.6	88.2	97.6	96.2	87.6	80.0
50 - 59	87.7	80.8	94.5	91.6	80.9	70.3
60 +	51.2	42.3	64.4	56.4	40.0	29.9

Sources: United Nations, Demographic Yearbook 1964, 1972 and 1973, tables 8,8 and 38 respectively;

For Sri Lanka: - 1953 figures are taken from Department of Census and Statistics, The Population of Sri Lanka, CICRED Series, October 1974;

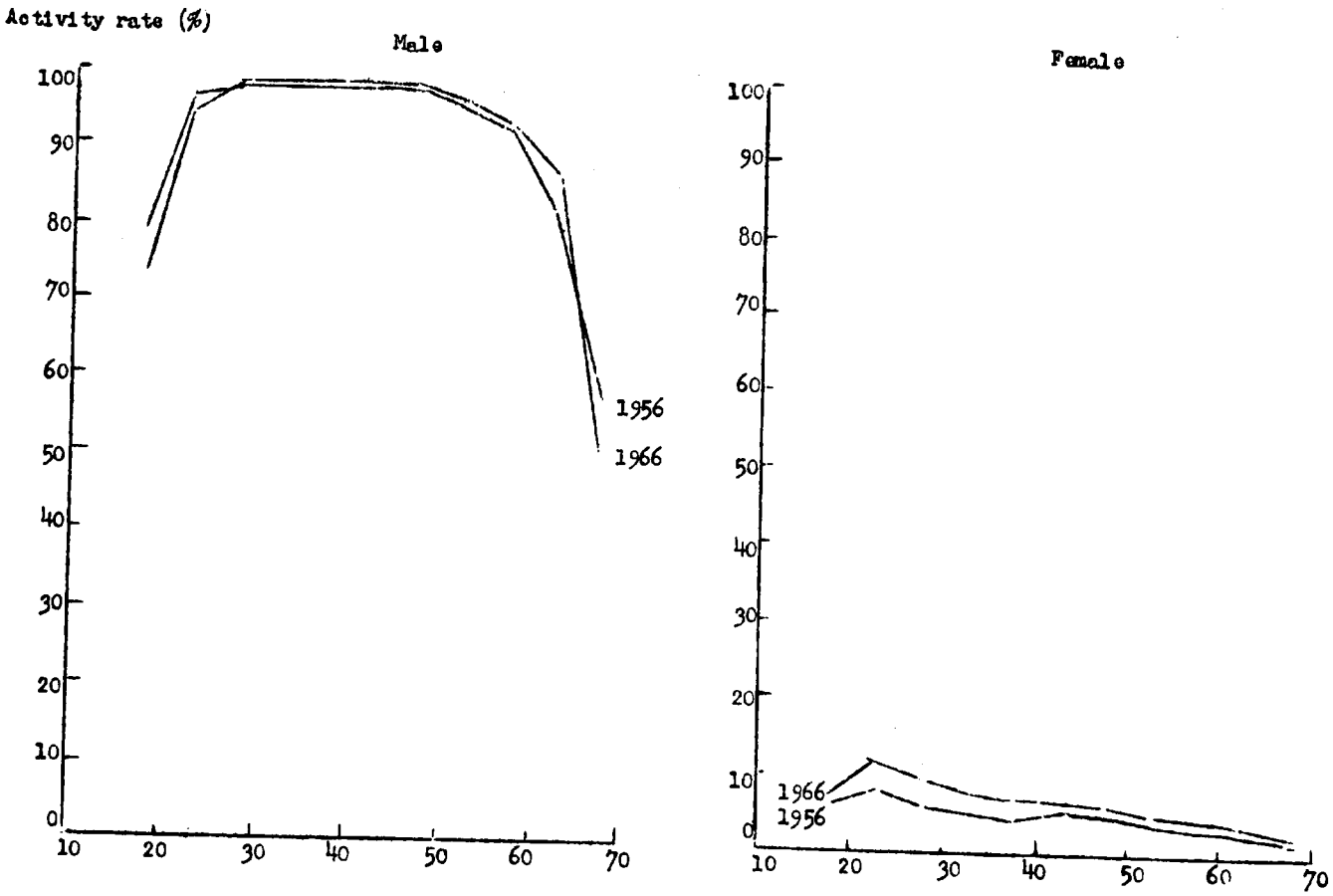
- 1963 and 1971 figures are taken from Department of Census and Statistics, Census of Population 1971 (Computer print-out).

Graph 4 a. Age-specific activity rates, by sex, Australia, 1961-1971



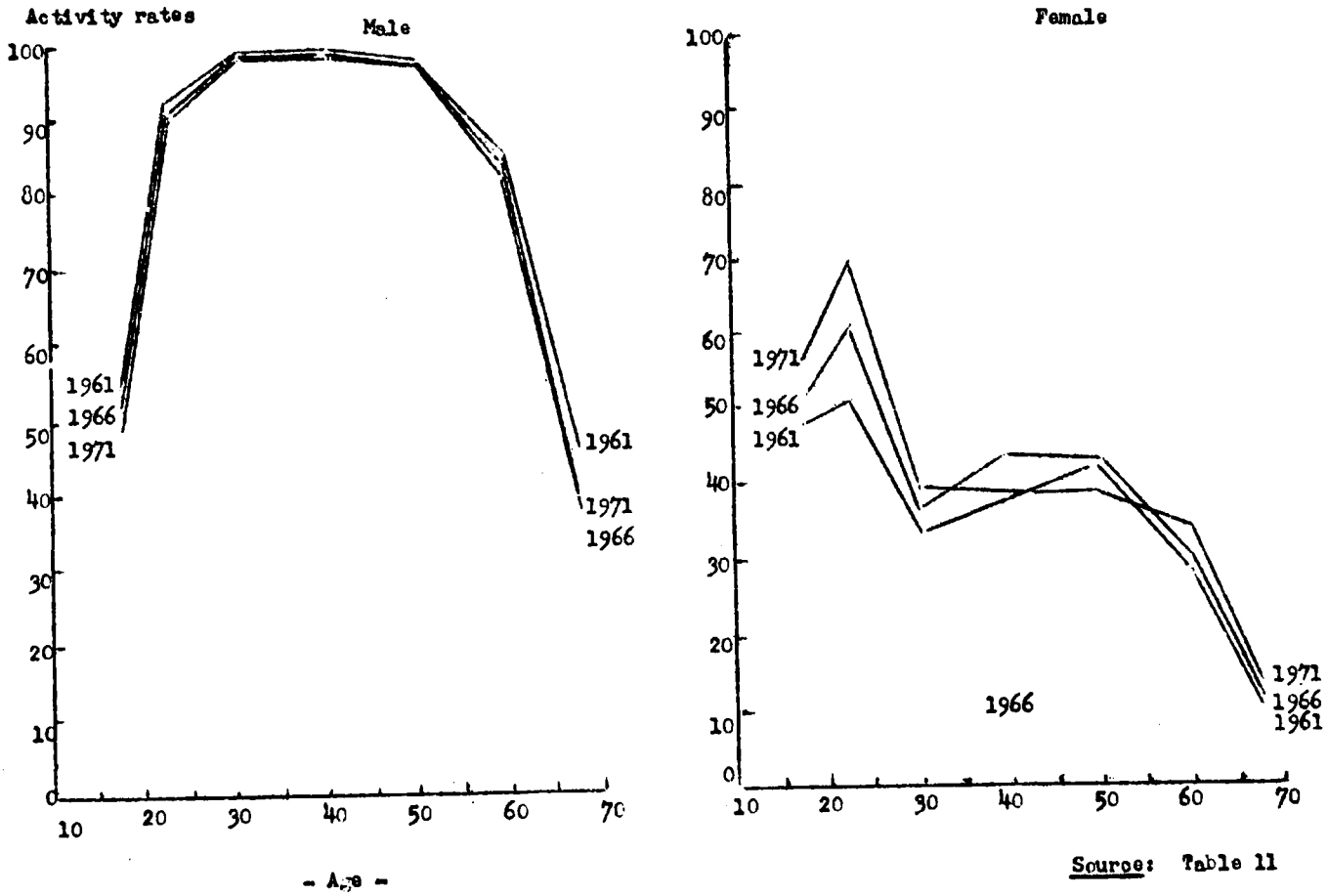
Source: Table 11

Graph 4 b. Age-specific activity rates, by sex, Fiji, 1956-1966



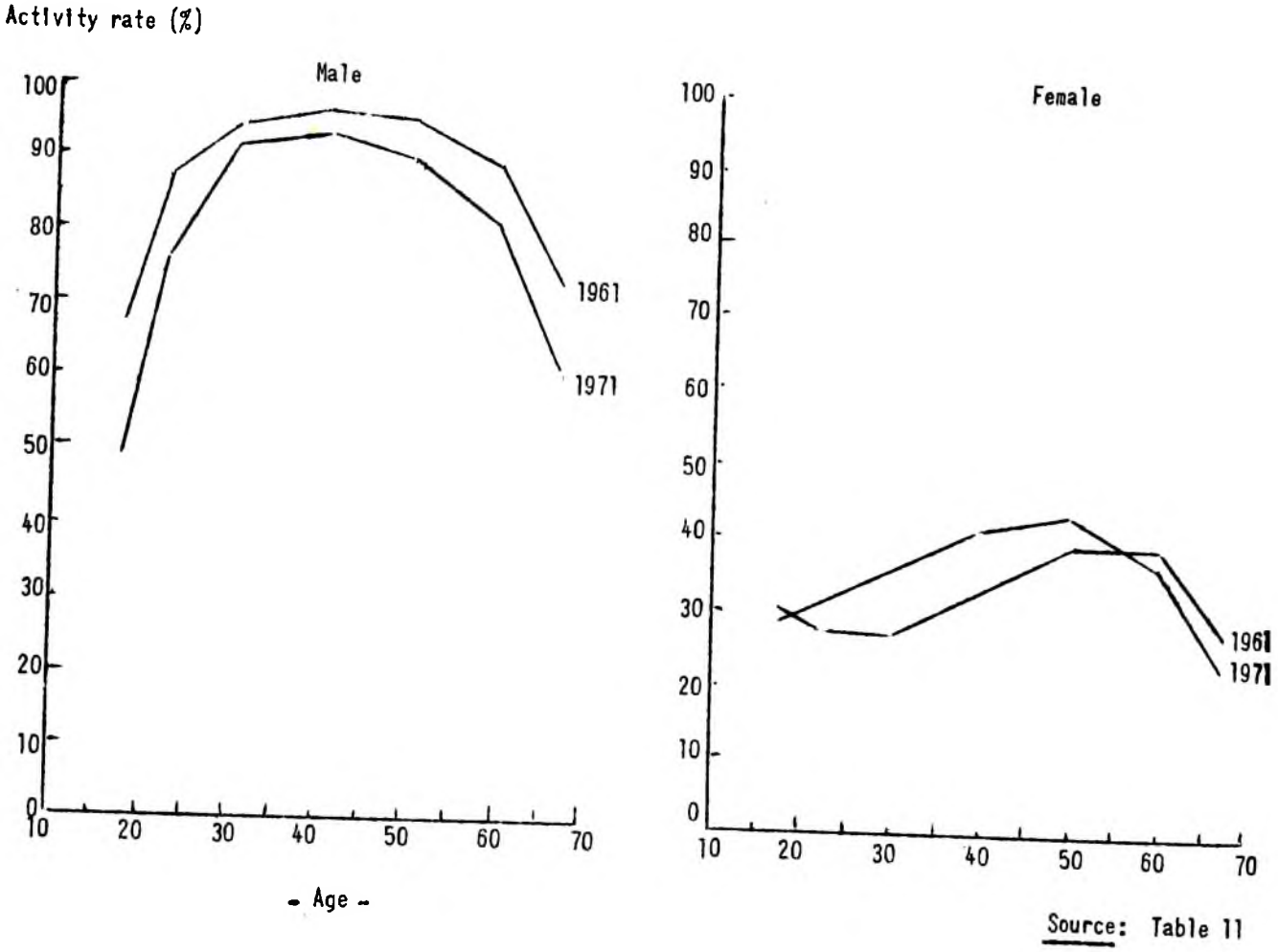
Source: Table 11

Graph 4 c. Age-specific activity rates, by sex, Hong Kong, 1961-1971



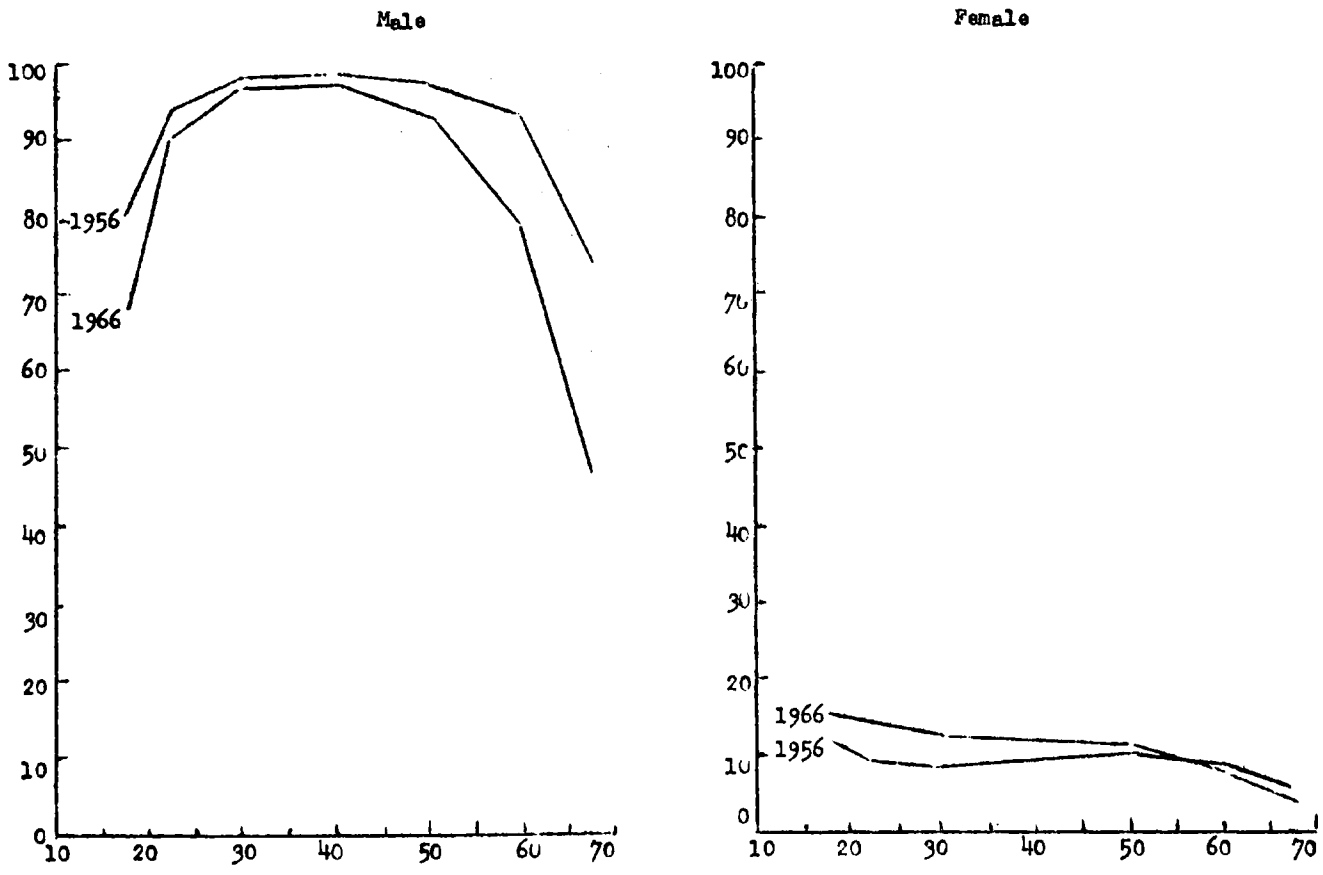
Source: Table 11

Graph 4 d. Age-specific activity rates by sex, Indonesia, 1961-1971



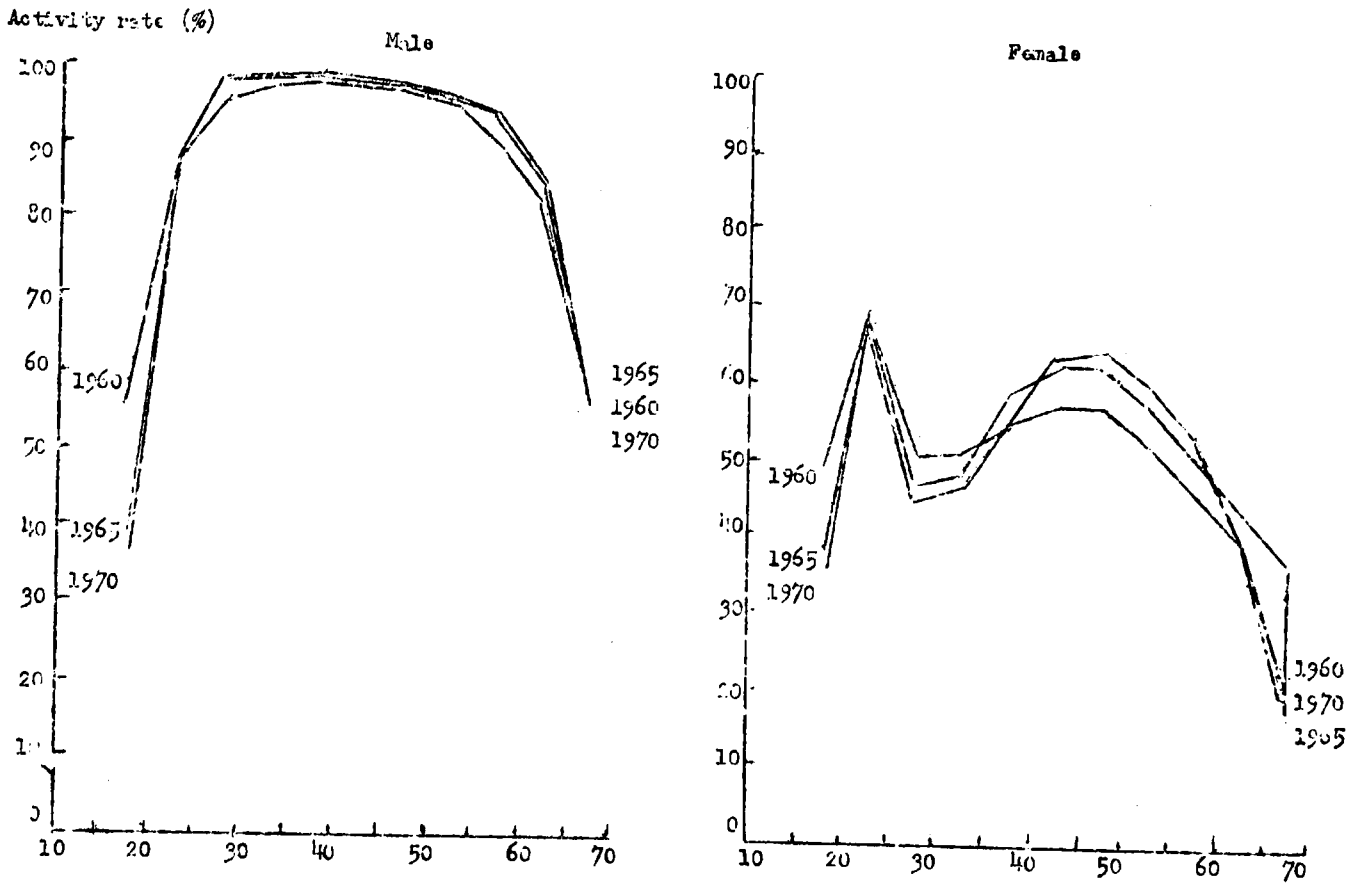
Source: Table 11

Graph 4 c. Age-specific activity rates, by sex, Iran, 1956-1966



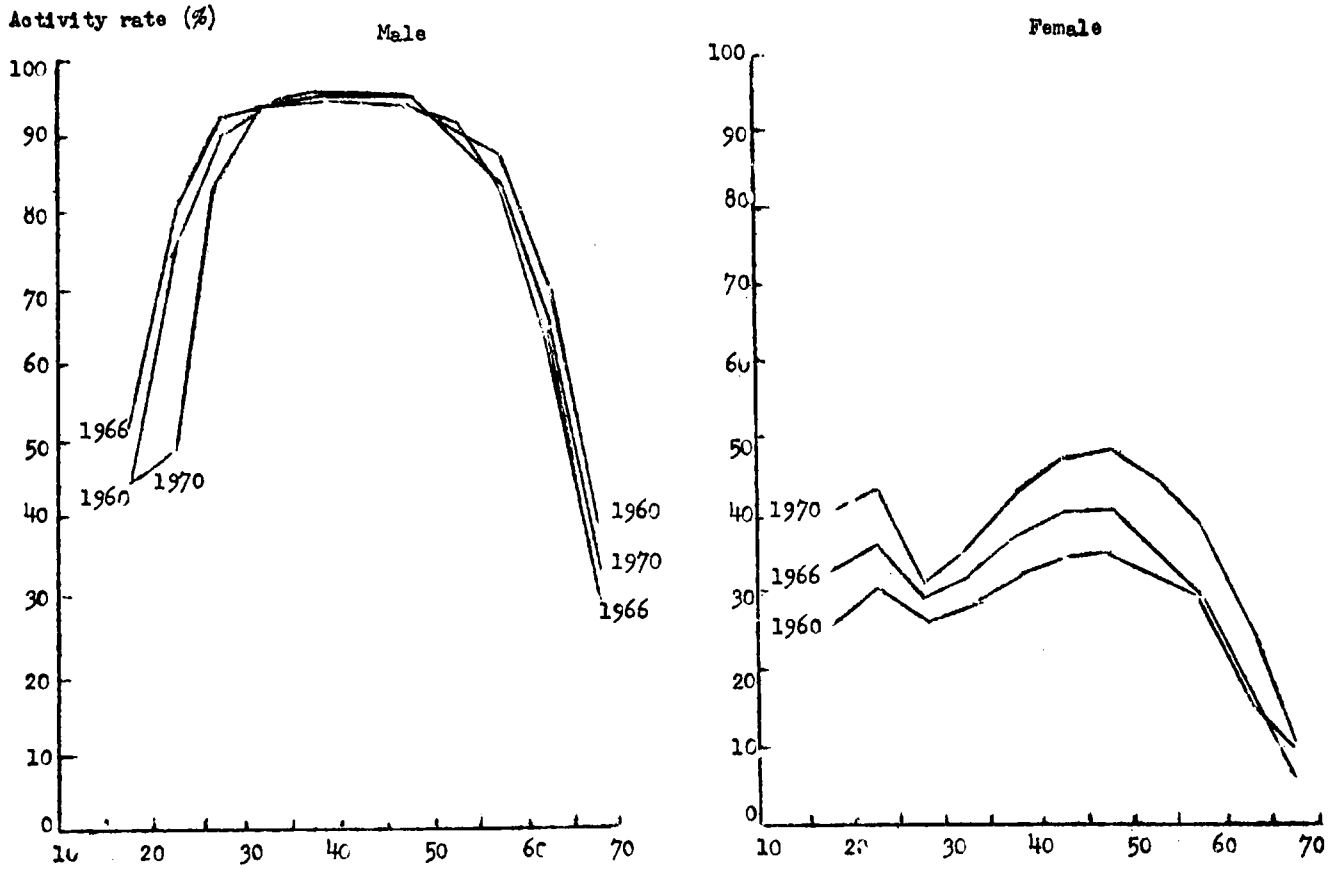
Source: Table 11

Graph 4 f. Age-specific activity rates, by sex, Japan, 1960-1970



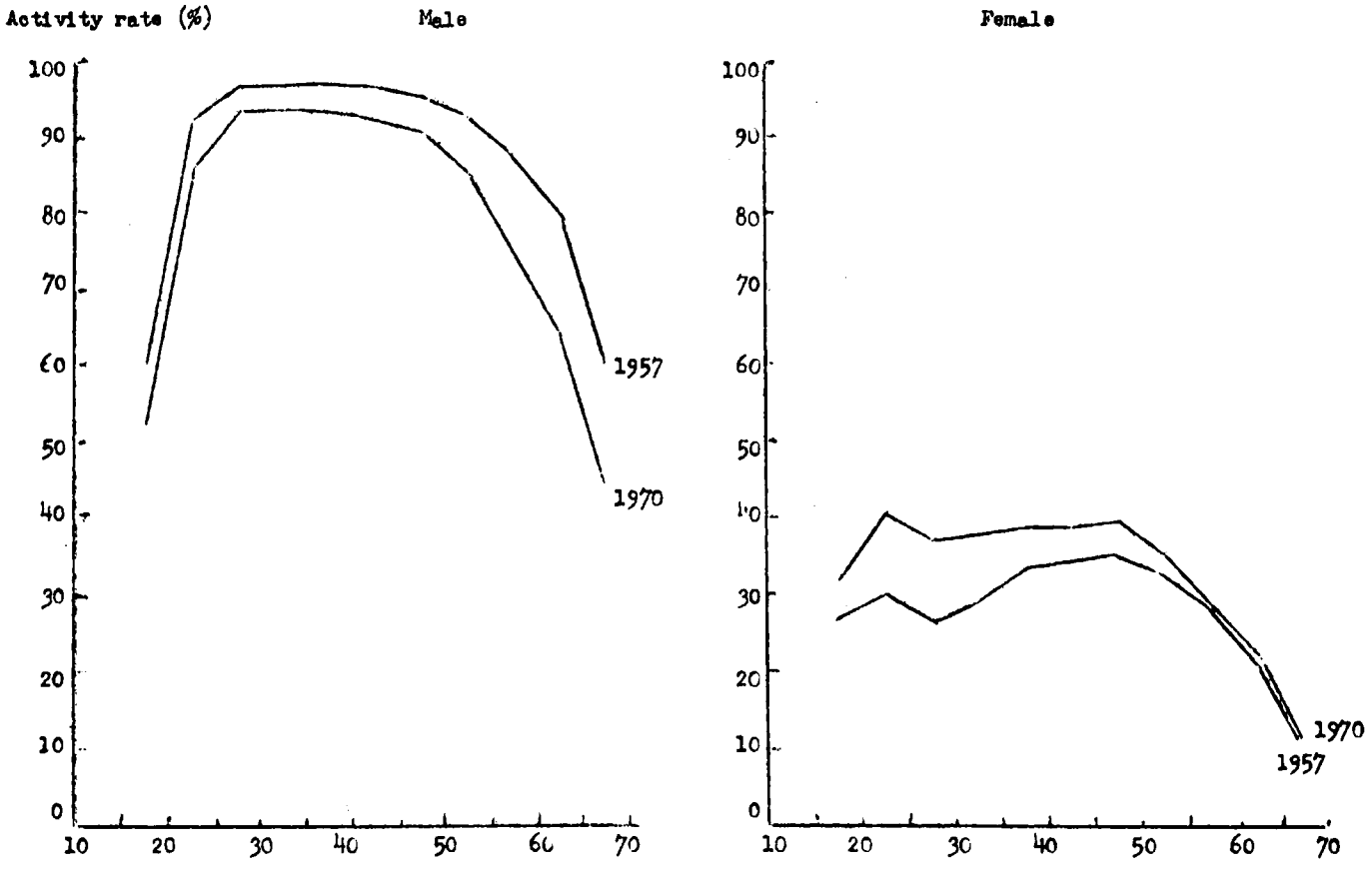
Source: Table 11

Graph 4 g. Age-specific activity rate, by sex, Rep. of Korea, 1960-1970



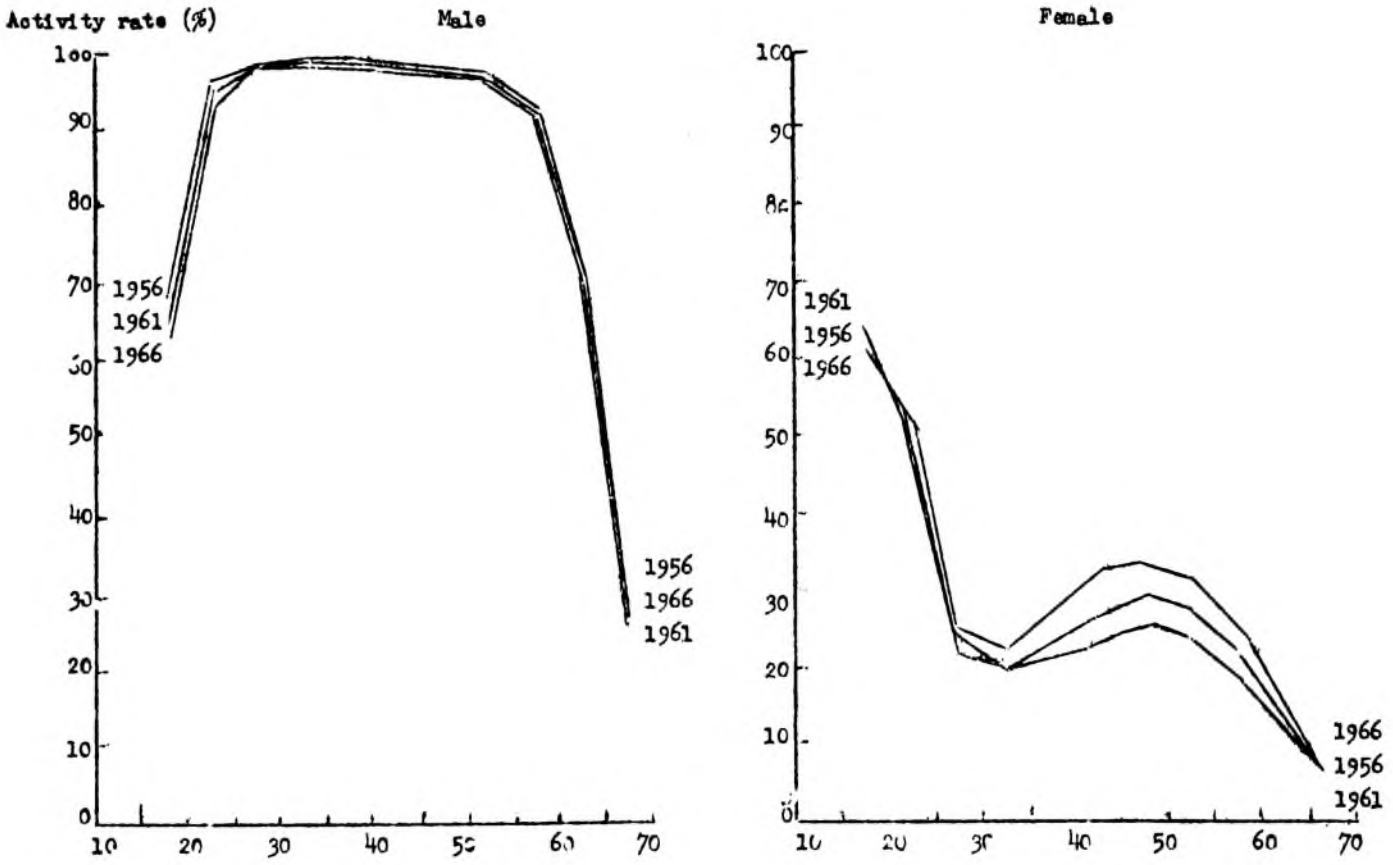
Source: Table 11

Graph 4 h. Age-specific activity rates, by sex, Malaysia (West), 1957-1970



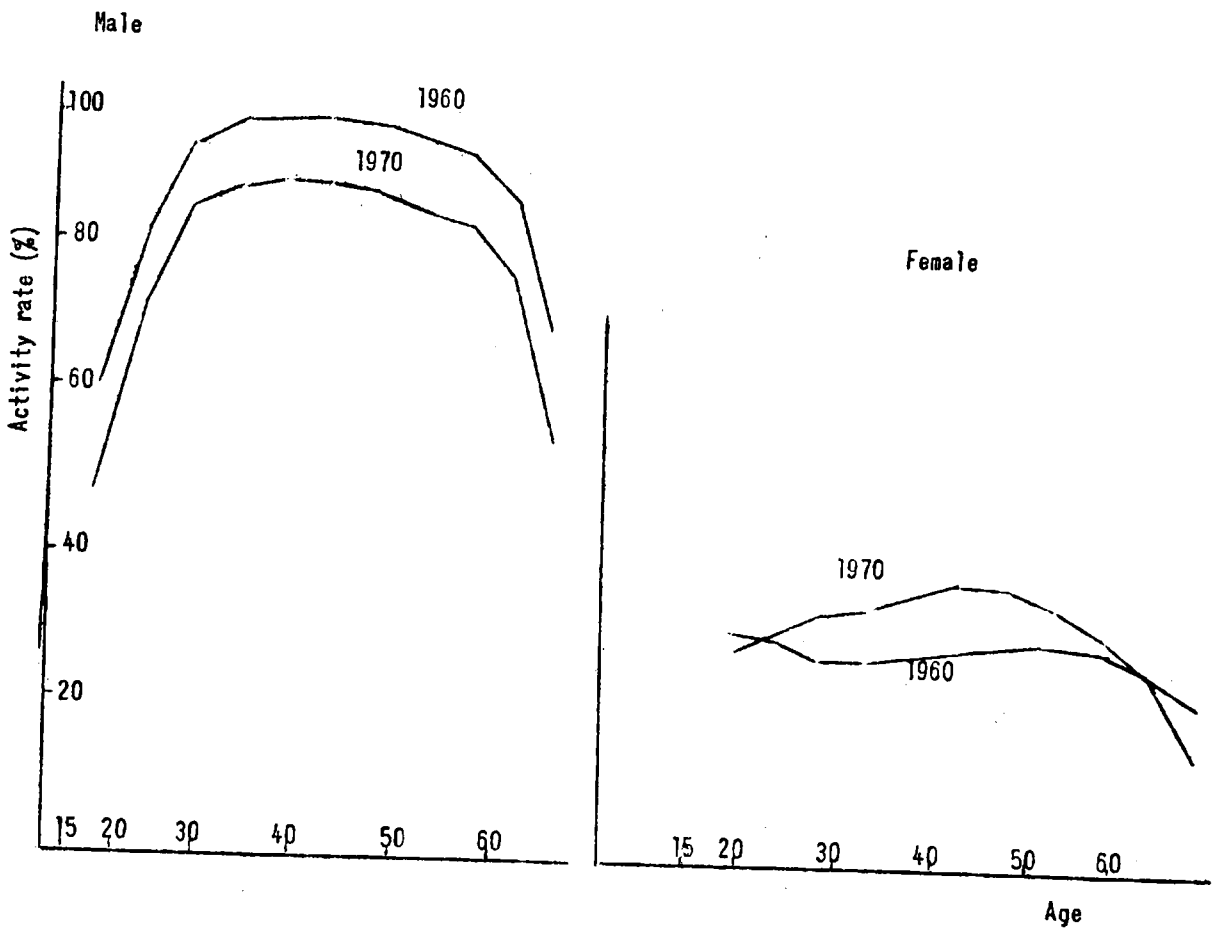
Source: Table 11

Graph 4 1. Age-specific activity rates, by sex, New Zealand, 1956-1966

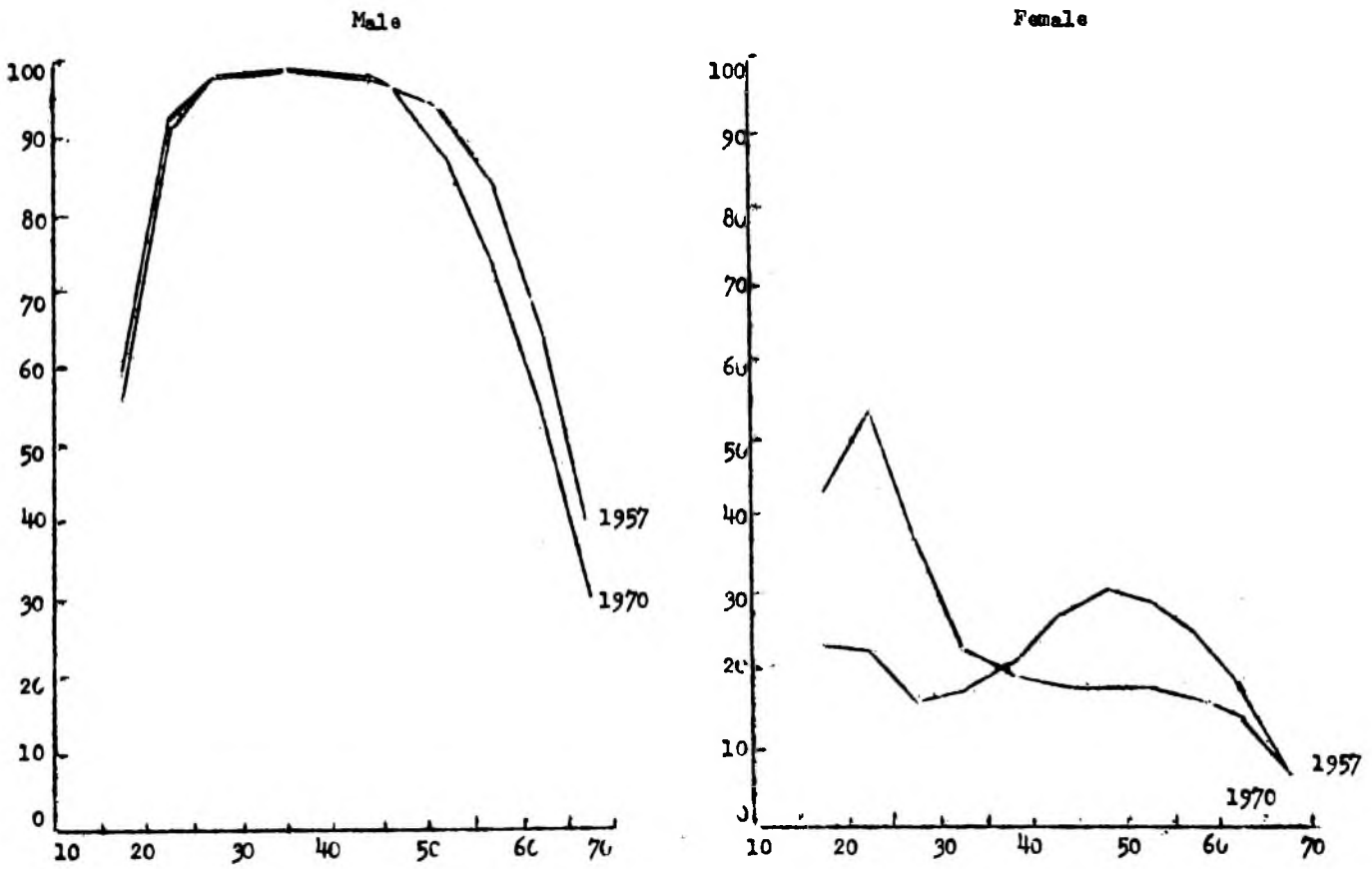


Source: Table 11

Graph 4j. Age-specific activity rates, by sex, Philippines, 1960-1970

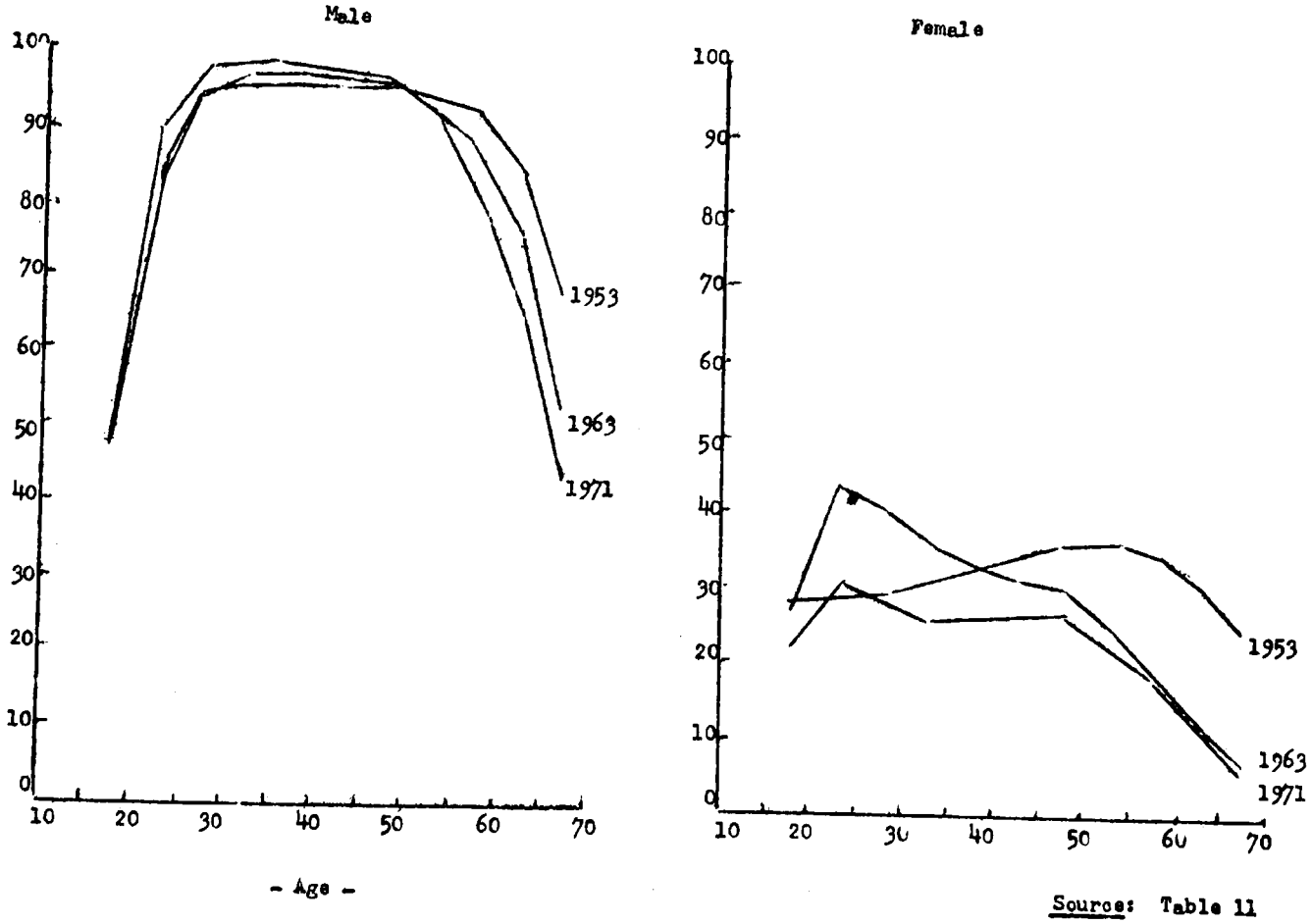


Graph 4 k. Age-specific activity rates, by sex, Singapore, 1957-1970



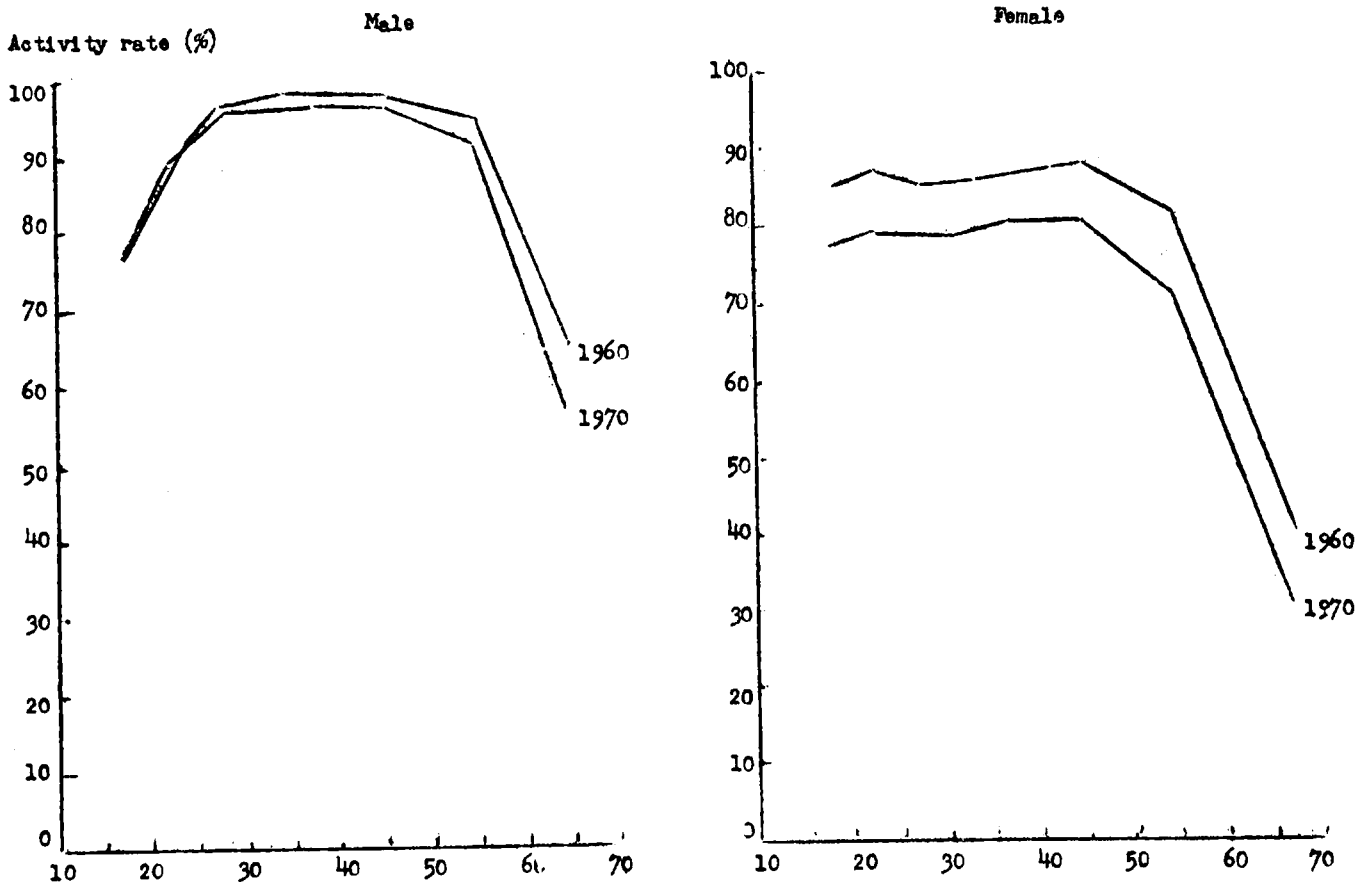
Source: Table 11

Graph 4 1. Age-specific activity rates, by sex, Sri Lanka, 1953-1971



Source: Table 11

Graph 4 m. Age-specific activity rates, by sex, Thailand, 1960-1970



Source: Table 11

B. MALE AGE-SPECIFIC ACTIVITY RATES

Table 12 presents male activity rates for broad age groups and their annual rate of variation for 13 selected countries of the ESCAP region. This section will examine the levels of these rates and their rates of change.

