POPULATION DYNAMICS, EDUCATION AND MANPOWER PLANNING IN THAILAND: THE CASE OF THE 15-19 AGE GROUP

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DECLARATION

Except where otherwise indicated,
this thesis is my own work.

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ABSTRACT

The objective of this study is to examine the dynamics of demographic process in relation to school enrolment and employment with particular reference to the Thai population aged 15-19 years. Secondary sources of information are widely used and the future enrolment and labour force participation of the study population is assessed.

The study observes that fertility started to decline around 1960-1970. The fertility decline will have wider implications not only for the future size of the population but also for schooling and manpower planning. Universal primary school enrolment has virtually been achieved in Thailand. In the age group 6-11 years, the numbers to be enrolled in primary schooling will start to decline by 1991 and by 1997 for the secondary level aged 12-17 years.

Taking the medium variant of fertility and mortality assumptions used in official planning in Thailand, the study applies three sets of enrolment and labour force assumptions to examine the future size of the population aged 15-19 years in schooling and labour force. According to the medium variant of the school enrolment projection, school enrolment in the age group 15-19 will increase from 27 per cent in 1980 to 39 per cent in the year 2005. The labour force participation rate is estimated to decline from 64 per cent in 1980 to 42 per cent in the year 2005 for the same age group of population.

The study concludes that Thailand is undergoing a socio-economic and a demographic transition. Therefore, every effort should be made to reduce the gap between educated labour supply and demand so that a favourable situation can be created for the rapidly modernizing Thai economy and society in order to usher in a quick transition.

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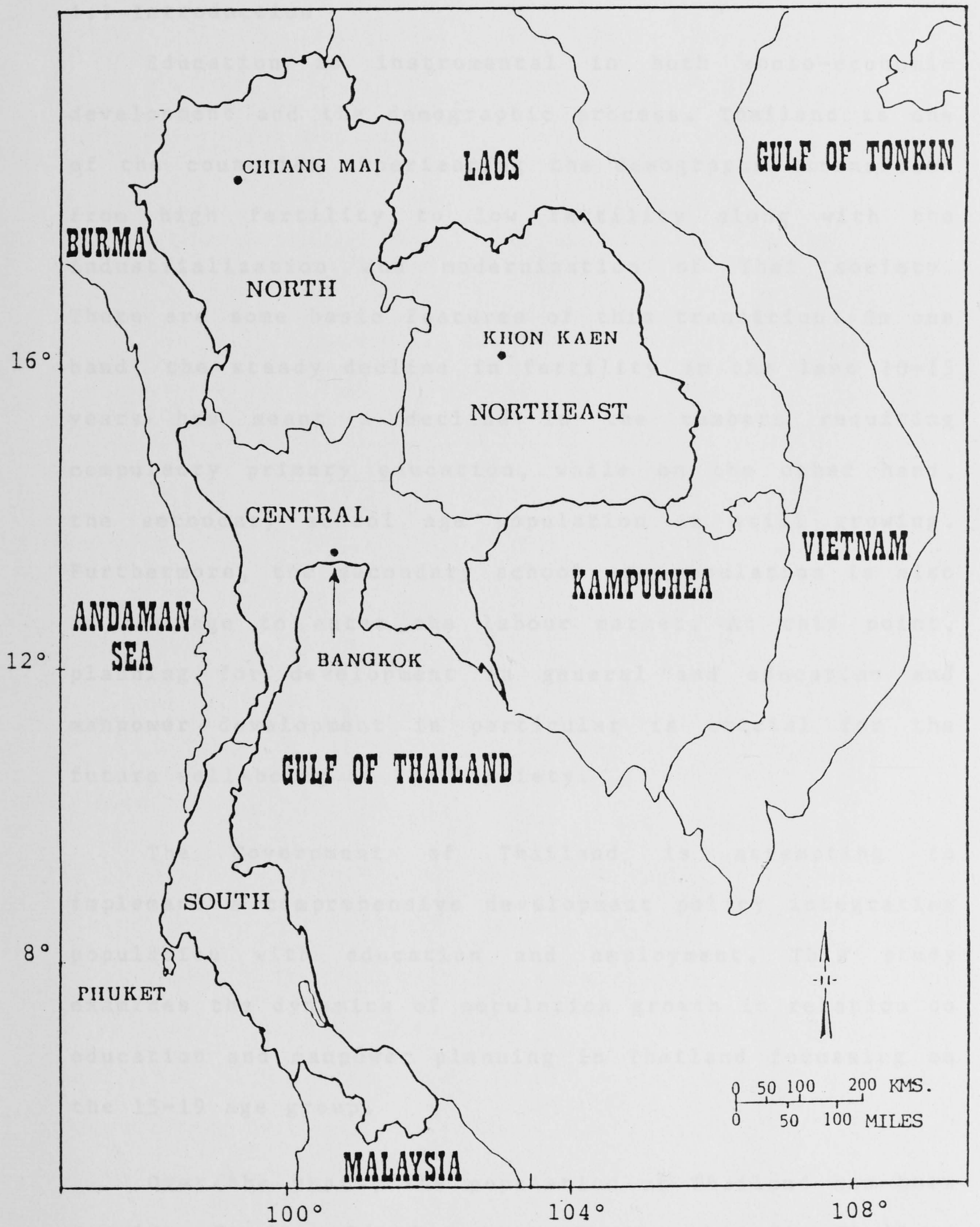


CHAPTER 1

INTRODUCTION

1.1 Introduction

Education is instrumental in both socio-economic development and the demographic process. Thailand is one of the countries experiencing the demographic transition from high fertility to low fertility along with the industrialization and modernization of Thai society. There are some basic features of this transition. On one hand, the steady decline in fertility in the last 10-15 years has meant a decline in the numbers requiring compulsory primary education, while on the other hand, the secondary school age population is still growing. Furthermore, the secondary school age population is also at the age to enter the labour market. At this point, planning for development in general and education and manpower development in particular is crucial for the future well-being of Thai society.

The Government of Thailand is attempting to implement a comprehensive development policy integrating population with education and employment. This study examines the dynamics of population growth in relation to education and manpower planning in Thailand focussing on the 15-19 age group.

Over the years, the population of Thailand has been growing. It is said that it took centuries for Thailand to reach a population of 8 million in 1911 when the first

scientific census was taken. However, since then population has grown at an increasing pace. It took only 32 years for 8 million to double to 16 million and 24 years to double this population to 32 million (Wanglee, 1976: 11). In 1980, the population of Thailand stood at 45 million. Table 1.1 gives the distribution of population since 1911.

Table 1.1 Enumerated Population, Inter-censal Increase and Average Annual Inter-censal Growth Rate, Thailand, Census Years 1911-1980

Date of Census	Enumerated Population ('000)	Inter-censal increase ('000)	Inter-censal interval (years)	Average annual inter-censal growth rate (%)
April 1, 1911	8,266.4	-	-	-
April 1, 1919	9,207.4	940.9	8.0	1.4
July 15, 1929	11,506.2	2,298.8	10.3	2.2
May 23, 1937	14,464.1	2,957.9	7.8	3.0
May 23, 1947	17,442.7	2,978.6	10.0	1.9
April 25, 1960	26,257.9	8,815.2	12.9	3.2
April 1, 1970	34,397.4	8,139.5	9.9	2.8
April 1, 1980	44,824.5	10,427.1	10.0	2.7

Sources: 1. Population figures for the period 1911-1970 are taken from ESCAP, 1976, Table 3.
2. Population for 1980 is taken from the 1980 Population and Housing Census, Whole Kingdom, Table A. and the growth rate is computed by the author.