1. Levels of activity rates

In age groups 15-24, the highest activity rate was 87.4 per cent in Iran (1956) and the lowest was 47.9 per cent in the Republic of Korea (1970). The average value fell from 75.0 per cent in the initial period to 68.8 per cent in the second period. The wide dispersion in activity rates relative to that found in other age classes reflects the influence of social and economic factors, particularly education, on the participation of young persons in the labour force.

In age group 25-54, the highest male activity rate was 98.3 per cent in New Zealand (1970). The lowest was 86.0 per cent in the Philippines (1970). The average value fell from 96.6 per cent in the initial period to 95.1 per cent in the second period. The consistently high levels of participation rates in this age category were to be expected. "Male activity rates exceeding 90 per cent in the age groups between 25 and 54 years are the general rule in countries at all levels of industrialization."[3/]

The male activity rates for the 55-64 age group were slightly lower than the rates for the 25-54 are group. They ranged from a low of 66.1 per cent in Singapore (1970) to a high of 94.5 per cent in Thailand (1960). The average activity rate fell from 86.2 per cent in the initial period to 80.9 per cent in the second period.

The lowest male activity rates occurred in age class 65 and over. They ranged from a high of 74.1 per cent in Iran (1956) to a low of 22.0 per cent in New Zealand (1961). The average value fell from 52.1 per cent in the initial period to 43.1 per cent in the later period. "The rather low average activity rate in Asia among males in the age group 65 and over is perhaps due in part to the prevalence of the extended family system, which may facilitate early retirements of older persons in the family."[4/]

/Table 12.

3/ United Nations, The Determinants and Consequences of Population Trends, op. cit., p. 299.

4/ United Nations, Demographic Aspects of Manpower, op. cit. p.13.

Table 12. Age specific male activity rates and their annual rates of intercensal variation in selected countries of the ESCAP region (1955-1971)

Country	Census years		Activity rates								Annual rates of intercensal variation in activity rates			
			15-24		25-54		55-64		65 +		Age group			
	I	II	I	II	I	II	I	II	I	II	15-24	25-54	55-64	65 +
Australia	1961	1971	81.4	72.3	97.9	94.3	86.9	82.7	26.4	22.2	-0.91	-0.36	-0.42	-0.42
Fiji	1956	1966	86.6	83.0	97.8	98.1	86.9	90.8	57.3	49.9	-0.36	0.03	0.39	-0.74
Hong Kong	1961	1971	73.6	68.0	97.7	97.9	85.3	84.2	46.4	39.8	-0.56	0.02	-0.11	-0.66
Indonesia	1961	1971	76.4	59.6	95.5	91.8	89.6	81.1	72.8	60.5	-1.68	-0.37	-0.85	-1.23
Iran	1956	1966	87.4	77.8	98.4	96.7	93.7	78.9	74.1	46.8	-0.96	-0.17	-1.48	-2.73
Japan	1955	1970	88.4	61.7	94.9	98.2	85.6	90.3	55.7	54.4	-0.45	0.22	0.31	-0.09
Malaysia (West)	1957	1970	74.9	67.1	96.9	92.6	85.6	70.6	60.8	45.7	-0.60	-0.33	-1.15	-1.16
New Zealand	1961	1966	78.6	76.2	98.1	98.3	81.7	83.4	22.0	23.6	-0.48	0.04	0.34	0.32
Philippines	1960	1970	69.2	57.8	94.0	86.0	89.2	79.5	66.8	53.0	-1.14	-0.80	-0.97	-1.38
Rep. of Korea	1960	1970	57.2	47.9	94.5	93.2	80.7	77.9	39.3	35.1	-0.93	-0.13	-0.28	-0.42
Singapore	1957	1970	74.4	72.4	97.6	96.8	78.4	66.1	38.9	31.9	-0.18	-0.06	-0.95	-0.54
Sri Lanka	1963	1971	63.9	67.7	95.5	96.4	82.6	74.2	52.2	40.7	0.48	0.11	-1.05	-1.44
Thailand	1960	1970	82.4	82.3	97.2[a/]	96.2[a/]	94.5[b/]	91.6[b/]	64.4[c/]	56.4[c/]	-0.01	-0.10[a/]	-0.29[b/]	-0.80[c/]
Arithmetic mean		$\bar{x}$	75.0	68.8	96.6	95.1	86.2	80.9	52.1	43.1	-0.60	-0.15	-0.50	-0.87
Standard deviation			8.4	9.8	1.5	3.4	4.6	7.4	16.0	11.8	0.52	0.26	0.60	0.73

Source: Table 11.

a/ For age-group 25-49

b/ For age-group 50-59.

c/ For age-group 60 and over.

2. Rates of change of activity rates

With the exception of Sri Lanka where participation rates increased at a 0.48 per cent annual rate, activity rates decreased in all countries for males in the age group 15-24. The greatest rate of decrease was found in Indonesia: -1.68 per cent between 1961 and 1971. This may have reflected an expansion in educational enrolments in that country. The average rate of decrease for all countries was -0.67 per cent. The standard deviation was -0.43 per cent.

For age group 25-54, the highest annual rate of intercensal change activity rates occurred in Japan: 0.22 per cent. The largest rate of decline occurred in the Philippines: -0.80 per cent. The average annual rate of intercensal change was -0.21 per cent. The standard deviation was -0.21 per cent.

For age group 55-64, the annual rates of intercensal change in activity rates varied from a high of 0.39 per cent in Fiji to a low of -1.48 per cent in Iran. The average annual rate of decline was -0.66 per cent. The standard deviation was -0.41 per cent.

In New Zealand, activity rates for males aged 65 and over increased at an annual rate of 0.32 per cent. For all other countries the activity rates declined. The largest annual rate of decline was -2.73 per cent in Iran. The average rate of decline was -0.91 per cent. The standard deviation was -0.66 per cent. This trend toward early retirement is related to the decrease in the proportion of the labour force engaged in agriculture, the increasing proportion of paid employees and diminishing opportunities for self-employment, as well as the development of social security schemes.

C. FEMALE AGE-SPECIFIC ACTIVITY RATES

Table 13 presents female activity rates by broad age groups and their annual rate of intercensal variation for 13 selected countries of the ESCAP region covering the period 1953-1971. The table also presents the means and standard deviations by age class.

/Table 13.

Table 13. Age-specific female activity rates and their annual rates of intercensal variation in selected countries of the ESCAP region, 1955-1971

Country	Census years		Activity rates								Annual rates of intercensal variation in activity rates			
			15-24		25-54		55-64		65 +		Age group			
	I	II	I	II	I	II	I	II	I	II	15-24	25-54	55-64	65 +
Australia	1961	1971	58.2	55.3	26.7	41.0	17.9	22.6	4.4	4.2	-0.29	1.43	0.47	-0.02
Fiji	1956	1966	7.1	8.6	5.3	7.5	3.3	4.5	1.7	2.2	0.15	0.22	0.12	0.05
Hong Kong	1961	1971	49.7	62.2	37.3	39.0	28.2	33.9	9.9	12.6	1.25	0.17	0.57	0.27
Indonesia	1961	1971	28.9	30.0	31.6	39.2	31.9	36.2	27.8	22.8	0.11	0.76	-0.29	-0.50
Iran	1956	1966	10.6	14.9	9.3	12.2	8.7	8.1	5.8	4.5	0.43	0.29	-0.06	-0.13
Japan	1955	1970	57.3	54.7	52.0	55.3	42.9	49.0	21.1	19.6	-0.17	0.22	0.41	-0.10
Malaysia (West)	1957	1970	29.4	36.6	32.3	38.9	26.3	26.4	11.5	12.8	0.55	0.51	0.01	0.10
New Zealand	1961	1966	57.4	58.0	24.9	28.4	17.8	20.5	3.3	3.7	0.12	0.70	0.54	0.08
Philippines	1960	1970	29.3	28.2	27.1	33.6	27.1	28.3	21.2	15.5	-0.11	0.65	0.12	-0.57
Rep. of Korea	1960	1970	28.0	41.9	31.1	40.7	23.0	33.6	9.2	10.6	1.39	0.96	1.06	0.14
Singapore	1957	1970	23.2	47.9	22.0	21.9	21.5	15.0	6.7	6.5	1.90	-0.01	-0.50	-0.02
Sri Lanka	1963	1971	25.2	34.0	25.7	33.2	14.6	14.1	6.0	5.1	1.10	0.94	-0.06	-0.11
Thailand	1960	1970	85.6	77.9	86.1[a/]	79.3[a/]	80.9[b/]	70.3[b/]	40.0[c/]	30.5[c/]	-0.77	-0.68[a/]	-1.06[b/]	-0.95[c/]
Arithmetic mean			37.7	42.3	31.6	36.2	27.0	27.9	13.0	11.6	0.44	0.47	0.10	-0.14
Standard deviation			21.4	18.8	19.3	17.5	18.8	17.0	10.9	8.3	0.74	0.51	0.52	0.33

Source: Table 11

a/ For age-group 25-49.

b/ For age-group 50-59.

c/ For age-group 60 and over.

1. Levels of activity rates

For all four broad age groupings, the low value occurred in the case of Fiji and the high value occurred in the case of Thailand. In age group 15-24, activity rates ranged from a low of 7.1 per cent to a high of 85.6 per cent. The average of the values rose from 37.7 per cent in period I to 42.3 per cent in period II. In age group 25-54, the activity rates ranged from a low of 5.3 per cent to a high of 81.6 per cent. The average of the rates increased from 31.6 per cent in period I to 36.2 per cent in period II. In age group 55-64, activity rates ranged from a low of 3.3 per cent to a high of 80.9 per cent. In the case of the first two broad age groups, the average of the activity rates increased substantially. For age group 55-64, the average remained nearly stationary, rising from 27.0 per cent in period I to 27.9 per cent in period II.

In age group 65 and over, activity rates varied from a low of 1.7 per cent to a high of 40.0 per cent. This age group was unique in that the average of the labour force participation rates fell from 13.0 per cent in period I to 11.6 per cent in period II.

The level and pattern of age-specific fertility rates for females is quite different from that for males. In every age category the average is lower in the case of females. The difference is least in the case of age group 15-24 and greatest in the case of age group 25-54. This is a reflection of a different profile of age-specific activity rates. In the case of males, activity rates rise to a peak at age group 25-54 and fall thereafter. In the case of females, activity rates are at their highest in age group 15-24 and decline thereafter. The dispersion is also greater in the case of females. In the case of the developed countries, two patterns emerged. Activity rates in Japan were above average in all age groups. In Australia and New Zealand, they were above average in age group 15-24 and thereafter declined relative to the other countries of the study.

2. Rates of change of activity rates

Annual rates of change of activity rates for females aged 15 to 24 varied from a high of 1.9 per cent in Singapore to a low of -0.77 per cent in Thailand. The average rate of change was 0.44 per cent. The standard deviation was 0.74 per cent. It was noted earlier that in many countries, longer schooling had tended to reduce the labour force participation of males aged 15 to 24. This does not appear to have been so in the case of females. On the other hand, the postponement of

/marriages,

marriages, observed in several Asian countries in recent years, might have contributed to the increase in labour force participation of females, particularly those age 15 to 24.

In age group 25-54, the annual intercensal rate of change of age-specific activity rates varied from a high of 1.43 per cent in Australia to a low of -0.68 per cent in Thailand. The average rates of increase was 0.47 per cent. The standard deviation was 0.51 per cent.

In the age group 55-64, the annual intercensal rate of change of age-specific activity rates varied from a high of 1.06 per cent in the Republic of Korea to a low of -1.06 per cent in Thailand. The average rate of increase was 0.10 per cent. The standard deviation was 0.52 per cent.

In the age group 65 and over, the annual intercensal rate of change of age-specific activity rates varied from a high of 0.27 per cent in Japan to a low of -0.95 per cent in Thailand. The average rate of change was 0.14 per cent. The standard deviation was 0.33 per cent.

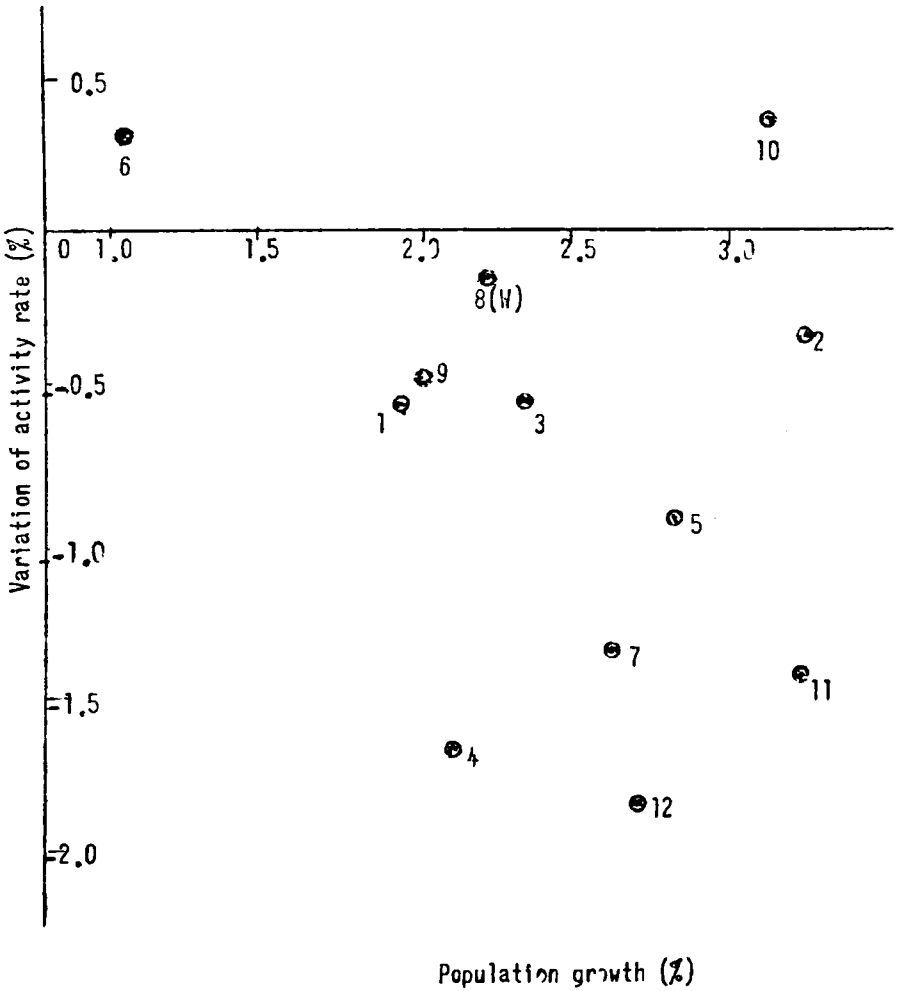
D. ASSOCIATION BETWEEN GROWTH RATES OF POPULATION AND RATES OF CHANGE IN AGE-SPECIFIC ACTIVITY RATES

In this section, the assumption that changes in activity rates are independent of changes in population will be examined. On *a priori* grounds, a relationship between these variables might be expected. For example, the birth of an additional child may compel an older child to leave school and enter the labour force or it may require the mother to withdraw from the labour force in order to take care of the infant.

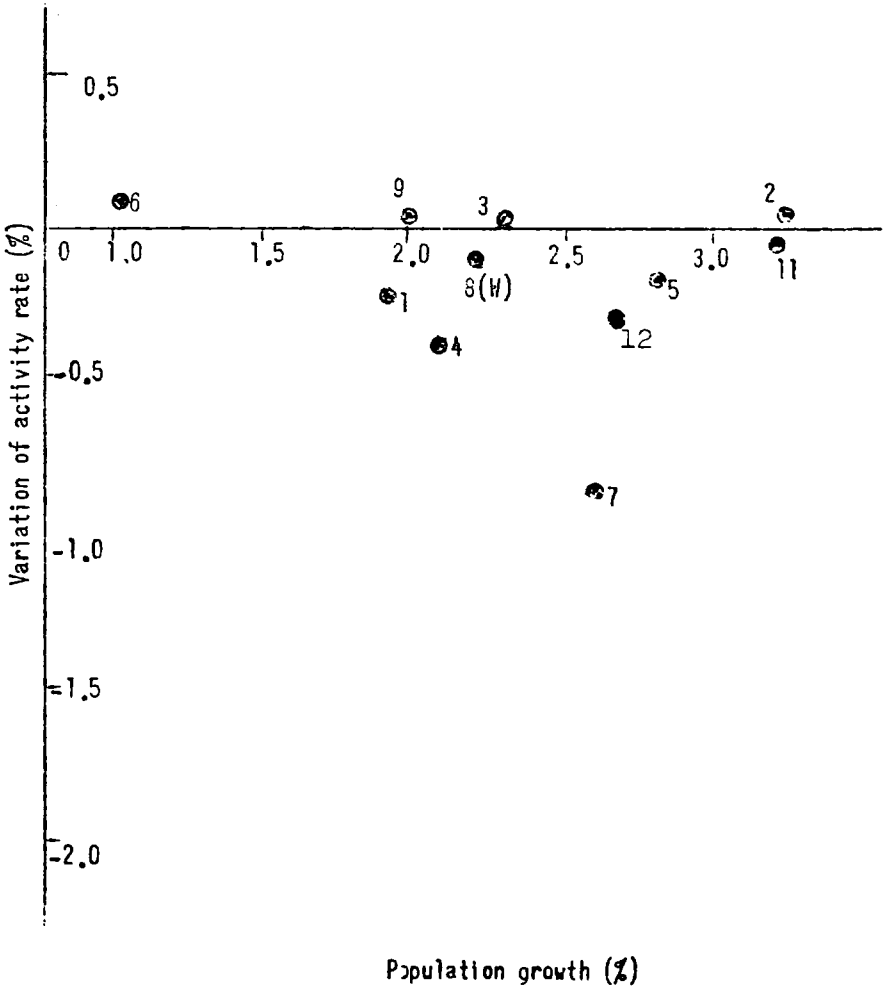
Graphs 5.a-5.d illustrate the scatter when rates of growth of male population are plotted against activity rates. Graphs 6.a-6.d illustrate the scatter when rates of growth of female population are plotted against activity rates. They indicate no clear association between the two variables. The corresponding correlation coefficients are shown in table 14 below. None of these coefficients is statistically significant at the .05 level of probability. Therefore, this analysis does not support the hypothesis that population growth alters age-specific activity rates.

/Table 14.

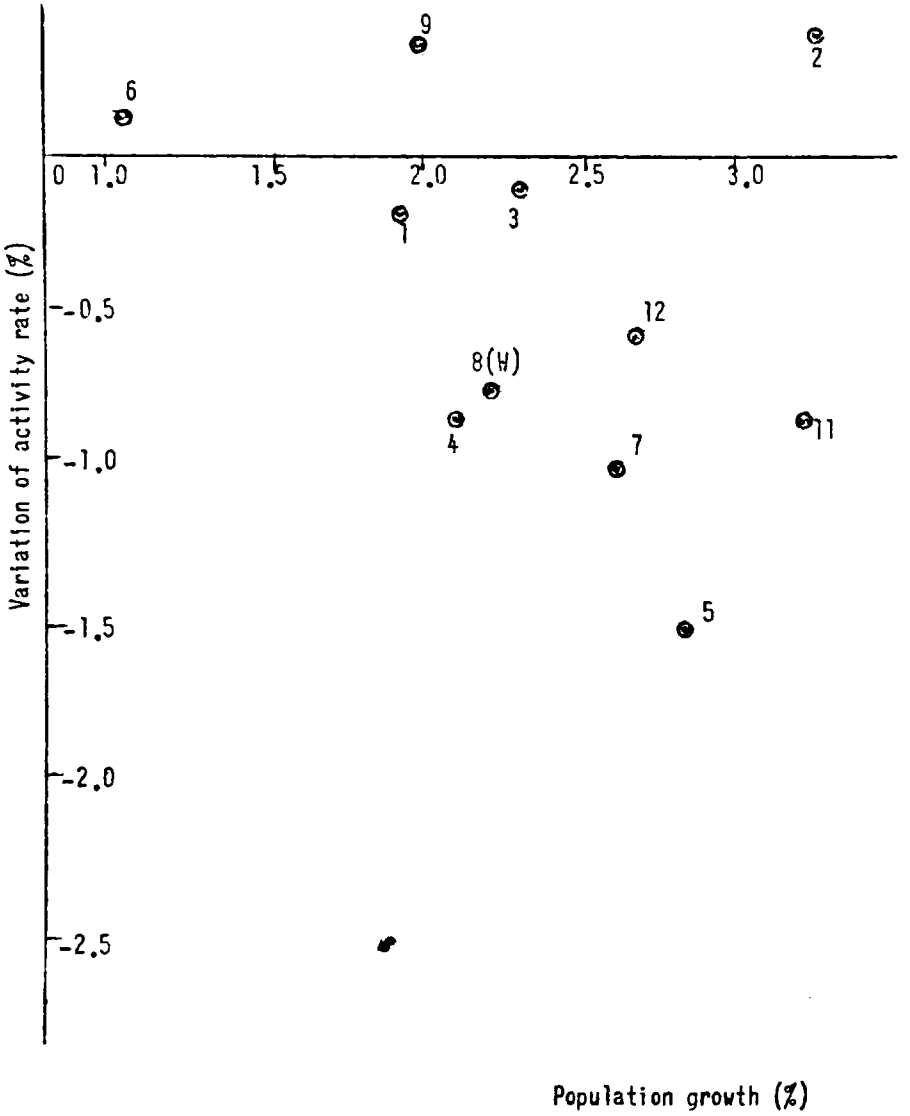
Graph 5a. Annual rate of intercensal change in male population and activity rates (age group 15-24)



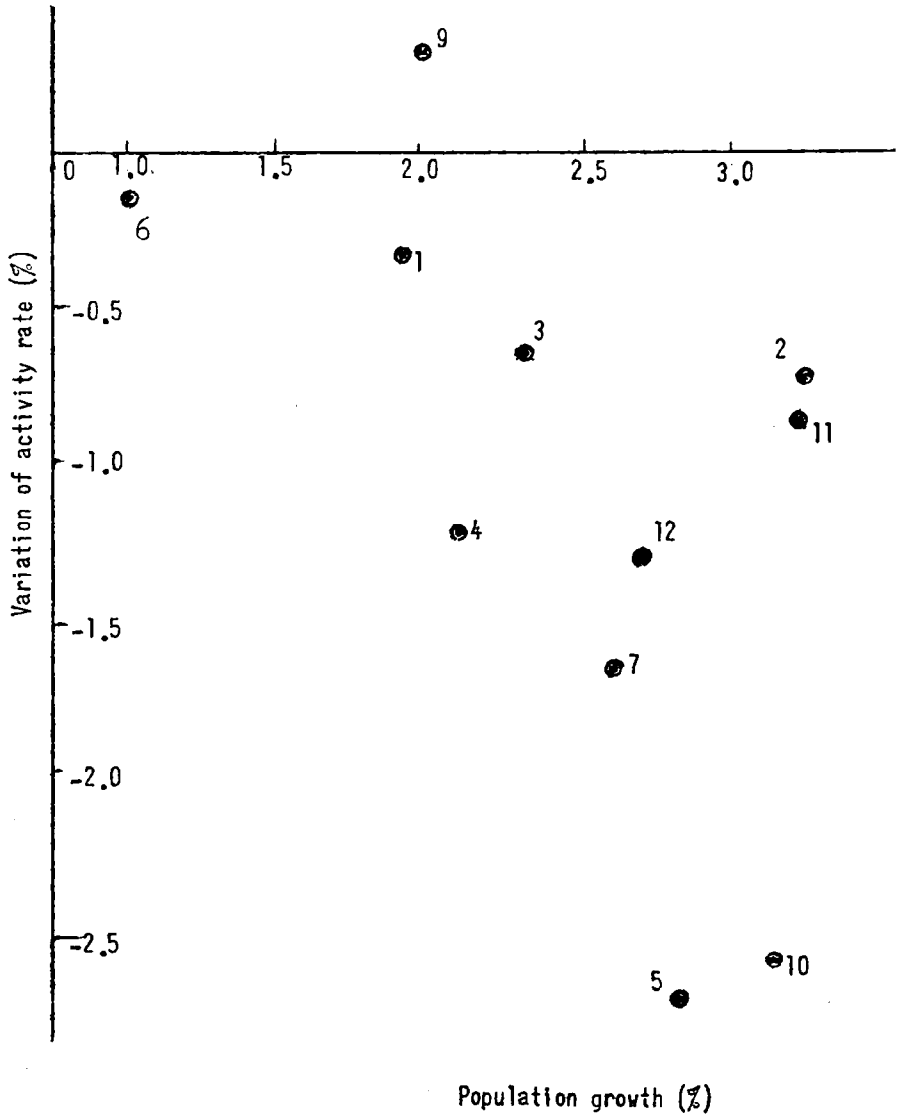
Graph 5b. Annual rate of intercensal change in male population and activity rates (age group 25-54)



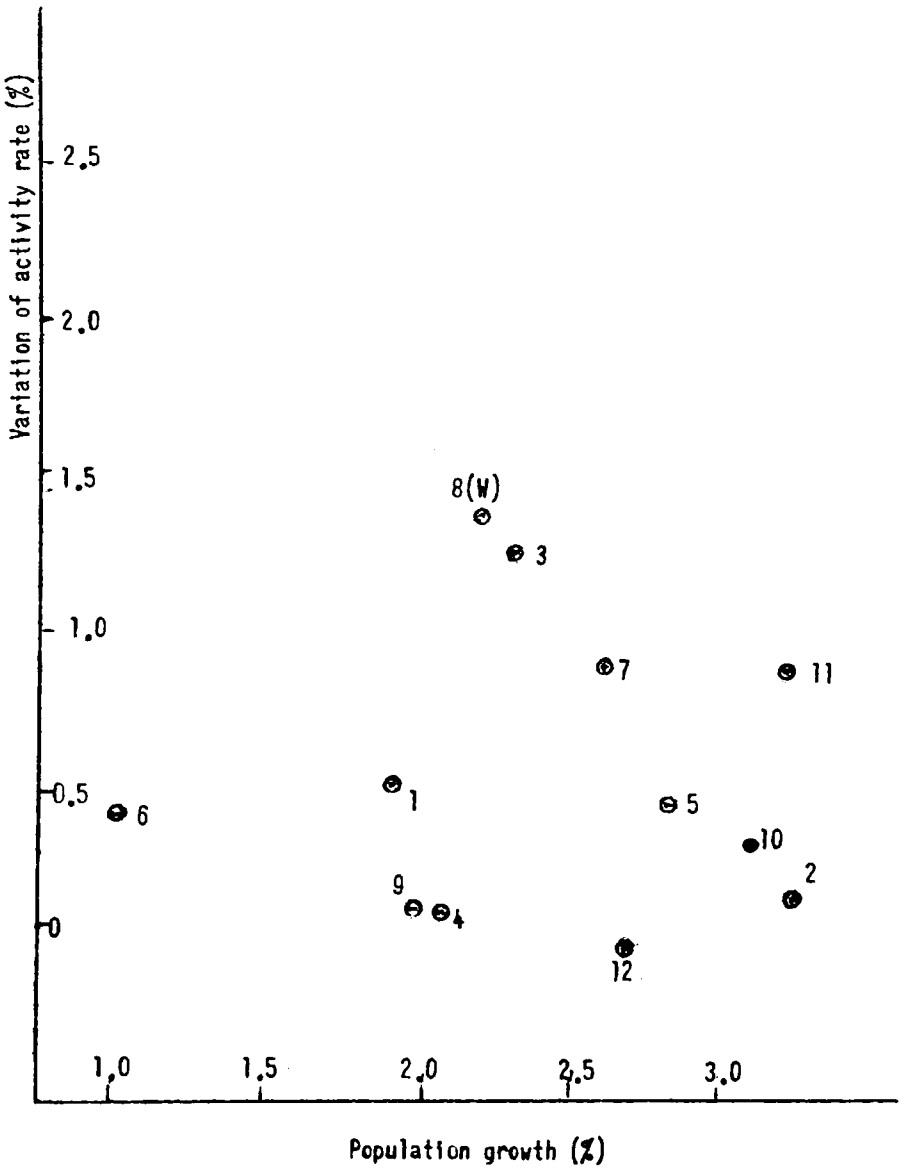
Graph 5c: Annual rate of intercensal change in male opopulation and activity rates (age group 55-64)



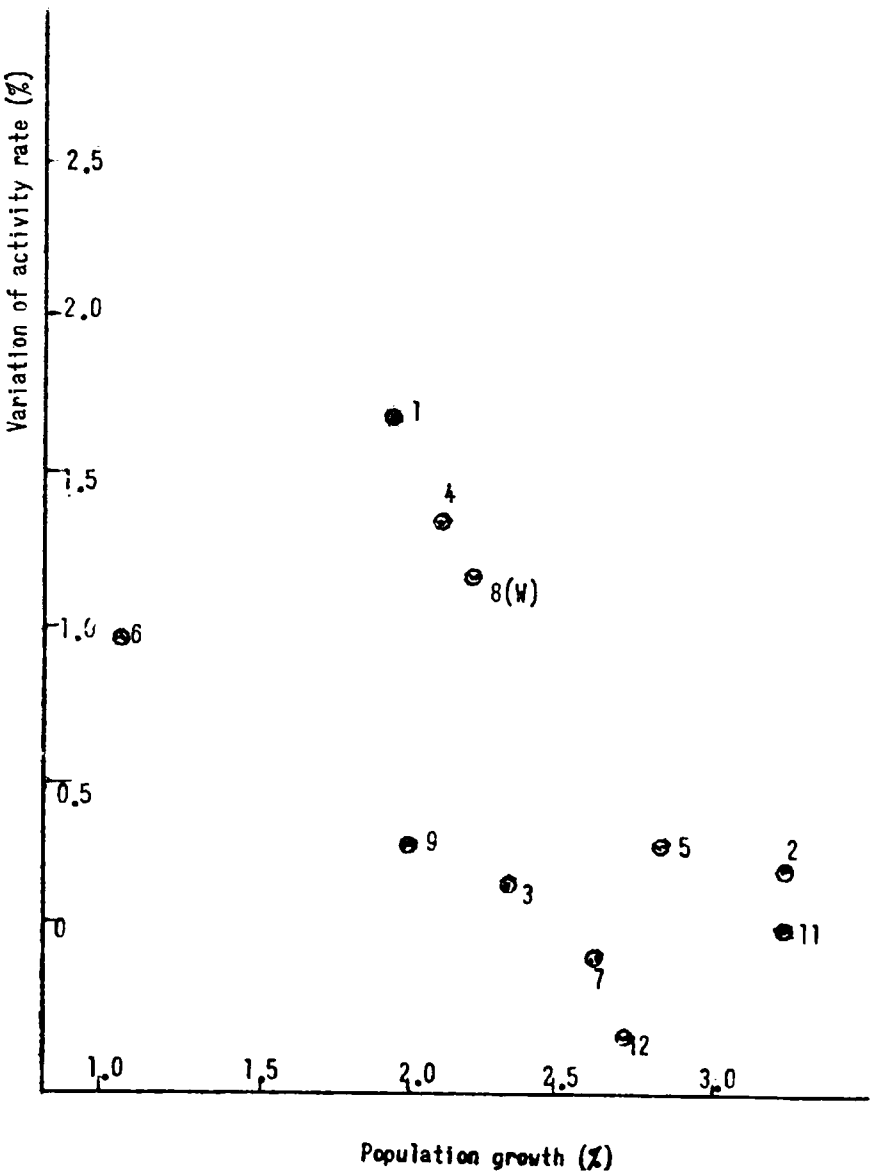
Graph 5d: Annual rate of intercensal change in male population and activity rates (age group 65 and over)



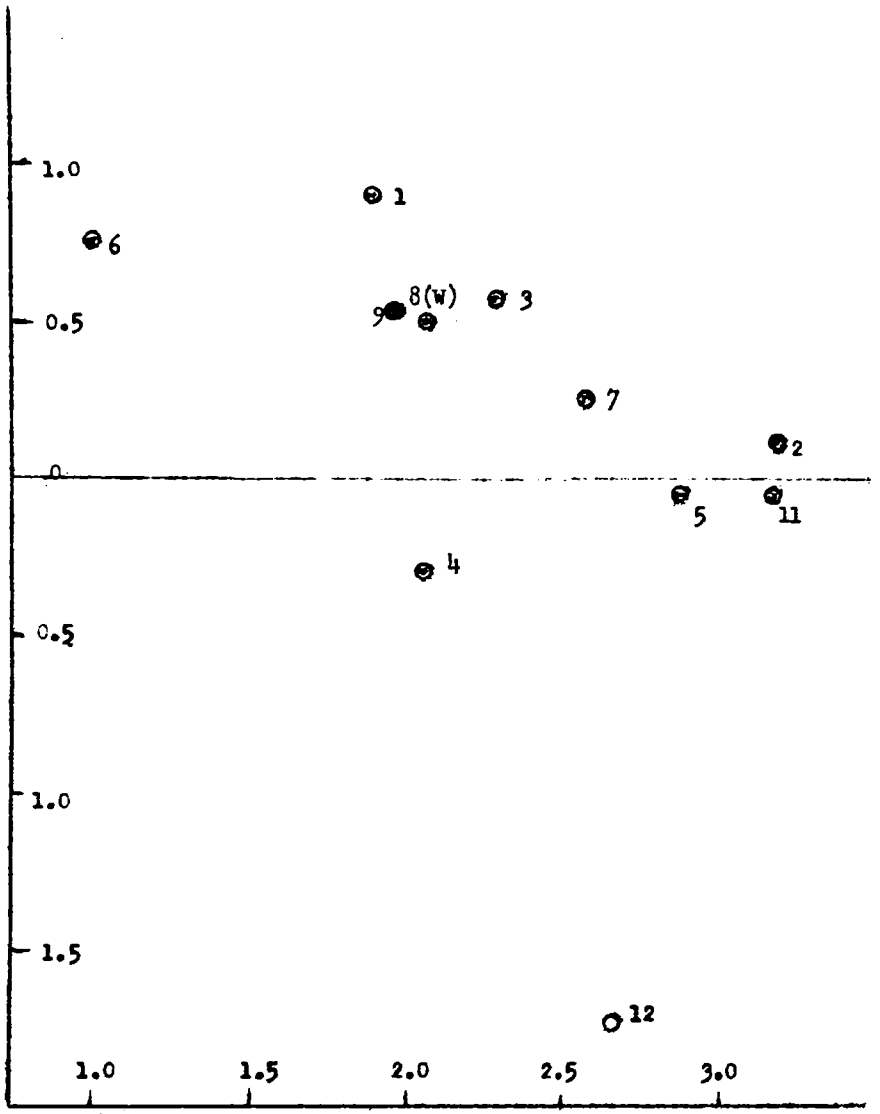
Graph 6a. Annual rate of intercensal change in female population and activity rates (age group 15-24)



Graph 6b. Annual rate of intercensal change in female population and activity rates (age group 25-54)



Graph 6 c. Annual rate of intercensal change in female population and activity rates (age group 55-64)



Graph 6 d. Annual rate of intercensal change in female population and activity rates (age group 65 and over)

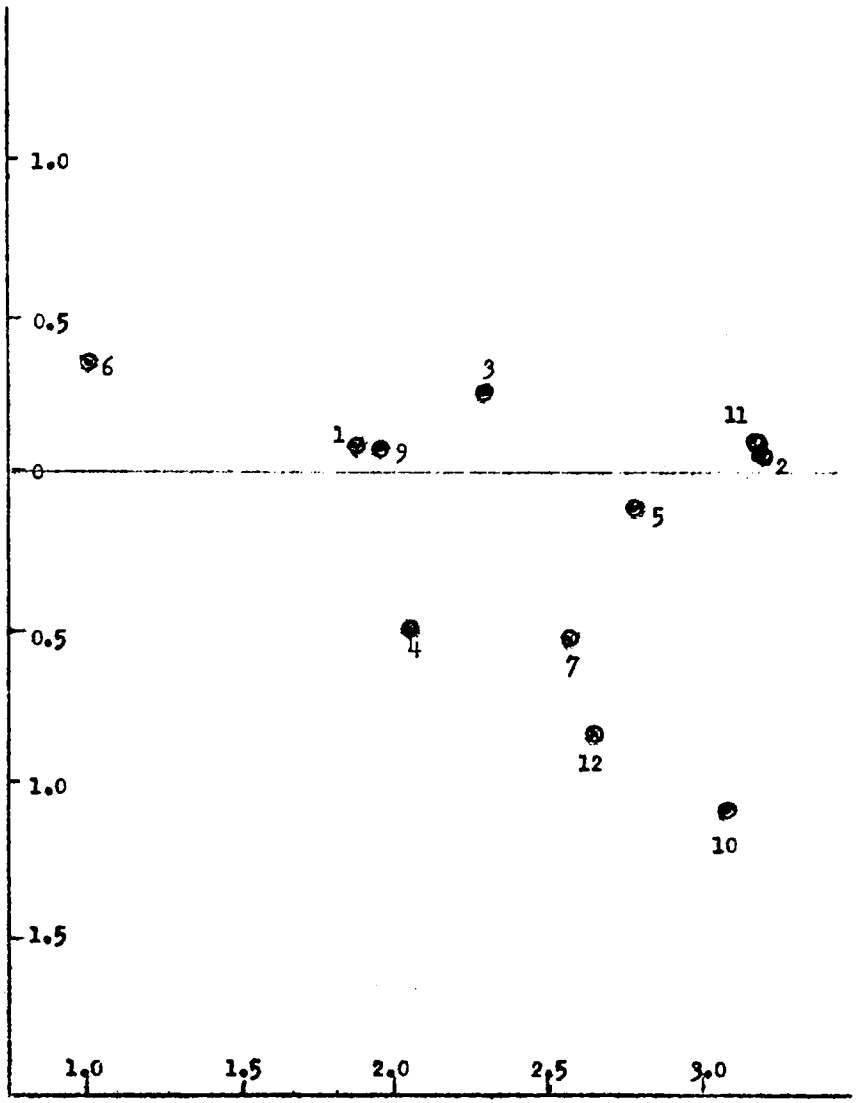


Table 14. Correlation coefficients between rates of population growth and rates of change of activity rates for specified age-sex groups

Age group	Correlation coefficients	
	Males	Females
15 - 24	0.202	0.385
25 - 54	-0.287	-0.124
55 - 64	0.075	-0.000
65 +	-0.167	-0.036

Source: Tables 12 and 13.