Similar growth has been occurring throughout the Third World countries. These developing countries are faced with the challenge of accelerating development on one hand and controlling the ever increasing population on the other. It has been recognized that rapid population growth is often detrimental to economic development. It is further recognized that socio-economic development influences population trends and population trends influence development (Jones, 1975 and 1982: 1).

Realizing this fact, most of the developing countries are incorporating population policy in their development plans.

1.2 Integration of Population with Education and its Importance in Manpower Planning

Before 1970, Thai government policy on population was not explicit but tended to be pro-natalist for reasons of national security (Sawannavej, 1976: 81; Rungpitarangsi, 1977: 1 ; Hongladarom, 1979: 12; Kiranandana, 1983: 292). However, various activities were being carried out in the form of family health research, and the need for an effective family planning program was being felt in various quarters of the society (Sawannavej, 1976: 82-83). The unexpected excessive growth of the Thai population in the few decades before 1970 forced the government to adopt a policy appropriate to its development needs. Therefore, in 1970, the Thai government announced its first explicitly expressed population policy designed to reduce the population growth rate by promoting birth control (Sawannavej, 1976: 83; Rungpitarangsi, 1977: 1 ; Osatananda, 1980: 1;). This population policy was incorporated into the Third National Economic and Social Development Plan (1972-1976). In the 1974 Constitution of Thailand, Section 86 (cited by Osatananda, 1980: 1), it was stated that: `The government has to formulate a population policy to suit the resources, socio-economic context and technological situation in order to achieve the socio-economic development target and the security of the nation.´. In

the Fourth Development Plan (1977-1981), population activities were integrated with overall development planning (Osatananda, 1980: 1). Population policy in the Fifth Development Plan (1982-1986) placed great emphasis on the reduction of population growth and improvement of the quality of the population (NESDB, 1981: 13-14). In the present Sixth Development Plan (1987-1991), the Thai population is expected to have better income, quality of life and state of mind (NESDB, 1987: 1).

It has been argued that education has three direct and fundamental contributions to economic development, namely: (1) new ideas and techniques from educational and research establishment embodied in physical capital will determine the pace of the economy; (2) new skills can be given to the rapidly increasing labour force who will make use of production techniques and initiate changes in the mode of production; (3) education will bring attitudinal change in consumer and work management (Berg, 1970: 24). Myrdal (1968: 1621) argued that education is fundamental for socio-economic development because it rationalizes `attitudes´ by imparting knowledge and skills and helps to overcome attitudes that are deeply-rooted and institutionalized. Education is thought to have played a significant role in the demographic transition of the West. Accordingly, it has been said that unless a certain level of educational development is achieved, the population of the Third World countries may not decline (UN, 1984: 45-73). Caldwell (1980) argued that mass education, particularly of children, is an

important factor in fertility decline. Therefore, education is intertwined with development, and different levels of development require different levels of educated manpower.

Recognizing the importance of education in socio-economic development, the Thai government has been promoting educational development. Unlike population policy, the importance of education in Thailand has long been emphasized. As early as 1921, a royal decree was issued making the primary education of children between the ages of 7 and 14 compulsory. However, in 1935, Thailand enacted the Compulsory Education Act which stated that all persons have equal right to be educated at the primary level (MOE, 1975a: 1; MOE, 1975b; NEC, 1977; Prasarttong-Osoth, 1976: 119). The Act gave impetus to the expansion of primary education.

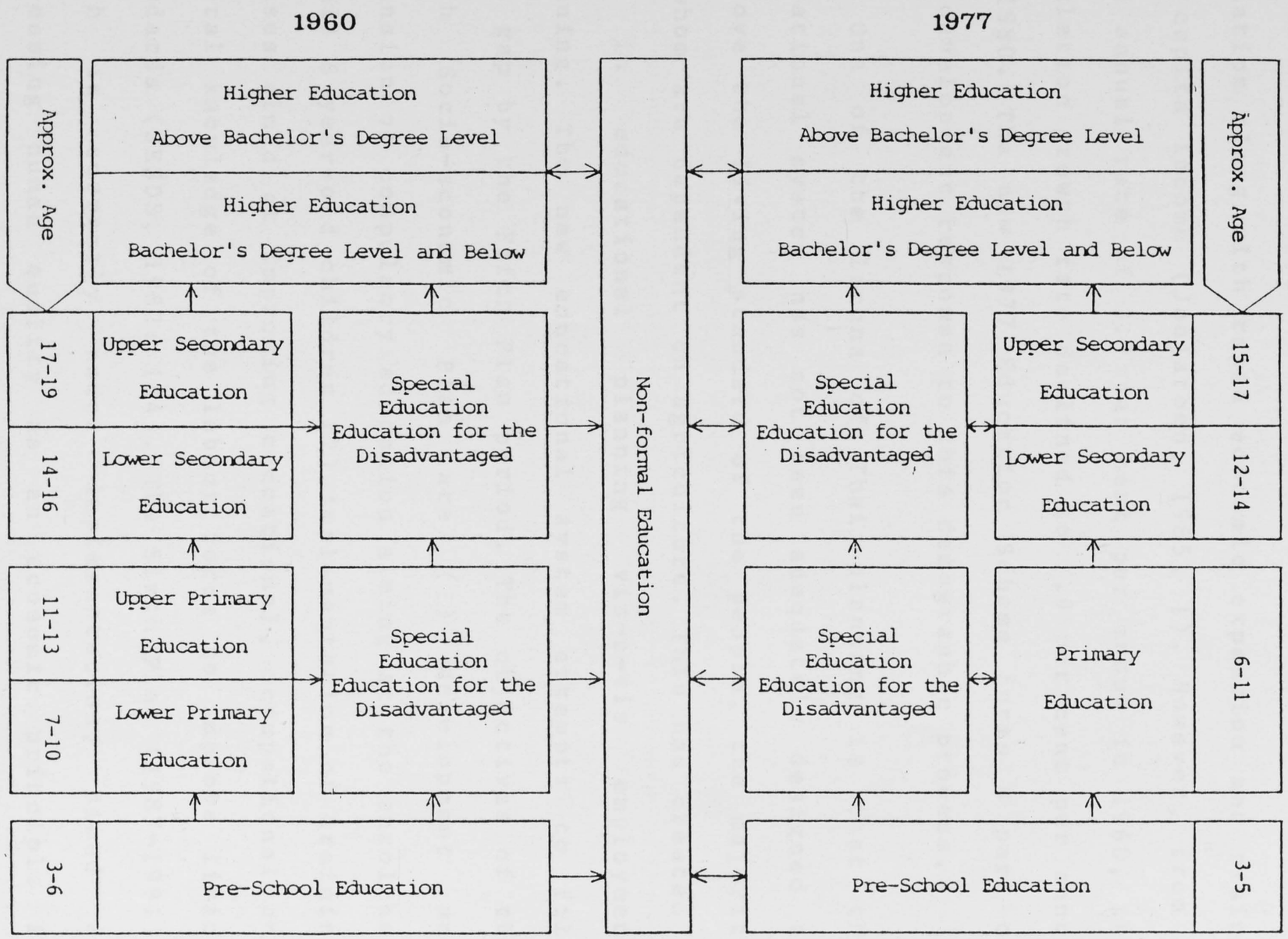
As stated above, there was no explicit population policy before 1970 in Thailand. However, if the education policy is examined, it is apparent that the importance of education in the socio-economic development of the country has long been emphasized. In 1957, the National Education Plan which among other things aimed at the building of an independent national economy was introduced. This made the educational system a part of economic planning (Watson, 1980: 137). This plan was modified by the National Scheme of Education in 1960. The post-1960 educational system introduced 4-3-3-2 years of schooling. Under the scheme, primary schooling took seven

years comprising the lower and the upper elementary levels. For secondary schooling, a 5-year program was introduced consisting of three years in lower and two years in upper secondary levels. This scheme was linked with National Economic and Development Plans. The Third Development Plan (1972-1976) had the objective of expanding and improving compulsory education at both lower and upper Prathom (primary level) and expansion of education at the secondary and higher levels to meet the demand for manpower at the middle and high levels (NESDB, 1972: 247).

In 1977, the government introduced a revised educational system and a National Scheme of Education B.E.2520 (1977) which is now being implemented. This system is divided into four levels: pre-school level, primary level, secondary level and tertiary level (see Figure 1.1). According to this scheme, primary education was made compulsory for children. The minimum age to start primary schooling was fixed at 6 years, with the maximum at 8 years. The minimum age for entry to secondary schooling is 12 years. Secondary schooling comprises lower and upper levels, each consisting of 3 years of schooling. The minimum age for entering higher education is 19 years. Similarly, the scheme outlined schooling for vocational education, university education and teacher training, all at tertiary levels (NEC, 1980).

The above review of educational development in Thailand indicates that various changes have to be

Figure 1.1 Structure of the Educational System in Thailand



Source: National Education Commission

brought about in the educational system to suit the changing situation. Until 1960, the population growth rate was increasing. This created a rapid demand for education along with rapid economic expansion and rising per capita income (Janjaroen, 1985: 1). However, from a high annual rate of 3.3 per cent per annum in 1960, the population growth rate declined to 1.9 per cent per annum in 1980. The new 1977 Education Scheme forms a part of the development response to this demographic process.

One of the lacuna of Thai planning is that the educational system has not been adequately designed to improve the living standard of the people, the majority of whom are dependent on agriculture. This has created a gap in educational planning vis-a-vis employment planning. The new educational system attempts to fill this gap by the Fifth Plan period. The objectives of the Fifth Socio-economic Plan are (1) development and expansion of compulsory education aiming at the enrolment of all 6 year-old children (2) implementation of training courses aimed at improving educational, occupational and general knowledge of the labour force to improve living standards (NESDB, 1982: 184). The Sixth Plan (1987-1991), which is currently under implementation, aimed at increasing human quality as an economic principle in improving efficiency and equity in social services. Education is recognized as one such agent to accelerate this process (NESDB, 1987: 7).

The fundamental relationship between population and economic development in general and educational development in particular will have to undergo a fundamental change keeping the ongoing process of demographic change (TDRI, 1986: 1). As stated before, the population growth rate of Thailand has started to decline; this means a different educational system has to be created to cater for future manpower requirements in general and to improve the quality of life in particular. Even though, in the inter-censal period 1970-80, the proportions under age 15 years have started to decline, the numbers continue to increase (see Table 1.2).

Table 1.2 Population of Thailand by 5-Year Age Groups, 1960, 1970 and 1980

Age group	Number ('000)			Percent		
	1960	1970	1980	1960	1970	1980
0-4	4,239	5,659	5,426	16.1	16.5	12.1
5-9	3,992	5,285	5,836	15.2	15.4	13.0
10-14	3,088	4,562	5,904	11.8	13.3	13.2
15-19	2,499	3,717	5,408	9.5	10.8	12.1
20-24	2,416	2,683	4,521	9.2	7.8	10.1
25-29	2,071	2,241	3,554	7.8	6.5	7.9
30-34	1,754	2,124	2,699	6.8	6.2	6.0
35-39	1,372	1,911	2,344	5.3	5.6	5.2
40-44	1.132	1,541	2,167	4.3	4.5	4.8
45-49	977	1,197	1,894	3.8	3.5	4.2
50-54	812	962	1,513	3.1	2.8	3.4
55-59	651	790	1,111	2.4	2.3	2.5
60-64	474	625	854	1.7	1.8	1.9
65-69	313	452	630	1.1	1.3	1.4
70+	422	604	961	1.3	1.8	2.2
Unknown	46	43	-	0.2	0.1	-
Total	26,258	34,396	44,825	100.0	100.0	100.0

Source: 1. CSO, 1962, Table 3. and Table 4.
2. NSO, 1973, Table 3. and Table 4.
3. NSO, 1983a, Table 3. and Table 4.

An examination of census data in Table 1.2 suggests a sizable understatement of the numbers aged 0-4 years in the 1960 and 1970 censuses. In both censuses, there is a large increase between those aged 0-4 years in 1960 to 10-14 years in 1970 and 0-4 years in 1970 to 10-14 years in 1980. This understatement will have an important bearing on the projections to be carried out later; and will subsequently affect the future numbers of school age and in the labour force.

Table 1.3 shows the budgetary allocation of the Development Plan to the education sector. Since 1966, the government has been investing around four percent of GNP in the education sector; this constitutes about 20 percent of the total budget. For development plans, the range lies between 15 percent in 1967 and 22 percent in 1977. Any change in the size and structure of the population composition will have an important bearing on the budgetary allocation to different sectors of the economy. The decline in fertility will have implications for educational expenditure immediately 5 years after of the start of fertility decline and for labour force participation after 15 or 20 years. Therefore, the decline in fertility has a lot to do with the government expenditure on education and has a significant impact on educational policy as the government has to shift the resources to different categories of expenditure, at the same time focussing on manpower building. This means that investment needed for the quality of higher education could now be made available through reduced cost in

compulsory primary schooling as a result of declining fertility.

Table 1.3 Distribution of Budgetary Allocation in the Education Sector, by Year, Development Plan and Levels of Education, Thailand, 1966-1984

(Million baht)

Level of Education		The Second Plan		The Third Plan		The Fourth Plan		The Fifth Plan	
	1966	1967	1971	1972	1976	1977	1981	1983	1984
Pre-primary and Primary	1,343 (56.2)	1,491 (52.2)	2,854 (55.6)	3,034 (56.7)	7,652 (56.9)	8,827 (57.3)	15,543 (55.4)	n.a	n.a
Secondary	281 (11.7)	371 (13.0)	631 (12.3)	617 (11.6)	1,652 (12.3)	2,118 (13.7)	4,580 (16.3)	n.a	n.a
Vocational	152 (6.4)	281 (9.8)	351 (6.8)	360 (6.7)	613 (4.6)	909 (5.9)	1,831 (6.5)	n.a	n.a
Teacher training	102 (4.3)	122 (4.3)	298 (5.8)	339 (6.3)	538 (4.0)	609 (4.0)	667 (2.4)	n.a	n.a
Informal education	10 (0.4)	11 (0.4)	44 (0.9)	56 (1.1)	167 (1.3)	151 (1.0)	459 (1.7)	n.a	n.a
Higher education	315 (13.2)	419 (14.6)	659 (12.8)	665 (12.4)	1,981 (14.7)	1,891 (12.3)	3,464 (12.4)	n.a	n.a
Promotion task and others	186 (7.8)	163 (5.7)	295 (5.8)	276 (5.2)	837 (6.2)	889 (5.8)	1,471 (5.3)	n.a	n.a
Total	2,289 (100.0)	2,858 (100.0)	5,133 (100.0)	5,348 (100.0)	13,444 (100.0)	15,394 (100.0)	28,045 (100.0)	37,657	39,406
% of total budget	15.79	14.86	17.92	18.44	21.26	22.38	20.03	21.21	20.52
% of GNP	2.37	2.64	3.55	3.25	3.98	3.92	3.57	4.08	3.84

Note: 1. 20B = approximately A$1
2. n.a = Data not available
3. Figures in parentheses are the percentage of the total

Source: 1. Educational Policy and Plan Division, NEC.
2. Educational Planning Section, NESDB.