Chapter VIII

MARITAL STATUS AND PARTICIPATION OF FEMALES IN THE LABOUR FORCE

A. INTRODUCTION

Significant changes in female activity rates have been observed within many countries of the ESCAP region. The range of variation in female activity rates between countries is also quite high. Activity rates depend in large part on the levels of demographic, social and economic development in each country. However, labour force participation of females may also have been influenced by marital status and fertility behaviour which is closely associated with population growth.[1/] This chapter, therefore, will explore the association between marital status of women and their participation in the labour force. Chapter IX will examine the association between fertility and activity rates.

Several studies have shown that the marital status of women has a great influence on their participation in the labour force.[2/] In many countries, married women are less likely to be in the labour force than single, widowed, divorced or separated women, for whom a job is often an economic necessity. When a married woman has yong children who need care, the chances of her participation in the labour force are generally reduced.

In order to illustrate the influence of marital status on the participation of females in the labour force, this study will examine female activity rates classified by marital status in selected countries of the ESCAP region. Marital status is highly correlated with age, which is itself a key determinant of female labour force participation. The influence of age has therefore been removed by analysing the impact of marital status on activity rates for specific age groups. Some country studies have taken into consideration other social and economic factors, particularly educational attainment and income.[3/] However, reliable data corresponding to these variables, cross-classified by economic activity, marital status and age-group are not available for most countries of the ESCAP region. The basic data from which all tables in this chapter are contained in appendix table IV.

/B.

1/ There is also an association between female activity rates and the status of women, but the examination of this relationship is beyond the scope of the present study.

2/ See: United Nations, Demographic Aspects of Manpower, op. cit. pp. 36-54; and United Nations, The Determinants and Consequences of Population Trends, op. cit, pp. 305-309.

3/ For citations, see United Nations, The Determinants and Consequences of Population Trends, op. cit. pp. 315-317.

Table 15. Female age-specific activity rates, by marital status, in selected countries of the ESCAP region, 1956-1971

Country, census date and age	Marital status		
	Never married	Married	Widowed, divorced and separated
Australia 1966			
15 +	67.7	26.6	23.2
15 - 19	65.0	29.4	57.4
20 - 24	90.4	37.0	60.0
25 - 29	86.9	26.0	58.6
30 - 34	82.7	26.8	57.5
35 - 39	80.1	31.4	59.4
40 - 44	77.3	33.7	60.9
45 - 49	74.2	31.6	58.9
50 - 54	70.0	26.6	47.8
55 - 59	64.5	20.0	36.6
60 - 64	40.3	11.1	19.5
65 +	12.1	3.8	4.0
Australia 1971			
15 +	60.8	32.8	23.0
15 - 19	53.7	36.9	59.7
20 - 24	84.6	44.9	57.2
25 - 34	84.4	33.3	58.2
35 - 44	78.4	41.4	59.4
45 - 54	71.7	35.7	50.0
55 - 59	61.3	22.8	35.5
60 - 64	36.6	11.8	18.3
65 +	9.5	3.5	3.5
Hong Kong 1961			
15 +	66.3	28.5	37.8
15 - 19	48.9	34.0	45.8
20 - 24	75.4	27.9	68.0
25 - 34	84.7	26.8	74.5
35 - 44	86.7	31.9	75.7
45 - 54	84.1	33.0	56.6
55 - 64	67.2	22.3	29.9
65 +	30.2	8.5	9.6
Hong Kong 1971			
15 +	69.7	31.8	29.8
15 - 19	57.1	31.1	45.9
20 - 24	88.3	30.3	65.7
25 - 29	92.1	30.6	70.4
30 - 34	88.8	32.8	75.9
35 - 39	83.6	35.7	75.0
40 - 44	84.6	36.8	67.9
45 - 49	82.3	35.9	57.6
50 - 54	80.7	34.3	49.1
55 - 59	76.0	31.3	39.3
60 - 64	67.1	27.2	30.5
65 +	36.3	11.7	10.5

/Japan

Country, Census date and age	Marital Status		
	Never Married	Married	Widowed, divorced and separated
Japan 1960			
15 +	63.1	46.6	44.1
15 - 19	49.0	46.2	30.8
20 - 29	78.7	42.8	71.6
30 - 39	73.6	48.9	80.0
40 - 49	66.5	51.1	79.3
50 - 59	59.5	47.3	53.5
60 +	34.9	35.7	21.6
Japan 1965			
15 +	56.0	48.2	41.5
15 - 19	36.9	36.8	11.9
20 - 24	80.6	41.5	47.5
25 - 29	75.8	38.4	74.3
30 - 34	70.0	44.1	78.3
35 - 39	71.3	54.4	86.2
40 - 44	67.2	58.9	83.2
45 - 49	65.5	58.1	79.9
50 - 54	56.8	54.3	68.7
55 - 59	40.7	50.0	51.4
60 - 64	35.5	43.7	34.3
65 +	18.8	27.0	13.7
Japan 1973			
15 +	57.5	47.2	38.5
15 - 19	27.7	40.3	40.8
20 - 24	79.7	39.2	58.5
25 - 29	80.7	35.2	74.4
30 - 34	81.7	43.3	81.0
35 - 39	79.1	54.1	81.2
40 - 44	76.4	59.7	86.6
45 - 49	77.4	59.6	80.3
50 - 54	72.7	54.9	70.7
55 - 64	57.7	43.4	46.1
65 +	27.5	23.1	13.6
Nepal 1971			
15 +	51.7	32.6	34.9
15 - 19	51.8	42.5	49.8
20 - 24	52.9	37.9	52.1
25 - 29	53.3	35.8	53.7
30 - 34	51.0	33.0	52.3
35 - 39	50.1	32.6	49.4
40 - 44	48.6	31.3	42.7
45 - 49	51.2	31.0	37.9
50 - 54	47.0	29.7	32.0
55 - 59	45.0	27.4	27.9
60 - 64	28.9	20.0	15.7
65 +	19.6	5.6	...

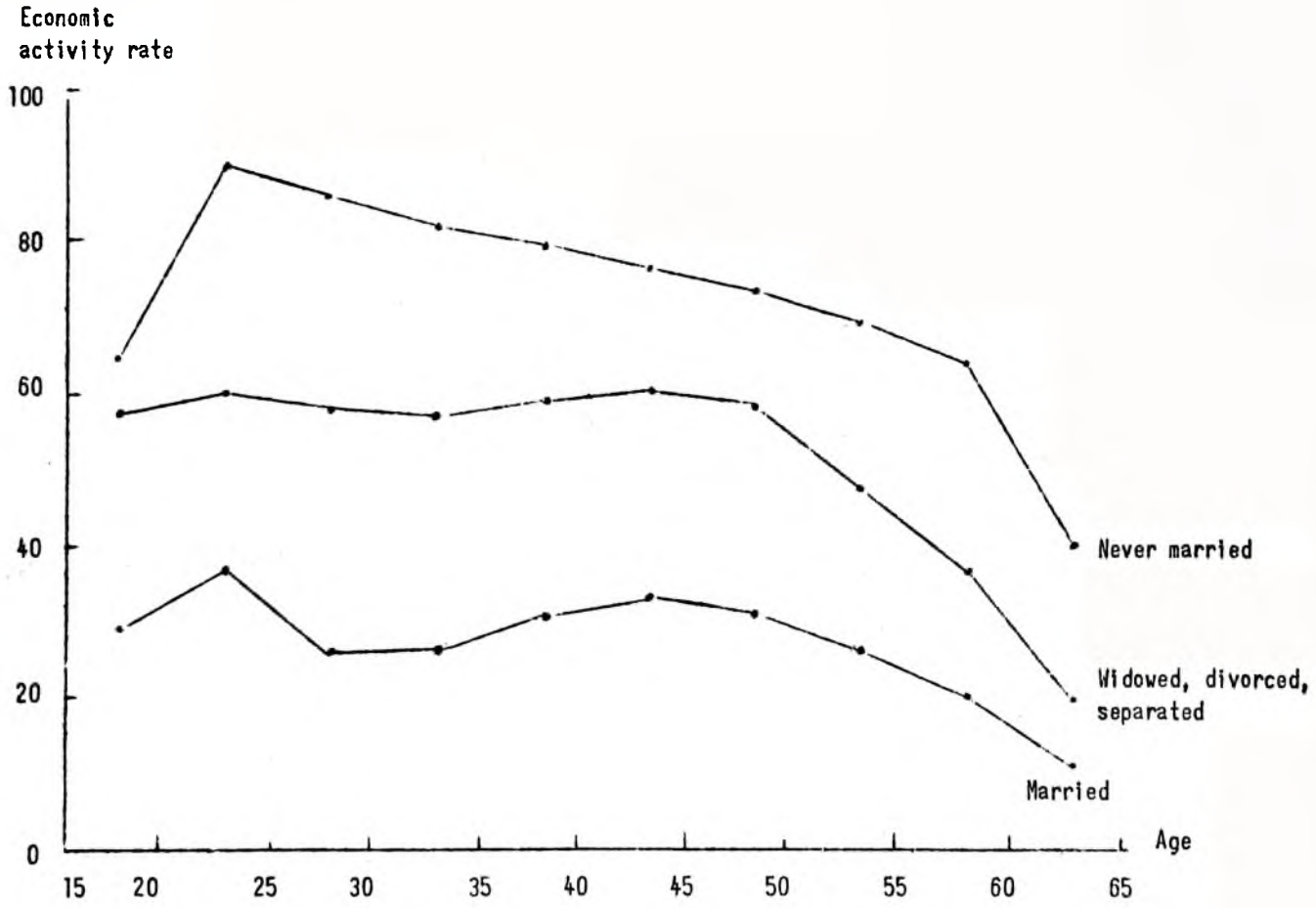
/Rep. of Korea

Country, Census data and age	Marital Status		
	Never married	Married	Widowed, divorced and separated
New Zealand 1956			
15 +	75.9	12.9	18.0
15 - 19	88.3	18.5	58.1
20 - 24	91.2	19.4	54.0
25 - 34	85.1	11.5	56.1
35 - 44	77.6	15.2	53.2
45 - 54	69.3	16.7	42.6
55 - 64	44.2	8.4	20.3
65 +	10.6	1.6	3.3
New Zealand 1966			
15 +	77.7	19.9	18.6
15 - 19	83.4	23.5	42.7
20 - 24	93.1	26.7	58.5
25 - 29	90.5	15.3	55.1
30 - 34	87.2	16.4	52.4
35 - 39	85.5	21.8	56.1
40 - 44	83.1	26.9	55.8
45 - 49	80.2	27.7	49.8
50 - 54	74.5	25.2	44.6
55 - 59	64.0	18.5	33.4
60 - 64	38.3	9.5	17.5
65 +	11.2	2.1	3.1
Singapore 1970			
15 +	57.1	14.7	17.3
15 - 19	44.7	8.9	45.5
20 - 24	75.1	14.1	42.8
25 - 29	73.5	17.8	52.5
30 - 34	66.7	17.0	53.5
35 - 39	62.4	15.3	47.9
40 - 44	56.2	14.2	37.7
45 - 49	59.8	13.6	29.7
50 - 54	64.6	13.1	22.2
55 - 59	57.5	11.9	17.1
60 - 64	45.7	9.8	12.7
65 +	23.0	6.2	5.3

Sources: United Nations Demographic Yearbook, 1958, 1962, 1964, 1971, 1972, 1973;

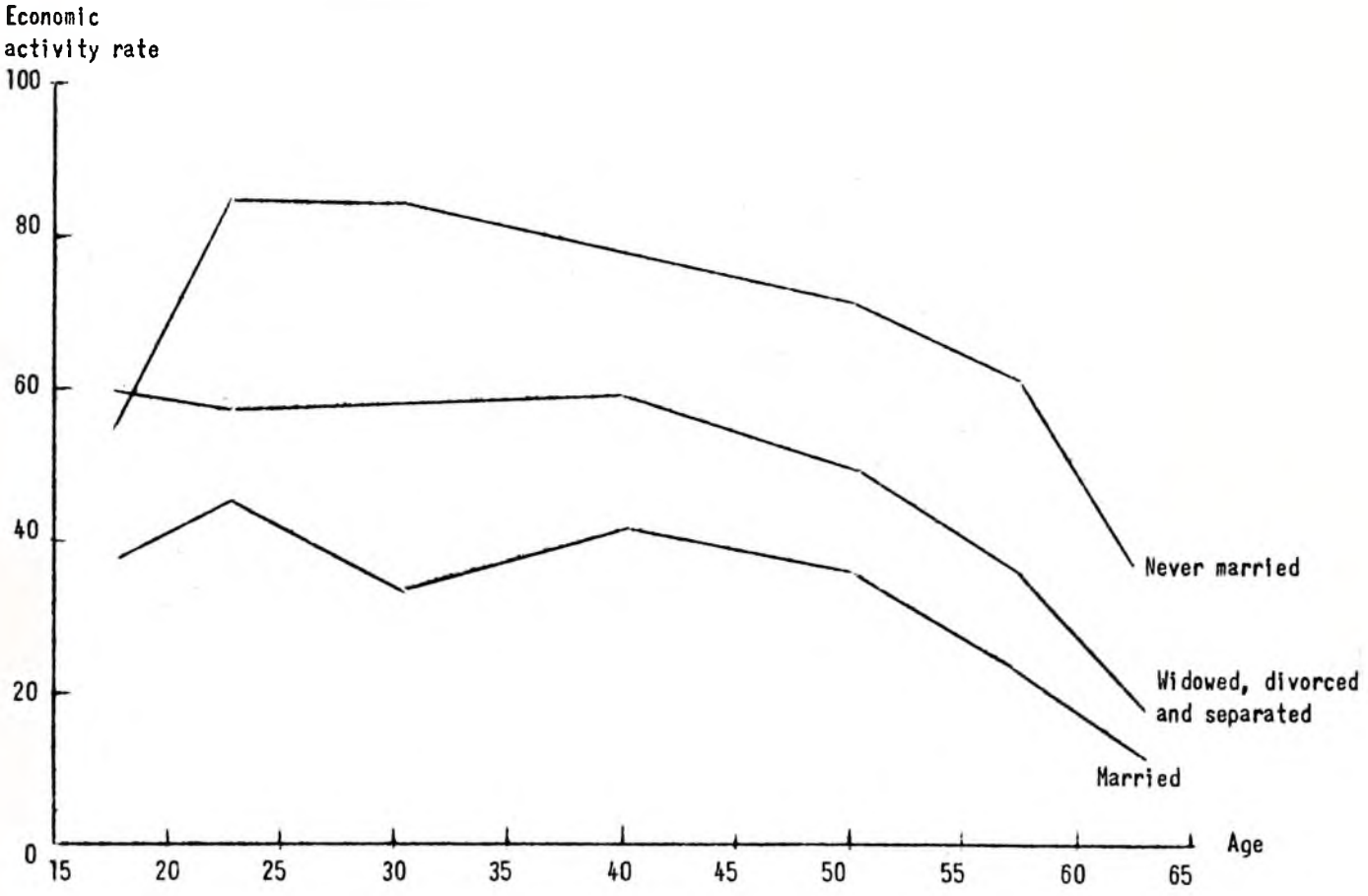
Bureau of Statistics, Office of the Prime Minister, Japan, Annual Report on the Labour Force Survey, 1973.

Graph 7a(i). Female age-specific activity rates, by marital status, Australia, 1966



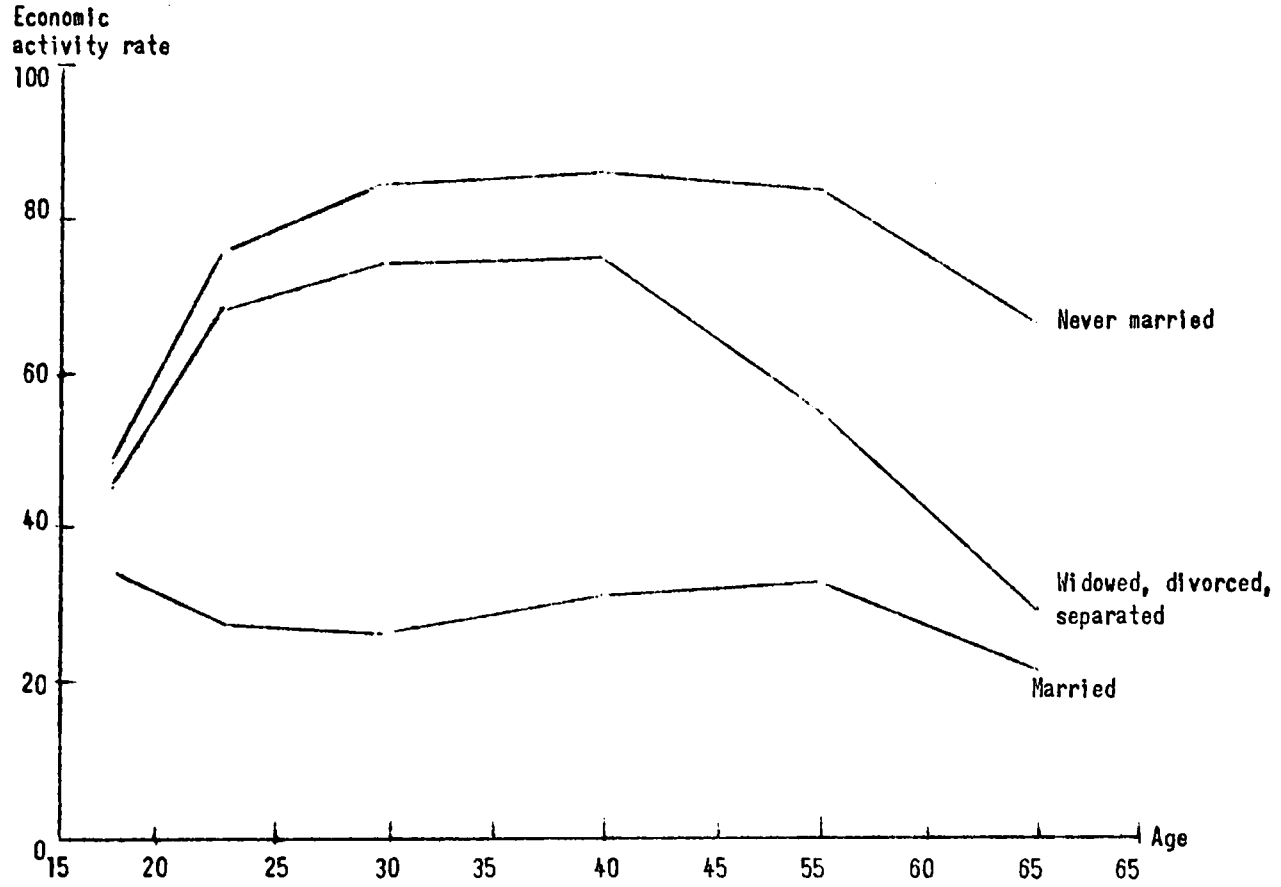
Source: Table 15.

Graph 7a(ii). Female age-specific activity rates, by marital status, Australia, 1971



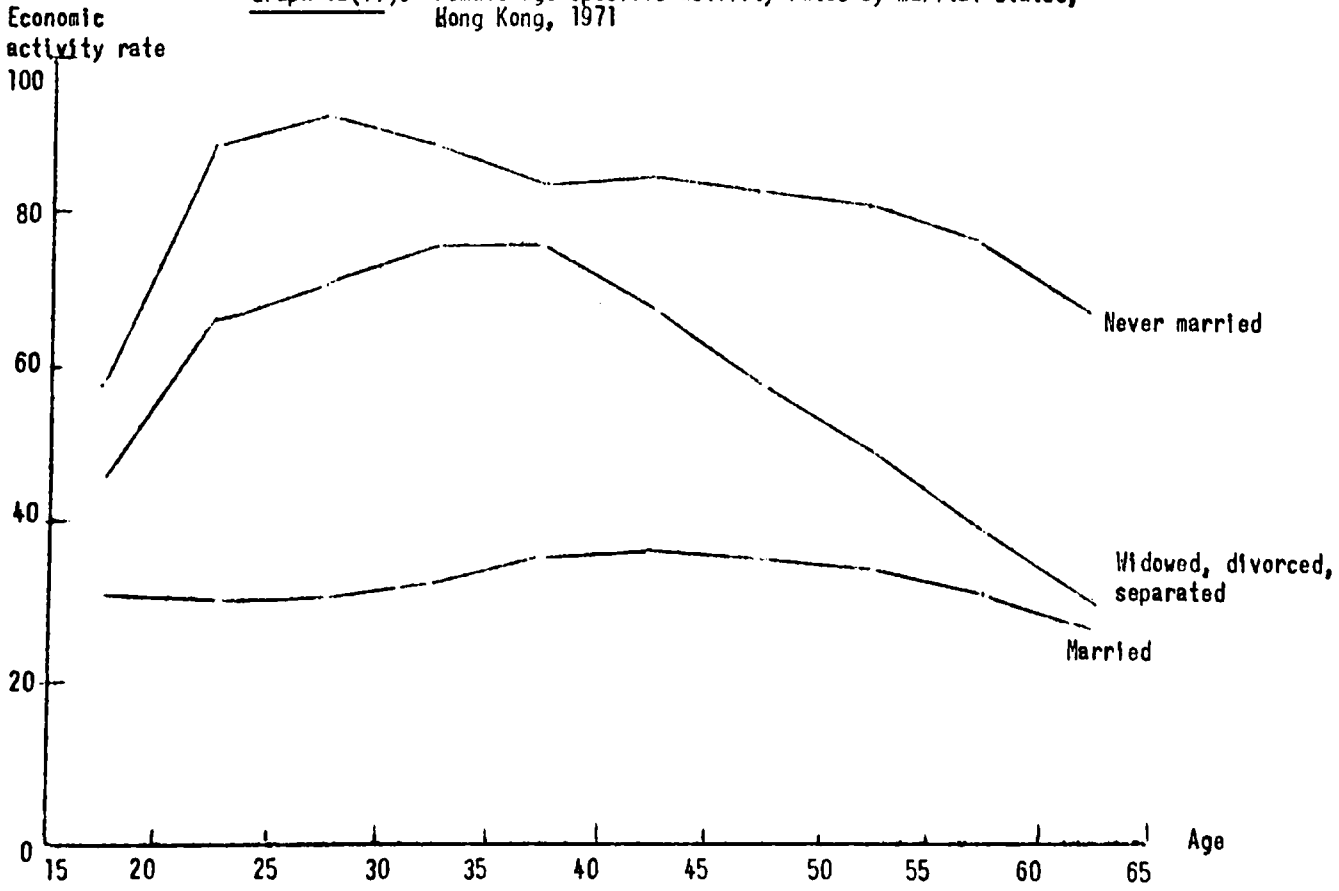
Source: Table 15.

Graph 7b(i). Female age-specific activity rates, by marital status, Hong Kong, 1961



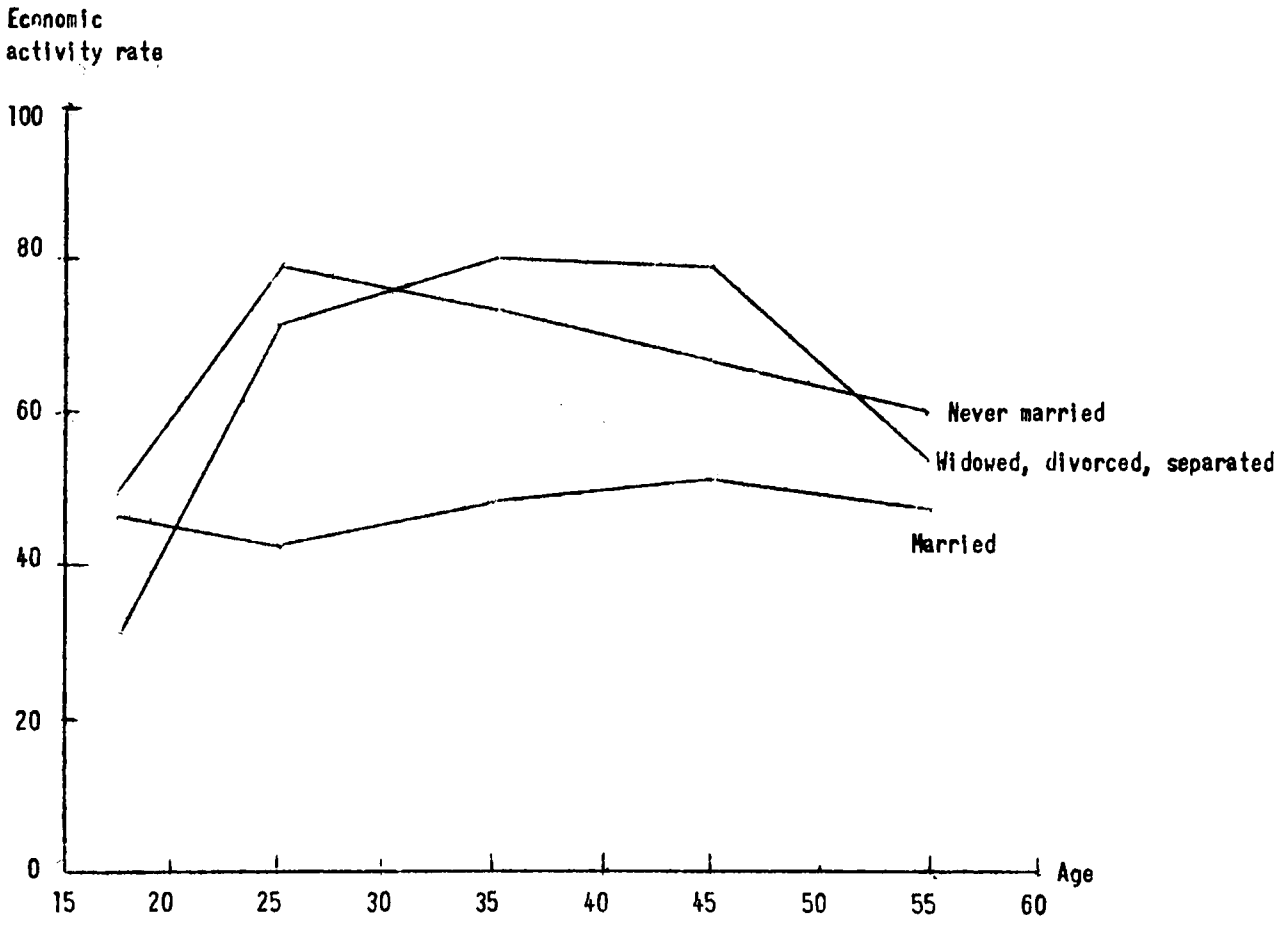
Source: Table 15.

Graph 7b(ii): Female age-specific activity rates by marital status, Hong Kong, 1971



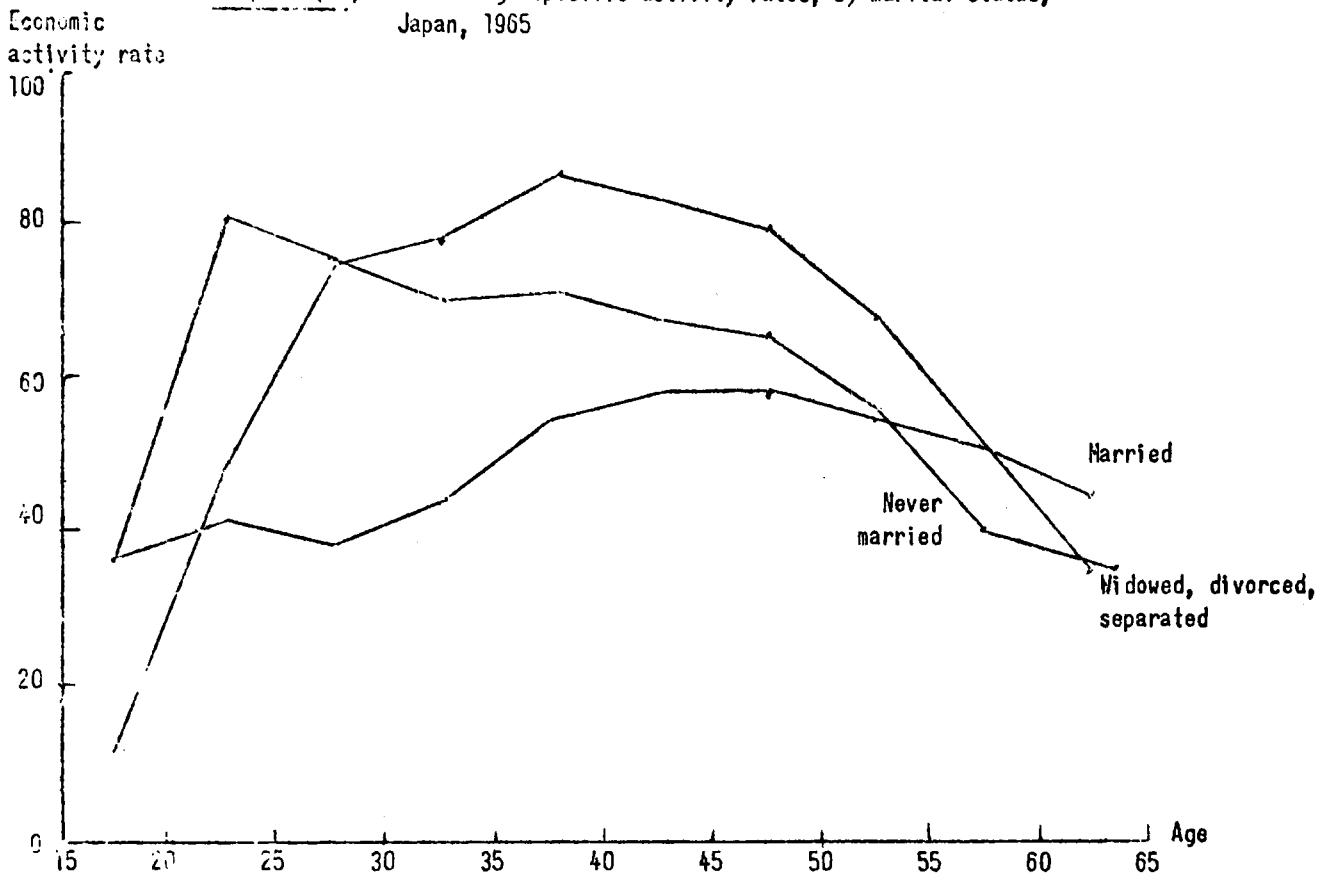
Source: Table 15.

Graph 7c(1). Female age-specific activity rates, by marital status, Japan, 1960



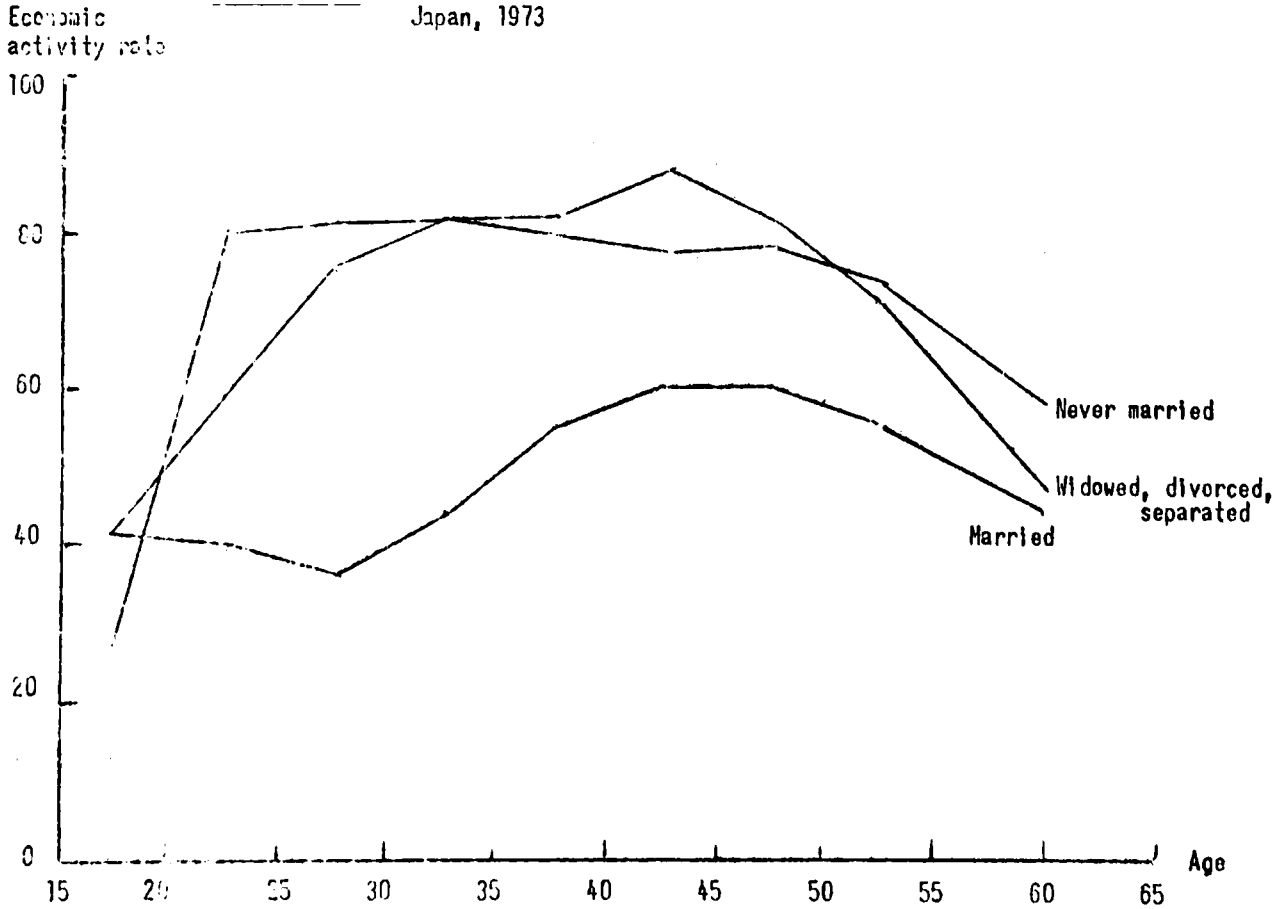
Source: Table 15.

Graph 7c(ii). Female age-specific activity rates, by marital status, Japan, 1965



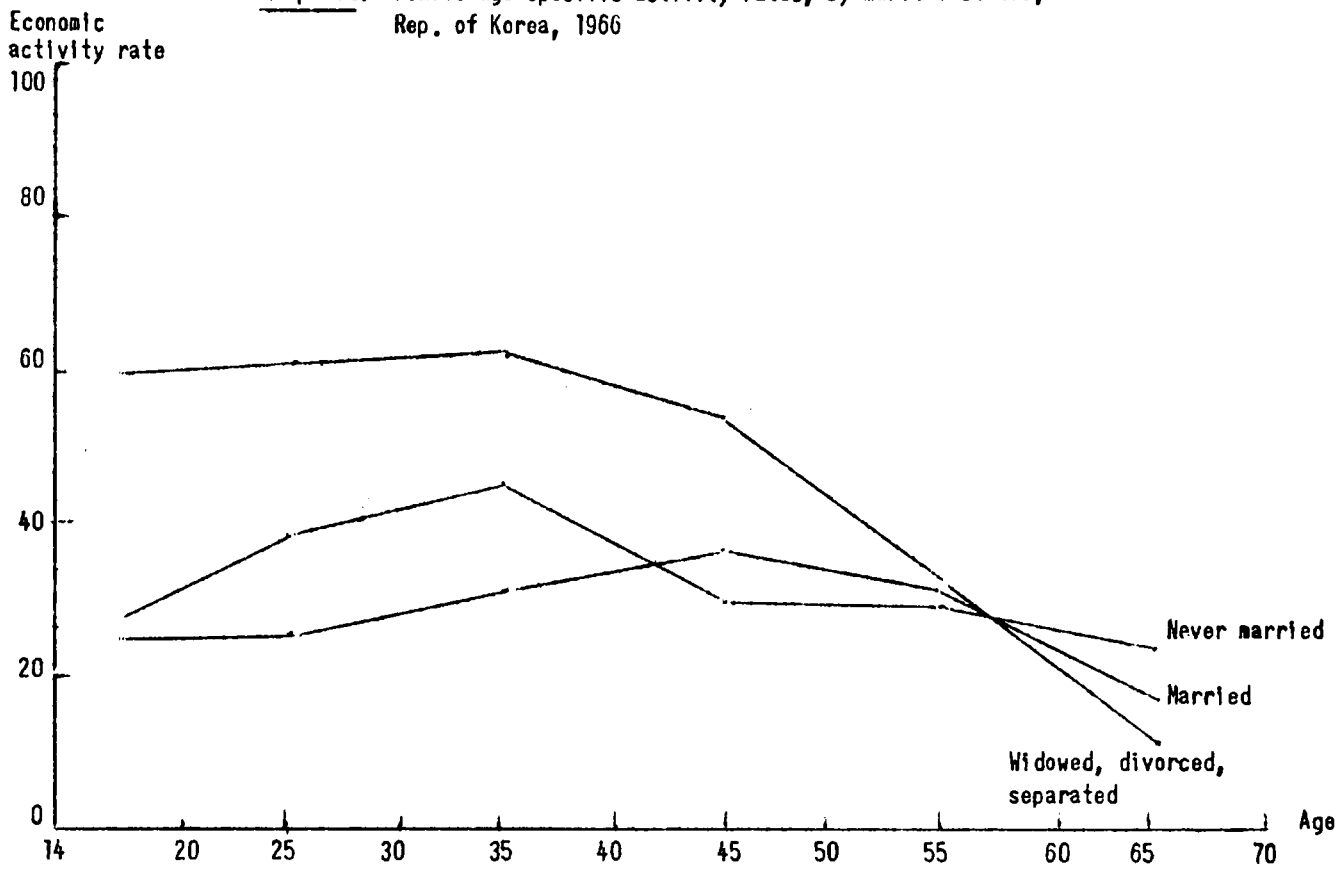
Source: Table 15.

Graph 7c(iii). Female age-specific activity rates, by marital status, Japan, 1973



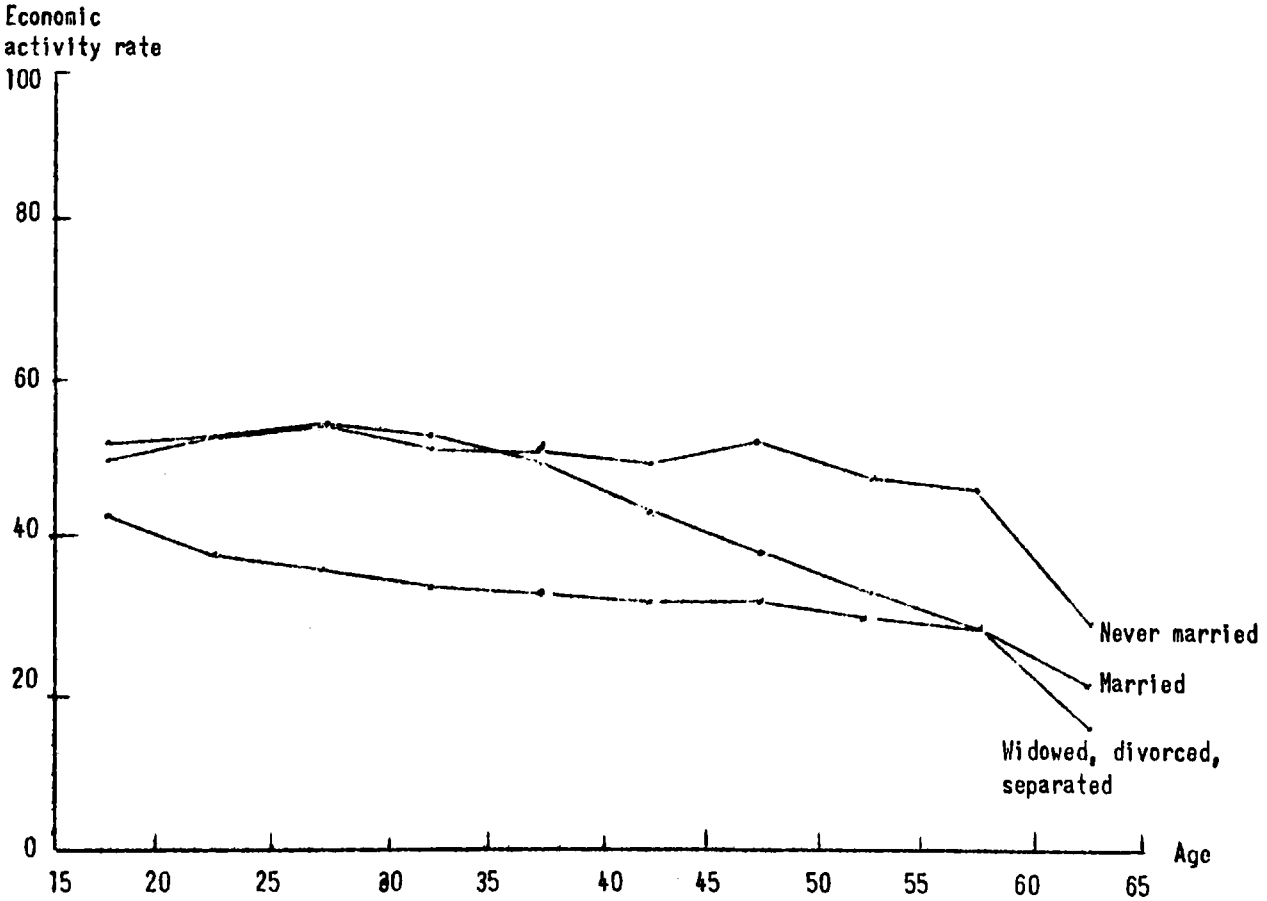
Source: Table 15.