In the foregoing section, it was highlighted that because of the fertility decline, the planners in Thailand think that the number at the primary school ages will decline in coming years. However, the number at the secondary school ages will still be growing. This cohort of people will have a fundamental impact with regard to the ongoing process of socio-economic development and demographic transition in Thailand. This group is different and needs to be treated differently if Thai society is to be developed. This cohort of people is vital for two reasons. First, this group will be the first to benefit from the changed educational policy aimed at improving the quality of higher education. Secondly, this group will continue to put pressure on the economy because this age group also represents people who are entering the labour market, as only 29 per cent of the 12-17 year age group were enrolled in secondary school during the 1982-1986 Fifth Plan period (NEC quoted in Janjaroen, 1985: 7).

Thailand's exposure to the planned development started in 1961 when the first five-year plan was implemented. By the middle of that plan, it became evident that there was a shortage of skilled manpower and the economy was growing rapidly. The need for skilled manpower was so great that the educational system could not produce it at the time of the need. This led to the preparation of a 15-year (1966-1981) long-term manpower development plan (Chantanintorn, 1984: 2-3). Since then,

the government has attempted to see that the needs of the economy are filled with the skilled manpower.

At present, the employment structure is dominated by the agricultural sector. Though the importance of the agricultural sector remains unquestionable, it is expected that there will be reasonable expansion of other sectors - especially the manufacturing and services sector. The burden of employment generation from the traditional sector, that is, agriculture, has to shift to the modern sector to absorb the growing labour force. The agricultural sector is constrained by limited resources - the land to accommodate the growing labour force. This means special education and training which could be easily absorbed in the modern sector has to be designed and imparted. Available evidence suggests that even though Thailand is steadily industrializing, labour absorption by this sector is not up to expectation (Hongladarom, 1983). Therefore, the government policy has to be geared to produce skilled manpower which is more in demand, such as doctors and agricultural engineers. This calls for a judicious and rational policy of integrating population with education and manpower planning in Thailand. It is not too much to claim that this will determine the future of the transition of Thai society.

1.3 Objectives

The broad objective of the study is to review manpower problems vis-a-vis population growth and educational development in Thailand. The specific objectives of this study are:

1. To examine population growth, educational and labour force participation with particular reference to the population aged 15-19 years

2. To project future enrolment and labour force participation rates for the population aged 15-19 years

3. To suggest some policy measures

1.4 Data Sources and Limitations

The sources of data used in this study are the 1970 and 1980 Population and Housing Census for the whole kingdom of Thailand. However, other publications are also referred to where deemed necessary. Secondary data create two types of problems: problems of comparability and structural problems.

Over the years, the educational system in Thailand has been changing. This will create problems in comparability of data as the number of years of schooling at different levels of school has been changed by the new education schemes introduced in the country. For example, until 1977, the educational system consisted of a 4-3-3-2 structure with the first seven years comprising the lower and upper elementary levels and last five years the lower and upper secondary levels. The post-1977 system comprises a 6-3-3 structure with the first six years in

primary school and three years each at lower and upper secondary level (see Figure 1.1).

Problems of comparability also arise in manpower planning. Manpower planning is closely associated with the economic activity of the population entering the labour market. Economic activity is usually measured by either the labour force approach or the gainfully occupied approach. Data used are basically from the 1970 and 1980 censuses, both of which used the labour force approach. The economically active population as defined in the censuses is all persons 11 years of age and over who were employed on the census date or who had worked for wages, salaries, profits, dividends or any other kind of payment on any day during the seven days preceding the census date (March 25-31) as well as experienced workers and new workers who were looking for work and waiting for the farm season. As such, the economically active population consists of three groups: employed, unemployed and waiting for the farm season. The unemployed consist of those who are currently seeking work and include new workers who have never had a job (NSO, 1975; NSO, 1983c: 10-15). These census data are not comparable with the Labour Force Surveys which have adopted the labour utilization approach (NSO, 1983b).

Most of the data to be used are in published form. This creates structural problems, as there is limited choice of restructuring the tables for tabulation.

Although Thailand has been a success story of a free market economy, no further consideration is given to the influence of private sector in both education and employment generation. This study assumes that government policy and action is the main influence in correcting unbalances between the supply and demand for educational and vocational skills.

1.5 Organization of the Study

The remaining part of this study consists of five chapters. Chapter 2 reviews the growth of the size of population and education development planning in Thailand. In chapter 3, economic activity of Thai population as reported in various censuses is examined.

The population aged 15-19 years is treated as a special case in chapters 4 and 5. In chapter 4, the education and labour force status of the population aged 15-19 years is examined. Chapter 5 projects the group of the population to the year 2005 and discusses the implications of the projection. Finally, chapter 6 contains the summary and conclusions of the study.

CHAPTER 2

REVIEW OF POPULATION AND EDUCATION TRENDS

2.1 Introduction

As shown in the preceding chapter, while the growth of Thailand´s population was under discussion, attempts were also being made to improve the quality of the population. One such early attempt was the emphasis placed on the educational system. The structure of Thai society also played an important part in the continued expansion of education. From its beginnings in the monasteries, the educational system was brought into the modern era of school and university in the early part of the 20th century (Watson, 1980).

One feature of population and education dynamics in Thailand has been the relatively high level of literacy. Illiteracy or lack of an elementary education is rapidly disappearing among the younger generation in Thailand (IPS, 1973: 8). In 1980, the literacy rate was estimated at 88 per cent including 92 per cent for males and 85 per cent for females. Table 2.1 shows the literacy rates by five-year age group for the 1960, 1970 and 1980 censuses. The high literacy rate is attributed to compulsory schooling which has been in effect since the 1930s. Furthermore, before 1970 the literate population referred to the population aged 10 years and above. However, in the 1970 and 1980 censuses, the National Statistical Office (NSO, 1973 and 1983a: 32) defined literate persons

5 years of age and above who are able to read and write simple statements in any language.

Table 2.1 Age-Specific Literacy Rates for Males and Females Aged 10 Years and Over, Thailand, 1960, 1970 and 1980

(%)

Age Group	Male			Female		
	1960	1970	1980	1960	1970	1980
10-14	86.6	95.9	96.1	84.8	94.1	95.7
15-19	91.0	95.8	97.4	85.8	92.9	96.4
20-24	88.6	95.1	97.1	79.4	90.7	95.3
25-29	85.7	93.2	96.7	75.0	86.1	94.2
30-34	86.0	90.3	95.8	70.3	80.1	92.3
35-39	80.3	88.4	94.0	51.3	77.5	88.6
40-44	73.5	87.5	91.5	33.5	68.6	83.3
45-49	69.7	82.1	89.6	25.8	49.6	80.4
50-54	62.8	75.0	87.1	13.0	32.8	71.3
55-59	56.8	72.1	80.7	9.1	25.7	54.3
60-64	52.4	63.6	71.2	7.4	13.2	38.1
65+	46.1	55.2	56.0	6.2	9.1	20.9
Total	80.6	88.9	92.4	61.0	74.8	85.3

Sources: 1.CSO, 1962, Table 10.
2.NSO, 1973, Table 12.
3.NSO, 1983a, Table 19.