Graph 7d. Female age-specific activity rates, by marital status, Rep. of Korea, 1966



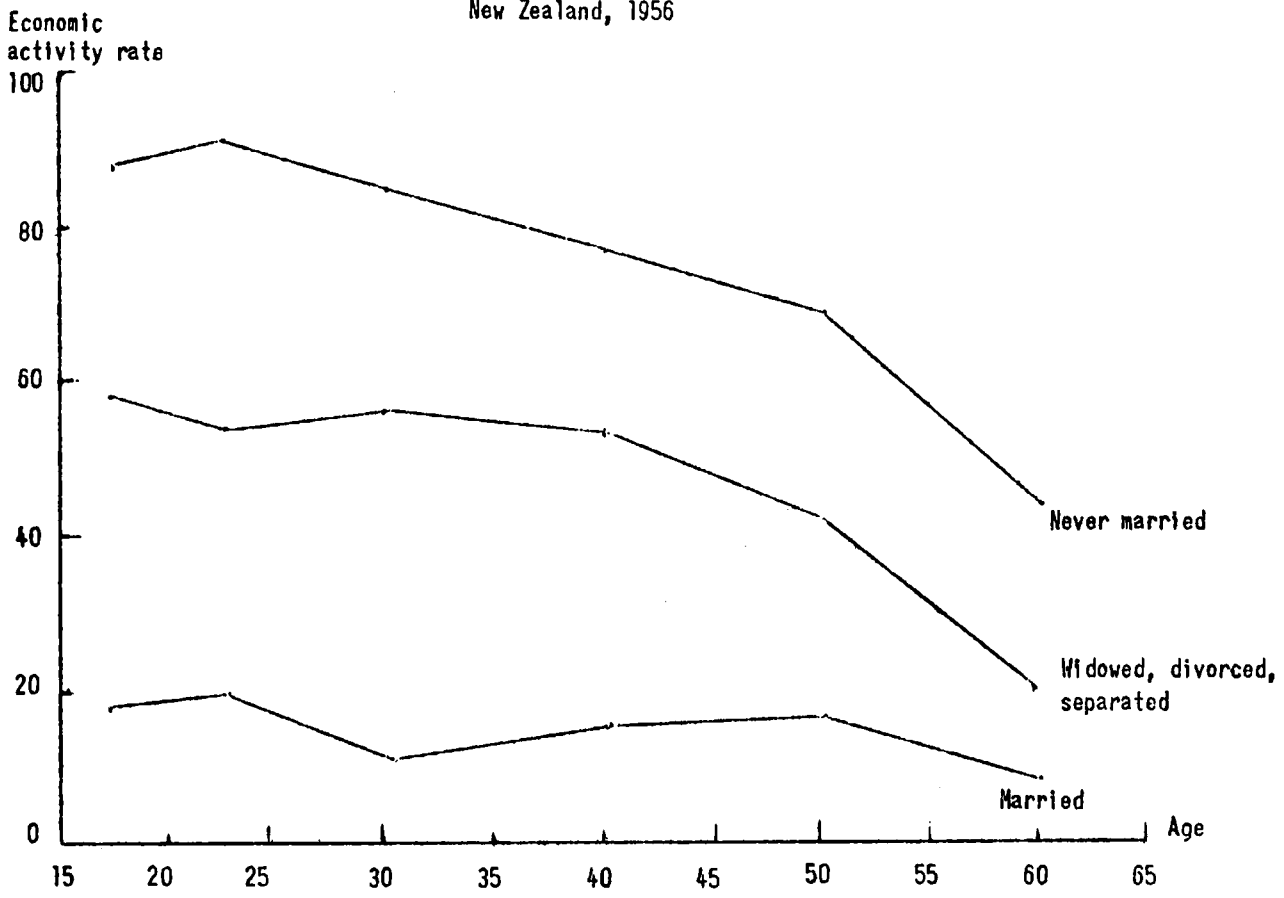
Source: Table 15.

Graph 7e. Female age-specific activity rates, by marital status, Nepal, 1971



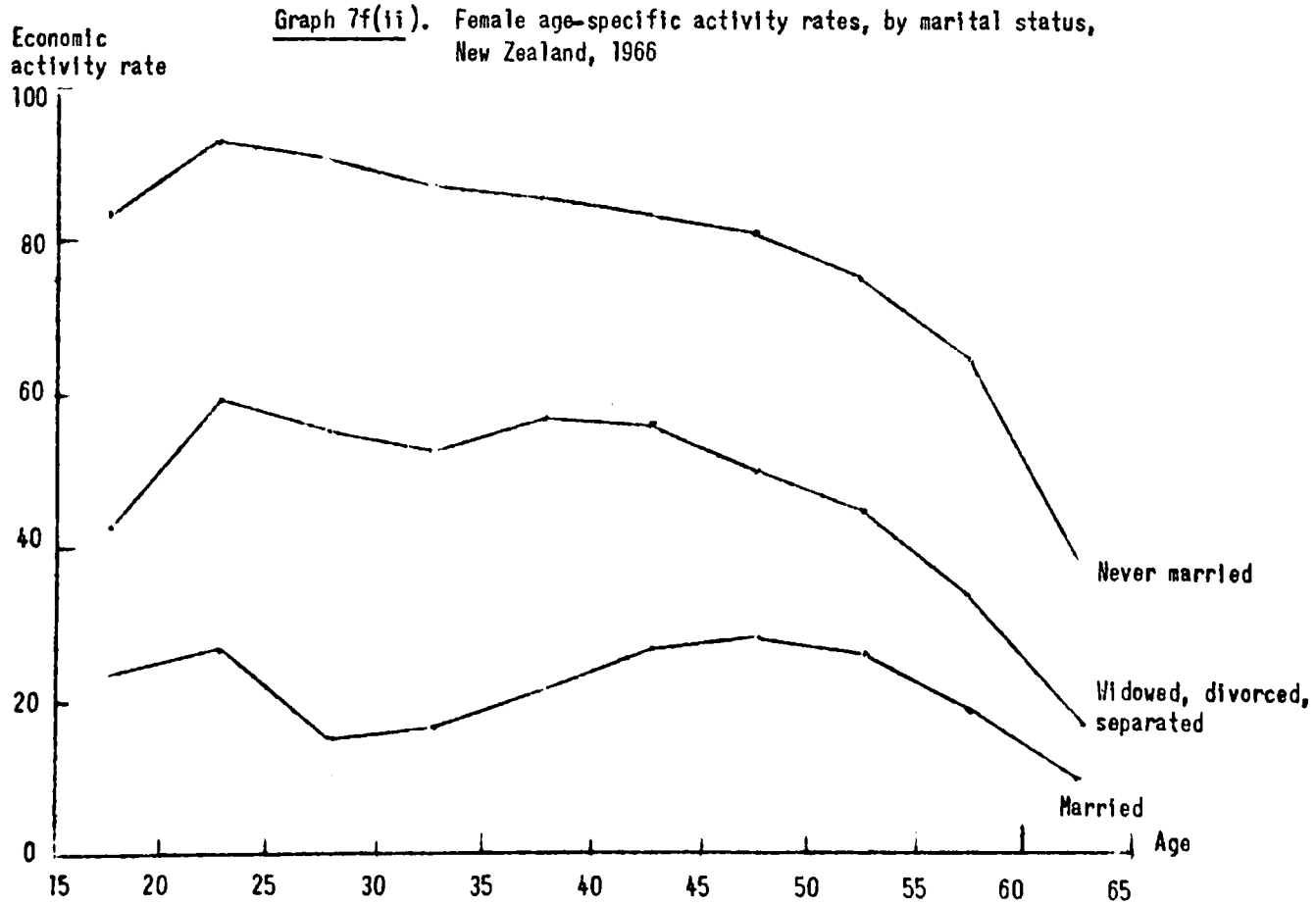
Source: Table 15.

Graph 7f(i). Female age-specific activity rates, by marital status, New Zealand, 1956



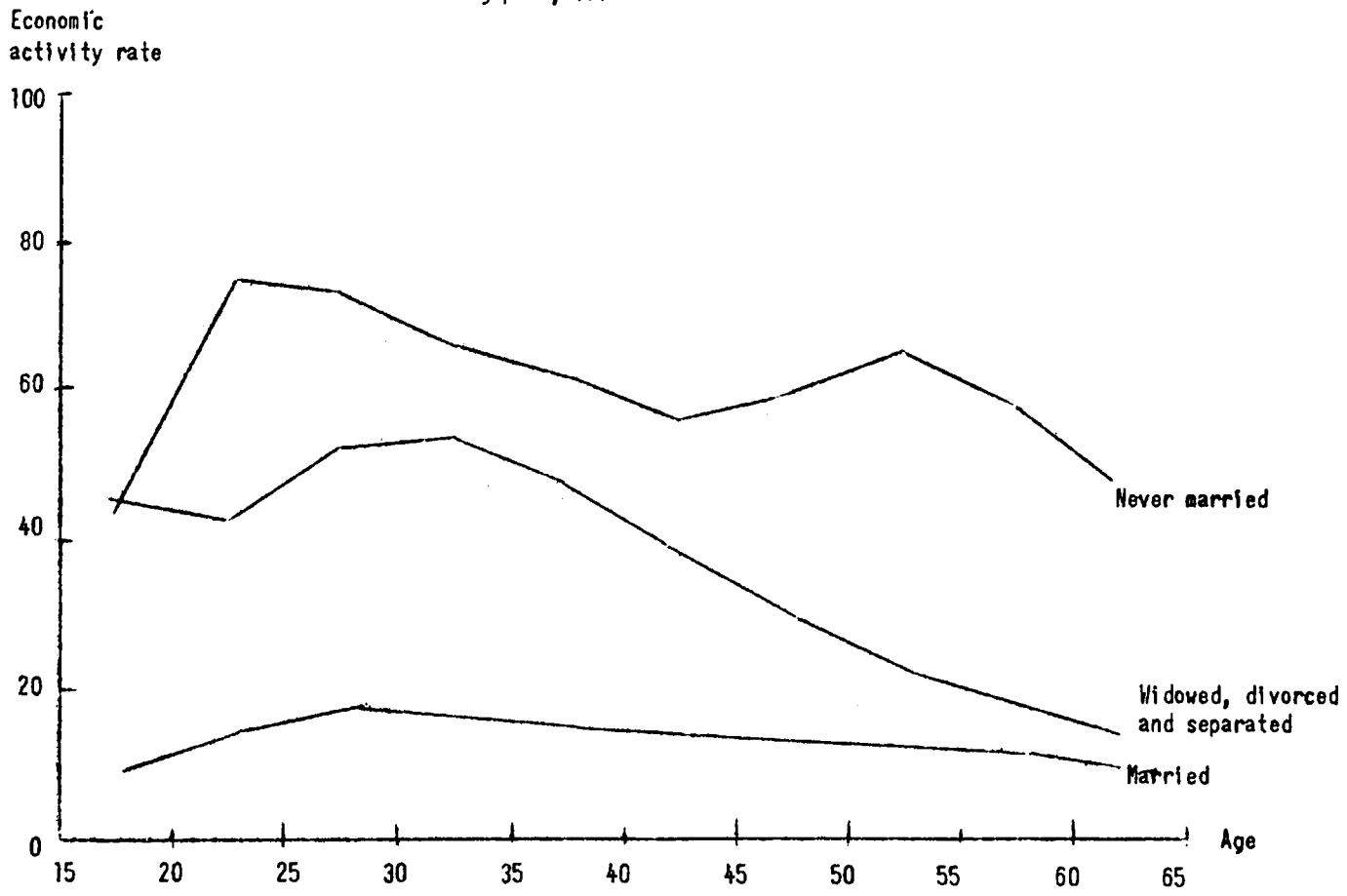
Source: Table 15.

Graph 7f(ii). Female age-specific activity rates, by marital status, New Zealand, 1966



Source: Table 15.

Graph 7g: Female age-specific activity rates, by marital status, Singapore, 1970



Source: Table 15.

B. COMPARISON OF ACTIVITY RATES BY MARITAL STATUS

Table 15 contains the female age-specific activity rates by marital status for seven countries (Australia, Hong Kong, Japan, Nepal, New Zealand, Republic of Korea and Singapore). The corresponding patterns in age-specific activity rates are shown in graphs 7a(i) through 7g.

Except for Japan and the Republic of Korea, the age-specific activity rates are the lowest for married women and highest for never married women. This reflects, to a large extent, the effects of fertility and maternal responsibilities as well as the material security provided by the husbands. Another factor at work in this connexion may be the social expectation that married women, even if they do not have children, should not participate in economic activity.

The higher level of labour force participation of widowed, divorced and separated women in most countries, as compared with that of married women, particularly in the age groups 30 to 50 years, may be due to two factors. Firstly, the widowed, divorced and separated women are able to enter the labour force since they are free from maternal responsibilities when their children by the previous marriage reach school age, while married women may continue to have children or bear the responsibility of caring for children below school age. Secondly, without the financial support of their husbands, widowed, divorced and separated women may be compelled to seek employment to improve their incomes.

It may therefore be concluded that, in most countries of the ESCAP region, marital status is significantly associated with the participation of women in the labour force. However, the impact of marital status upon female labour force participation varied from one countries to another, depending on the role of women in the social and economic life of the country. Nevertheless, it would appear that marriages and consequent maternal responsibilities prevent a number of females from joining the labour force.

/C.

C. LEVELS OF ACTIVITY RATES BY MARITAL STATUS

1. Never married women

Table 15 indicates that labour force participation rates of never married women aged 15 and over varied from a low of 31.0 per cent in the case of the Republic of Korea in 1966 to a high of 77 per cent in the case of New Zealand in 1966. Only in the case of the Republic of Korea was the figure below 55 per cent.

When age-specific activity rates are examined, two patterns emerge. One pattern is exemplified by Nepal and the Republic of Korea. It is illustrated in Graph 8a(i). It involves a relatively constant level of age-specific labour force participation rates at a relatively low level. This relatively low level of activity rates of never-married women in Nepal and the Republic of Korea was probably due to the lack of job opportunities for females, the relatively low level of female education and the traditional financial support which non-married non-working females received from the other members of the family. The other pattern is exemplified by Australia, Hong Kong, Japan, New Zealand and Singapore. It is illustrated in graph 8a(ii) and involves a rapid increase in labour force participation rates between age 15 and age 20 and thereafter a steady and marked decline. After age 50 there is an acceleration in the rate of decline in activity rates. The rapidly rising phase probably represents entry into the labour force after leaving school. The decline after age 50 is probably due to early retirement from the labour force of women with traditional vocations.

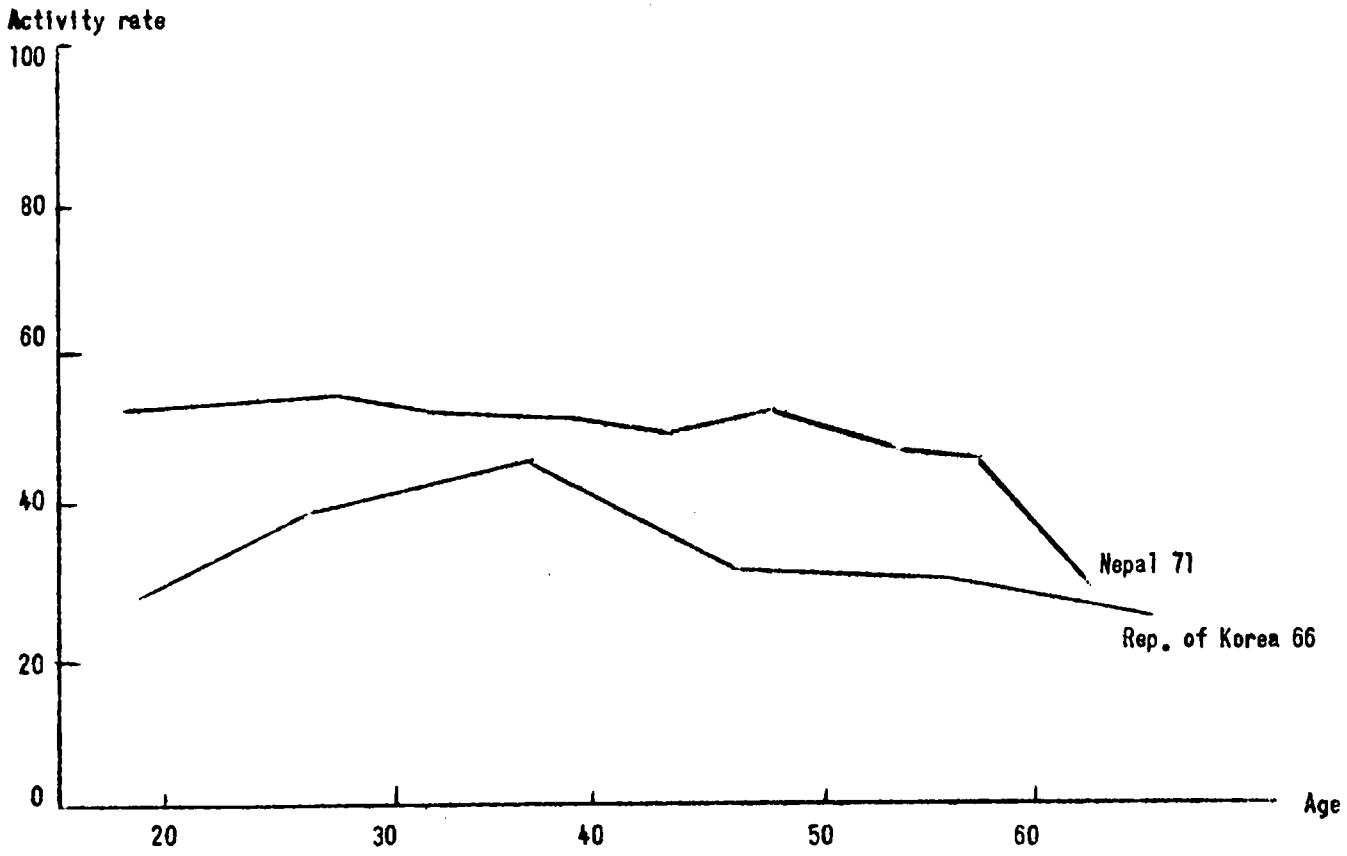
2. Married women

Table 15 indicates that labour force participation rates of married women aged 15 and over varied from a high of 48.2 per cent in the case of Japan (1965) to a low of 12.9 per cent in the case of New Zealand (1956). The high rate of labour force participation of married women in Japan may be due to part to the ready disposition of married women to work in business and industry and their wide acceptance by employers in that country,[4/] and in part to an over-enumeration of the economically active females.

/The patterns

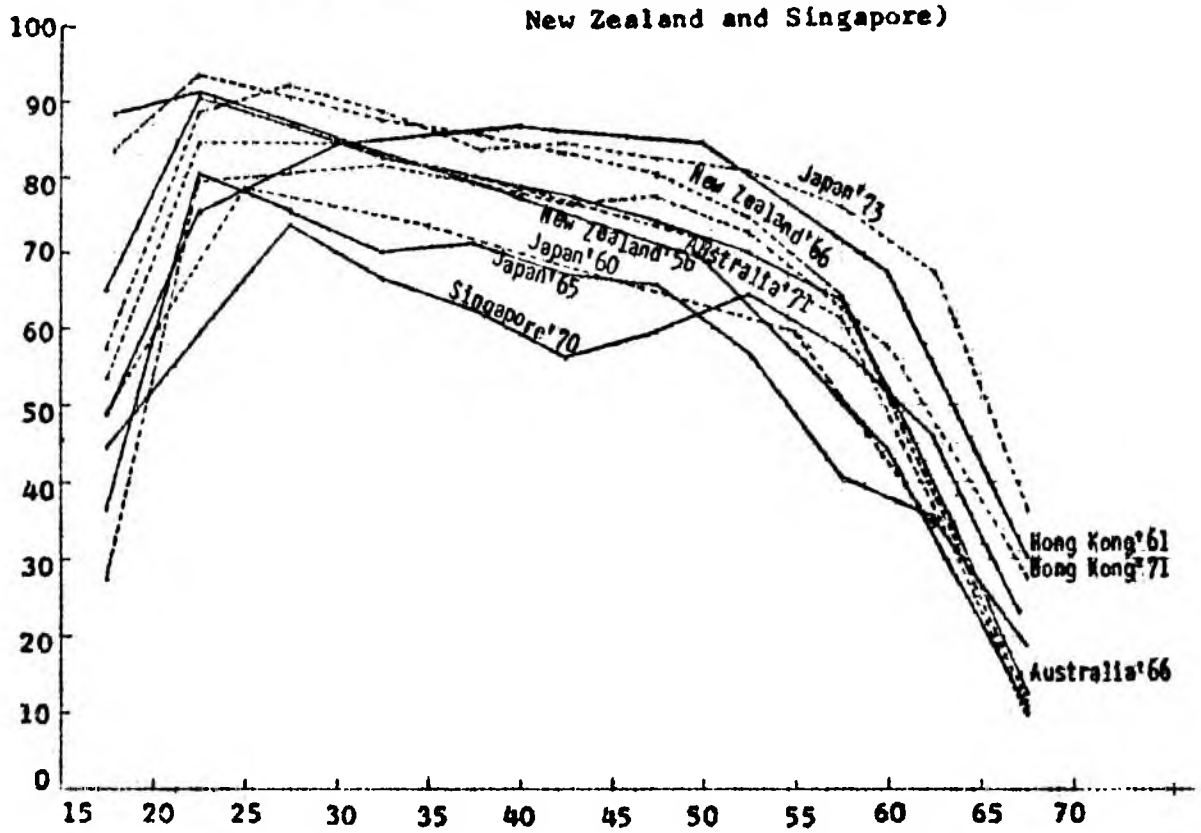
4/ In Japan, a large demand for female workers exists in such occupations as "craftsmen and production process workers", "farmers", "sales workers" and "clerical and related workers".

Graph 8a(1): Age-specific activity rates of never-married women (Nepal and Republic of Korea)



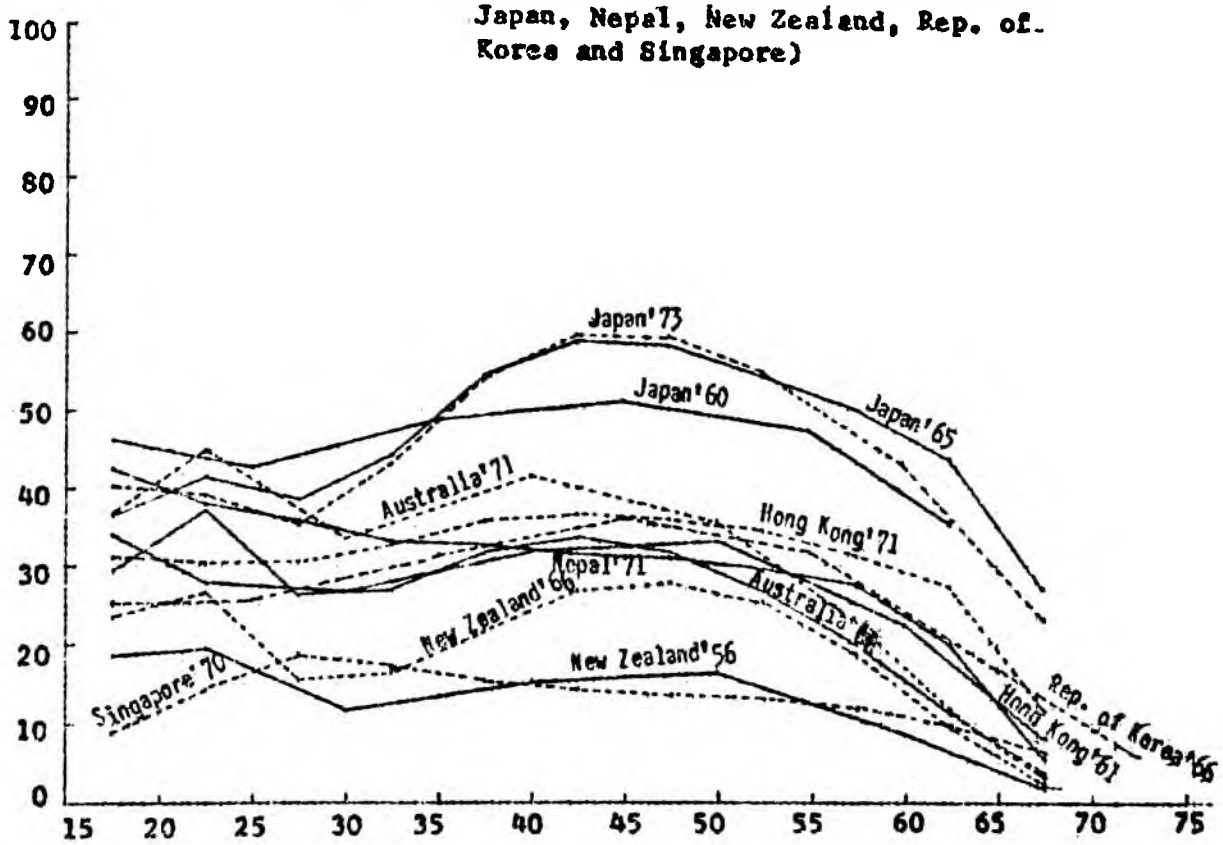
Source: Table 15.

Graph 8.a(ii). Age-specific rates of never-married women (Australia, Hong Kong, Japan, New Zealand and Singapore)



Source: Table 15.

Graph 8.b. Age-specific activity rates of married women (Australia, Hong Kong, Japan, Nepal, New Zealand, Rep. of Korea and Singapore)



Source: Table 15.

The patterns of age-specific activity rates of married women do not fall into a small number of distinct categories. This is illustrated in graph 8b. In general, the pattern of activity rate curves is similar, characterized by two peaks, one approximately at ages 20-25 years and the other at ages 40-50 years. The trough between the two peaks occurs approximately at age 30. This pattern probably reflects the effects of first pregnancies and maternal responsibilities on the size of female labour force.

It should be noted that not all countries followed this pattern in all respects. In several countries (Japan, Hong Kong, New Zealand and the Republic of Korea) the first peak occurred at age 15 rather than between ages 20-25 years.

3. Widowed, divorced and separated women

Table 15 indicates that the participation rates of widowed, divorced and separated women in the labour force varied from a low of about 18 per cent in New Zealand (1956, 1966) to a high of more than 40 per cent in Japan (1960, 1965).

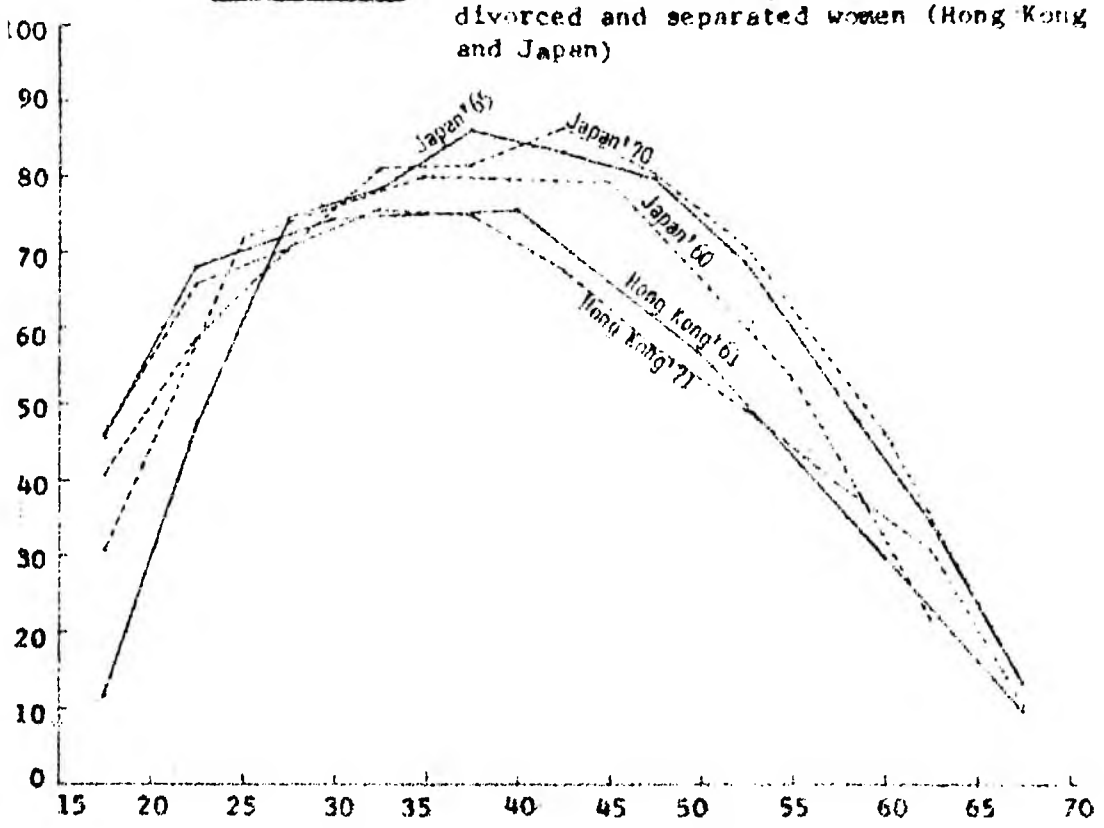
The various countries could be dividedinto two groups on the basis of the shape of the curves relating to the age-specific activity rates of their widowed, divorced and separated women. Graph 8c(i) illustrates the pattern of age-specific activity rates for Japan (1960, 1965, 1973) and Hong Kong (1961, 1971). Although the age-specific activity rates of widowed, divorced and separated women in Hong Kong were lower than those in Japan, the shape of the curves are similar, with maximum participation levels at ages 35-45 for Japan and at ages 30-35 years for Hong Kong.

The sharp increases in activity rates of widowed, divorced and separated women aged 30 to 45 years observed in Japan and Hong Konk may be due to the entry or re-entry of these women into the labour force when their children reach school age and is perhaps motivated by the need for additional income.

Graph 8c(ii) illustrates the pattern of age-specific activity rates for Nepal (1971), New Zealand (1966, 1971), Australia (1966), Republic of Korea (1966) and Singapore (1971). The age-specific activity rates of widowed, divorced and separated women appeared to be constant until the age of 45 and decreasing at older ages. Except for those below 25 years of age, the average labour force participation rates of widowed, divorced and separated women were much lower in the second than in the first group of countries.

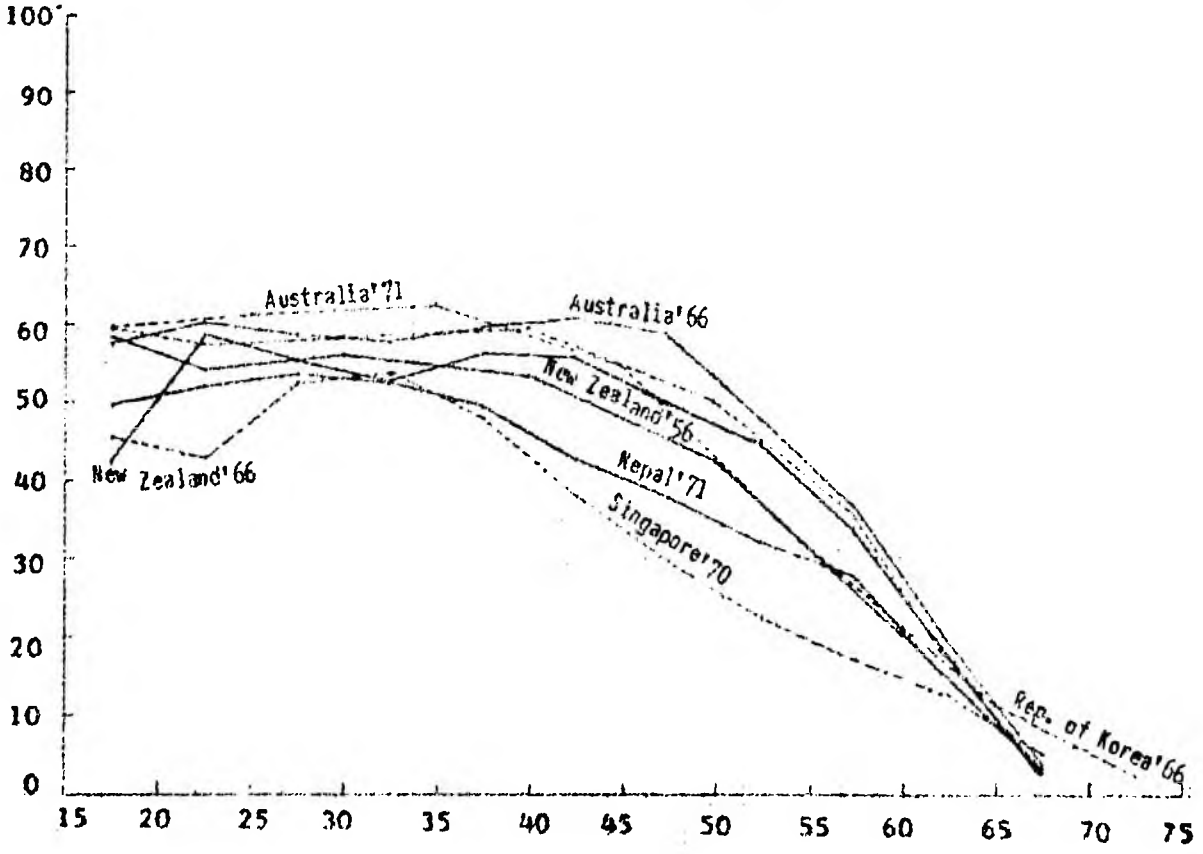
/In most

Graph 8.c(i). Age-specific activity rates of widowed, divorced and separated women (Hong Kong and Japan)



Source: Table 15.

Graph 8.c(ii). Age-specific activity rates of widowed, divorced and separated women (Australia, Nepal, New Zealand, Rep. of Korea and Singapore)



Spurce: Table 15.

In most developing countries, such as Nepal and the Republic of Korea, widowed women, like single women, receive financial support from their parents, brothers, sisters, or other close relatives and therefore mostly do not participate in economic activity. The lower activity rate of widowed women in developed countries, such as Australia and New Zealand, may be due to government as well as private pension schemes which provide financial support to the widowed.

D. INTERCENSAL VARIATIONS IN ACTIVITY RATES BY MARITAL STATUS

A study of the variations in the labour force participation of women by marital status and age groups at the regional level is rendered difficult on account of the differences between countries in the level of labour force participation of women and in the degree of interaction with social and economic changes. A study of those variations at the national level may also be difficult because of the non-availability and non-comparability of data over time. However, in order to obtain a rough idea of the pattern of these variations, an analysis has been undertaken of the data relating to four countries, Australia (1966-1971), Japan (1960 and 1973), New Zealand (1956 and 1966) and Hong Kong (1961 and 1971).

Table 16 presents annual rates of intercensal variation in age-specific female activity rates by marital status for these four countries.

1. Never-married women

Graph 9a(i) presents annual rates of intercensal change in married women for four countries.

In the case of the more developed countries, Australia, Japan and New Zealand, activity rates tended to fall during the intercensal period in the younger age groups and tended to rise in the older age groups. This was probably due to the increased average number of years of schooling for females in those countries. Graph 9a(ii) illustrates a more complex pattern in the case of Hong Kong, where activity rates rose prior to age 30, declined until age 50 and increased thereafter.

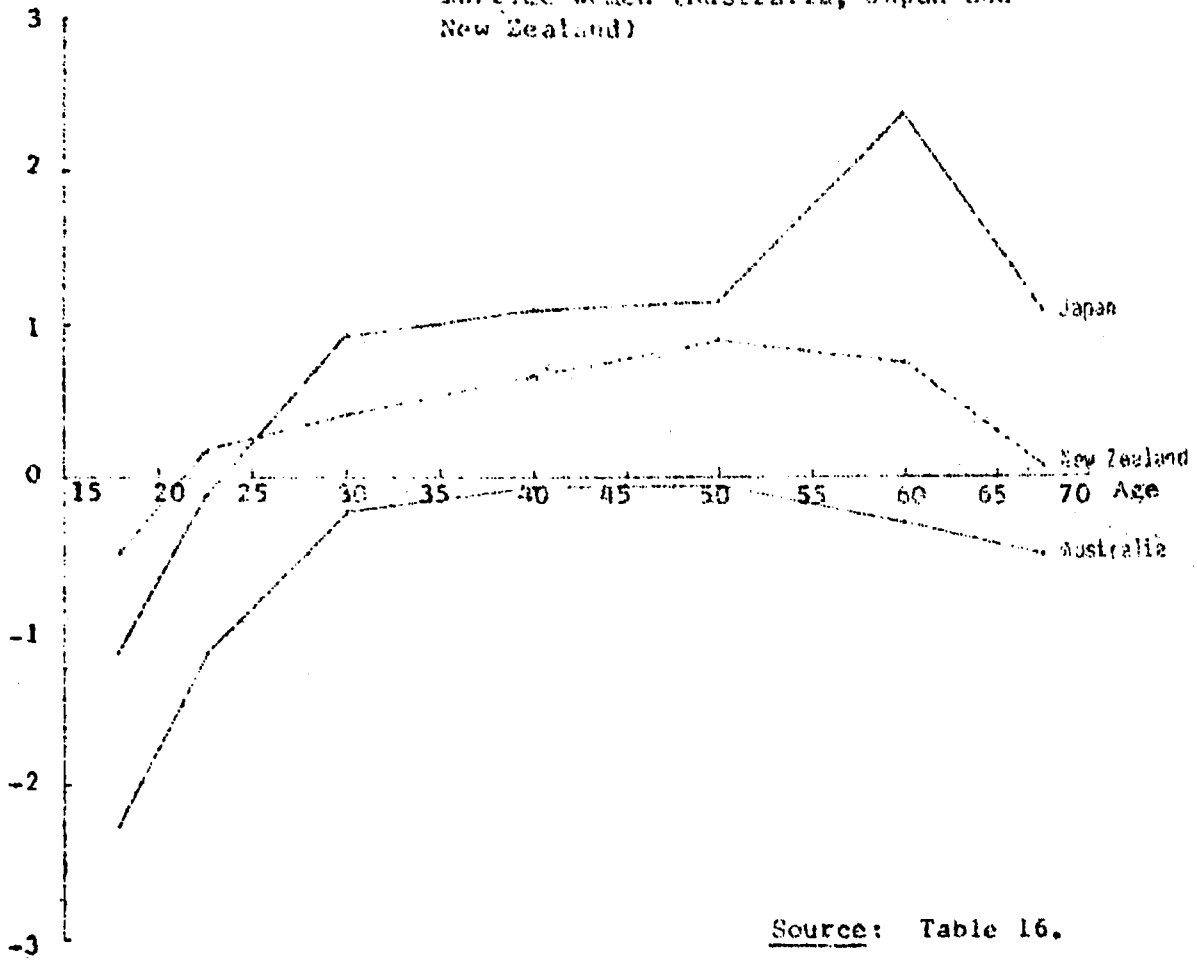
/Table 16.

Table 16. Annual rates of intercensal variation in age-specific female activity rates, by marital status, for selected countries of the ESCAP region, 1956-1971

Country, census year, and age	Annual rates of intercensal variation		
	Never married	Married	Widowed, divorced and separated
(1)	(2)	(3)	(4)
Australia (1966-1971)			
15 +	-1.38	1.24	-0.04
15 - 19	-2.26	1.50	0.46
20 - 24	-1.16	1.58	-0.56
25 - 34	-0.22	1.38	0.04
35 - 44	-0.06	1.78	-0.18
45 - 54	-0.06	1.30	-0.52
55 - 64	-0.30	0.36	0.28
65 +	-0.52	-0.06	-0.10
Hong Kong (1961-1971)			
15 +	0.34	0.33	-0.80
15 - 19	0.82	-0.29	0.01
20 - 24	1.29	0.24	-0.23
25 - 34	0.66	0.50	-0.01
35 - 44	-0.26	0.44	-0.56
45 - 54	-0.27	0.21	-0.42
55 - 64	0.45	0.72	0.45
65 +	0.61	0.32	0.09
Japan (1965-1973)			
15 +	0.19	-0.13	-0.38
15 - 19	-1.15	0.44	3.61
20 - 24	-0.11	-0.29	1.38
25 - 34	0.94	-0.25	0.38
35 - 44	1.09	0.04	-0.04
45 - 54	1.16	0.18	0.14
55 - 64	2.38	-0.50	0.45
65 +	1.09	-0.49	-0.01
New Zealand (1956-1966)			
15 +	0.18	0.70	0.06
15 - 19	-0.49	0.50	-1.54
20 - 24	0.19	0.73	0.45
25 - 34	0.43	0.43	-0.25
35 - 44	0.67	0.91	0.27
45 - 54	0.80	0.98	0.42
55 - 64	0.75	0.63	0.44
65 +	0.06	0.05	-0.02

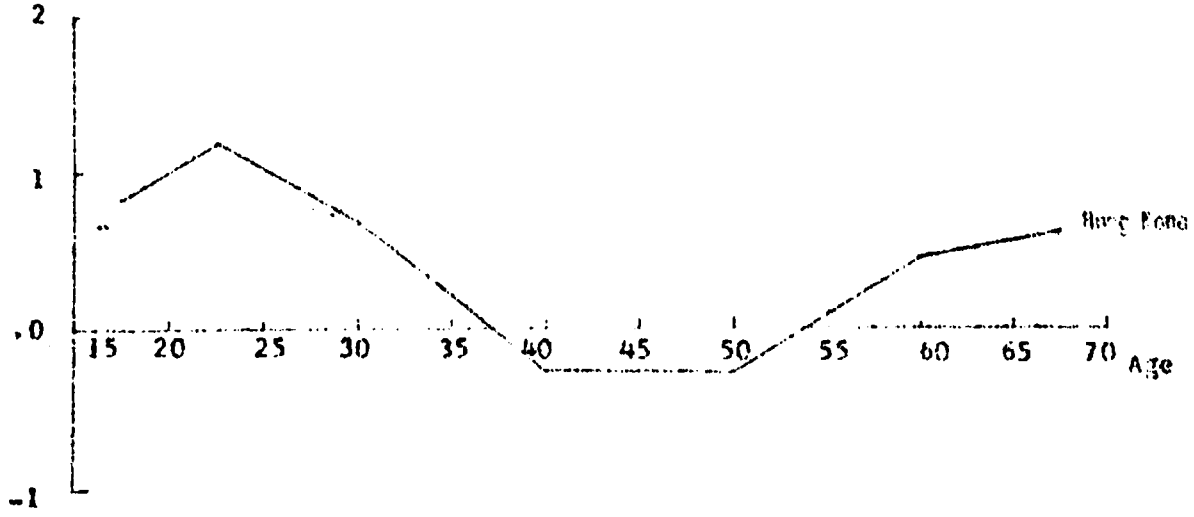
Source: Table 15.

Graph 9a(i). Annual rate of intercensal change in age-specific activity rates of never-married women (Australia, Japan and New Zealand)



Source: Table 16.

Graph 9a(ii). Annual rate of intercensal change in age-specific activity rates of never-married women for Hong Kong



Source: Table 16.