2.2 Age Structure and Educational Costs

The age structure of the population is one of the most important factors affecting the demographic process. Most developing countries still have high rates of population growth and are experiencing changes not only in the number but also in the structure of the population. Jones (1971: 328) argued that in most developing countries, the estimated growth of the school-age and pre-school age group during the 1960s exceeded that of the population as a whole and this put enormous

pressure on the expansion of the educational system. During the period 1960-66, developing countries as a whole registered an enrolment growth rate of 42 per cent at the primary school level (World Bank, 1971: 6). However, for Thailand primary school enrolment in the 1970s and early 1980s is estimated to be increasing at the rate of 2 per cent per annum. During the period 1960 to 1970, enrolment in the lower secondary level is estimated to have doubled, while that in the upper secondary level tripled (Khoman, 1987: 2-6). A comparative study of annual growth rates of students enrolled in the various levels of the educational system in the South-East Asian region is shown in Table 2.2.

Table 2.2 Average Annual Growth Rates of Students Enrolled

Countries	Period	Primary	Secondary	Tertiary
Indonesia	1970-1982	5.4	8.5	7.9
Malaysia	1970-1983	1.8	5.2	12.1
Philippines	1970-1981	1.8	5.0	6.7
Singapore	1970-1983	-1.7	2.0	7.5
Thailand	1970-1983	2.0	9.2	27.9*

Note: * includes `Open university´

Source: Khoman, 1987, Table 4.

Girard (1975: 25-42) observed that in a developing country with a reproduction rate of about 3.0, a life expectancy of 50 years and the average labour force participation rates prevailing in these countries, about 1000 male workers will have to support the education of 471 children as against 242 children supported by 1000

workers in developed countries with a reproduction rate of 1.0 and a life expectancy of 70 years. This is mainly because of the age structure of the population. In the developing countries as a whole, persons aged 0-14 years in the 1970s comprised 42 per cent of the total population, as against 27 per cent in developed countries (World Bank, 1971: 6). The young population in 1980 still comprised as much as 39 per cent compared to 23 per cent in the developed countries (UN, 1982: 6-7).

Most of the developing countries are, therefore, faced with the dilemma of investing more in education to develop their human resource base at the same time as they are trying to accelerate the pace of development by investing in other socio-economic programmes. The demand for investment in the education sector alone is huge. A report by UNESCO (cited by Huq, 1976: 12-13) estimated that to achieve an enrolment target of 80 per cent, 33 per cent and 4.9 per cent respectively for the first, second and third levels of education in Asia would cost about 9.3 billion in 1980. This figure is four times the total investment made in the education sector in 1965. The burden of the age structure for educational development was also demonstrated by Jones (1976: 557-558) for Thailand. According to him, the per worker costs of meeting given educational targets would be 84 per cent higher than in European countries. Even after 30 years of rapid fertility decline, the per worker education cost in Thailand would still be 30 per cent higher than in Europe.

The populations of most developing countries have been found to be characterized by declining mortality with sustained high fertility. This results in a broad age pyramid, indicating a large proportion of the population in the school-going age group. Recognizing the importance of education in socio-economic and demographic changes, most developing countries spend sizable amounts of their national income on educational investment. However, the growing population base with the increased share of the young age group puts severe constraints on the expansion of the educational system. Therefore, the in-built effects of the age structure on educational development would be greatly reduced if a rapid decline in fertility could be achieved (Jones, 1975: 67; UN, 1984; Carleton, 1975; Girad, 1975; Fougstedt, 1975).

2.3 The Impact of Mortality and Fertility on Age Structure

Compared with the typical developing country age structure discussed on the previous page, Thailand in 1980 had a lower proportion of young people (39 per cent), due to earlier trends in fertility and mortality rates. Mortality levels in Thailand declined rapidly during the immediate post-war period. The Crude Death Rate declined from around 29.4 per thousand in 1945-49 to 10.9 per thousand in 1964-65. The Crude Death Rate is estimated to have further declined to 7.8 in the period 1980-85 (Table 2.3).

Table 2.3 Estimated Crude Death Rates (CDR) for Thailand by Year, 1964-1985

Year	CDR per thousand	Life Expectancy at Birth	
		Male	Female
1964-1965	10.9	55.9	62.0
1965-1970	10.4	-	-
1970-1975	9.3	-	-
1975-1980	8.4	59.3	63.2
1980-1985	7.8	60.3	66.3

Source: TDRI, 1986, Table 2.5 and Table 2.6.

Similarly, the infant mortality rate (IMR) was estimated to have declined from 84 per thousand in 1964-1965 to 46 per thousand in 1983. As levels of mortality declined, life expectancy continued to increase. Life expectancy at birth for males increased from 56 years around 1964-65 to 60 years during 1980-85. The corresponding figure for life expectancy at birth for females is 62 years in 1964-65 and 66 years in 1980-85. Until recently fertility remained relatively high with Total Fertility Rates (TFRs) of around 6. However, fertility has been declining since 1964. The Total Fertility Rate for the period 1980-1985 is estimated to be 3.4 (Table 2.4).

Table 2.4 Age-Specific Fertility Rates and Total Fertility Rates (TFR) for Thailand by Year

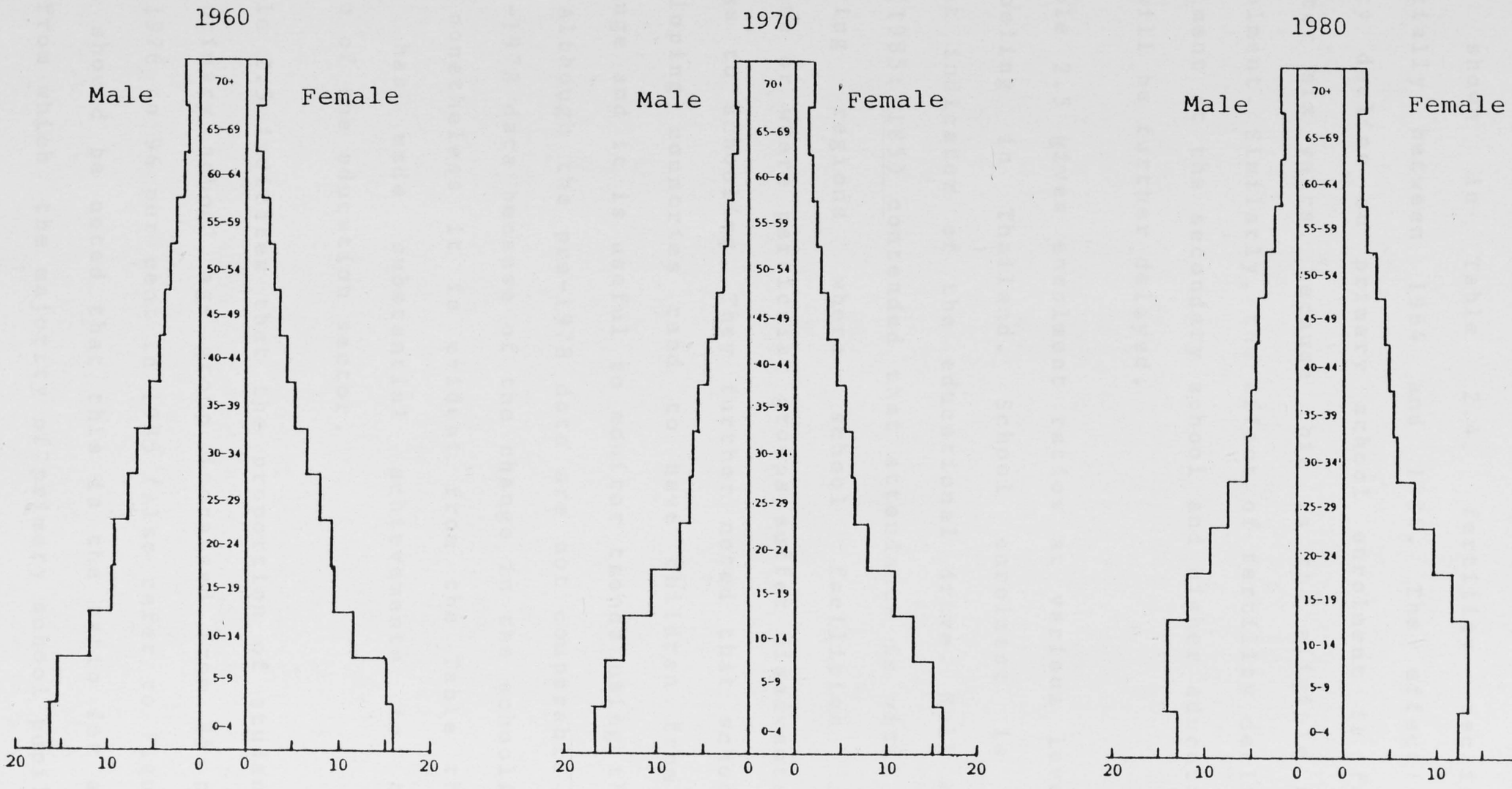
Age Group	SPC1 1964-65	SPC2 1974-76	CPS3 1984
15-19	0.07	0.08	0.07
20-24	0.26	0.24	0.17
25-29	0.30	0.25	0.18
30-34	0.27	0.18	0.12
35-39	0.22	0.14	0.07
40-44	0.11	0.07	0.05
45-49	0.02	0.02	0.01
TFR	6.3	4.9	3.4

Note: SPC = Survey of Population Change
CPS = Contraceptive Prevalence Survey

Source: TDRI, 1986, Table 2.8 and Table 2.10.

The effect of declining fertility is reflected in the age composition of the population. In general, declining mortality in developing countries increases the percentage of the population in younger age groups. However, there is a possibility of understatement of numbers ages 0-4 years, as noted in chapter one. Falling fertility, on the other hand, tends to increase the percentage in the older age groups. As such, the impact of mortality reduction on the age structure has been to broaden the age pyramid, while fertility decline leads to an aging of the population which narrows the age pyramid. The effects of falling mortality and fertility can be observed in Figure 2.1.

Figure 2.1 Population Age Pyramid for Thailand, 1960, 1970 and 1980



Source: 1. 1960 Population Census

2. 1970 Population and Housing Census

3. 1980 Population and Housing Census

2.4 Targets and Achievements in Enrolment at Various Levels of Education

As shown in Table 2.4, fertility declined substantially between 1964 and 1984. The effect of fertility decline on primary school enrolment is felt only after six years, because this is the eligible age for enrolment. Similarly, the effect of fertility decline on enrolment at the secondary school and higher education levels will be further delayed.

Table 2.5 gives enrolment ratios at various levels of schooling in Thailand. School enrolment is an important indicator of the educational drive. Hull and Yeboah (1985: 185) contended that attendance is vital in identifying regions where school facilities are inadequate or where particular groups suffer disadvantage in access to schooling. They further noted that schools in developing countries tend to have children from a broad range and it is useful to monitor trends using this method. Although the pre-1978 data are not comparable to the post-1978 data because of the change in the schooling system, nonetheless it is evident from the Table that Thailand has made substantial achievements in the expansion of the education sector.

Table 2.5 indicates that the proportion of students in the primary school age group increased from 85 per cent in 1976 to 96 per cent in 1985 (Also refer to Figure 2.2). It should be noted that this is the ratio for age groups from which the majority of primary school pupils

Table 2.5 Enrolment Ratios by Level of Education, 1976-1985

Class and level	Age range	Ratio of students to school-age population								
		1976	1977	1978	1979	1980	1981	1982	1983	1985
Pre-primary education	4-6	5.6	5.9	7.0	7.9	8.6	9.2	9.8	12.4	17.8
A1	4	6.4	6.5	7.9	8.8	9.2	10.1	10.5	12.6	13.7
A2	5	5.5	5.8	6.2	7.0	7.5	7.9	8.3	9.5	10.8
Kindergarten	6	5.0	5.5	6.8	8.0	9.0	9.6	10.6	15.2	28.9
Primary education	7-13	84.5	83.7	92.8	96.7	98.1	96.6	94.9	98.8	95.9
P1	7	122.6	117.8	124.6	115.5	110.3	106.9	101.2	106.4	109.5
P2	8	106.1	102.6	103.2	108.8	100.9	96.2	92.3	96.4	96.3
P3	9	105.2	105.0	102.0	102.4	106.8	97.8	92.2	97.0	94.6
P4	10	97.3	93.9	93.9	95.5	103.4	104.2	95.8	97.2	92.3
P5	11	58.8	62.3	78.8	87.6	90.7	94.4	103.1	98.3	91.7
P6	12	46.9	49.5	50.2	67.5	74.4	78.9	84.3	97.3	91.0
P7	13	40.7	42.3	-	-	-	-	-	-	-
Secondary education	13-19	23.2	25.2	24.0	24.3	25.0	25.3	26.7	30.2	30.4
Lower secondary	13-16	31.3	31.3	29.3	28.9	29.4	31.1	32.9	32.8	35.4
M1	13	-	-	29.3	29.7	32.0	33.9	34.7	33.3	35.8
M.S.1, M2	14	33.8	32.9	30.7	29.2	28.7	31.2	33.2	32.3	36.7
M.S.2, M3	15	31.4	31.6	29.0	29.2	28.7	28.2	30.9	30.7	32.6
M.S.3	16	28.5	29.3	28.3	27.5	28.0	-	-	-	-
Upper secondary	16-19	14.1	15.7	20.0	17.2	18.4	20.5	21.6	27.4	25.4
M4	16	-	-	-	-	-	15.6	29.4	27.9	27.0
M.S.4, M5	17	19.2	21.8	21.1	23.2	24.2	32.5	14.8	25.2	24.9
M.S.5	18	17.6	18.7	19.2	19.8	21.7	22.6	31.0	29.3	24.4
M.S.6	19	5.2	6.2	7.0	8.1	8.8	11.0	10.7	-	-
Higher education	19-24	2.7	3.5	3.3	3.6	3.6	4.4	5.0	5.7	6.0
All levels	4-24	39.2	39.4	39.7	41.1	41.8	41.5	39.8	42.1	41.8