2. Married women

Graph 9.b(i) illustrates annual rates of change of age-specific activity rates of married women in Australia, Japan and New Zealand. The activity rates for all age-groups increased in New Zealand from 1955 to 1966 and in Australia from 1961 to 1971, the rates of increase being about 0.70 and 1.24 per cent per annum respectively. In Japan, from 1960 to 1973, the activity rates of married women decreased at about 0.13 per cent per annum. However, the activity rate curve for Japan seems to suggest an increasing entry of already married women who have had most of their children. This pattern conforms to the pattern observed in other low-fertility countries.

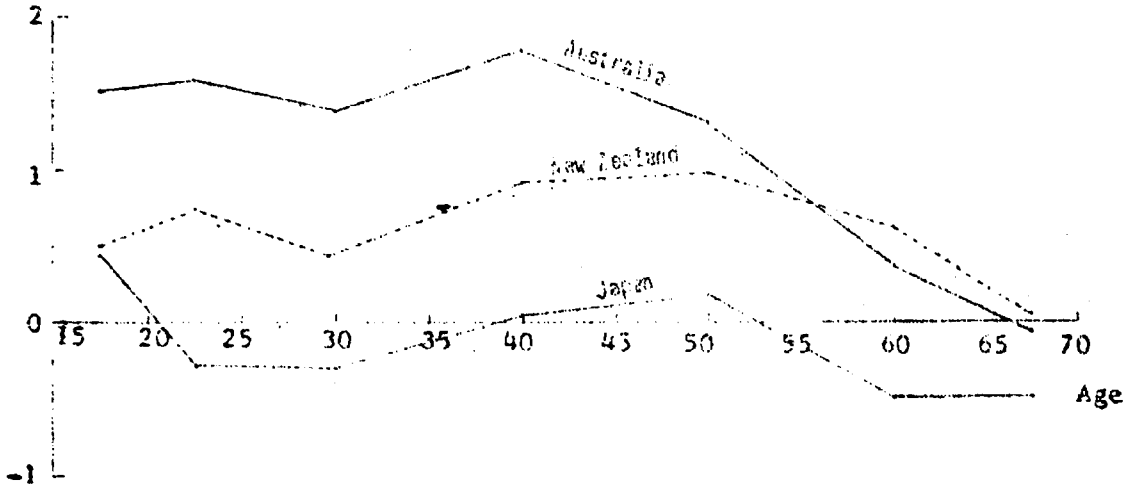
Graph 9.b(ii) illustrates a very different pattern in the case of Hong Kong. From 1961 to 1971 the activity rates of married women decreased for the age group 15-20 and increased for all older age groups. The largest rate of increase was recorded for the age group 55-64.

3. Widowed, divorced and separated women

Graph 9.c(i) illustrates annual rates of change in age-specific actitity rates of widowed, divorced and separated women in Australia, Japan and New Zealand. Rates tended to decline in Austtalia, but tended to rise in Japan. However, the pattern of change seemed to be the same in both countries. In New Zealand the pattern seems to be exactly opposite to that of Australia.

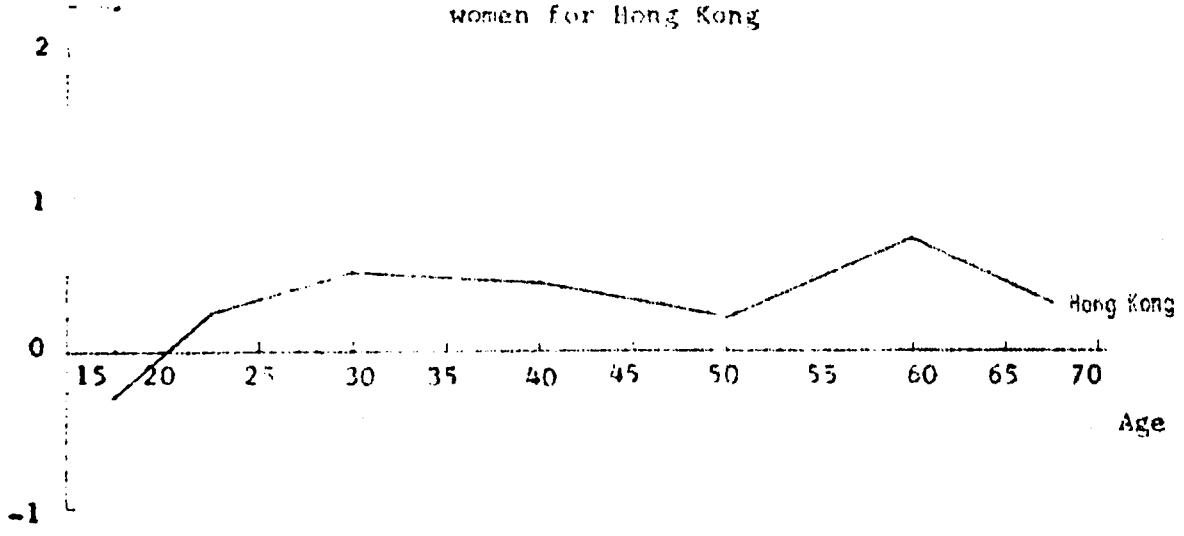
Graph 9.c(ii) illustrates the case of widowed, divorced and separated women aged 35 years and over in Hong Kong. Up until age 55, the pattern closely parallels that of Australia. After that age, the pattern is similar to that of Japan.

Graph 9b(i). Annual rate of intercensal change in age-specific activity rates of married women (Australia, Japan and New Zealand)



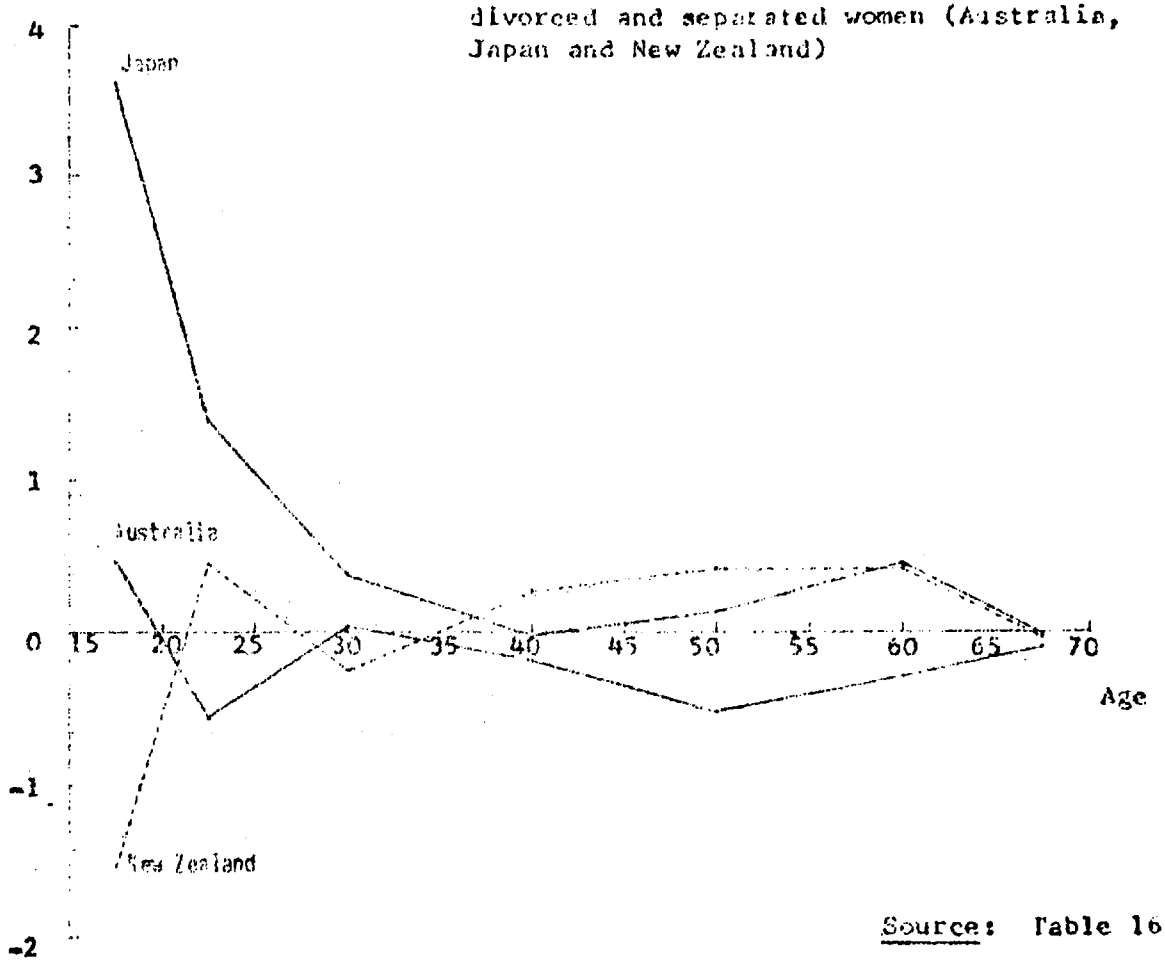
Source: Table 16.

Graph 9b(ii). Annual rate of intercensal change in age-specific activity rates of married women for Hong Kong



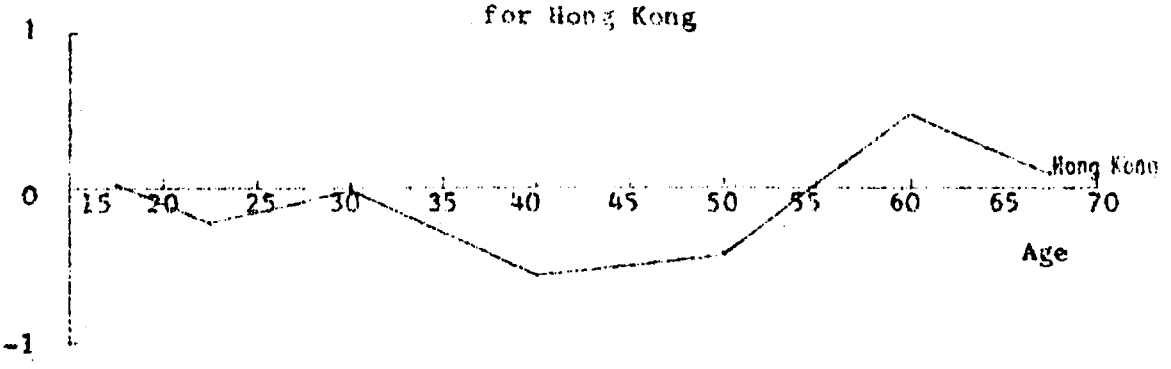
Source: Table 16.

Graph 9c(i). Annual rate of intercensal change in age-specific activity rates of widowed, divorced and separated women (Australia, Japan and New Zealand)



Source: Table 16.

Graph 9c(ii). Annual rate of intercensal change in age-specific activity rates of widowed, divorced and separated women for Hong Kong



Source: Table 16.

Chapter IX

FERTILITY AND FEMALE ECONOMIC ACTIVITY

A. INTRODUCTION

Although the participation of females in the labour force is affected by child-bearing and maternal responsibilities, other demographic, social and economic factors, such as marital status, residence, education and income, may also exert a great influence on the labour force participation of females. Thus, the upward trend in female labour force participation that has taken place in most developing countries during the last decade might have been caused by an increase in the proportion of educated women, an increase in the age at marriage and the need for increasing family incomes.[1/] Currently available data will not permit a detailed analysis of the interrelation between fertility change and the trend in female labour force participation by age groups, marital status and occupation at the regional level, taking into consideration other demographic, social and economic factors. This chapter, therefore, will be limited to an examination of the association between fertility and female participation in the economic activity.

B. IMPACT OF LABOUR FORCE PARTICIPATION ON FERTILITY

Several studies have been undertaken regarding the interrelationship between fertility patterns and female activity rates. In a study undertaken in 1965, Gendell concluded that "in cultures where wives are permitted, if not encouraged, to take employment outside the home and where birth control is widely practised, economic activity rates clearly are considerably influenced by family building activities. But in developing countries, i.e. in cultures where contrary conditions tend to prevail, the direct evidence is too meagre to provide a clear indication of the influence of family-building activities. However, the indirect evidence suggests little or no influence in at least the traditional sector of these societies. There, economic activity is largely agricultural or consists of handicrafts, both of which are conducted at home, and women economically active at home seem to be no less fertile than women not economically active".[2/]

/However,

1/ See Murray Gendell, Maria N. Marevirila and Philip C. Kreitner, "Fertility and economic activity of women in Guatemala City, 1964", Demography, vol. 7, No. 3, August 1970, p. 273.

2/ Murray Gendell, "The influence of family-building activity on women's rate of economic activity", in World Population Conference 1965, vol. IV (United Nations publication, sales No. 66.XIII.8), p.285.

However, several other studies have shown that there is significant association between fertility change and labour force participation of females.[3/] Stycos and Weller found that there are differences in the fertility of active and inactive females in Turkey, but this differential fertility is associated more with residence and education than with the employment status of females, particularly in urban areas. In rural areas, the association between employment and fertility appears to be marginally significant.[4/] Similarly, Goldstein and others have found that the number of children ever born per 1,000 ever married women in Thailand is significantly higher for housewives than for female workers in metropolitan areas, but that the reverse conditions held in the rural areas.[5/]

C. CRUDE BIRTH RATES AND FEMALE LABOUR FORCE PARTICIPATION RATES

1. Interrelationship between birth rates and female activity rates

Table 17 contains crude birth rates and female activity rates in 22 selected countries of the ESCAP region. Levels and trends in female activity rates were discussed in chapter V. In this section, crude birth rates will be discussed and their association with activity rates will be analysed.

Crude birth rates were lowest in the case of Japan (17.2). They were highest in Pakistan (55.0). The average of the rates was 32.8. The standard deviation was 9.9. Rapid declines in crude birth rates were observed in the case of Hong Kong and Singapore. For the remaining countries, declines in fertility occurred at a slower rate.

/Table 17.

3/ For a review of such studies relating to Latin America, see J. Mayone Stycos and Robert H. Weller, "Female working roles and fertility", Demography, vol. 4, No. 1, 1967, pp. 211-212.

4/ Ibid., pp. 212-213.

5/ Sidney Goldstein, Alice Goldstein and Penporn Tirasawat, The Influence of Labour Force Participation and Education on Fertility in Thailand, Research Report No. 9, (Bangkok, Institute of Population Studies, Chulalongkorn University), December 1972, p. 13.

Table 17. Crude birth rates and female economic activity rates in selected countries of the ESCAP region, 1960-1971

Country	Census year	Crude birth rate	Female economic activity rate
Australia	1961	22.8	20.4
	1966	19.3	25.0
	1971	21.7	26.7
Brunei	1960	48.9	10.4
	1971	38.4	10.2
Cambodia[a/]	1962	50.0	36.7
Cook Islands	1966	42.8	17.0
Fiji	1966	34.9	4.0
Gilbert and Ellice Islands	1963	25.2	1.6
	1968	22.8[b/]	2.5
Hong Kong	1961	34.2	22.8
	1966	25.8	26.2
	1971	19.7	28.8
India	1971	42.8[b/]	11.9
Indonesia	1961	43.0[c/]	19.6
	1971	48.3[b/]	22.1
Iran	1966	42.0	8.3
Japan	1960	17.2	36.2
	1965	18.6	37.5
	1970	19.0	38.7
Malaysia (West)	1962	40.3	21.2
	1970	39.9	20.9
Nauru	1961	34.3	6.1
	1966	41.1	9.3
Nepal	1961	41.1	36.5
	1971	44.6[b/]	24.7
New Zealand	1961	27.1	18.7
	1966	22.5	21.0
	1971	22.7	23.3

Table 17. Cont'd.

Country	Census year	Crude birth rate	Female economic activity rate
Pakistan	1961	55.0[c/]	8.8
Philippines	1960	29.6	16.3
	1970	26.2	18.8
Rep. of Korea	1960	40.6	17.3
	1966	35.6[d/]	18.5
	1970	29.0[e/]	23.2
Singapore	1970	23.0	18.5
Sri Lanka	1963	34.4	14.1[f/]
	1971	29.9	18.7[f/]
Thailand	1960	34.7	51.1
	1970	31.6	46.0
Western Samoa	1961	31.3	4.9
	1966	28.6	11.3

Sources: United Nations Demographic Yearbook, 1964, 1969, 1970, 1972, 1973 and 1974.

Notes: Crude birth rate = total live births in a year to total population of all ages (a rate per 1,000)

Female activity rate = total female labour force to total female of all ages (a rate per 100)

a/ New Democratic Kampuchea.

b/ 1970 figure.

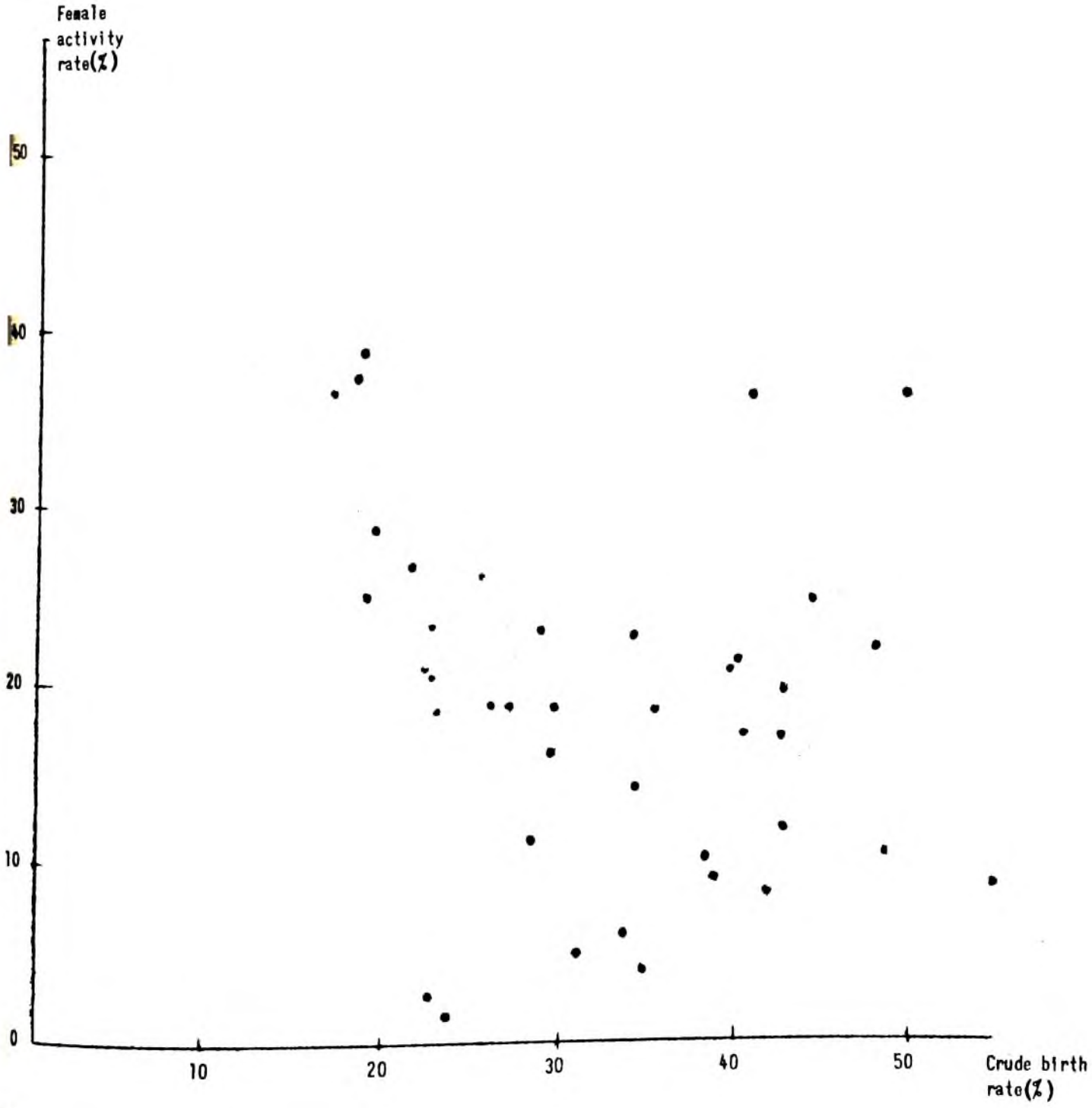
c/ 1962 figure.

d/ United Nations estimate for 1965-1970

e/ Lee-Jay Cho, The Demographic Situation in the Republic of Korea, (East-West Center, Hawaii, USA), 1973, p.5.

f/ The rate was taken from Department of Census and Statistics, Sri Lanka Census of Population, 1971, preliminary report, Colombo, 1974.

Graph 10.a Crude birth rates and female activity rates in selected countries of the ESCAP region, 1960-1971



Source: Table 17.

Graph 10.a portrays the scatter of points which results from plotting crude birth rates against corresponding female activity rates. It indicates a low degree of association between the two variables.[6/]

However, if subgroups of countries are considered separately, two sharply divergent patterns appear. Graph 10.6 portrays the scatter of points which results from plotting crude birth rates against corresponding female activity rates for the more developed countries of the region, Australia, Japan and New Zealand. It indicates a high and negative degree of association between the two variables. The linear correlation coefficient between the crude birth rate and female activity rates was -0.84, based on nine observations.

The less developed countries may be divided into three subgroups: (a) countries with unusually high female activity rates; (b) Pacific island countries; and (c) all other less developed countries of the region. Graph 10.c portrays the scatter for the three less developed countries included in this study which have unusually high female activity rates, Cambodia,[7/] Nepal and Thailand. Once again there appears to be a high and negative degree of association between the two variables. The linear correlation coefficient is -0.72 based on five observations, Graph 10.d portrays the scatter for the six island countries of the Pacific area, (Cook Islands, Fiji, Gilbert and Ellice Islands, Nauru and Western Samoa). The pattern in this case contrasts sharply with that of the developed countries and the other less developed countries of the region. There appears to be a high and positive degree of association between crude birth rates and female activity rates. The linear correlation coefficient is 0.74, based on eight observations.

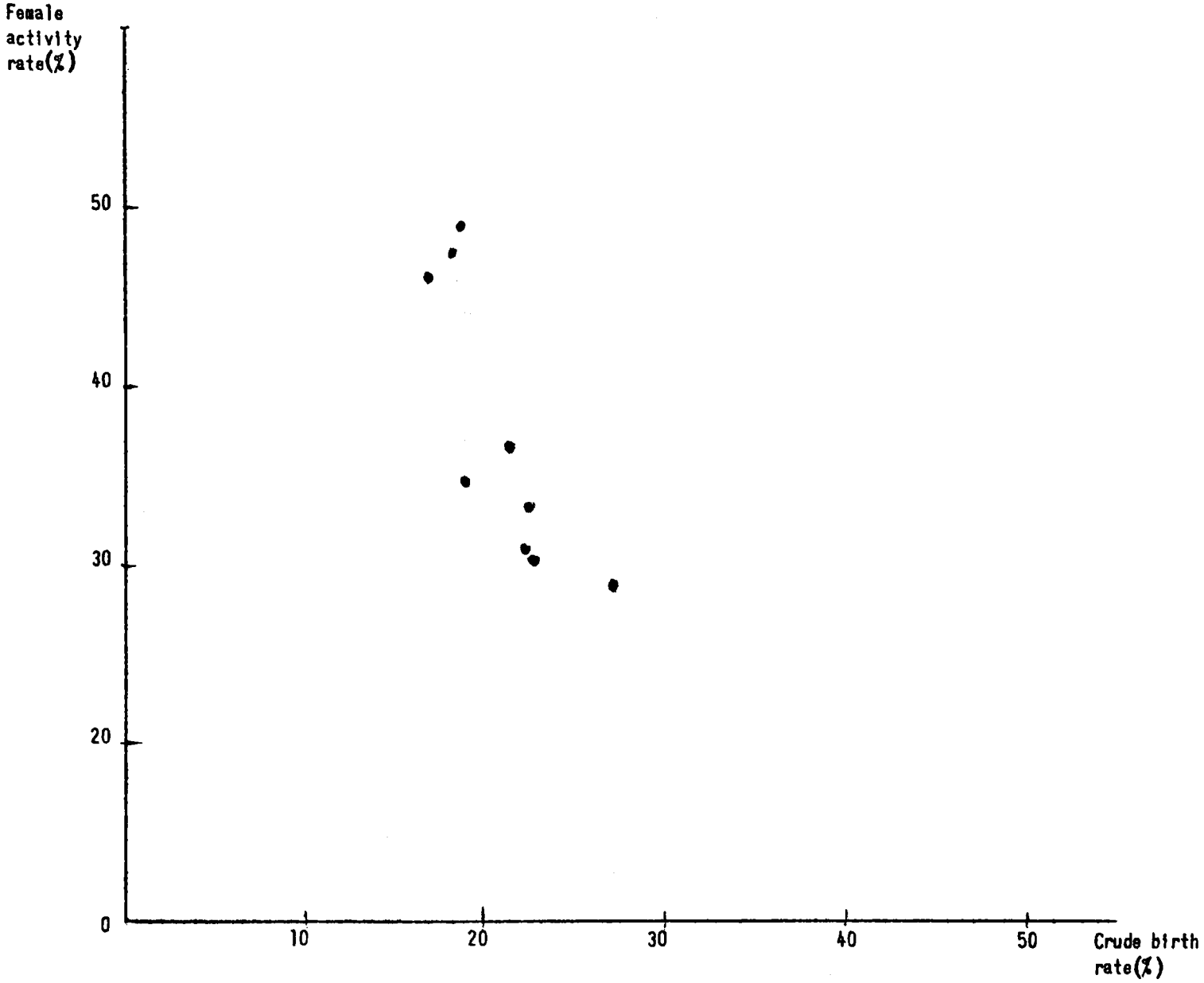
Graph 10.c portrays the scatter when crude birth rates are plotted against female activity rates for the 11 remaining less developed countries included in the study. In these countries, as in all but the Pacific island countries, there is a strong and negative degree of association between the variables. The coefficient of linear correlation is -0.61 based on twenty observations.

/This analysis

6/ In a study of about 60 countries in different regions of Europe, America, Africa and Asia, from 1930 to 1969, Kasarda found a significant correlation between the crude birth rate and the percentage of female population employed for wages or salary in non-agricultural occupations (-0.69 for 1960-1967 and -0.73 for 1950-1959). See John D. Kasarda, "Economic structure and fertility: A comparative analysis", Demography, vol. 8, No. 3, 1971, pp. 307-317.

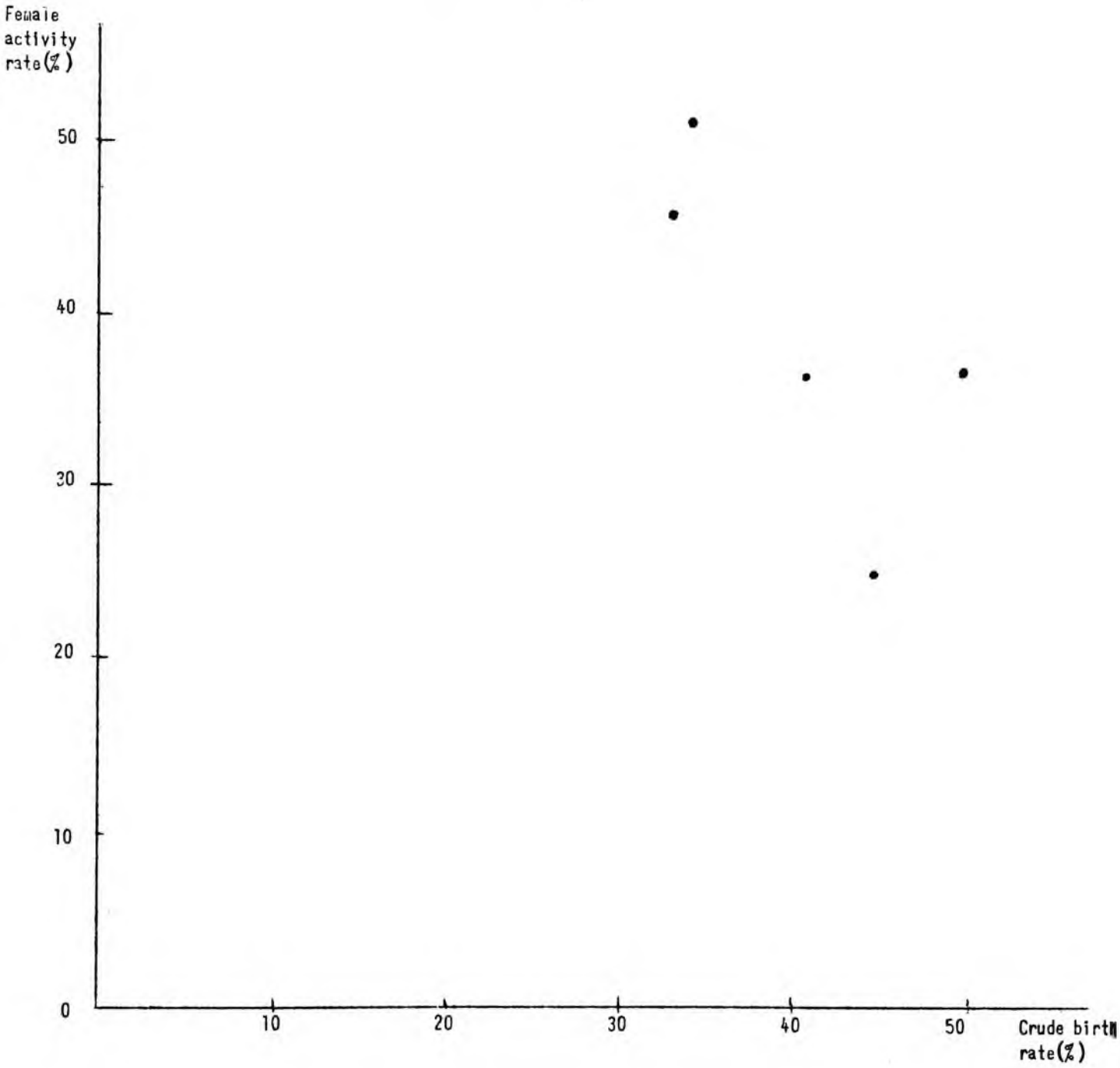
7/ Now Democratic Kampuchea.

Graph 10.b. Crude birth rates and female activity rates in Australia, Japan and New Zealand, 1960-1971



Source: Table 17.

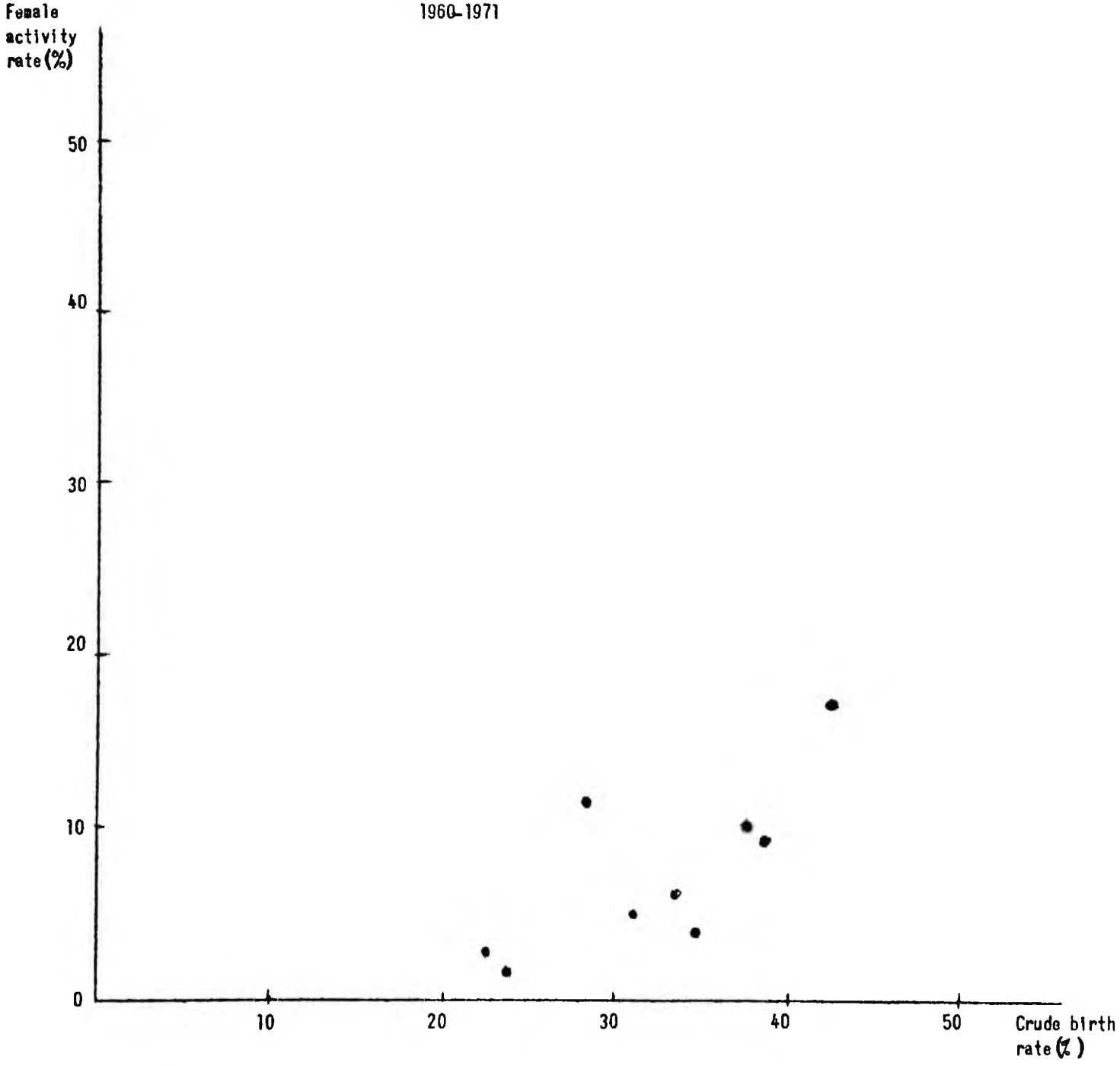
Graph 10.c. Crude birth rates and female activity rates in Cambodia,[a/] Nepal and Thailand, 1960-1971



Source: Table 17.

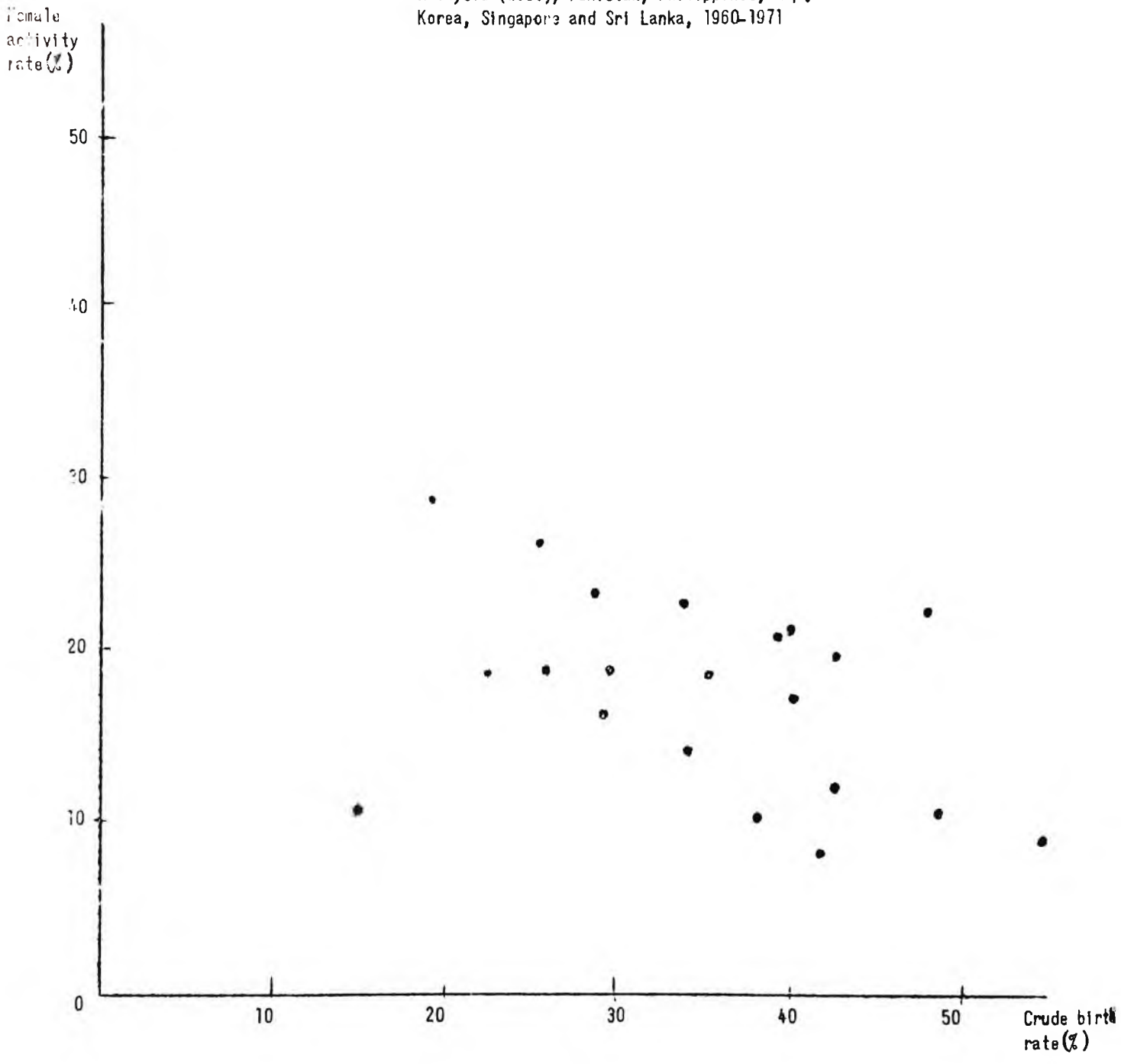
a/ Now Democratic Kampuchea

Graph 10.d. Crude birth rates and female activity rates in Cook Islands, Fiji, Gilbert and Ellice Islands, Nauru, and Western Samoa, 1960-1971



Source: Table 17.

Graph 10.e. Crude birth rates and female activity rates in Brunei, Hong Kong, India, Indonesia, Iran, Malaysia (West), Pakistan, Philippines, Rep. of Korea, Singapore and Sri Lanka, 1960-1971



Source: Table 17.

This analysis tends to support the hypothesis that throughout the ESCAP region, with the exception of the Pacific island countries, reduced birth rates tend to be associated with higher activity rates. Unfortunately it is not possible to identify lines of causation by such cross-section techniques. It may be that high activity rates were responsible for fewer births. On the other hand, reduced maternal responsibilities may have made higher activity rates possible.

2. Interrelationship between changes in birth rates and changes in female activity rates

Graph 11.a illustrates the time paths inherent in the scatter of points for the developed countries, Japan, Australia and New Zealand. In these countries, there seems to be no clear relationship over time between changes in female activity rates and changes in birth rates. In each of these three countries, activity rates increase over time irrespective of whether birth rates increase or decrease.

Graph 11.b illustrates the time paths inherent in the scatter of points for less developed countries excluding those with high female activity rates and the Pacific island countries. For the countries included in graph 11.b, there appears to be a clear negative association between changes in birth rates and changes in female labour force participation rates in the developing countries included in this study.

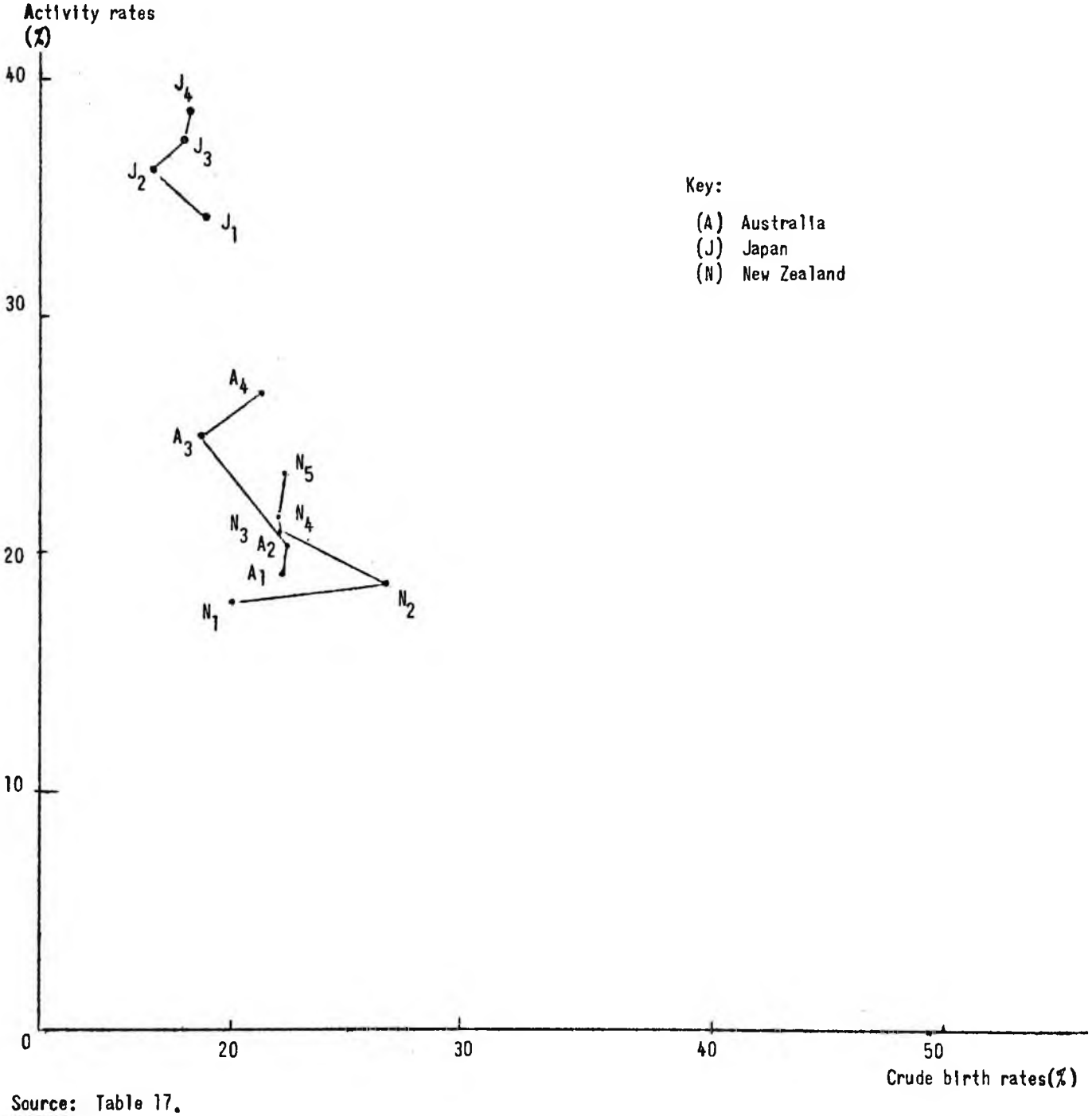
D. INTERRELATIONSHIP BETWEEN FEMALE ACTIVITY RATES AND BIRTH RATES BY AGE GROUP

There is a statistically significant degree of association between crude birth rates, (measured as proportions of live births to total population of both sexes) and female activity rates (measured as proportions of female workers to total female population of all ages). However, this association might be affected by the changes in the age structure of female labour force as well as the total population. Therefore, the interrelation between the age-specific birth rates and age-specific activity rates will be examined in this section. Table 18[8/] presents age-specific birth rates and female activity rates for eight selected countries of the ESCAP region during the period 1955-1970. The analysis is limited to the child bearing ages 15-49.