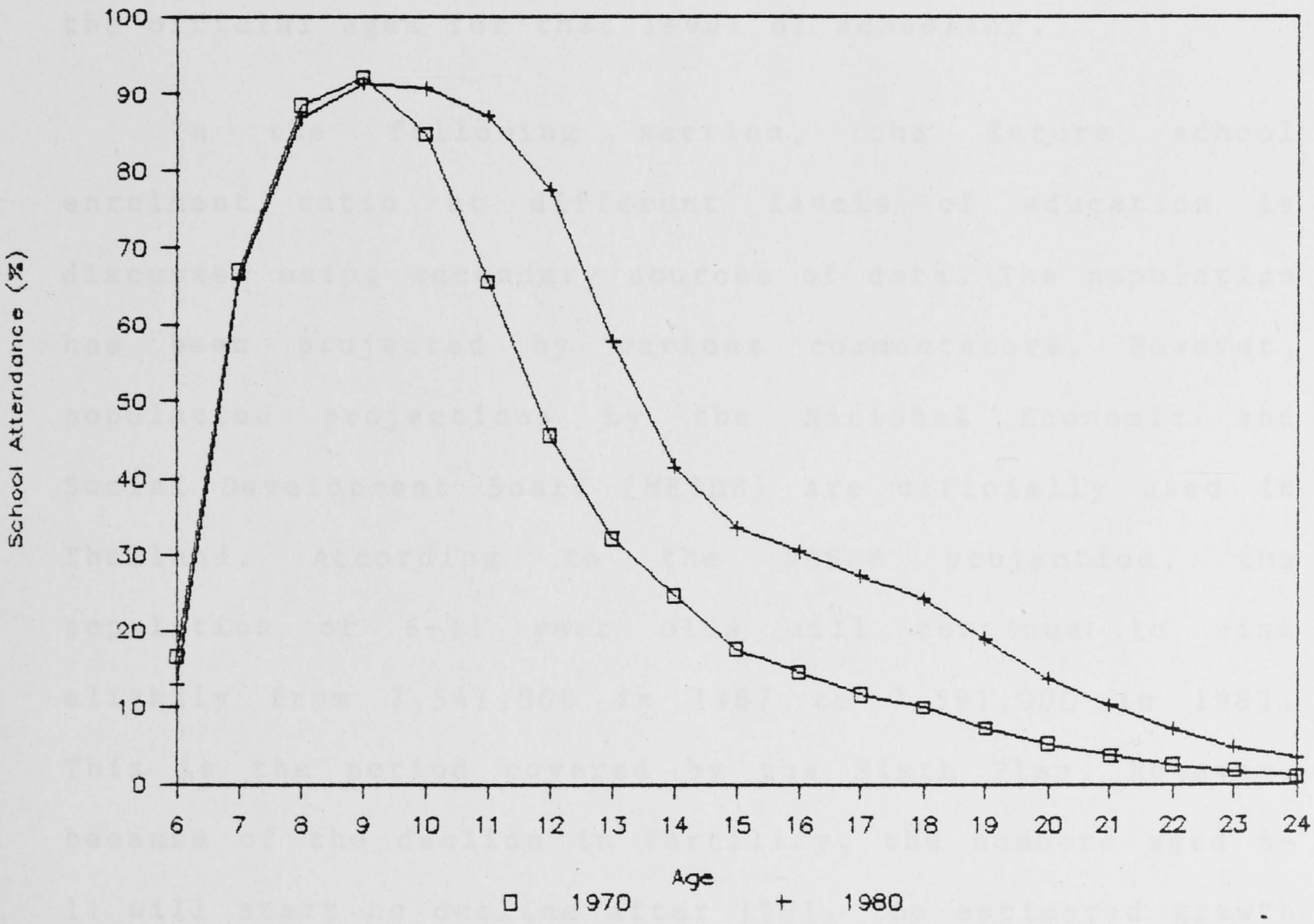
Notes: A = Pre-primary
P = Prathom
M = Matayom
M.S. = matayom Suksa

$$\text{Enrolment Ratio (Ratio of students to school-age population)} = \frac{\text{Students at each level of education}}{\text{Population in that age group}} * 100$$

Source: Ministry of Education Publication, Various Years.

are drawn. Ta Ngoc Chau (1969: 29) has explained that because of late entry and repetition of grades, many children are older than the official age; this explains why the ratio is more than 100 in some cases. The high proportion of students in primary schooling also reflects the government's continued drive for compulsory education which has been in force since 1935 and particularly since 1977.

Figure 2.2 Percentage of School Attendance for Population Aged 6-24 Years, Thailand, 1970 and 1980



Source: Based on NSO, 1973, Table 15 and NSO, 1983a, Table 21.

As stated before, primary school enrolment is estimated to have been increasing at the rate of 3 per cent per annum. The increase in tertiary education is also remarkable. Tertiary level enrolment for the period 1970-1986 jumped from about 55,000 to over a million. This has been attributed to the creation of `open universities´ which accounted for 56 per cent of total tertiary enrolment in 1978 and 85 per cent in 1985. The role of private tertiary institutions is limited to about 10 percent of tertiary enrolment (Khoman, 1987: 6-7). The ratio is calculated by comparing the total numbers in a level of schooling with the corresponding age group at the official ages for that level of schooling.

In the following section, the future school enrolment ratio at different levels of education is discussed using secondary sources of data. The population has been projected by various commentators. However, population projections by the National Economic and Social Development Board (NESDB) are officially used in Thailand. According to the NESDB projection, the population of 6-11 year olds will continue to rise slightly from 7,541,000 in 1987 to 7,591,000 in 1991. This is the period covered by the Sixth Plan. However, because of the decline in fertility, the numbers aged 6-11 will start to decline after 1991. The estimated growth rates for this group of population for the Seventh and Eighth Plan are -2.5 per cent and -3.8 per cent respectively. The projected school enrolments are presented in Table 2.6.

Table 2.6 Projected Total Population and Projected Student Enrolment by Year and by Level of Schooling

Year and Level	Projected Population ('000)	Projected Students ('000)	Enrolment Ratio
A. Primary level (aged 6-11 yrs)			
1987	7,541	7,450	98.8
1992	7,584	7,481	98.6
1997	7,308	7,198	98.5
2001	7,027	6,945	98.8
B. Secondary level (aged 12-17 yrs)			
1987	7,405	1,697	22.9
1992	7,470	1,749	23.4
1997	7,552	1,820	24.1
2001	7,243	1,801	24.9
C. University level (age 18-23 yrs)			
1987	6,967	98	1.4
1992	7,324	103	1.4
1997	7,381	104	1.4
2001	7,466	105	1.4

Source: Janjaroen, 1985; Table B.1, Table 3.1, Table 3.2 and Table 3.7.

Despite declining fertility, the effect on school enrolment at the lower and secondary levels will not be realized until the Eighth Plan period (1997-2001). The proportion of 13-19 year olds in secondary education is increasing, as shown in Table 2.5. According to another study which starts with a lower enrolment ratio than shown in Table 2.5 and increases the enrolment ratio only slightly, the absolute number of students in secondary school will increase from 1,697,000 in 1987 to 1,820,000 in 1997 and to 1,801,000 in 2001 (see Table 2.6). This

indicates that secondary enrolments would not start to decline until after 1997, when the effect of the fertility decline would lead to a decline in the secondary school age population. If enrolment rates continue to rise (and they certainly will continue to rise because of the government's effort to increase enrolment rates), the numbers enrolled at this level could well continue to increase in spite of the decline in numbers in the age group.

It should be noted that because of the change in educational system, the relevant age group of students has also changed. While the pre-1977 scheme accepted 13-19 year olds for secondary education, the post-1977 scheme accepts 12-17 year olds for the same level of education. Table 2.6 also gives the distribution of the projected population for 12-17 years and projected student enrolment at the secondary level of schooling if enrolment ratios were to be raised only slightly.

The case of university education is similar. According to Table 2.5, university student enrolment in the age group 19-24 years old increased from 2.7 per cent in 1976 to 6.0 per cent in 1985. It is to be noted that this does not include enrolment in open universities. If enrolment at open universities is taken into account, the rate of annual increase at the tertiary level was about 28 per cent for the period 1970-83. This rate is thought to be four times higher than that of Indonesia, the Philippines and Singapore (Khoman, 1987: 9). The

projected number of students at university level in 1987 was estimated at 98,000 and is expected to increase to 105,000 by the year 2001, the end of the Eighth Plan. Table 2.5 gives the distribution of the projected population aged 19-24 and projected student enrolment at university level, assuming enrolment ratios are held constant. Besides these main streams of educational planning, there are plans for vocational education and teacher training programmes.