/Table 18.

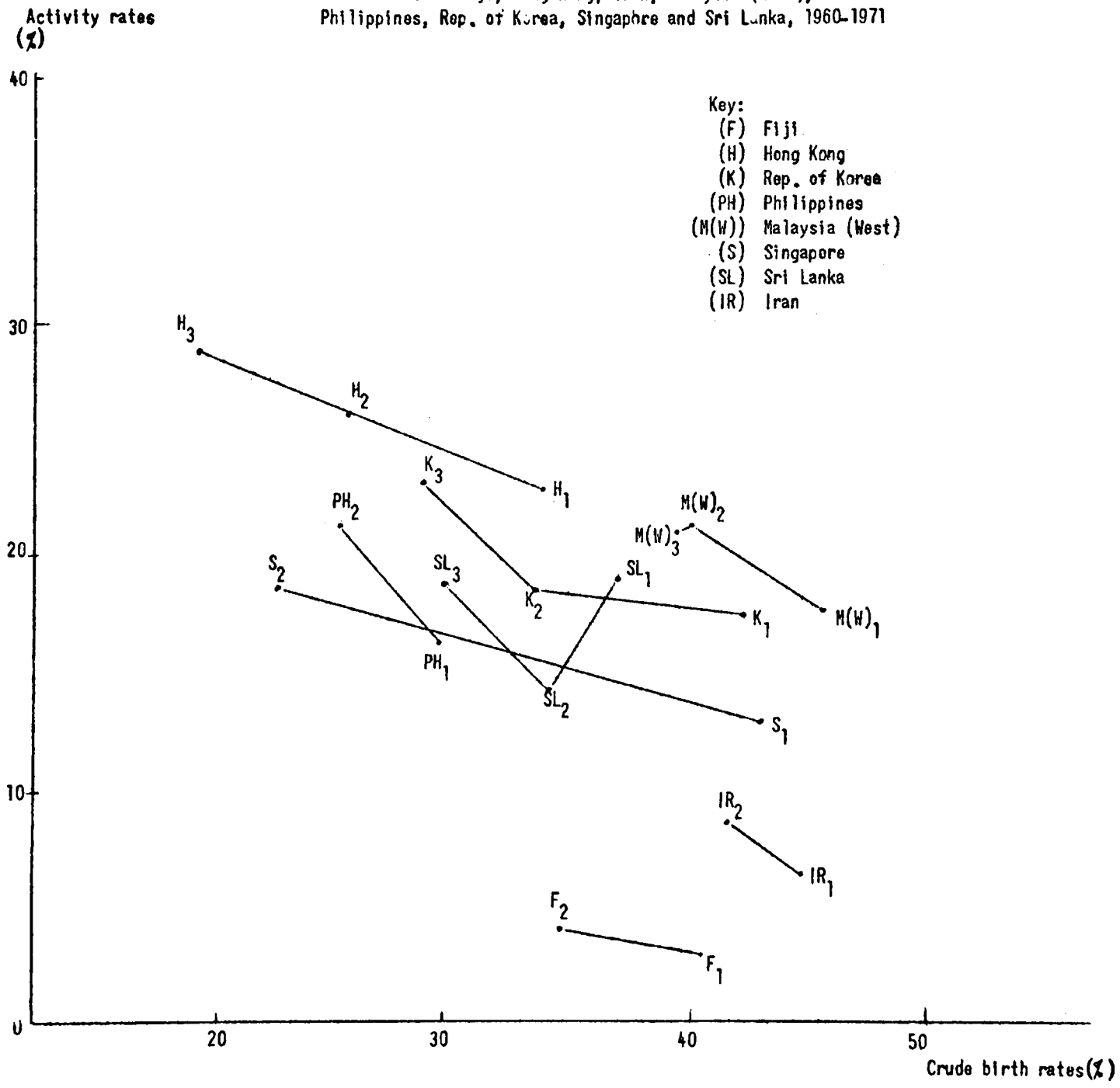
8/ Due to the lack of reliable data on the number of births by age of mother in some countries, the number of observations used in this part of the study is 16 instead of the 25 used earlier.

Graph 11.a. Time paths of points relating female activity rates and crude birth rates in Australia, Japan and New Zealand, 1960-1971



Source: Table 17.

Graph 11.b. Time paths of points relating female activity rates and crude birth rates in Fiji, Hong Kong, Iran, Malaysia (West), Philippines, Rep. of Korea, Singapore and Sri Lanka, 1960-1971



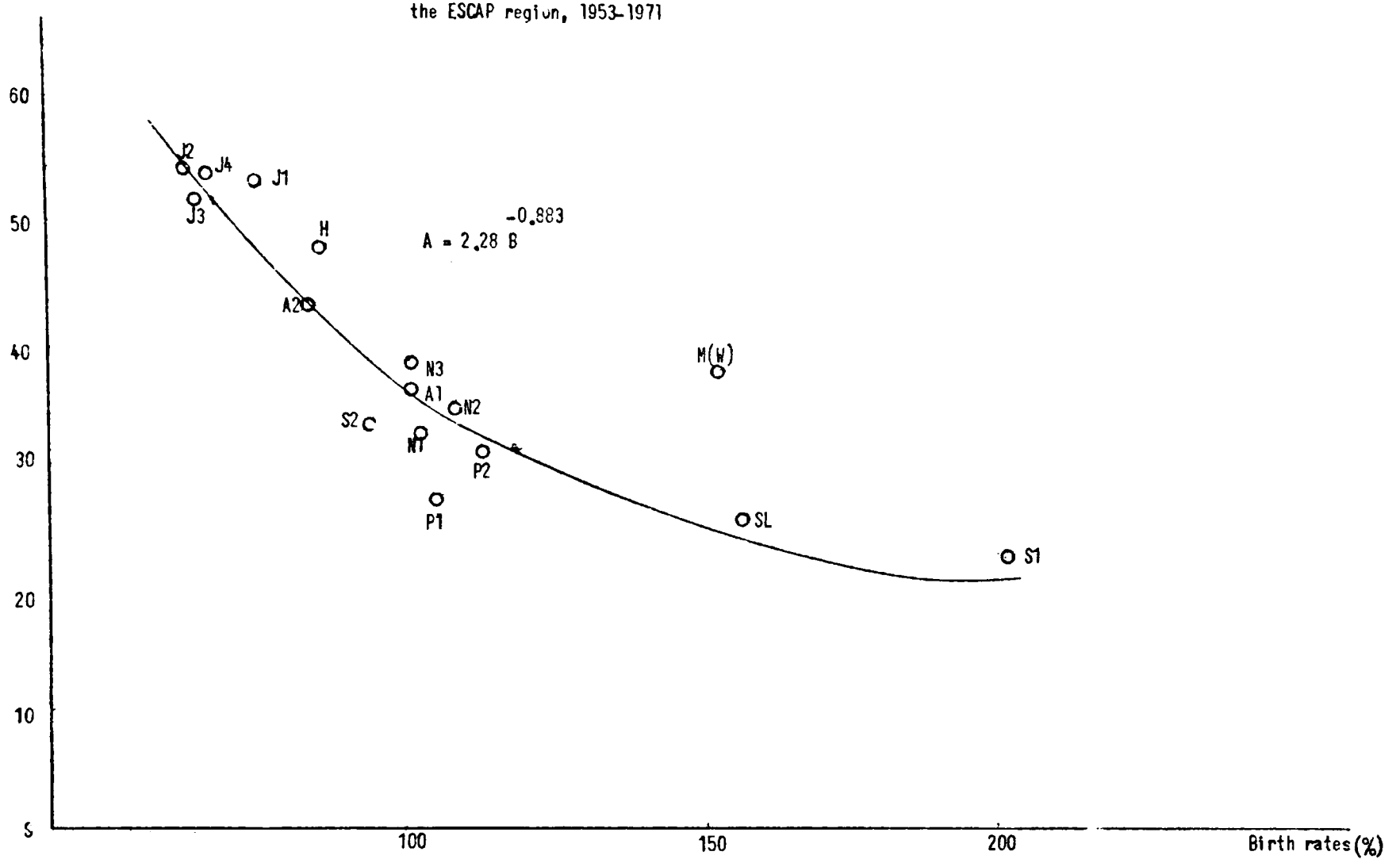
Source: Table 17

Table 18. Female activity rates and birth rates, by age group, in selected countries of the ESCAP region, 1955-1971

Country	Year	Age class							
		15 - 49		15 - 19		20 - 29		30 - 49	
		Birth rates	Activity rates	Birth rates	Activity rates	Birth rates	Activity rates	Birth rates	Activity rates
Australia	1961	98.9	36.3	47.2	64.4	222.8	39.3	55.5	26.8
	1966	82.4	44.2	48.8	62.2	177.8	47.6	41.9	35.8
Hong Kong	1971	84.8	48.7	16.7	56.4	179.5	60.4	63.2	38.3
Japan	1955	74.3	54.1	5.9	48.3	144.4	59.4	49.7	52.5
	1960	63.5	55.0	4.3	48.9	143.5	59.3	31.9	54.3
	1965	65.4	53.7	3.3	37.6	155.9	58.5	31.9	57.0
	1970	65.4	54.6	4.5	35.8	147.5	59.0	29.6	57.4
Malaysia (West)	1970	150.4	38.1	56.5	32.7	252.3	40.2	125.7	39.6
New Zealand	1956	101.2	32.9	31.7	63.7	219.5	36.7	61.3	22.7
	1961	107.6	34.8	43.6	64.0	240.0	36.7	61.1	25.0
	1966	100.0	38.6	63.1	61.9	217.9	39.9	46.5	28.6
Philippines	1960	103.5	27.9	31.0	29.6	166.1	27.6	88.2	27.3
	1970	110.4	31.3	38.5	26.9	159.8	30.6	104.4	34.4
Singapore	1957	199.8	22.0	77.7	23.4	327.1	19.9	156.4	23.0
	1970	92.7	33.8	25.9	43.0	166.7	44.6	71.8	19.8
Sri Lanka	1963	155.2	25.8	51.8	21.6	250.8	28.6	130.6	25.6

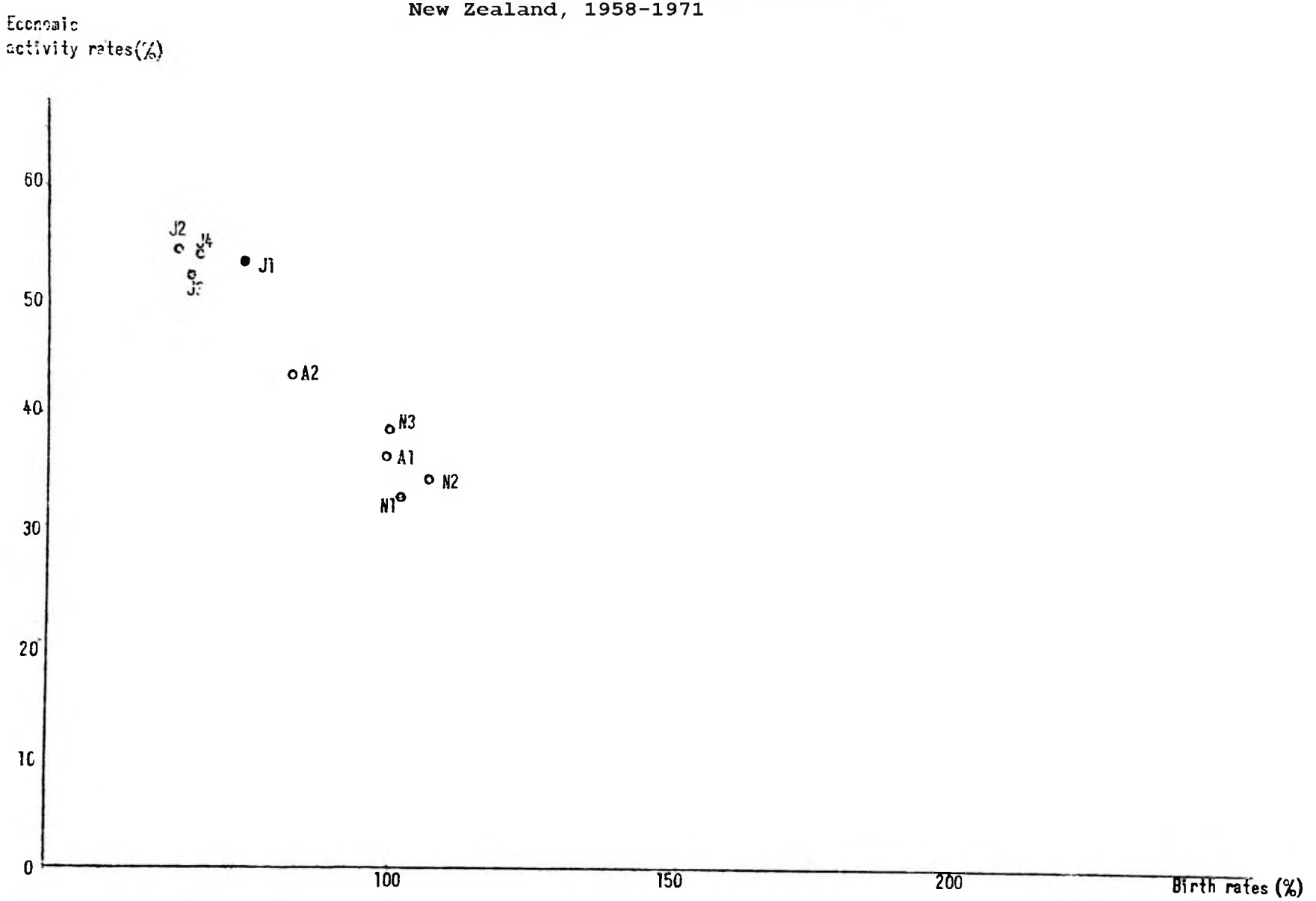
Sources: United Nations Demographic Yearbook, 1964, 1965, 1969, 1970, 1971, 1972, 1973.

Graph 12.a. Age-specific birth rates and economic activity rates for females aged 15-49 in selected countries of the ESCAP region, 1953-1971



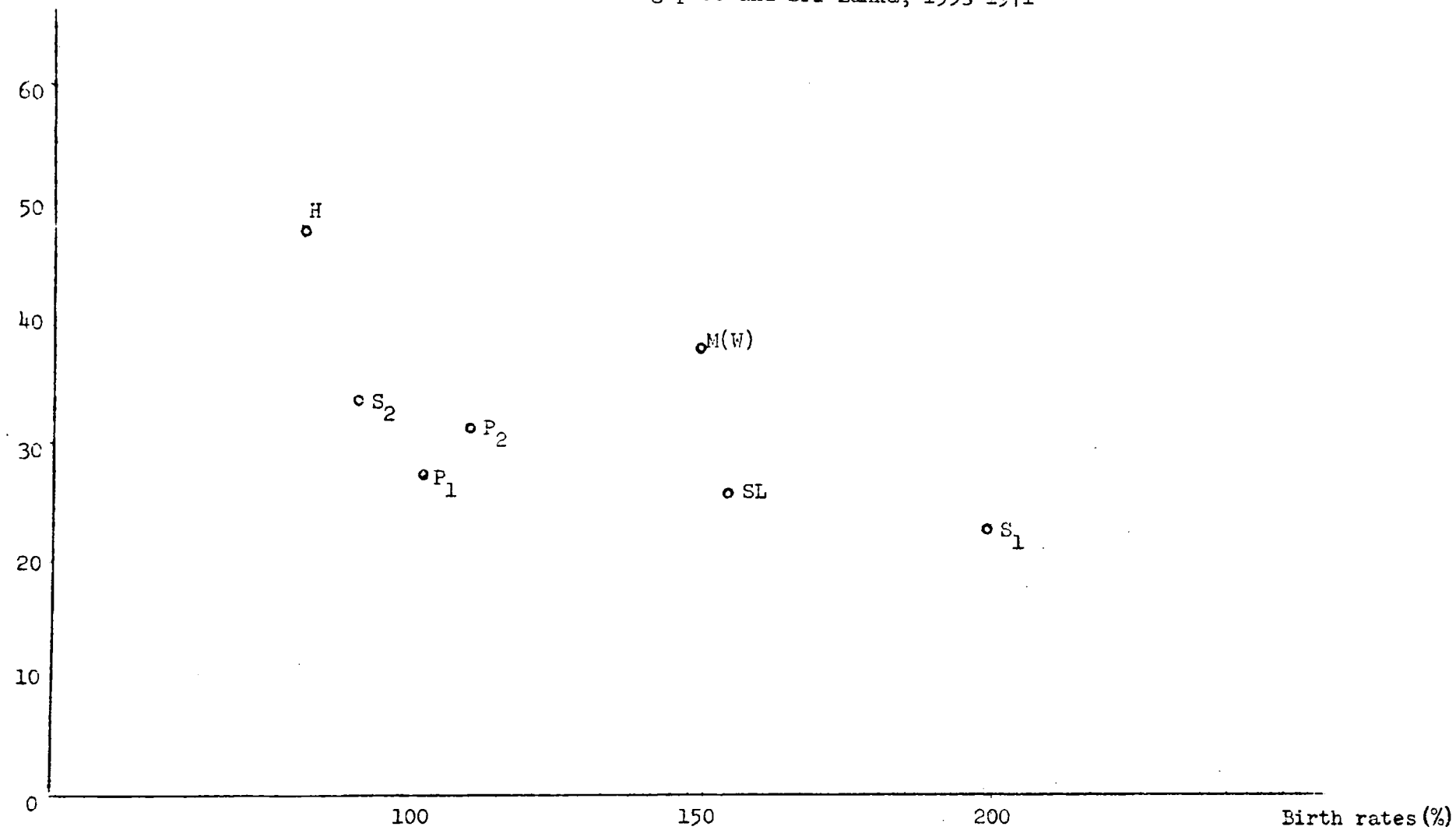
Source: Table 18

Graph 12.b. Age-specific birth rates and economic activity rates for females aged 15-49 in Australia, Japan and New Zealand, 1958-1971



Source: Table 18

Graph 12.c. Age-specific birth rates and economic activity rates for females aged 15-49 in Hong Kong, Malaysia (West), Philippines, Singapore and Sri Lanka, 1953-1971



Source: Table 18

1. Age group 15-49

Graph 12.a shows the scatter of points when activity rates and birth rates for females in the age group 15-49 years are plotted against one another. It indicates a significant negative association of the crude birth rates and female activity rates shown in the previous paragraph.

The scatter of points contained in graph 12.a indicates that the relation between birth rates and activity rates for females aged 15-49 years may not be linear. However, if the points referring to the developed countries are considered apart from those referring to the less developed countries, then two inverse linear relationships are apparent. Graph 12.b presents the scatter of points relating age-specific birth rates and female economic activity rates in Australia, Japan and New Zealand (1953-1971). Graph 12.c presents the corresponding points for Hong Kong, Malaysia (West), the Philippines, Singapore and Sri Lanka. In both cases, the relationship appears to be inverse and linear. However, the slope is much steeper and the scatter less dispersed in the case of the developed countries.

2. Age groups 15-19, 20-29 and 30-49

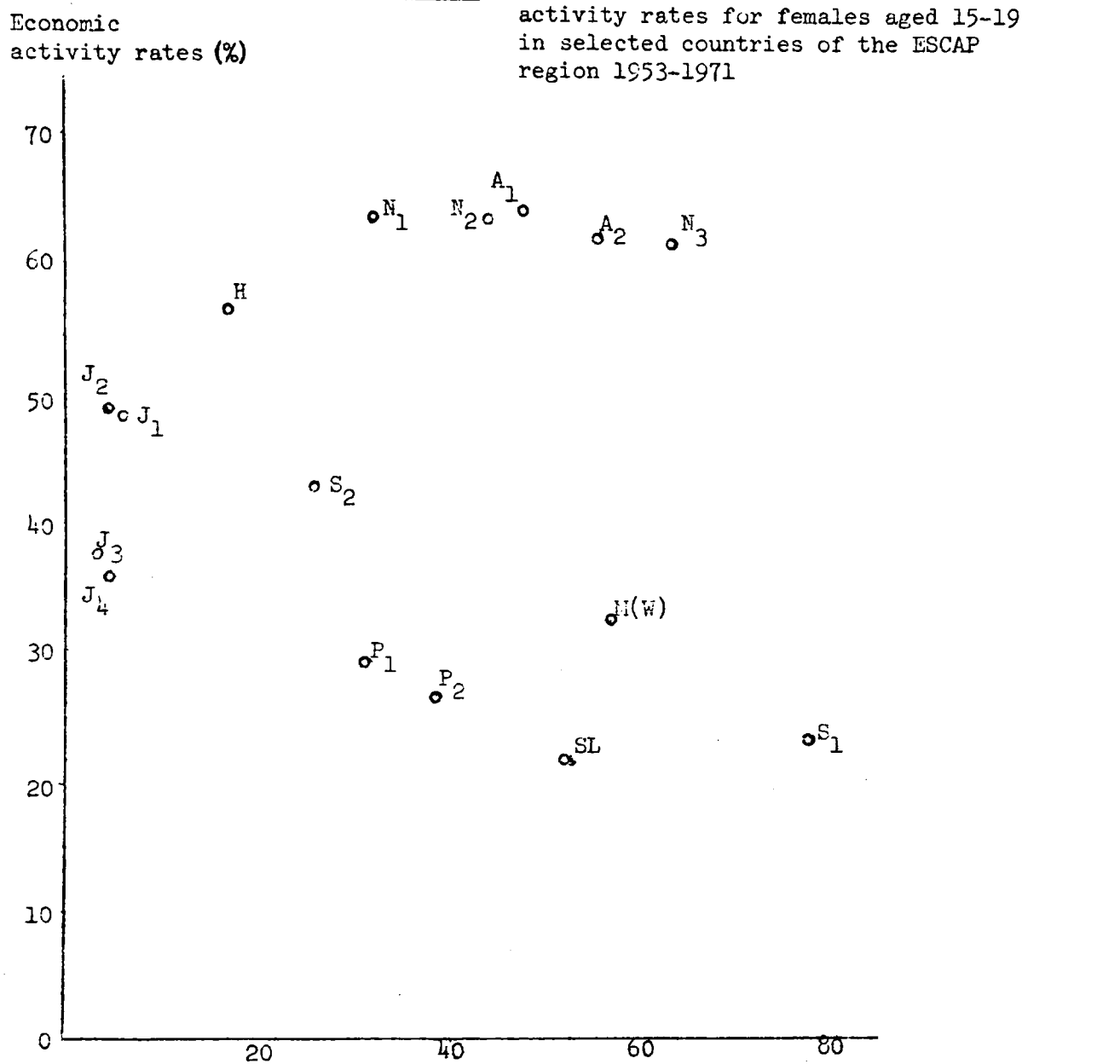
In order to make a more detailed analysis, the association between age-specific birth rates and female activity rates was examined for three age groups, 15-19, 20-29 and 30-49 years. Within the 15-19 age bracket, economic activity rates are increasing in response to the completion of education. Birth rates in this age period are likely to be reflective of the age of marriage. Between the ages 20 and 29, activity rates of married women tend to fall as the peak child-bearing period is reached. The ages 30 to 49 are normally associated with declining birth rates and increasing economic activity rates of married women.

Graph 13.a presents the scatter of points relating age-specific birth rates and activity rates of females aged 15 to 19. There does not appear to be any clear relationship between these variables. This holds true even if the developed and less developed countries are treated separately.

Graph 13.b presents the corresponding scatter of points for females aged 20 to 29. In general, there appears to be an inverse linear relationship between birth rates and activity rates in this age group. If the developed countries are treated separately, their pattern would closely follow a linear path. The scatter for the less developed countries would have the same slope but be more widely dispersed.

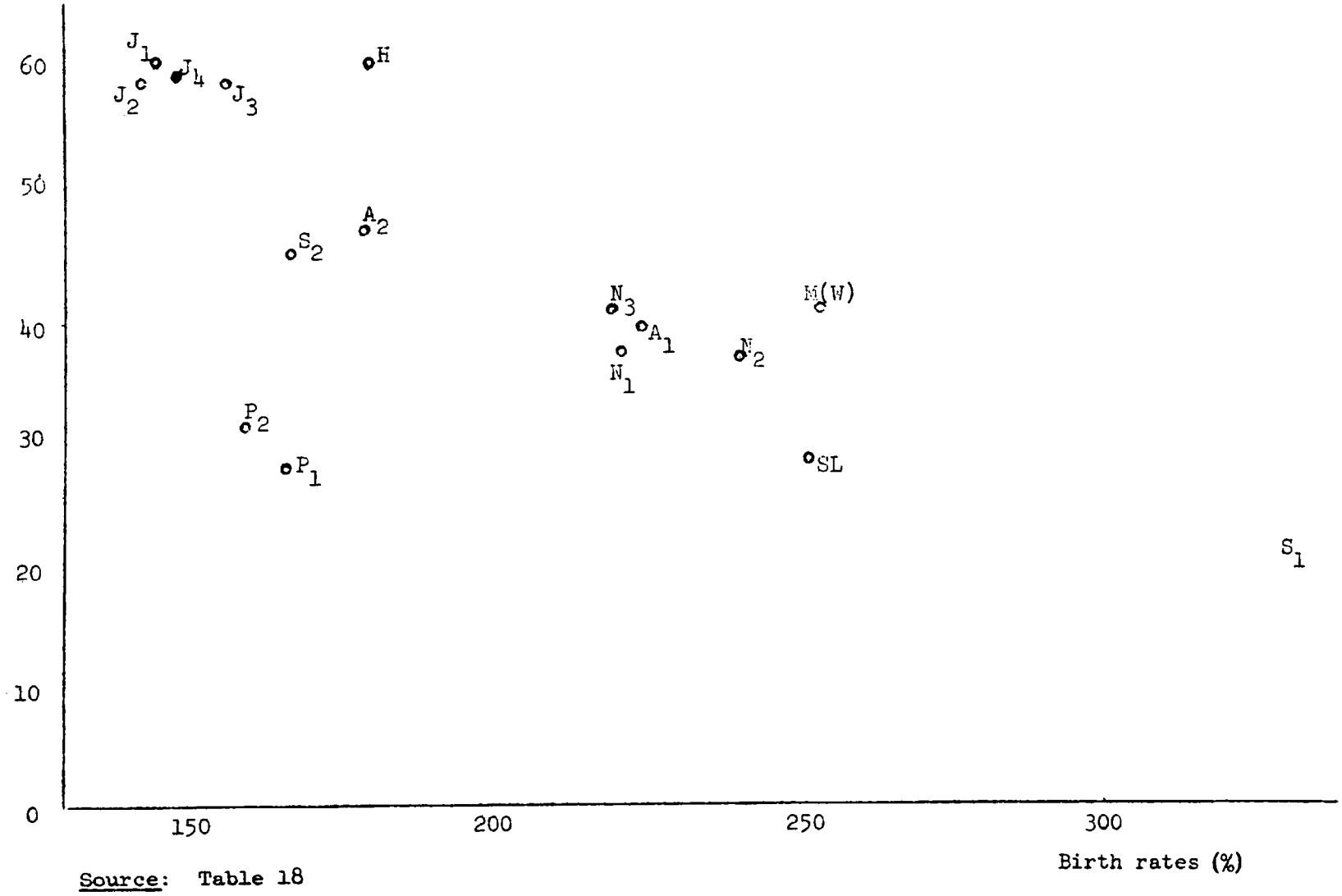
/Graph 13.c(i)

Graph 13.a. Age-specific birth rates and economic activity rates for females aged 15-19 in selected countries of the ESCAP region 1953-1971



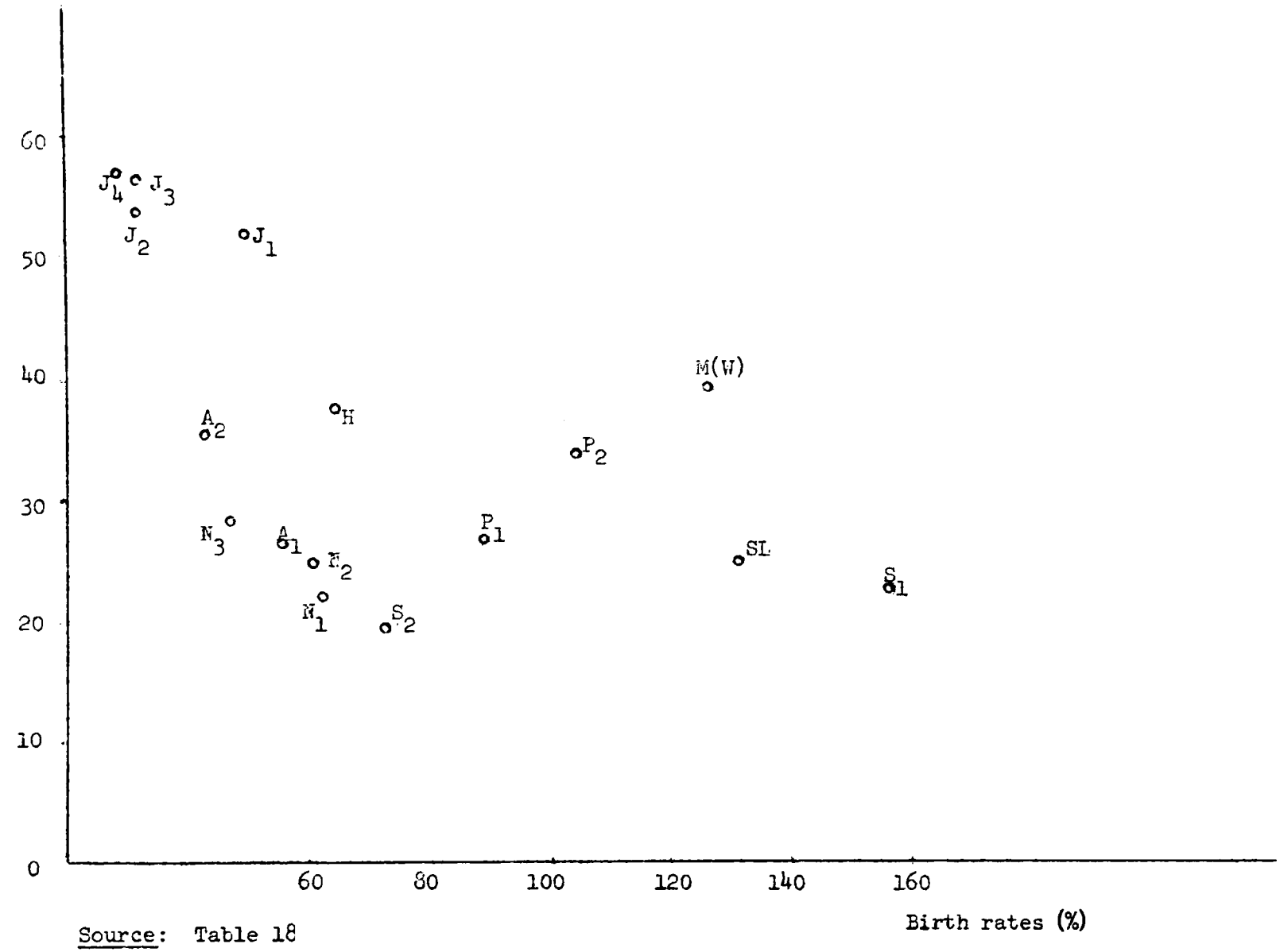
Source: Table 18

Graph 13.b. Age-specific birth rates and economic activity rates for females aged 20-29 in selected countries of the ESCAP region 1953-1971



Source: Table 18

Graph 13.c(i). Age-specific birth rates and economic activity rates for females aged 30-49 in selected countries of the ESCAP region 1953-1971



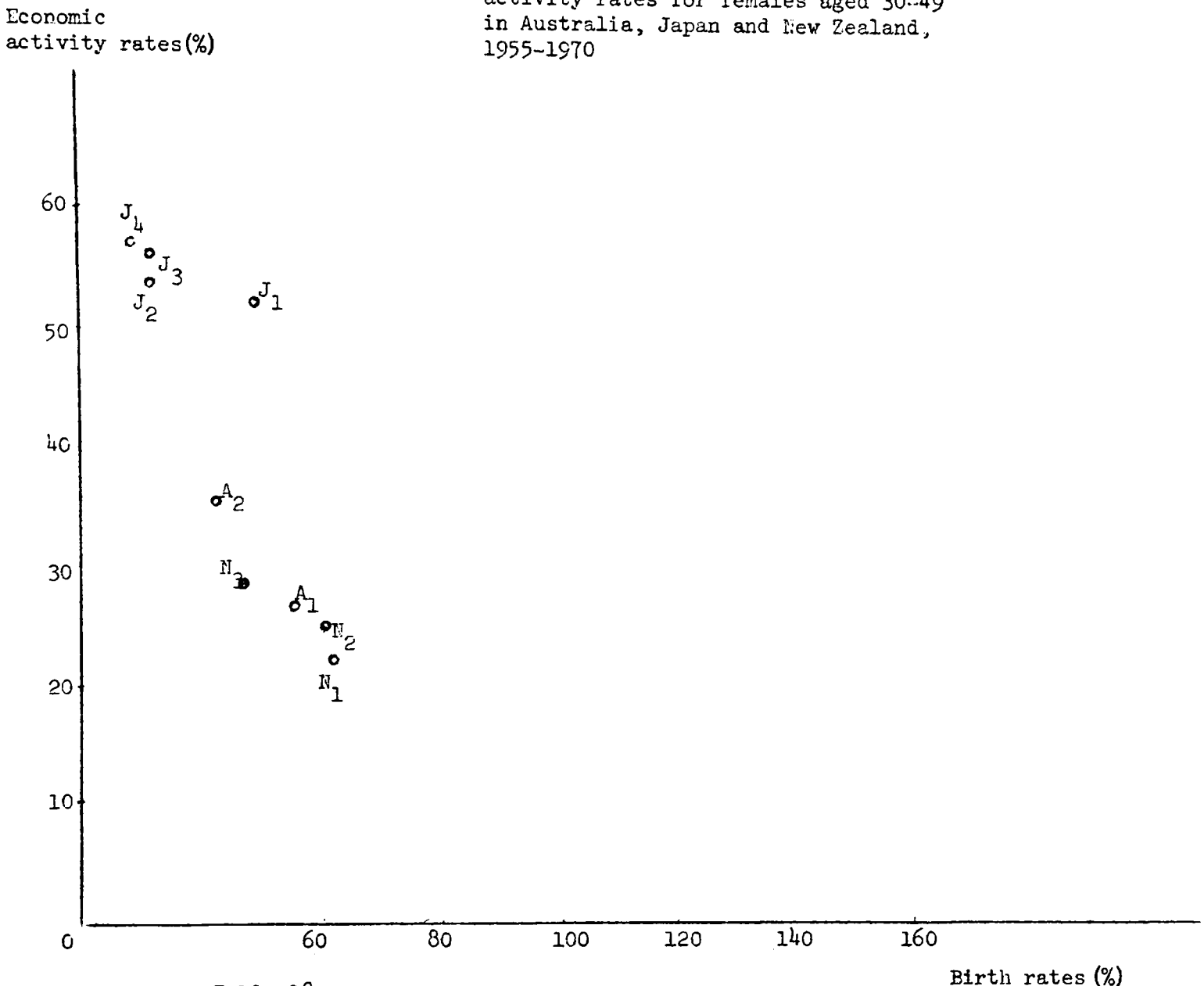
Source: Table 18

Graph 13.c(i) presents the scatter of points relating age-specific birth rates and activity rates for females aged 30 to 49. Taken as a whole, the points appear to fall along a curvilinear path. However, if the points for the developed countries, Australia, Japan and New Zealand, are treated separately, then two distinct patterns appear. Graph 13.c(ii) presents the points for Australia, Japan and New Zealand. They fall along a well-defined linear path. However, the path is much steeper for age group 30-49 than for age group 20-29. Graph 13.c(iii) presents the corresponding points for the less developed countries in the study. For these countries there does not appear to be any clear relationship between birth rates and economic activity rates.

In summary, for the age groups 20-29 and 30-49 there is significant negative linear relationship between the female labour force participation rates and age-specific birth rates when Australia, Japan and New Zealand are considered alone. There appears to be a weak linear relationship between birth rates and activity rates in the less developed countries for age group 20-29 and no relationship in age group 30-49. For age group 15-19, the female labour force participation appeared to be independent of fertility behaviour and therefore dependent on other social and economic factors.

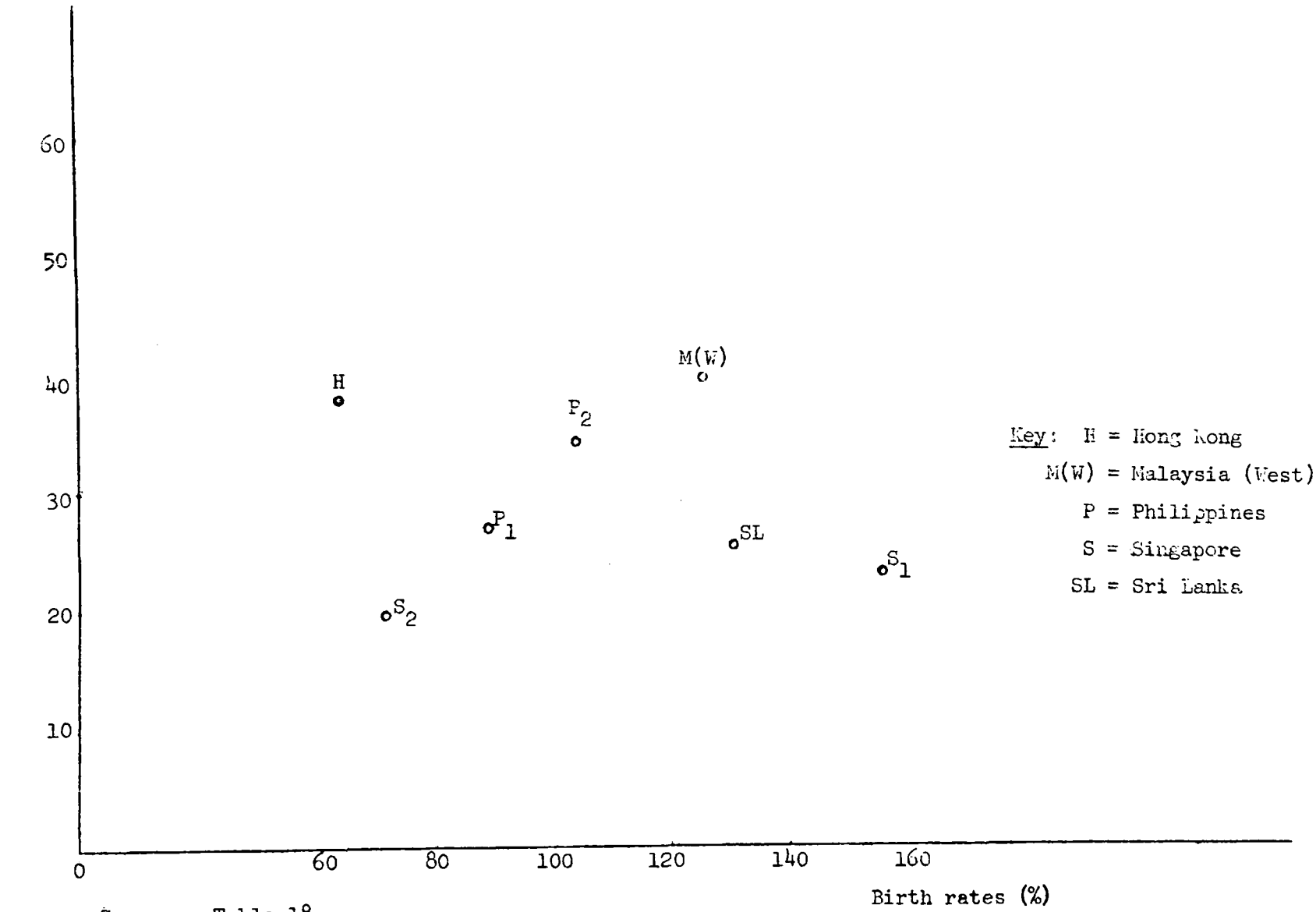
The arbitrary grouping of ages and the interdependence between age groups, in terms of births and maternal responsibilities, might tend to obscure the real association between labour force participation and the number of births for women in each age group. This association may change over time with the changes in social and economic conditions. Moreover, conclusions based on observations of the levels of birth rates and activity rates may not be applicable in the case of changes in these rates over time.

Graph 13.c(ii). Age-specific birth rates and economic activity rates for females aged 30-49 in Australia, Japan and New Zealand, 1955-1970



Source: Table 18

Graph 13.c(iii). Age-specific birth rates and economic activity rates for females aged 30-49 in selected developing countries of the ESCAP region, 1957-1971



Source: Table 18

Chapter X

GROWTH OF RURAL AND URBAN POPULATION AND STRUCTURAL CHANGES IN THE LABOUR FORCE

A. INTRODUCTION

It is difficult to measure the impact of population growth on the labour force by industrial and occupational groups since inter-industry and inter-occupational mobility as well as other socio-economic factors might have a greater effect on the rate of entry into and withdrawal from the labour force than population growth. Moreover, the lack of accurate time-series data for most countries of the region makes it difficult to make such an in-depth analysis at regional level.[1/] Hence, this study will be limited to an analysis of: (a) the association between the growth of rural and urban population[2/] and the variations in the labour force in the agricultural and the non-agricultural sectors;[3/] and (b) the influence of rural-urban migration on the growth of the agricultural and the non-agricultural labour force.

B. RATES OF GROWTH OF RURAL AND URBAN POPULATION AND AGRICULTURAL AND NON AGRICULTURAL LABOUR FORCE

Table 19 presents intercensal annual growth rates of urban and rural population of working ages (15 and over) as well as rates of growth of agricultural and non-agricultural and non-agricultural labour force for 12 countries of the ESCAP region for the period 1956-1971.[4/]

/1.

1/ However, with adequate and reliable data it would be possible to sort out these influences. For example, see J.D. Durand and K.C. Holden, Methods for Analysing Components of Change in Size and Structure of the Labour Force Analytical and Technical Reports No. 8 (Population Studies Center, University of Pennsylvania, 1969).

2/ The definitions of rural and urban population are those used in the national censuses. They have not been standardized for purposes of this study, and for this reason the relationship between labour force structure and rural and urban population distribution may differ from one country to another.

3/ The ISI Classification has been adopted for classifying agricultural and non-agricultural labour force. The agricultural sector also includes forestry, hunting and fishing. The non-agricultural sectors cover all other ISIC divisions, including "activities not adequately described".

4/ The basic data from which all tables in this chapter are derived are contained in appendix table IV.

1. Rural and urban population

For all countries in the study, the rate of increase of urban population of working age, both male and female, was much higher than that of rural population. The average annual growth rate of urban population was more than three times the average annual rate of growth of rural population This was true for both males and females

For males, the rate of urban population growth ranged from a high of 8.29 per cent in Fiji to a low of 2.55 per cent in Australia. The average rate of growth was 4.65 per cent. The standard deviation was 1.80 per cent. The rate of rural male population growth varied from a high of 4.60 per cent in Sabah (Malaysia) to a low of 3.14 per cent in New Zealand. The average of the rates of growth was 1.19 per cent. The standard deviation was 2.0 per cent. Thus, the average rate of growth of male urban population was 3.46 percentage points greater than the average rate of growth of male rural population. However, there was greater variability among the rates of growth of rural population.

For females, the rate of urban population growth ranged from a high of 9.67 per cent in Fiji to a low of 2.53 per cent in Australia. The average rate of growth was 4.95 per cent. The standard deviation was 1.99 per cent. The rate of rural female population growth varied from a high of 4.75 per cent in Sabah (Malaysia) to a low of -3.37 per cent in New Zealand. The average of the rates of growth was 1.31 per cent. The standard deviation was 2.03 per cent. Thus, the average rate of growth of female urban population was 3.64 percentage points higher than the average rate of female rural population growth. As in the case of males, there was greater variability among the rates of growth of rural population.

2. Agricultural and non-agricultural labour force

Table 19 indicates that, for all countries in this study, the rate of increase of the non-agricultural labour force of working age was much higher than that of the agricultural labour force. The differences were even more marked th an in the case of population.

For males, the rate of non-agricultural labour force growth ranged from a high of 7.75 per cent in Sabah (Malaysia) to a low of 1.02 per cent in India. The average rate of growth was 3.62 per cent. The standard deviation was 1.82 per cent. The rate of agricultural labour force growth varied from a high of

/1.74 per cent

Table 19. Annual intercensal rates of growth of population (urban and rural) aged 15 and over and annual intercensal rates of growth of labour force (agricultural and non-agricultural) in selected countries of the ESCAP region, 1956-1971

Country	Census I		Population				Labour force			
			Male		Female		Male		Female	
			Urban	Rural	Urban	Rural	Non-agricultural	Agricultural	Non-agricultural	Agricultural
Australia	1961	1971	2.55	-0.21	2.53	0.31	1.90	-2.77	4.64	5.55
Fiji	1956	1966	8.29	0.71	9.67	1.09	3.40	2.33	6.19	6.52
Hong Kong	1961	1971	3.42	0.40	3.46	1.02	2.66	-2.87	5.23	-3.30
India	1961	1971	2.61	2.00	3.61	1.69	1.02	1.62	-6.53	-6.39
Indonesia	1961	1971	5.28	3.35	5.33	3.31	2.53	-0.22	4.41	2.57
Iran	1956	1966	4.45	0.91	4.17	0.74	4.50	-0.71	6.11	3.50
Japan	1960	1970	2.97	-0.47	2.90	-0.44	3.25	-3.60	4.49	-3.16
Malaysia: Sabah	1960	1970	6.85	4.60	7.08	4.75	7.75	-1.42	14.58	-0.84
Sarawak	1960	1970	5.24	3.20	5.82	3.08	5.40	-0.69	16.39	-0.15
New Zealand	1956	1961	4.48	-3.14	4.38	-3.37	1.96	-0.64	3.00	1.78
Rep. of Korea	1960	1970	6.85	0.01	6.70	0.03	5.57	-0.73	7.06	4.07
Sri Lanka	1963	1971	4.24	2.07	5.06	2.52	3.40	0.51	9.72	2.43
Thailand	1960	1970	3.25	2.03	3.63	2.31	3.72	1.74	3.86	1.31
Arithmetic mean			4.65	1.19	4.95	1.31	3.62	-0.57	6.09	1.07
Standard deviation			1.80	2.01	1.99	2.03	1.82	1.82	5.59	3.73

Source: Appendix table V.

1.74 per cent in Thailand to a low of -3.60 per cent in Japan. The average rate of decline was 0.57 per cent. Thus, for males, the average rate of growth of the non-agricultural labour force was 4.19 percentage points greater than the average rate of growth of the agricultural labour force. The variability was the same in both sectors.

For females, the rate of growth of non-agricultural labour force varied from from a high of 16.39 per cent in Sarawak (Malaysia) to a low of -6.58 per cent in India. The average rate of growth was 6.09 per cent. The standard deviation was 5.59 per cent. The rate of growth of female agricultural labour force varied from a high of 6.52 per cent in Fiji to a low of -6.39 per cent in India. The average of the rates of labour force growth was 1.07 per cent. The standard deviation was 3.73 per cent. Thus, the average rate of growth of non-agricultural female labour force exceeded the average rate of growth of female agricultural labour force by 5.02 percentage points. The variability was much greater in the non-agricultural labour force.

3. Association between rates of growth of population and labour force

Table 20 presents average annual rates of growth of population and labour force and correlation coefficients. In general, the average rates of labour force growth parallel the average rates of population growth. The correlation coefficients in the case of males are much higher than in the case of females, although none are statistically significant at the .05 level of probability. There seems to be non significant correlation between the growth rates of female urban population and those of female non-agricultural labour force and between the growth of female rural population and that of the female agricultural labour force.

The growth of the female labour force in both the agricultural and the non-agricultural sectors is the result of a complex combination of demographic social and economic factors. For example, the reduction of the female labour force in the agricultural sector due to rural-urban migration might be largely compensated for by the entry into the labour force of hitherto inactive females motivated by other social and economic factors. Similarly, the rate of growth of female workers in the non-agriculture sector, which was much greater than the rate of growth of urban population, may have been largely influenced by changes in social and economic factors determining female participation in the labour force. Moreover, the shortage of male labour in certain sectors due to migration might induce females to enter the labour force.

C. EFFECT OF MIGRATION

Table 21 presents differences between the rates of growth of total, urban and rural populations of working ages. These differences are equal to the rates of growth of the proportions of the population which are urban

/and rural

Table 20. Annual rates of growth of rural and urban population and agricultural and non-agricultural labour force aged 15 and over, by sex

	Annual rates of growth		Correlation coefficients
	Population	Labour force	
Male			
Urban - non-agricultural	4.65	3.62	0.605
Rural - agricultural	1.19	-0.57	0.258
Female			
Urban - non-agricultural	4.95	6.09	0.439
Rural - agricultural	1.31	1.07	-0.134

Source: Table 19.

Table 21. Differences between rates of growth of total, urban and rural populations aged 15 and over, by sex, for selected countries of the ESCAP region, 1956-1971

Country	Census years	Differences between annual rates of growth			
		Male		Female	
		Urban less total	Rural less total	Urban less total	Rural less total
Australia	1961-1971	0.46	-2.30	0.30	-1.92
Fiji	1956-1966	5.46	-2.12	6.31	-2.27
Hong Kong	1961-1971	0.37	-2.65	0.29	-2.15
India	1961-1971	0.48	-0.13	1.56	-0.36
Indonesia	1961-1971	1.60	-0.33	1.69	-0.33
Iran	1956-1966	2.23	-1.31	2.20	-1.23
Japan	1960-1970	1.05	-2.39	1.05	-2.29
Malaysia: Sabah	1960-1970	1.87	-0.38	1.97	-0.36
Sarawak	1960-1970	1.70	-0.34	2.30	-0.44
New Zealand	1956-1961	3.04	-4.58	2.73	-5.02
Republic of Korea	1960-1970	4.37	-2.47	4.26	-2.41
Sri Lanka	1963-1971	1.67	-0.50	2.01	-0.53
Thailand	1960-1970	1.05	-0.17	1.14	-0.18

Source: Table 19.

and rural respectively.[5/] The data contained in this table indicate that the proportion of the population of working age that is urban has been increasing rapidly. In the absence of appropriate rural-urban fertility and mortality differentials, this would indicate a substantial migration of working-age population to urban areas.[6/] The rapid industrialization that has taken place in most countries of the region has resulted in the creation of many job opportunities, thereby attracting people from rural areas to the cities.[7/] The migration might also have influenced activity rates and thus the total size as well as the structure of the labour force.

A study of the impact of migration on labour force is rendered difficult because reliable data on rural urban migration are not available in most countries of the ESCAP region. Estimation of migrants by survival techniques requires reliable data on urban and rural mortality rates which are generally lacking. Reliable data on age-specific mortality rates are available for both urban and rural areas in five countries of the region (Hong Kong, New Zealand, Australia, Japan and Sri Lanka). In some of these countries, urban mortality is higher than rural mortality, while in others the opposite

/is true.

5/ Let P = total population of working age
Pu = urban population of working age
Pr = rural population of working age
t = time

If follows that: $\frac{d \ln Pu}{dt} \cdot \frac{P}{} = \frac{d \ln Pu}{dt} - \frac{d \ln P}{dt}$

$\frac{d \ln Pr}{dt} \cdot \frac{P}{} = \frac{d \ln Pr}{dt} - \frac{d \ln P}{dt}$

6/ In a study relating to rural-urban migration, fertility and mortality, Schnore argued that "rural-to-urban migration may no longer be the main source of urban growth but may be surpassed by natural increase occurring on a substantial scale". See Leo F. Schnore, "Population theories and social change", working paper 73-13, Centre for Demography and Ecology, University of Wisconsin, Madison, September 1972, (mimeo), p. 28. But in most countries of the region rural-urban migration has been and is a major component of urban growth.

7/ Rural-urban migration has also been motivated by other factors. According to several studies, education is a important factor in mobility, while many scholars believe that rural push factors are also highly important even if they only work in conjunction with urban pull factors.

Table 22. Estimated male rural-to-urban migrants aged 15 and over, since previous census, and ratio of migrants to urban and rural population and growth rates of male agricultural and non-agricultural labour force in selected countries of the ESCAP region, 1956-1971

Country	Census years I	Census years II	Estimated migrant Population (M)	Urban - non-agricultural: Ratio of M to urban pop. in period II	Urban - non-agricultural: Growth rate of non-agricultural labour force	Rural - agricultural: Ratio of M to rural pop. in period II	Rural - agricultural: Growth rate of agricultural labour force
			(1)	(2)	(3)	(4)	(5)
Australia	1961	1971	171,651	0.04	1.90	0.26	-2.77
Fiji	1956	1966	19,535	0.42	3.40	0.24	2.33
Hong Kong	1961	1971	41,458	0.04	2.66	0.30	-2.87
India	1961	1971	1,636,936	0.05	1.02	0.01	1.62
Indonesia	1961	1971	1,074,117	0.15	2.53	0.03	-0.22
Iran	1956	1966	573,314	0.20	4.50	0.14	-0.71
Japan	1960	1970	2,782,495	0.10	3.25	0.27	-3.60
Malaysia: Sabah	1960	1970	6,963	0.17	7.75	0.04	-1.42
Sarawak	1960	1970	8,250	0.16	5.40	0.03	-0.69
New Zealand	1956	1961	72,794	0.14	1.96	0.26	-0.51
Republic of Korea	1960	1970	1,396,957	0.35	5.57	0.28	-0.73
Sri Lanka	1963	1971	124,378	0.13	3.40	0.04	0.51
Thailand	1960	1970	135,405	0.10	3.72	0.02	1.74
Arithmetic mean				0.16	3.62	0.15	-0.57
Standard deviation				0.11	1.82	0.12	1.82

Sources: Appendix table V and table 19.

Notes: (1) = estimated migrant population (M) = $P_{u,II} - P^*_{u,II}$

when $P^*_{u,II} = P_{u,I}e^{rt}$

(2) = $M_u = \frac{M}{P_{u,II}}$

(3) = $M_r = \frac{M}{P_{r,II}}$

is true. Hence, it will not be appropriate to use the experience of these countries as a basis for estimating rural-urban mortality differentials in countries where data are not available.

As a first approximation, that part of the population added to urban areas by rural-urban migration between two censuses may be estimated as the difference between the actual increase in urban population and the estimated natural increase of urban population during this period.[8/]

Thus, the natural increase technique derives estimates of the rural-urban migrant population on the assumption that the growth rates of urban and rural population would have been the same if there had been no rural-to-urban migration.[9/] Table 22 contains estimates of male migrant population (M) and the ratio of male migrant population to urban and rural population (M_u and M_r), using this technique.[10/] Table 23 contains the corresponding information for females.

/The ratio

8/ Growth rates of rural and urban population may be different in some countries where urban-rural differentials in fertility, as well as in mortality, are important.

9/ Rural-urban migrants for Hong Kong, Japan and the Republic of Korea were estimated by both survival and natural increase techniques. The difference between the two estimates was quite small.

10/ Let r = annual rate of growth of total population

$P_{u,j}$ = actual urban population in period j (j = I or II)

$P^*_{u,j}$ = hypothetical urban population in period j assuming no migration

$P_{r,j}$ = rural population in period j

M = net increase in urban population due to rural to urban migration in intercensal period

M_u = proportion of urban population who are migrants

M_r = migrants to urban areas as a proportion of rural population

It follows that:

$$P^*_{u,II} = P_{u,I}e^{rt}$$

and $$M = P_{u,II} - P^*_{u,II}$$

and $$M_u = \frac{M}{P_{u,II}}$$

and $$M_r = \frac{M}{P_{r,II}}$$

Table 23. Estimated female rural-to-urban migrants aged 15 and over, since previous census, and ratio of migrants to urban and rural population and growth rates of female agricultural and non-agricultural labour force in selected countries of the ESCAP region, 1956-1971

Country	Census years I II	Estimated migrant population (M)	Urban - non-agricultural		Rural - agricultural	
			Ratio of M to urban pop. in period II	Growth rate of non-agricultural labour force	Ratio of M to rural pop. in period II	Growth rate of agricultural labour force
		(1)	(2)	(3)	(4)	(5)
Australia	1961 - 1971	118,702	0.03	4.64	0.21	5.55
Fiji	1956 - 1966	20,539	0.47	6.19	0.26	6.52
Hong Kong	1961 - 1971	32,072	0.03	5.28	0.24	-3.30
India	1961 - 1971	4,429,217	0.15	-6.58	0.04	-6.39
Indonesia	1961 - 1971	1,146,874	0.16	4.41	0.03	2.57
Iran	1956 - 1966	514,097	0.20	6.11	0.13	3.50
Japan	1960 - 1970	2,920,902	0.10	4.49	0.26	-3.19
Malaysia: Sabah	1960 - 1970	6,263	0.18	14.58	0.04	-0.84
Sarawak	1960 - 1970	10,939	0.21	16.39	0.04	-0.15
New Zealand	1956 - 1961	71,504	0.13	3.00	0.29	1.78
Republic of Korea	1960 - 1970	1,413,944	0.35	7.06	0.27	4.07
Sri Lanka	1963 - 1971	124,407	0.15	9.72	0.04	2.43
Thailand	1960 - 1970	152,830	0.11	3.86	0.02	1.31
Arithmetic mean			0.17	6.09	0.14	1.07
Standard deviation			0.12	5.59	0.11	3.73

Source: Same as table 22.

Notes: Same as table 22.

The ratio of male migrants (since the previous census) to urban male population varied from a high of 0.42 in Fiji (1966) to a low of 0.04 in Hong Kong and Australia. The average value of this ratio was 0.16. The standard deviation was 0.11.

The ratio of male migrants from rural to urban areas (since the previous census) to rural male population (M_r) can be calculated as the urban migration ratio (M_u) multiplied by the ratio of urban to rural population (P_u/P_r).[11/] The rural migration ratio varied from a high of 0.30 in H ong Kong to a low of 0.01 in India. The average value was 0.15. The standard deviation was 0.12.

Migration to cities may contribute to the growth of the non-agricultural labour force by increasing population and by altering labour force participation rates. The co-efficient of correlation between the proportion of the urban population who are migrants and the growth rate of non-agricultural labour force, however, is not statistically significant at the 0.05 level of probability. The coefficient of correlation between the ratio of migrants to rural population and the rate of growth of agricultural labour force is also not statistically significant.

Table 23 indicates that the ratio of female migrants to female urban population varied from a high of 0.47 in Fiji to a low of 0.03 in Australia. The average value was 0.17. The standard deviation was 0.12.

The ratio of female migrants to female rural population varied from a high of 0.29 in New Zealand to a low of 0.04 in India, Sabah (Malaysia) and Sri Lanka. The average value was 0.14. The standard deviation was 0.11.

As in the case of males, the urban and rural migration ratios was correlated with rates of growth of non-agricultural and agricultural labour force respectively. The correlation coefficients were not significantly different from zero.

The low degree of association found between the proportion of the population who are migrants and rates of growth of labour force may be due to a number of factors. It must be remembered that the categories of population, rural and urban, do not correspond exactly to the categories of labour force, agricultural and non-agricultural.

/It was

11/ Since $M_u = M/P_u$

$M = M_u P_u$

and $M_r = M/P_r$

therefore $M_r = M_u P_u/P_r$

It was likely that the correlation coefficients might underestimate the true association betweeen rural-urban migration and the growth of labour force in both agricultural and non-agricultural sectors because of (a) the differences in definitions of urban and rural population adopted in each country; and (b) errors in the estimation of rural-urban migrants. Furthermore, rural population was not only composed of people who work in the agricultural sector but also of persons who, although residing in a rural area, work in other sectors, such as commerce and transportation.12/

The fact that the correlation coefficients were lower in the case of females may be due to changes in the definitions of female activity between censuses which are more likely to affect enumeration in agricultural and service activities than industry.

/Chapter XI

12/ Distinctions between rural non-agricultural and rural agricultural population, as well as urban non-agricultural and urban agricultural, have been considered in several studies. For example, see Goldstein, The Influence of Labour Force Participation and Education on Fertility in Thailand, op. cit. and United Nations Department of Economic and Social Affairs, Agriculture Industry and Services in the Urban and Rural Labour Force (ESA/P/W.P.57), September 1975.

Chapter XI

POPULATION GROWTH AND UNEMPLOYMENT

A. INTRODUCTION

Rapid population growth has been associated with increasing unemployment in the developing countries. High rates of population growth have been followed, after a time lag, by equally high or even higher rates of increase in the labour force.[1/] But for various reasons, the expansion of employment opportunities in these countries has not kept pace with the increase in their labour forces. The result is unemployment which in some countries has assumed chronic proportions. As was observed in the case of Sri Lanka by an ILO sponsored inter-agency team: "the emergence of chronic large-scale unemployment was due to the contrast between the fast growth of population and the inertia of the economy in the face of adverse trends in world markets". [2/]

/It

1/ "Population increase due to declining mortality and high fertility affects the size of the labour force in the short as well as the long run. In the short run, the decline in mortality results in an increase in the survival of the existing labour force. In the long run, the large number of births occurring as a result of high birth rates will tend to increase the number of persons seeking employment after 15 years or so". See S. Selvaratnam, "Impact of population growth on employment and training in Sri Lanka", in Report of the National Management Seminar on Population and Family Planning, (Colombo, Department of Labour and ILO, 1972), p.30.

2/ Matching Employment Opportunities and Expectations - A Programme of Action for Ceylon, the Report of an Inter-Agency Team Organized by the International Labour Office (Geneva ILO, 1971), p.17. Similar views have been expressed by the other inter-agency teams as well. For instance, the Team to Colombia stated; "It reflects the pace of population growth in relation to the sluggishness of the economy - the potential labour force has been increasing at a very fast rate, too fast for it to be adequately absorbed in productive employment", in Towards Full Employment - A Programme for Columbia" (Geneva ILO,1970),p.29. The Philippines Team observed; "Whatever picture the open unemployment figures may show, a striking aspect of post-war economic growth has been the economy's failure to provide enough productive jobs in the face of a rapid population increase" , in Sharing in Development - A Programme of Employment, Equity and Growth for the Philippines, (Geneva, ILO, 1974) p.6.

It is often argued that in the long-run a slower rate of population growth may help to solve the unemployment problems. For instance the ILO sponsored Inter-Agency Team to Kenya observed that "A reduction in the high rate of growth of the population is an important part of an employment strategy, on account both of its long-term effect on the growth of the labour force and of its more immediate effect in reducing the dependency burden in addition to setting free sums for investments raising the rate of growth and income levels".[3/] Opposed to this is the argument that population growth, by increasing consumer demand, tends to expand employment opportunities. Reciprocally, high rates of unemployment may cause population change through their influence on mortality, fertility and migration.

There are several studies relating to the size, structure and composition of unemployment in various countries of the region[4/] but few of them are concerned with the interaction of population change and unemployment. The relationship between population and unemployment may be affected by inter-country variations in job opportunities and other socio-economic factors. The degree of association between population and unemployment will also depend on which phase of the economic cycles pertain on the dates for which unemployment data are available. This chapter will be limited to an analysis of the association between the growth rates of working age population, labour force and unemployment in countries of the region for which required data are available.

B. RATES OF UNEMPLOYMENT

Table 24 presents data on the proportion of the labour force aged 15-and-over unemployed, and rates of intercensal variation in unemployment rates for males and femals for 10 countries of the ESCAP region.[5/] In period I, the highest rate of male unemployment was 7.29 per cent in Sri Lanka (1963). The lowest rate was 0.70 per cent in New Zealand (1961). In general, the rates of unemployment in the more developed countries, Australia, Japan and New Zealand, were low relative to the less developed countries. The average of the rates was 3.39 per cent.

/The standard

3/ ILO., Employment Incomes and Equality - A Strategy for Increasing Productive Employment in Kenya, Report of an Inter-Agency Team, Geneva, 1972 p.14.

4/ See for example, Pravin Visaria, "The levels and composition of labour force and unemployment in India," and F. Nessari, "Employment, Under-employment and Unemployment in Iran," in Ronald Ridker and Harold Lubel, Employment and Unemployment Problems of the Near East and South Asia, op. cit.; Peter Richards, Employment and Unemployment in Ceylon, Development Centre, OECD, Paris.

5/ The basic data for the tables in this chapter are contained in appendix table VI.

Table 24. Percentage unemployed, growth rate of unemployed persons, and annual rate of change of percentage unemployed of the labour force by sex for selected countries of the ESCAP region, 1956-1971

Country	Census years		Male				Female			
			Percentage of labour force unemployed		Growth rate of unemployed persons	Annual rate of change in percentage unemployed	Percentage of labour force unemployed		Growth rate of unemployed persons	Annual rate of change in percentage unemployed
	I	II	I	II			I	II		
Australia	1961	1971	4.06	1.46	-8.84	-0.26	4.15	2.19	-1.74	-0.20
Fiji	1956	1966	1.31	4.47	15.09	0.32	0.56	0.27	-1.13	-0.03
Hong Kong	1961	1971	1.76	4.28	11.25	0.25	1.64	4.51	14.88	0.29
Indonesia	1961	1971	4.81	2.42	-6.18	-0.24	6.97	1.82	-10.15	-0.52
Iran	1956	1966	2.85	9.66	14.01	0.68	0.40	8.99	36.67	0.86
Japan	1960	1970	0.85	1.49	7.53	0.06	0.64	1.18	8.06	0.05
New Zealand	1961	1971	0.70	1.12	6.28	0.04	0.99	2.22	12.04	0.12
Philippines	1960	1965	5.70	5.69	3.52	-0.00	10.50	13.23	16.23	0.55
Rep. of Korea	1960	1970	4.60	2.59	-3.51	-0.20	4.32	[illegible].38	-6.21	-0.29
Sri Lanka	1963	1971	7.29	13.72	10.06	0.80	8.93	30.04	21.20	2.64
Average			3.39	4.69	4.92	0.15	3.91	6.58	8.99	0.35
Range			6.59	12.60	23.93	1.06	10.10	29.77	46.82	3.16
Standard deviation			2.25	4.09	8.48	0.37	3.74	9.20	14.25	0.90

Source: Appendix table VI.

The standard deviation was 2.25 per cent. In period II, the levels of unemployment varied from a high of 13.72 per cent in Sri Lanka to a low of 1.12 per cent in New Zealand (1966). The mean value was 4.69 per cent. The standard deviation was 4.09 per cent. The annual rate of increase varied from 0.80 per cent in Sri Lanka (1963-1971) to -0.86 per cent in Indonesia (1961-1964/65). The mean value was 0.13 per cent. The standard deviation was 0.48 per cent. Over-all, it appears that there had been a slight increase in the rate of unemployment between the two periods. The growth rate of unemployed males ranged from 15.09 per cent in Fiji to -8.84 per cent in Australia. The average value was 4.92 per cent. The standard deviation was 8.48 per cent.

In the case of females in period I, rates of unemployment varied from a high of 8.93 per cent in Sri Lanka (1963) to a low of 0.40 per cent in Iran (1956). The average value was 3.91 per cent. The standard deviation was 3.74 per cent The rate of female unemployment in period II varied from a high of 30.04 per cent in Sri Lanka (1971) to a low of 0.27 per cent in Fiji (1966). The average value was 6.58 per cent. The standard deviation was 9.20 per cent. The intercensal annual rate of change in percentage unemployed varied from a high of 2.64 per cent in Sri Lanka to a low of -0.52 per cent in Indonesia. The average value was 0.35 per cent. The standard deviation was 0.90 per cent. The growth rate of unemployed females ranged from a high of 21.20 per cent in Sri Lanka to a low of -10.15 per cent in Indonesia. The average rate of growth was 8.99 per cent and the standard diviation was 14.25 per cent. The rate of female unemployment appears to have been increasing at twice the rate of male unemployment. The relatively higher rates of growth of female unemployment may be due on the one hand to significant increases in female labour force and on the other to a preference for male employees in many sectors.

C. ASSOCIATION BETWEEN GROWTH RATES OF POPULATION AND UNEMPLOYMENT

Table 25 presents linear correlation coefficients between the growth rates of labour force and population and the number of unemployed persons as well as the corresponding levels and rates of change in unemployment rates. None of the coefficients is statistically significant at the 0.05 level of probability. These findings may be due in part to errors of measurement. However, the major reason is likely to be short-run fluctuations in business activity. If this is the case, the effects of population growth on unemployment may be concealed by the complex interrelationship between socio-economic factors and employment rates. A change in unemployment between periods will depend on changes in the size of the labour force and the creation of employment opportunities. While the variation in the size of the labour force depends in large part on new entries and retirements, employment creation is mainly a function of economic development and labour policy.

/Table 25.

Table 25. Correlation coefficients between proportion of labour force unemployed, annual intercensal rate of change in proportion unemployed in relation to growth of labour force and growth of population in selected countries of the ESCAP region, 1956-1971

	Male		Female	
	Growth of labour force	Growth of population of working age	Growth of labour force	Growth of population of working age
Percentage of labour force unemployed in period II	0.274	0.112	0.433	0.183
Annual intercensal rate of change in percentage of labour force unemployed	0.254	-0.139	0.299	0.045
Rate of growth of unemployed persons	0.452	-0.132	0.286	-0.340

Source: Table 24.

Note: Limit of significance of P = 0.05 is 0.632.

APPENDIX TABLES

Table I. Population, by age group and by sex, for selected countries of the ESCAP region, 1956 - 1971

Country	Year	Population			Population 15 - 59			Population 59 and over		
		Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Australia	1961	10,508,186	5,312,252	5,195,934	6,036,092	3,111,102	2,924,990	1,295,096	574,955	720,141
	1966	11,550,462	5,816,359	5,734,103	6,736,221	3,450,489	3,285,732	1,421,753	628,132	793,621
	1971	12,755,638	6,412,711	6,342,927	7,519,047	3,841,553	3,677,494	1,566,539	690,601	875,938
Brunei	1960	83,877	43,676	40,201	40,054	21,668	18,386	4,714	2,319	2,395
	1965(E)	86,980	45,387	41,593	-	-	-	-	-	-
	1967(E)	150,853	77,218	73,635	-	-	-	-	-	-
	1971	136,256	72,772	63,484	70,882	39,291	31,591	6,238	3,372	2,866
Burma	1953(E)	2,940,704	1,499,488	1,441,216	1,742,931	897,637	845,294	201,042	96,701	104,341
	1957(E)	3,267,000	1,612,000	1,655,000	-	-	-	-	-	-
Fiji	1956	345,737	178,475	167,262	168,895	87,065	81,830	17,689	10,611	7,078
	1966	476,727	242,747	233,980	235,679	119,495	116,184	18,309	10,070	8,239
Hong Kong	1961	3,129,648	1,607,779	1,521,869	1,764,695[a]	917,636[a]	847,059[a]	87,918[b]	26,128[b]	61,790[b]
	1971	3,936,630	2,000,602	1,936,028	2,235,453	1,169,051	1,066,402	293,273	111,431	181,842
India	1951	356,628,312	183,194,954	173,433,358	-	-	-	-	-	-
	1961	438,774,729	226,060,908	212,713,821	233,875,534	121,109,715	112,765,819	24,704,224	12,352,714	12,351,510
	1971	547,949,809	283,936,614	264,013,195	284,886,839	148,140,059	136,746,780	32,692,765	16,870,536	15,822,229
Indonesia	1961	96,318,829	47,493,854	48,824,975	53,248,287[a]	25,796,469[a]	27,451,818[a]	2,525,864[b]	1,233,359[b]	1,292,505[b]
	1971	118,459,845	58,279,166	60,180,679	61,016,030	29,279,290	31,736,740	5,182,509	2,443,129	2,739,380
Iran	1956	18,954,704	9,644,944	9,309,760	10,202,878[a]	5,172,531[a]	5,030,347[a]	758,670[b]	394,864[b]	363,806[b]
	1966	25,078,923	12,981,665	12,097,258	11,880,552	6,093,017	5,787,535	1,638,042	859,386	778,656

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Japan	1955	89,275,529	43,860,718	45,414,811	52,231,815	25,426,700	26,805,115	7,244,724	3,254,977	3,989,747
	1970	104,665,171	51,369,177	53,295,994	68,366,981	33,499,204	34,867,777	11,145,411	5,012,584	6,132,827
Malaysia:										
West	1957	6,278,758	3,237,579	3,041,179	3,236,737	1,679,350	1,557,387	289,813	153,972	135,841
	1970	8.780,728	4,413,068	4,367,660	4,384,249	2,171,218	2,213,031	472,369	245,066	227,303
Saban	1960	454,421	236,616	217,805	238,917	125,943	112,974	17,678	9,125	8,553
	1970	651,304	338,227	313,077	321,232	168,409	152,823	22,332	11,830	10,502
Sarawak	1960	744,529	375,846	368,683	374,654	186,135	188,519	38,779	20,150	18,629
	1970	887,292	447,123	440,169	436,373	215,127	221,246	44,448	23,503	20,945
Nepal	1961	9,412,996	4,636,033	4,776,963	-	-	-	-	-	-
	1971	11,555,983	5,817,203	5,738,780	6,232,702	3,126,695	3,106,007	648,703	311,086	337,617
New Zealand	1956	2,174,062	1,093,211	1,080,851	1,214,152	616,193	597,959	276,652	128,044	148,608
	1966	2,676,919	1,343,743	1,333,176	1,482,276	752,960	729,316	322,244	144,515	177,729
Pakistan	1951	73,880,344	39,141,972	34,738,372	-	-	-	-	-	-
	1961	90,282,674	47,516,890	42,765,784	44,717,335	23,578,939	21,138,396	1,850,805	1,059,197	791,608
Papua New Guinea	1966	2,184,986	1,140,359	1,044,627	-	-	-	-	-	-
	1971	2,489,936	1,293,888	1,196,048	-	-	-	-	-	-
Philippines	1960	27,087,685	13,662,869	13,424,816	13,371,410	6,607,860	6,763,550	1,135,520	580,060	555,460
	1970	36,590,068	18,187,924	18,402,144	18,803,049	9,109,344	9,693,705	2,013,377	986,213	1,027,164
Rep. of Korea	1960	24,989,241	12,543,968	12,445,273	12,772,985	6,100,110	6,672,875	1,507,930	647,505	860,425
	1970	31,435,252	15,779,615	15,655,637	16,489,183	8,227,052	8,262,131	1,704,636	700,440	1,004,196
Singapore	1957	1,445,929	762,760	683,169	771,488	418,438	353,050	55,337	24,361	30,976
	1970	2,074,507	1,062,127	1,012,380	1,151,364	593,069	558,315	118,287	55,587	62,700

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Sri Lanka	1963	10,582,064	5,498,674	5,083,390	5,502,171	2,889,198	2,612,973	690,238	382,153	308,085
	1970[c/]	12,712,277	6,497,494	6,214,783	6,893,245	3,508,819	3,384,426	821,335	449,616	371,719
Thailand	1960	26,257,916	13,154,149	13,103,767	13,683,895	6,860,995	6,822,900	1,254,306	580,595	673,711
	1970	34,397,374	17,123,862	17,273,512	17,166,613	8,486,142	8,680,471	1,724,501	786,065	938,436
Western Samoa	1961	114,427	58,785	55,642	52,109	26,376	25,733	4,856	2,324	2,532
	1966	131,377	67,842	63,535	60,312	30,948	29,364	3,625	1,671	1,954

Sources: United Nations Demographic Yearbook, 1973, table 38; 1972, table 8; and 1964, table 8.

a/ For age-group 15 - 64.
b/ For age-group 65 and over.
c/ Taken from Department of Census and Statistics, Census of Population 1971, preliminary report, tables 1 and 6, p. 1 and pp. 33 - 34.
(E) Estimate

Table II. Labour force, by age group and by sex, for selected countries of the ESCAP region, 1956 - 1971

Country	Year	Labour Force			Labour Force 15-59			Labour force 59 and over		
		Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Australia	1961	4,225,096	3,165,927	1,059,169	3,905,901	2,904,417	1,001,484	304,088	253,547	50,541
	1966	4,856,455	3,421,814	1,434,641	4,517,788	3,147,518	1,370,270	338,667	274,296	64,371
	1971	5,330,488	3,639,639	1,690,849	4,980,153	3,356,152	1,624,001	350,335	283,487	66,848
Brunei	1960	24,830	20,659	4,171	22,880	19,053	3,827	1,950	1,506	344
	1965(E)	25,326	21,072	4,254	-	-	-	-	-	-
	1967(E)	44,663	36,336	8,327	-	-	-	-	-	-
	1971	40,012	33,562	6,450	37,381	31,338	6,043	2,631	2,224	407
Burma	1953(E)	1,074,505	782,134	292,371	959,982	707,747	252,235	80,264	56,402	23,862
	1957(E)	1,180,600	867,300	313,300	-	-	-	-	-	-
Fiji	1956	93,257	88,223	5,034	86,085	81,211	4,874	7,172	7,012	160
	1966	125,809	116,433	9,376	119,215	110,070	9,145	6,594	6,363	231
Hong Kong	1961	1,211,999	864,795	347,204	1,169,300[a/]	840,726[a/]	328,574[a/]	18,258[b/]	12,124[b/]	6,134[b/]
	1971	1,654,907	1,096,900	558,007	1,520,323	1,020,495	499,828	98,659	63,860	34,799
India	1951	140,695,918	99,547,564	41,148,354	-	-	-	-	-	-
	1961	188,571,542	129,113,818	59,457,724	161,853,334	110,939,424	50,913,910	12,225,636	9,463,332	2,762,304
	1971	180,373,399	149,075,136	31,298,263	155,503,974	128,723,291	26,780,683	14,108,385	12,448,015	1,660,370
Indonesia	1961	34,578,234	25,008,797	9,569,437	31,721,851[a/]	23,128,251[a/]	8,593,600[a/]	1,276,861[b/]	903,195[b/]	373,666[b/]
	1971	40,100,070	26,832,401	13,267,669	35,359,990	23,835,223	11,524,767	2,406,229	1,658,417	747,812
Iran	1956	6,066,643	5,491,012	575,631	5,394,158[a/]	4,909,699[a/]	484,459[a/]	313,676[b/]	292,261[b/]	21,415[b/]
	1966	7,584,085	6,584,257	999,828	6,269,508	5,516,818	752,690	541,246	496,049	45,197

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Japan	1955	40,026,550	24,435,282	15,591,268	36,827,236	22,306,758	14,520,478	3,199,314	2,128,524	1,070,790
	1970	53,320,664	32,466,605	20,854,059	48,365,040	29,183,411	19,181,629	4,955,624	3,283,194	1,672,430
Malaysia:										
West	1957	2,164,861	1,635,080	529,781	1,978,711	1,494,289	484,422	127,863	106,666	21,197
	1970	2,870,949	1,958,288	912,661	2,606,381	1,775,582	830,799	170,441	131,421	39,020
Sabah	1960	176,626	123,317	53,309	168,745	117,068	51,677	7,881	6,249	1,632
	1970	212,714	144,579	68,135	194,905	133,559	61,346	9,541	7,160	2,381
Sarawak	1960	294,285	184,214	110,071	277,495	171,466	106,029	16,790	12,748	4,042
	1970	346,009	209,366	136,643	304,095	184,861	119,234	20,985	14,757	6,228
Nepal	1961	4,306,839	2,563,915	1,742,924	-	-	-	-	-	-
	1971	4,852,524	3,434,288	1,418,236	3,992,433	2,859,036	1,133,397	205,529	158,731	46,798
New Zealand	1956	816,852	622,758	194,094	760,366	574,863	185,503	56,320	47,771	8,549
	1966	1,026,039	745,595	280,444	956,177	687,763	268,414	69,806	57,794	12,012
Pakistan	1951	22,698,740	21,382,192	1,316,548	-	-	-	-	-	-
	1961	30,205,981	26,443,488	3,762,493	24,758,353	21,592,976	3,165,377	2,782,051	2,527,565	254,486
Papua New Guinea	1966	697,345	412,999	284,346	-	-	-	-	-	-
	1971	521,110	359,162	161,948	-	-	-	-	-	-
Philippines	1960	8,536,000	6,352,420	2,183,580	7,467,550	5,574,160	1,893,390	558,210	432,270	125,940
	1970	11,354,875	7,890,559	3,464,316	9,926,945	6,888,089	3,038,856	803,887	604,609	199,278
Rep. of Korea	1960	7,543,060	5,386,910	2,156,150	6,987,915	4,985,945	2,001,970	442,040	336,345	105,695
	1970	10,377,512	6,752,595	3,624,917	9,723,060	6,333,878	3,389,182	510,373	345,087	165,286
Singapore	1957	480,267	393,797	86,470	455,371	375,652	79,719	16,192	12,842	3,350
	1970	726,676	539,223	187,453	687,860	510,120	177,740	29,381	23,662	5,719

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Sri Lanka	1963	3,458.994	2,740,098	718,896	3,099,731	2,441,931	657,800	269,209	239,081	30,128
	1970	4,418,188	3,253,579	1,164,609	4,086,569	2,980,059	1,106,510	246,466	221,120	25,346
Thailand	1960	13,836,984	7,144,796	6,692,188	12,107,332	6,282,808	5,824,524	650,146	375,688	274,458
	1970	16,850,136	8,910,760	7,939,376	14,445,820	7,685,830	6,759,990	716,072	434,166	281,906
Western Samoa	1961	27,941	25,216	2,725	25,621	22,969	2,652	2,230	2,165	65
	1966	35,292	28,088	7,204	32,982	26,041	6,941	1,678	1,517	161

Sources: Same as for table I.

a/ For age-group 15 - 64.
b/ For age-group 65 and over.
c/ Taken from Department of Census and Statistics, Census of Population 1971, preliminary report, tables 1 and 6, p. 1 and pp. 33-34.
(E) Estimate

Table III. Population and labour force, by sex and age group, for selected countries of the ESCAP region, 1956-1971

Country	Age group	Male				Female			
		Population		Labour force		Population		Labour force	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Australia		1961	1971	1961	1971	1961	1971	1961	1971
	All ages	5,312,252	6,412,711	3,165,927	3,639,639	5,195,934	6,342,927	1,059,169	1,690,849
	15 plus	3,686,057	4,532,154	3,157,964	3,639,639	3,645,131	4,553,432	1,052,025	1,690,849
	15 - 19	414,788	567,960	288,838	316,624	394,145	542,236	253,904	282,297
	20 - 24	361,531	558,166	343,100	497,515	335,907	538,779	170,691	315,597
	25 - 34	728,618	893,224	716,955	846,380	665,421	841,436	159,865	326,981
	35 - 44	739,220	788,487	726,316	748,135	707,223	738,864	194,521	328,172
	45 - 54	628,894	732,252	608,483	681,081	596,964	712,208	152,299	284,909
	55 - 59	238,051	301,464	220,725	266,417	225,330	303,971	50,204	86,045
	60 - 64	190,805	243,740	151,956	184,302	210,048	257,804	27,883	41,125
	65 +	384,150	446,861	101,591	99,185	510,093	618,134	22,658	25,723

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Fiji		1956	1966	1956	1966	1956	1966	1956	1966
	All ages	178,475	242,747	88,223	116,433	167,262	233,980	5,034	9,376
	15 plus	97,676	129,565	88,223	116,433	88,908	124,423	5,034	9,376
	15 - 19	18,312	25,473	14,322	18,503	18,162	25,438	1,090	1,609
	20 - 24	15,133	20,677	14,631	19,824	14,776	21,128	1,245	2,398
	25 - 29	12,667	17,060	12,413	16,745	12,105	17,247	723	1,625
	30 - 34	10,167	14,054	9,982	13,858	9,757	13,399	503	1,048
	35 - 39	9,299	11,957	9,112	11,783	8,749	11,455	426	796
	40 - 44	7,775	9,675	7,628	9,493	6,775	9,093	364	596
	45 - 49	5,960	8,819	5,818	8,651	4,898	8,072	251	489
	50 - 54	4,285	7,091	4,102	6,825	3,733	6,205	161	365
	55 - 59	3,467	4,689	3,203	4,388	2,875	4,147	111	219
	60 - 64	3,709	3,527	3,031	3,069	2,635	3,111	73	105
	65 +	6,681	6,403	3,826	3,198	4,245	5,022	73	110
	Unknown	221	140	155	96	198	106	14	16

Table XIII (cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Hong Kong		1961	1971	1961	1971	1961	1971	1961	1971
	All ages	1,607,779	2,000,602	864,795	1,096,900	1,521,869	1,936,028	347,204	558,007
	15 plus	943,764	1,280,482	852,850	1,084,355	908,849	1,248,244	334,708	534,627
	15 - 19	90,240	219,657	48,990	110,791	74,857	208,187	35,863	117,402
	20 - 24	111,242	173,211	99,280	156,277	91,499	163,142	46,780	113,441
	25 - 34	278,101	224,187	271,879	220,518	239,016	182,162	81,007	72,090
	35 - 44	230,653	263,149	226,663	259,452	207,338	237,521	78,747	91,944
	45 - 54	146,601	213,914	142,043	206,670	144,517	199,719	60,853	77,693
	55 - 64	60,799	127,225	51,871	107,121	89,832	139,080	25,324	47,147
	65 +	26,128	59,139	12,124	23,526	61,790	118,433	5,134	14,910
Indonesia		1961	1971	1961	1971	1961	1971	1961	1971
	All ages	47,493,854	58,279,166	25,008,797	26,832,401	48,824,975	60,180,679	9,569,437	13,267,669
	15 plus	27,029,828	31,722,419	24,031,446	25,493,640	28,744,323	34,476,120	8,967,266	12,272,579
	15 - 19	3,834,117	5,642,971	2,556,342	2,761,730	3,874,058	5,748,375	1,185,071	1,646,081
	20 - 24	3,452,362	3,555,777	3,008,984	2,719,698	4,338,603	4,405,511	1,188,852	1,402,632
	25 - 34	7,333,617	7,697,456	6,923,586	7,027,654	8,542,102	9,239,205	2,326,611	3,309,765
	35 - 44	5,719,856	7,022,853	5,536,284	6,561,206	5,363,334	7,086,944	1,784,089	2,926,620
	45 - 54	3,559,007	4,286,317	3,403,264	3,860,175	3,483,325	4,195,387	1,385,164	1,817,223
	55 - 64	1,897,510	2,107,960	1,699,791	1,709,457	1,850,396	2,250,203	723,813	815,349
	65 +	1,173,477	1,405,110	853,943	850,435	1,235,636	1,546,605	343,396	352,823
	Unknown	59,882	3,975	49,252	3,285	56,869	3,890	30,270	2,086

Appendix Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Iran		1956	1966	1956	1966	1956	1966	1956	1966
	All ages	9,644,944	12,981,665	5,491,012	6,584,257	9,309,760	12,097,258	575,631	999,828
	15 plus	5,567,395	6,952,403	5,201,960	6,012,867	5,394,153	6,566,191	595,874	757,887
	15 - 19	710,029	1,060,029	572,867	720,875	710,495	1,069,007	86,112	165,966
	20 - 24	699,369	792,896	658,514	720,180	797,309	889,265	73,878	125,899
	25 - 34	1,440,929	1,664,981	1,416,480	1,617,712	1,463,246	1,652,737	126,467	205,533
	35 - 44	1,056,710	1,501,708	1,045,236	1,467,250	890,731	1,237,581	86,194	153,443
	45 - 54	742,191	849,864	726,101	797,562	704,242	734,583	71,479	83,833
	55 - 64	523,303	567,737	490,501	448,196	463,824	530,101	40,329	42,698
	65 +	392,078	515,188	290,537	241,092	359,529	452,917	20,941	20,515
	Unknown	2,786	-	1,724	-	4,277	-	474	
Japan		1960	1970	1960	1970	1960	1970	1960	1970
	All ages	45,877,602	51,369,177	26,822,090	32,466,605	47,540,899	53,295,994	17,205,780	20,609,332
	15 plus	31,542,231	38,511,788	26,822,090	32,466,605	33,809,664	41,000,604	17,205,780	20,609,332
	15 - 19	4,677,763	4,622,873	2,372,412	1,686,029	4,630,775	4,544,171	2,204,856	1,588,822
	20 - 24	4,125,266	5,344,885	3,580,303	4,465,512	4,193,184	5,382,751	2,866,726	3,723,069
	25 - 29	4,094,656	4,545,780	3,928,940	4,461,872	4,114,704	4,602,418	2,060,158	2,041,341
	30 - 34	3,746,898	4,215,776	3,637,519	4,155,912	3,770,907	4,225,557	1,912,431	1,977,481
	35 - 39	2,763,208	4,154,678	2,685,084	4,090,445	3,274,822	4,118,164	1,783,122	2,302,774
	40 - 44	2,274,344	3,690,875	2,209,303	3,628,362	2,744,786	3,702,753	1,565,804	2,342,689
	45 - 49	2,256,804	2,696,819	2,182,416	2,644,781	2,559,755	3,222,878	1,446,664	2,071,861
	50 - 54	2,040,674	2,172,383	1,941,149	2,114,375	2,160,716	2,669,007	1,122,355	1,615,020
	55 - 59	1,802,182	2,055,135	1,612,829	1,936,123	1,839,025	2,400,078	843,067	1,280,764
	60 - 64	1,437,574	1,766,393	1,177,849	1,515,965	1,494,043	1,985,726	584,346	854,787
	65 +	2,322,862	3,246,191	1,266,752	1,767,229	3,026,947	4,147,101	646,984	810,724

Table III (Cont'd)

(1)	((2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Malaysia (West)		1957	1970	1957	1970	1957	1970	1957	1970
	All ages	3,237,579	4,413,068	1,635,080	1,958,288	3,041,179	4,367,660	529,781	912,661
	15 plus	1,833,322	2,416,284	1,600,955	1,907,003	1,693,228	2,440,334	505,619	869,819
	15 - 19	307,263	481,945	184,316	251,829	304,698	491,619	85,112	160,865
	20 - 24	257,645	362,318	238,843	314,847	263,655	377,423	82,223	157,237
	25 - 29	216,030	269,841	210,612	251,948	224,276	275,708	62,151	105,311
	30 - 34	187,475	262,228	183,386	247,161	183,197	268,250	55,733	104,097
	35 - 39	173,482	202,903	169,484	190,988	165.508	214,822	56,536	85,392
	40 - 44	156,990	185,031	152,551	172,252	136,033	186,533	48,055	74,240
	45 - 49	152,468	151,519	146,666	138,463	119,947	157,266	43,493	63,697
	50 - 54	129,338	138,938	121,188	120,272	94,185	135,541	31,759	49,299
	55 - 59	98,659	116,495	87,243	87,822	65,888	105,869	19,340	30,661
	60 - 64	64,462	100,855	52,411	65,531	50,315	93,116	11,234	21,367
	65 +	88,479	144,211	53,815	65,890	84,743	134,187	9,781	17,153
	Unknown	1,031	-	440	-	783	-	182	-

Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
New Zealand		1961	1966	1961	1966	1961	1966	1961	1966
	All ages	1,213,376	1,343,743	670,506	745,595	1,201,608	1,333,176	224,857	280,444
	15 +	805,125	897,475	670,506	745,557	810,917	907,045	224,857	280,426
	15 - 19	95,324	125,326	62,240	78,631	90,895	120,041	58,131	74,340
	20 - 24	80,043	97,394	75,682	91,155	78,020	93,258	38,884	49,321
	25 - 29	73,600	84,927	72,253	83,453	70,173	82,319	15,431	20,654
	30 - 34	81,923	76,529	80,875	75,664	75,976	72,867	15,155	16,221
	35 - 39	81,024	84,911	79,848	84,095	77,846	78,978	18,574	21,300
	40 - 44	71,232	81,385	69,843	80,397	72,764	78,795	19,743	25,245
	45 - 49	71,203	72,272	69,725	70,895	70,290	73,516	20,800	24,336
	50 - 54	64,307	68,778	62,105	66,550	61,836	69,226	17,108	21,706
	55 - 59	53,424	61,438	48,924	56,023	51,258	60,316	11,341	15,291
	60 - 64	41,573	49,158	28,702	35,325	44,682	49,993	5,689	7,275
	65 +	91,472	95,357	20,153	22,469	117,177	127,736	3,908	4,737

Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Philippines		1960	1970	1960	1970	1960	1970	1960	1970
	All ages	13,662,669	18,187,924	6,352,420	7,890,559	13,424,816	18,402,144	2,183,580	3,464,316
	15 +	7,187,920	10,095,557	6,006,430	7,493,698	7,319,010	10,720,869	2,019,330	3,238,134
	15 - 19	1,372,640	1,732,927	813,340	805,195	1,374,030	1,941,489	407,140	521,834
	20 - 24	1,176,160	1,573,616	950,580	1,107,153	1,227,080	1,789,833	354,200	529,841
	25 - 29	943,400	1,420,272	861,540	1,189,704	991,000	1,452,012	258,510	462,506
	30 - 34	757,540	1,154,528	715,930	1,003,439	789,540	1,125,923	207,490	363,521
	35 - 39	697,860	972,460	666,300	853,549	742,420	928,009	198,630	323,158
	40 - 44	535,640	705,777	510,830	618,542	548,980	731,050	153,200	265,928
	45 - 49	520,820	607,271	495,280	526,254	509,790	671,002	147,460	236,674
	50 - 54	355,440	501,626	332,590	421,183	343,130	569,655	99,460	189,057
	55 - 59	248,360	440,867	227,770	363,070	237,580	484,732	67,300	146,335
	60 - 64	228,140	357,850	197,070	271,609	192,730	376,668	49,140	97,458
	65 +	351,920	625,256	235,200	331,495	362,730	647,184	76,800	100,355
	Unknown	-	3,107	-	1,505	-	3,312	-	1,465

Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rep. of Korea		1960	1970	1960	1970	1960	1970	1960
	All ages	12,543,968	15,779,615	5,386,910	6,752,595	12,445,273	15,655,637	2,156,150
	15 plus	6,747,615	8,927,525	5,322,290	6,678,965	7,533,300	9,629,297	2,107,665
	15 - 19	1,243,925	1,573,163	562,800	721,664	1,129,955	1,514,949	287,705
	20 - 24	793,760	1,298,690	602,450	653,752	1,100,610	1,224,490	337,385
	25 - 29	778,320	1,096,834	707,195	939,630	1,001,635	1,107,505	266,795
	30 - 34	709,890	1,108,878	679,020	1,059,574	832,840	1,084,448	241,655
	35 - 39	682,330	915,075	657,070	883,682	729,585	939,213	240,340
	40 - 44	598,155	691,071	579,905	663,023	587,050	770,854	204,000
	45 - 49	517,345	628,930	498,620	598,971	515,000	655,681	181,125
	50 - 54	458,695	506,555	417,805	465,417	442,020	518,010	144,985
	55 - 59	317,690	407,892	281,080	348,165	334,190	447,147	97,980
	60 - 64	256,820	302,361	182,480	205,281	336,250	362,894	56,415
	65 +	383,505	398,076	150,855	139,806	517,705	641,088	47,605
	Unknown	7,180	-	3,010	-	6,470	-	1,675

Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Singapore		1957	1970	1957	1970	1957	1970	1957	1970
	All ages	762,760	1,062,127	393,797	539,223	683,169	1,012,380	86,470	187,453
	15 +	442,799	648,656	388,494	533,782	384,026	621,015	83,069	183,459
	15 - 19	70,137	126,358	41,649	70,331	65,542	120,059	15,364	51,627
	20 - 24	61,254	103,181	56,531	95,851	58,012	100,554	13,308	53,939
	25 - 29	59,776	66,650	58,565	65,290	51,950	66,095	8,548	20,340
	30 - 34	50,148	68,462	49,440	67,277	39,777	67,919	6,877	15,426
	35 - 39	46,506	58,441	45,814	57,491	36,203	54,454	7,515	10,528
	40 - 44	43,041	54,015	42,198	52,975	33,176	46,862	8,710	8,354
	45 - 49	37,773	44,148	36,608	42,466	28,943	37,598	8,719	6,589
	50 - 54	29,253	37,770	27,351	33,287	22,541	33,453	6,497	5,864
	55 - 59	20,550	34,044	17,496	25,152	16,906	31,321	4,181	5,073
	60 - 64	12,015	24,998	8,043	13,987	12,261	23,925	2,098	3,216
	65 +	12,346	30,589	4,799	9,756	18,715	38,775	1,252	2,503

Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Sri Lanka		1963	1971	1963	1971	1963	1971	1963	1971
	All ages[a/]	3,951,988	4,839,067	2,736,046	3,312,469	3,571,217	4,515,236	715,661	1,175,670
	15 +	3,271,351	4,018,116	2,681,012	3,263,069	2,921,058	3,727,096	687,928	1,144,606
	15 - 19	517,803	688,715	239,403	332,779	503,351	671,248	108,713	178,911
	20 - 24	444,416	639,574	375,011	568,612	441,443	631,115	129,387	272,001
	25 - 29	375,758	478,970	353,660	464,174	368,454	475,188	102,173	191,121
	30 - 34	353,323	377,745	341,030	368,993	314,595	352,034	78,747	123,768
	35 - 39	343,417	366,884	332,272	357,619	310,129	358,567	80,354	117,988
	40 - 44	258,727	314,343	248,525	304,136	212,641	271,876	55,010	83,682
	45 - 49	246,853	289,638	236,162	277,080	196,973	255,170	51,144	75,369
	50 - 54	193,882	227,034	179,789	209,657	152,103	100,991	32,475	47,149
	55 - 59	155,019	192,183	136,079	155,835	113,084	157,305	19,797	27,638
	60 - 64	138,707	150,600	106,393	99,658	102,868	117,442	11,776	12,965
	65 +	207,824	292,430	108,472	124,526	171,533	246,160	10,295	13,749
	Unknown	35,622	-	24,216	-	33,684	-	8,057	

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Table III (Cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Thailand		1960	1970	1960	1970	1960	1970	1960	1970
	All ages	13,154,149	17,123,862	7,144,796	8,910,760	13,103,767	17,273,512	6,692,188	7,939,376
	15 +	7,441,590	9,272,207	6,658,496	8,119,996	7,496,611	9,618,907	6,098,982	7,041,896
	15 - 19	1,262,683	1,832,177	970,495	1,418,783	1,236,294	1,885,371	1,046,638	1,455,529
	20 - 24	1,211,986	1,321,641	1,069,158	1,178,333	1,204,153	1,361,717	1,043,225	1,075,402
	25 - 29	1,024,650	1,098,083	984,052	1,047,744	1,046,464	1,143,377	889,140	896,868
	30 - 34	883,952	1,047,323	861,701	1,010,230	869,876	1,077,088	741,177	847,948
	35 - 39	692,094	952,959	676,938	920,116	679,940	957,607	589,040	766,540
	40 - 49	1,062,362	1,373,446	1,036,754	1,322,364	1,046,778	1,363,786	916,766	1,091,137
	50 - 59	723,268	860,513	683,710	788,260	739,395	891,525	598,538	626,566
	60 +	554,909	764,414	357,198	431,262	653,305	934,610	261,358	279,539
	Unknown	25,686	21,651	18,490	2,904	20,406	21,826	13,100	2,367

Sources: United Nations Demographic Yearbook, 1964, 1972 and 1973; sent-in data for Sri Lanka.

a/ Aged 10 and over.

Table IV. Female population and labour force, by marital status and age group, for selected countries of the ESCAP region, 1956-1971

Country	Year	Age group	Population			Labour Force		
			Never married	Married	Widowed, divorced, separated	Never married	Married	Widowed, divorced, separated
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Australia	1966	15 plus	899,354	2,578,488	601,511	608,538	686,334	139,769
		15 - 19	469,455	42,037	886	339,832	12,982	509
		20 - 24	168,284	242,156	6,792	152,060	89,680	4,076
		25 - 29	44,286	305,685	11,758	38,503	79,416	6,889
		30 - 34	22,697	294,391	14,612	18,766	78,867	8,397
		35 - 39	20,720	324,881	21,498	16,605	101,918	12,777
		40 - 44	20,558	327,281	29,376	15,883	110,271	17,892
		45 - 49	19,842	278,951	35,846	14,720	88,117	21,119
		50 - 54	21,829	249,010	46,985	15,272	66,114	22,437
		55 - 59	22,289	189,314	55,313	14,368	37,929	20,271
		60 - 64	21,994	132,403	65,362	8,859	14,681	12,745
		65 plus	67,400	193,379	313,083	8,170	7,259	12,657
	1971	15 plus	940,173	2,927,544	691,680	571,745	960,039	139,065
		15 - 19	492,546	46,356	951	264,637	17,092	568
		20 - 24	190,447	328,199	12,508	161,178	147,259	7,160
		25 - 34	77,416	719,913	38,017	65,321	239,549	22,111
		35 - 44	35,819	648,668	53,357	28,078	268,420	31,674
		45 - 54	36,675	589,031	96,706	26,279	210,233	48,397
		55 - 59	19,968	223,668	64,141	14,244	51,023	22,778
		60 - 64	21,099	162,383	78,242	7,712	19,109	14,304
		65 plus	66,203	209,326	347,758	6,296	7,354	12,073
Hong Kong	1961	15 plus	170,202	614,035	124,612	112,833	174,724	47,151
		15 - 19	70,051	4,782	24	34,224	1,628	11
		20 - 24	44,501	46,679	319	33,534	13,029	217
		25 - 34	25,460	209,127	4,429	21,557	56,149	3,301
		35 - 44	11,233	181,383	14,722	9,734	57,872	11,141
		45 - 54	11,216	101,836	31,465	9,429	33,618	17,806
		55 - 64	5,452	46,918	37,462	3,664	10,455	11,205
		65 plus	2,289	23,310	36,191	691	1,973	3,470

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Hong Kong	1971	15 plus	368,611	770,520	109,113	257,040	245,121	32,466
		15 - 19	202,111	6,039	37	115,505	1,880	17
		20 - 24	110,228	52,733	181	97,348	15,974	119
		25 - 29	17,438	68,807	358	16,060	21,058	252
		30 - 34	5,350	89,260	949	4,753	29,247	720
		35 - 39	3,414	109,964	2,253	2,853	39,220	1,690
		40 - 44	3,584	113,203	5,103	3,033	41,682	3,466
		45 - 49	3,984	93,946	7,494	3,280	33,693	4,318
		50 - 54	5,121	77,574	11,600	4,132	26,580	5,690
		55 - 59	5,450	55,876	14,345	4,144	17,470	5,644
		60 - 64	5,211	40,446	17,752	3,495	10,988	5,406
		65 plus	6,720	62,672	49,041	2,437	7,329	5,144
Japan	1960	15 plus	9,034,300	19,206,900	5,524,000	5,696,700	8,947,100	2,436,600
		15 - 19	4,522,700	58,200	1,300	2,217,100	26,900	400
		20 - 29	3,740,800	4,474,400	99,800	2,945,700	1,913,500	71,500
		30 - 39	539,600	6,014,600	458,100	397,300	2,941,700	366,700
		40 - 49	133,100	4,214,600	959,100	88,500	2,155,300	760,100
		50 - 59	56,500	2,787,900	1,165,700	33,600	1,317,800	623,100
		60 plus	41,600	1,657,200	2,840,000	14,500	591,900	614,800
	1965	15 plus	10,205,161	21,820,937	5,629,852	5,719,100	10,517,600	2,334,600
		15 - 19	5,293,803	69,845	7,550	1,953,600	25,700	900
		20 - 24	3,113,293	1,437,167	19,572	2,509,500	596,500	9,300
		25 - 29	795,199	3,352,471	56,964	602,800	1,286,100	42,300
		30 - 34	370,650	3,618,585	118,988	259,500	1,594,200	93,200
		35 - 39	253,981	3,282,224	212,953	180,900	1,786,500	183,600
		40 - 44	151,551	2,742,140	336,407	101,800	1,614,800	279,800
		45 - 49	79,992	2,131,326	484,472	52,400	1,237,400	387,200
		50 - 54	51,971	1,810,444	621,301	29,500	983,500	426,800
		55 - 59	34,393	1,379,747	656,190	14,000	690,100	337,300
		60 - 64	22,523	976,151	718,588	8,000	426,900	246,300
		65 plus	37,805	1,020,837	2,396,867	7,100	275,900	327,900

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Japan	1973	15 plus	9,490,000	26,690,000	6,180,000	5,460,000	12,610,000	2,380,000
		15 - 19	3,990,000	40,000	-	1,110,000	20,000	-
		20 - 24	3,580,000	1,620,000	10,000	2,860,000	630,000	10,000
		25 - 29	930,000	3,790,000	50,000	750,000	1,330,000	40,000
		30 - 34	310,000	4,040,000	100,000	260,000	1,750,000	80,000
		35 - 39	190,000	3,860,000	180,000	150,000	2,090,000	140,000
		40 - 44	180,000	3,480,000	260,000	140,000	2,080,000	230,000
		45 - 49	130,000	2,970,000	410,000	100,000	1,770,000	330,000
		50 - 54	80,000	2,280,000	580,000	50,000	1,260,000	410,000
		55 - 64	60,000	3,040,000	1,600,000	40,000	1,320,000	740,000
		65 plus	30,000	1,550,000	3,000,000	10,000	360,000	410,000
Nepal	1971	15 plus	267,161	2,858,031	318,432	138,084	930,830	111,281
		15 - 19	196,627	300,947	2,392	101,845	127,859	1,192
		20 - 24	39,615	458,700	5,338	20,961	173,699	2,779
		25 - 29	12,284	452,277	9,429	6,542	161,813	5,066
		30 - 34	5,969	404,374	15,362	3,046	133,277	8,033
		35 - 39	3,859	329,572	24,976	1,932	107,448	12,345
		40 - 44	2,821	266,377	38,265	1,372	83,400	16,324
		45 - 49	1,663	173,695	40,219	852	53,844	15,262
		50 - 54	1,390	139,183	55,957	653	41,399	17,898
		55 - 59	849	83,085	40,782	382	22,778	11,391
		60 - 64	973	78,339	76,477	281	15,653	12,005
		65 plus	1,111	171,482	9,235	218	9,655	8,986

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
New Zealand	1956	15 plus	151,448	481,490	94,264	115,004	62,033	1
		15 - 19	54,433	4,133	31	48,061	764	
		20 - 24	28,597	37,308	572	26,070	7,245	
		25 - 29	11,232	60,757	1,492	9,776	7,081	
		30 - 34	7,693	65,415	2,237	6,333	7,366	
		35 - 39	6,504	62,859	3,057	5,140	8,737	
		40 .. 44	6,462	59,506	4,189	4,926	9,891	
		45 - 49	6,548	51,430	5,248	4,765	9,032	
		50 - 54	5,810	40,414	6,450	3,801	6,265	
		55 - 59	5,446	33,299	8,638	2,933	3,596	
		60 - 64	4,994	25,262	10,938	1,679	1,298	
		65 plus	13,729	41,107	51,412	1,449	658	
	1966	15 plus	183,093	583,172	115,978	142,301	116,314	2
		15 - 19	86,421	9,149	96	72,112	2,150	
		20 - 24	36,255	55,960	985	33,756	14,943	
		25 - 29	9,746	70,726	1,826	8,825	10,812	
		30 - 34	4,995	65,767	2,084	4,354	10,760	
		35 - 39	4,712	71,221	3,027	4,031	15,556	
		40 - 44	4,864	69,439	4,465	4,042	18,693	
		45 - 49	4,941	62,377	6,175	3,965	17,285	
		50 - 54	5,346	55,436	8,417	3,985	13,956	
		55 - 59	5,581	44,063	10,635	3,573	8,147	
		60 - 64	5,151	31,948	12,832	1,971	3,024	
		65 plus	15,081	47,086	65,436	1,687	988	
Rep. of Korea	1966	14 plus	1,925,917	5,019,142	1,413,675	597,990	1,481,990	41
		14 - 19	1,258,135	49,924	787	339,400	12,540	
		20 - 29	652,731	1,535,151	35,625	252,270	388,920	2
		30 - 39	12,364	1,653,827	135,999	5,580	515,650	8
		40 - 49	1,404	987,666	255,025	430	355,830	13
		50 - 59	653	538,057	355,580	190	171,390	11
		60 - 69	376	203,945	353,175	90	34,460	4
		70 plus	254	50,572	277,484	30	3,000	

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Singapore	1970	15 plus	212,908	332,567	75,540	121,590	48,799	13,070
		15 - 19	114,259	5,745	55	51,093	509	25
		20 - 24	64,977	35,152	425	48,817	4,940	182
		25 - 29	14,926	50,375	794	10,975	8,948	417
		30 - 34	6,554	59,658	1,707	4,369	10,143	914
		35 - 39	2,795	48,912	2,747	1,744	7,469	1,315
		40 - 44	1,558	40,788	4,516	875	5,777	1,702
		45 - 49	1,162	30,555	5,881	695	4,146	1,748
		50 - 54	1,383	23,702	8,368	894	3,114	1,856
		55 - 59	1,672	18,376	11,273	962	2,180	1,931
		60 - 64	1,461	10,517	11,947	668	1,031	1,517
		65 plus	2,161	8,787	27,827	498	542	1,463

Sources: United Nations Demographic Yearbook, 1962, 1964, 1968, 1972 and 1973; Bureau of Statistics, Japan, Annual Report on the Labour Force Survey, 1973, table 15, p. 86.

Table V. Population aged 15 and over, rural and urban, and labour force, agricultural and non-agricultural, by sex, for selected countries of the ESCAP region, 1956-1971

Country	Census years	Population				Labour force			
		Urban		Rural		Non-agricultural		Agricultural	
		Male	Female	Male	Female	Male	Female	Male	Female
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Australia	1961	2,987,457	3,099,312	678,506	541,581	2,746,198	1,020,013	419,729	39,156
	1971	3,853,527	3,992,286	664,144	558,649	3,321,421	1,622,660	318,218	56,189
Fiji	1956[a/]	20,242	16,683	77,434	72,225	35,333	4,661	52,890	373
	1966	46,398	43,884	83,167	80,539	49,648	8,660	66,785	716
Hong Kong[b/]	1961	812,763	789,409	131,001	119,440	808,568	315,850	56,227	31,354
	1971	1,144,073	1,115,933	136,409	132,311	1,054,718	535,459	42,182	22,548
India	1961	26,835,338	21,318,211	106,721,771	103,880,749	40,601,052	10,523,496	88,569,713	48,976,239
	1971[a/]	34,842,571	30,597,855	103,411,829	123,048,245	44,956,000	5,454,400	104,119,100	25,843,900
Indonesia	1961	4,271,429	4,325,603	22,758,399	24,418,720	7,636,986	3,425,031	17,371,811	6,144,386
	1971	7,245,657	7,371,738	31,803,062	34,005,968	9,831,210	5,322,847	17,001,191	7,944,822
Iran	1956	1,840,933	1,717,252	3,726,462	3,676,901	2,308,522	432,400	3,182,490	143,231
	1966	2,871,850	2,605,270	4,080,553	3,960,921	3,618,970	796,600	2,965,287	203,228
Japan	1960	20,776,491	21,898,660	10,765,717	11,910,984	19,959,052	9,832,091	6,863,038	7,373,689
	1970	27,956,757	29,269,774	10,270,466	11,399,606	27,631,958	15,400,457	4,787,745	5,375,935

Table V (cont'd)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Malaysia: Sabah	1960	20,577	17,269	114,491	104,258	28,843	5,670	94,474	47,639
	1970	40,821	35,050	181,381	167,606	62,582	24,355	81,997	43,780
Sarawak	1960	31,243	29,782	175,042	177,366	47,901	6,771	136,313	103,300
	1970	52,764	53,286	241,044	241,326	82,179	34,879	127,187	101,764
New Zealand	1956	412,289	450,172	331,948	296,395	499,963	184,962	122,795	9,132
	1961	515,863	560,390	283,783	250,443	551,554	214,875	118,952	9,982
Rep. of Korea	1960	1,991,142	2,085,879	4,972,718	5,175,690	2,137,715	735,060	3,249,195	1,421,090
	1970	3,948,526	4,076,244	4,978,966	5,190,083	3,731,411	1,489,125	3,021,185	2,135,794
Sri Lanka	1963	709,501	557,396	2,561,850	2,363,662	1,473,783	303,274	1,266,315	415,622
	1971	995,831	835,836	3,022,285	2,891,260	1,934,360	659,868	1,319,219	504,741
Thailand	1960[a/]	978,352	987,562	6,463,228	6,509,060	1,568,734	933,868	5,576,062	5,758,320
	1970	1,354,507	1,419,617	7,917,700	8,199,290	2,274,714	1,373,521	6,536,046	6,565,855

Sources: United Nations Demographic Yearbook, 1957, 1960, 1970, 1972 and 1973;

ILO, Yearbook of Labour Statistics 1958, 1965, 1970 and 1974;

Census and Statistics Department, Hong Kong, Report on the 1961 Census;

Census and Statistics Department, Hong Kong, Hong Kong 1971 Population and Housing Census, Basic tables;

Registrar General of Census Commissioner, India Provisional Population Totals Paper No.1 (Supplement), Census of India, 1971;

Census report of Sri Lanka, 1971.

a/ Figures for population urban and rural estimated by using the urban and rural proportion of total population and the ratio of urban proportion 15 and over to urban proportion for total of the other census.

b/ Urban population included population in Hong Kong Island, Kowloon, New Kowloon and Tsuen Wan.

Table VI. Numbers of labour force and unemployed persons by sex, for selected countries of the ESCAP region, 1956-1971

Country	Year	Male		Female	
		Labour force	Unemployed persons	Labour force	Unemployed persons
(1)	(a)	(3)	(4)	(5)	(6)
Australia	1961	3,165,927	128,626	1,059,169	43,980
	1971	3,639,639	53,113	1,690,849	36,947
Fiji	1956	88,223	1,152	5,034	28
	1966	116,433	5,210	9,376	25
Hong Kong	1961	864,795	15,223	347,204	5,677
	1971	1,096,900	46,911	558,007	25,147
Indonesia	1961	25,008,797	1,203,106	9,569,437	666,514
	1971[a/]	26,832,401	648,786	13,267,669	241,589
Iran	1956	5,491,012	156,681	575,631	2,296
	1966	6,584,257	635,844	999,828	89,845
Japan	1960	26,822,090	227,534	7,205,780	109,267
	1970	32,419,703	483,233	0,776,392	244,727

(1)	(2)	(3)	(4)	(5)	(6)
New Zealand	1961	670,506	4,674	224,857	2,224
	1971	784,969	8,757	333,866	7,411
Philippines	1960	6,352,420	362,290	2,183,580	229,260
	1965	7,590,000	432,000	3,900,000	516,000
Rep. of Korea	1960	5,386,910	247,960	2,156,150	93,065
	1970	6,752,596	174,563	3,624,919	50,001
Sri Lanka	1963	2,740,098	199,691	718,896	64,178
	1971	3,253,579	446,406	1,164,609	349,800

Sources: ILO, Yearbook of Labour Statistics, 1970 and 1974;
United Nations Demographic Yearbook, 1964;
ESCAP, Country Monograph of Hong Kong, 1974.

a/ Computed unemployment by using 46.2 (for male) and 44.8 (for female) per cent of persons seeking work for the first time to total unemployment and 299,739 (for male) and 108,232 (for female) of persons seeking work for the first time.

Annex I

DEFINITIONS OF EMPLOYMENT USED IN SOME COUNTRIES OF THE ESCAP REGION

Country	General level of employment Employment in non-agricultural sectors				Employment in manufacturing			
	Definition (1)	Coverage (2)	Source of data (3)	National publication (4)	Definition (5)	Coverage (6)	Source of data (7)	National publication (8)
Australia	Persons aged 15 and over (during the survey week) who: - did any work for pay or profit - worked without pay for 15 hours or more in family enterprise - persons who had business or job but did not work because of vacation, illness, accident, industrial dispute, etc.	All civilians in the country	Labour force survey (quarterly)	The Labour Force, Commonwealth Bureau of Census and Statistics, Canberra	Wage-earners and salaried employees at work or on paid holiday, vacation, paid sick leave, etc. during the last payroll period of the month	Total number of wage-earners and salaried employees engaged in establishments where four or more persons are employed or where power is used.	Statistics of establishment	Employment and Unemployment, Commonwealth Bureau of Census and Statistics, Canberra
Japan	Persons aged 15 and over (during the survey week), including unpaid family workers, who: - worked at least one hour - had a job but were not at work	All civilians in the country	Labour force survey (monthly)	Monthly Report on the Labour Force Survey, Bureau of Statistics, Office of the Prime Minister, Tokyo	Wage-earners and salaried employees aged 15 and over who - work at least one hour	All wage-earners and salaried employees	Same as (3)	Same as (4)
New Zealand	(1) Persons working 20 hours or more per week, for pay or profit as employees or workers on own account in the pay-week ending on or immediately preceding 15 April or October of each year	All civilians in employment	Statistics of establishment (half-yearly employment survey covering some 58,000 establishment employing two or more persons)	Labour and Employment Gazette, Department of Labour, and monthly Abstract of Statistics, Department of Statistics, Wellington	(2) Wage-earners and salaried employees on the payrolls of reporting establishment, including those on paid vacation, sick leave or temporary absent from work	All establishments employment two or more persons, including part-time employees (2) part-time employees are counted as on full time employee	Statistics of establishment	
Philippines	(3) Wage-earners and salaried employees who work or receive pay during the reporting period (pay period ending nearest the 15th of the month)	About 1,300 establishments in non-agricultural industries. The establishments submit their returns on a voluntary basis	Statistics of establishments	*Statistical Bulletin, Central Bank of the Philippines Department of Economic Research, Manila	Same as (1)	Same as (2)	Same as (3)	Same as (4)
Rep. of Korea	Persons aged 14 and over (during the survey week), including unpaid family workers, who - worked at least one hour - had a job but neither work nor sought work	All civilians in the country	Labour force survey (quarter)	Monthly Statistics of Korea, Bureau of Statistics, Economic Planning Board, Seoul	Same as (1)	Same as (2)	Same as (3)	Same as (4)
Thailand	Persons aged 11 and over (during the survey week) who: - worked for wages or profit or any kind of payment - worked without pay in family enterprises or farms - had a job but did not work because of vacation, illness, accident, industrial dispute, etc., or they are waiting to be called for a new job assignment within 30 days from the date of interview	All civilians in the country	Labour force survey	Labour Force Survey, National Statistical Office	Same difinitions as (1)	All wage-earners and salaried employees	Same as (3)	Same as (4)

Sources: Technical Guide (Geneva, ILO, 1970); National publications mentioned above.

Annex II

CONCEPTS AND SCOPE OF UNEMPLOYMENT FIGURES USED IN SOME COUNTRIES OF THE ESCAP REGION

Country	Definition	Coverage	Source of data	National publication
Australia	Persons aged 15 and over (during the survey week) who did not work and were actively looking for work	All civilian persons	Labour force survey (quarterly)	The Labour Force, Commonwealth Bureau of Census and Statistics, Canberra.
Burma	Persons registering voluntarily as seeking work in non-agricultural occupations at the employment offices (registration is valid for one month except for renewal)	Registered at Greater Rangoon and Mandalay areas	Employment office (end of each month)	People's Workers Gazette, Directorate of Labour, Rangoon
India	Persons registered at employment exchanges - as unemployed and seeking work - as employed but seeking a change of job (registration is valid three months, except renewal)	All civilian registered at the employment offices which are mainly located in urban areas. Rural population is under-represented	Employment office (last day of the month)	Monthly Abstract of Statistics, Central Statistical Organization, Department of Statistics, Delhi, and India Labour Journal, Labour Bureau, Ministry of Labour, Employment and Rehabilitation, Simla
Japan	Persons aged 15 and over during the survey week who: - did not work - did not have a job or business from which they were absent and who actively sought work or were awaiting results of previous applications for work	Survey covers about 70,000 persons aged 15 and over and in some 26,000 households selected from the entire country	Labour force surveys (monthly)	Monthly Report of the Labour Force Survey, Bureau of Statistics Office of Prime Minister, Tokyo.
Malaysia (West)	Persons aged 15 to 70 registering voluntarily at employment offices as: - unemployed seeking work - already in employment but seeking better employment - temporarily laid-off - seeking job for the first time Registration card will be removed from the live register after notification from the employer or the registrant when he finds a job	All branches of economic activity	Employment office (last day of each month)	Data provided by the Ministry of Labour, Kuala Lumpur
New Zealand	Persons registering at employment offices as unemployed willing and able to work - persons temporary laid-off - persons seeking their first job Registration not compulsory, but an essential condition for receiving unemployment benefits. Registration card will be removed after two weeks except renewal	All unemployed wage-earners and salaried employers who register for employment	Employment office (last working day of the month)	Monthly Abstract of Statistics, Department of Statistics, Wellington
Pakistan	Persons registering voluntarily at employment offices including - persons seeking job - persons in employment but seeking a change of job - persons seeking their first job	All categories of workers in all branches of economic activity	Employment office (end of each month)	Monthly Statistical Bulletin, Central Statistical Office, Economic Affairs Division, Karachi
Rep. of Korea	Persons aged 14 and over (during the survey week) who: - were actively seeking work - were prevented from seeking work due to temporary illness, bad weather conditions - believed no job available - anticipated taking a new job	Survey covers about 4,500 households selected from the entire country	Labour force survey (quarterly)	Monthly Statistics of Korea, Bureau of Statistics, Economic Planning Board, Seoul
Singapore	Persons seeking work and registered voluntarily at employment office (registration renewed every six months)	All categories of workers in all branches of economic activity	Employment office (end of each month)	Annual Report, Ministry of Labour, Singapore
Sri Lanka	Persons aged 16 to 60 years, in any occupation, who register as: - unemployed seeking work - already in employment but seeking better employment - part-time employed seeking fulltime employment	All civilians registered at employment office	Employment office (last day of each month)	Ceylon Labour Gazette, Department of Labour, Colombo

Sources: Technical Guide (Geneva, ILO, 1970); National publications mentioned above.

Annex III

LOWER AGE LIMIT AND OTHER MAIN CHARACTERISTICS OF LABOUR FORCE IN COUNTRIES OF THE ESCAP REGION FOR WHICH DATA ARE AVAILABLE

Country	Lower age limit (years)	Other main characteristics
Australia		
1961 (C)	10	Excluding full-blooded aboriginers, estimated at 40,081 in June 1961, and armed forces stationed outside country.
1966 (C)	15	Excluding armed forces stationed outside country, and persons describing themselves as being more than 50 per cent aboriginal or simply "Aboriginal".
1971 (C)	15	Excluding armed forces stationed outside country.
Brunei		
1960 (C)	15	Excluding unemployed persons.
1971 (C)	15	Excluding transients afloat.
Burma		
1953(S)-1957(S)	10	
Cambodia		
1962 (C)	10	Excluding foreign diplomatic personnel and their dependants.
Fiji		
1956 (C)	15	Excluding female "unpaid domestic workers", some of whom undoubtedly assist in family enterprises.
1966 (C)	15	
Hong Kong		
1961 (C)	6	Excluding transients.
1966 (C)	5	
1971 (C)	10	
India		
1961 (C)	No age limit	Excluding unemployed persons. Including data for the Indian-held part of Kashmir-Jammu, the final status of which has not yet been determined, and an estimate for population of Goa, Daman and Din. Excluding part of North East Frontier Agency.

/1971 (C)

A N N E X E S

Country	Lower age limit (years)	Other main characteristics
1971 (C)	No age limit	Including data for the Indian-held part of Jammu and Kashmir, the final status of which has not yet been determined. Excluding Sikkim. Economically active population rates to persons having a remunerated activity.
Indonesia		
1961 (C)	10	Excluding large number of females classified as home-makers but who are also engaged in economic activity.
1971 (C)	10	
Iran		
1956 (C)	10	
1966 (C)	10	Unsettled population and nomadic tribes are excluded.
Japan		
1950 (C)	14	Excluding diplomatic personnel outside country and foreign military and civilian personnel and their dependants stationed in the area.
From 1955 (C) to 1970 (C)	15	
Malaysia		
West Malaysia		
1957 (C)	10	Excluding transients afloat.
1970 (C)	10	Excluding transients afloat, persons residing in institutions and persons seeking work for the first time.
Sabah		
1960 (C)	15	Excluding unemployed persons.
1970 (C)	10	Excluding transients afloat, persons residing in institutions and persons seeking work for the first time.
Sarawak		
1960 (C)	15	Excluding unemployed persons.
1970 (C)	10	Excluding transients afloat, persons residing in institutions and persons seeking work for the first time.

/Nepal

C Country	Lower age limit (years)	Other main characteristics
Nepal		
1961 (C)	15	
1971 (C)	No age limit	
New Zealand		
1956 (C)	14	Excluding diplomatic personnel and armed forces stationed outside country, also excluding alien armed forces within the country.
1961 (C)	No age limit	
1966 (C)	No age limit	
1971 (C)	15	
Pakistan		
1951 (C)	12	Excluding foreign nationals.
1961 (C)	10	Excluding armed forces, foreigners, and probably a considerable number of nomads.
Philippines		
1960 (C)	10	Excluding persons in institutions and members of the armed forces
1970 (C)	10	Economically active data are for "employed workers" only.
Republic of Korea		
1955 (C)	14	Excluding persons 60 years of gage and over who are unemployed.
1960 (C)	13	Excluding alien armed forces, civilian aliens employed by armed forces, and foreign diplomatic personnel and their dependants. Age classification based on Korean system of measuring age and based on year of birth rather than on completed years of age.
1966 (labour force survey)	14	Excluding alien armed forces, civilian aliens employed by armed forces and foreign diplomatic personnel and their dependants.
1970 (C)	14	Excluding foreigners and Korean diplomatic personnel and their dependants outside the country.
Singapore		
1957 (C)	10	Excluding transients afloat and non-locally domiciled military and civilian services personnel and their dependants.
1970 (C)	10	

/Sri Lanka

Country	Lower age limit (years)	Other main characteristics
Sri Lanka		
1963 (C)	5	Excluding persons who are looking for work.
1970 (Socio-economic Survey)	5	Including persons who are looking for work.
1971 (C)	10	Excluding persons who are looking for work.
Thailand		
1956 (S)	15	Data are based on results of a sample survey covering 2,241 villages and 64 large municipalities.
1960 (C)	11	Including large number of female unpaid family workers in agriculture.
1970 (C)	11	
Western Samoa		
1956 (C)	10	For "All ages" including 15,262 female unpaid family workers in agriculture.
1961 (C)	No age limit)	Excluding female unpaid family workers in agriculture.
1966 (C)	No age limit)	

Sources: United Nations Demographic Yearbook, 1970, 1971, 1972, 1973

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a/ Now Democratic Kampuchea.

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