Though the above distribution is based on the enrolment method, as used by Janjaroen, other methods also exist. Important among them is the Transitional Matrix Method used by Prasithrathsint and Manasirisuk (1985). Despite differences in absolute numbers, it is now agreed that the enrolment target of universal primary education has almost been achieved in Thailand and will be achieved by 1991. However, the targets for secondary and university level enrolment are still to be achieved, as the effect of the decline in fertility on those age groups will be delayed.

CHAPTER 3

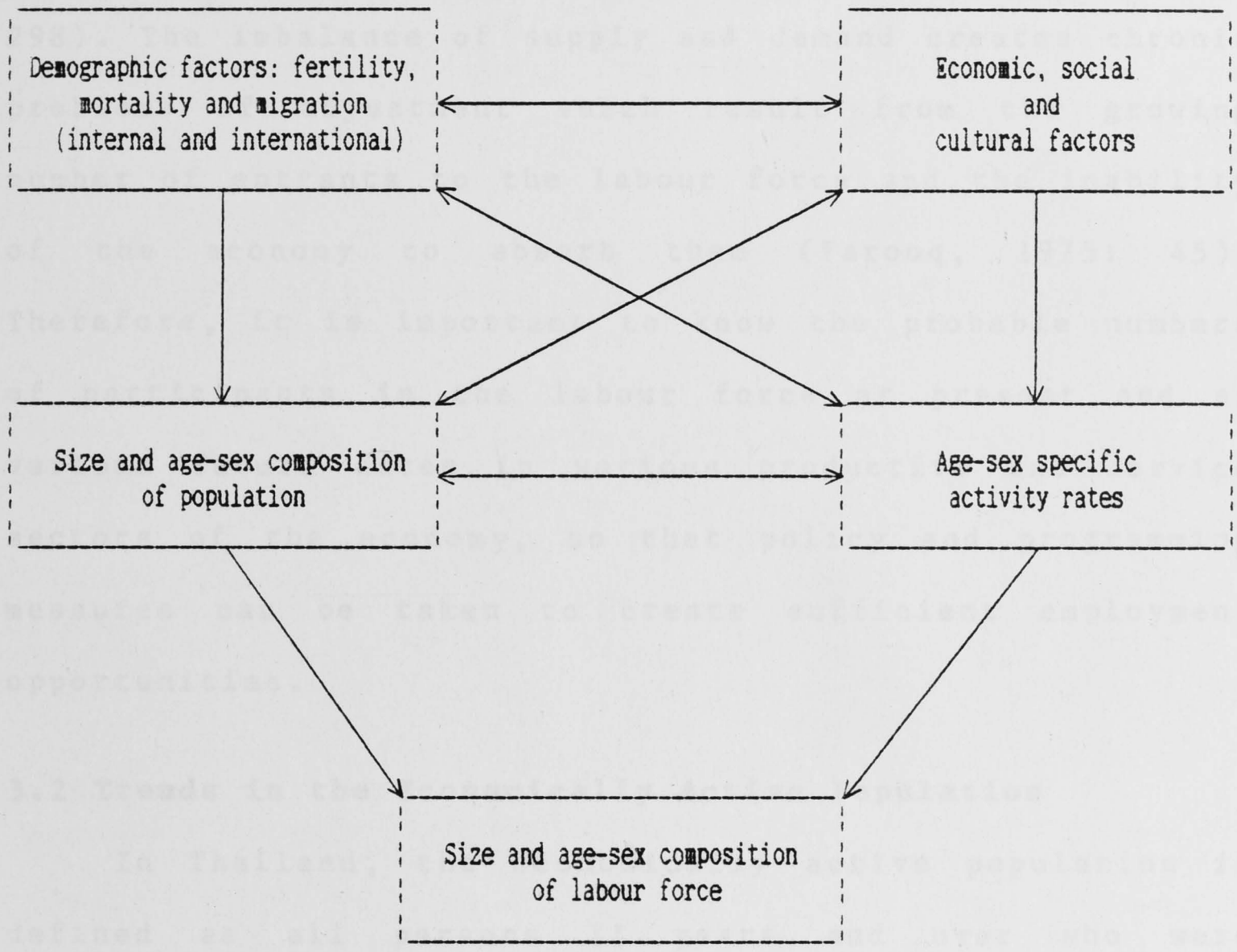
EDUCATION AND MANPOWER PLANNING ISSUES IN THAILAND

3.1 Introduction

Starting with trends in the growth of the economically active population, this chapter will discuss the temporal and spatial distribution and growth of Thailand's labour force. This is followed by projections of the future labour force. The focus of the discussion is the labour force in general and the employment of educated people in particular.

The size of the labour force, which is a function of the demographic composition of the population and the participation rates of different groups within the population, is one of the most important areas of the study of population and development. The size of a country's labour force and its proportion of the population have an evident bearing on the productive capacity of the economy and the levels of income per head that can be attained. It has been recognized that the availability, development and utilization of human resources have greater importance in socio-economic planning because manpower is a primary factor in the production of all goods and services. Manpower is a function of the interplay of socio-economic and demographic factors (Farooq, 1975: 45-68). The flow diagram presented below shows the interaction of these factors in the supply of labour force.

Figure 3.1 Flow Diagram of Basic Determinants of Labour Force Size



Note: Economic factors: Per capita GNP, average earning level for workers, employment opportunities and their geographical distribution, industrial structure, organization of production, and so forth.

Social factors: Educational opportunities, educational attainment, urbanization, marital laws and characteristics, and so forth.

Cultural and other factors: Traditional attitudes toward participation of different group, particularly women, in economic activity, religious influences on attitudes to work, and so forth.

Source: Farooq, 1972: 267-269.

Manpower planning is an essential component of overall planning, which provides a basis for estimating the extent of current and future labour needs for the production of various goods and services (UN., 1975: 296-298). The imbalance of supply and demand creates chronic problems of adjustment which result from the growing number of entrants to the labour force and the inability of the economy to absorb them (Farooq, 1975: 45). Therefore, it is important to know the probable numbers of participants in the labour force at present and at various future dates in various productive and service sectors of the economy, so that policy and programming measures can be taken to create sufficient employment opportunities.

3.2 Trends in the Economically Active Population

In Thailand, the economically active population is defined as all persons 11 years and over who were `employed on the census date´ or who had `worked on any day during the seven days preceding the census´, workers `looking for work´ and `waiting for farm season´. The Crude Activity Rate is defined as the proportion of economically active population to the total population. Similarly, the labour force participation rates or the activity rates are defined as the proportion of economically active population to the population of working age (population aged 11 years and over) (ESCAP, 1976: 135; NSO, 1983). The terms `labour force

participation rates' and 'activity rates' are used interchangeably in this study.

Table 3.1 gives trends in the growth of crude activity rates and labour force participation rates. Although because of definitional differences they are not strictly comparable, these figures provide a good idea of the trend.

Table 3.1 Economically Active Population of Thailand and the Crude Activity Rates by Sex, 1960, 1970 and 1980

Source of Data	Total population ('000)	Population under aged 11 ('000)	Population aged 11 and over ('000)	Economically active population ('000)	Crude activity rates (%)	Labour force participation rates (%)
1960 Census						
Both sexes	26,258	8,947	17,311	13,837	52.7	79.9
Male	13,154	4,512	8,642	7,145	54.3	82.7
Female	13,104	4,435	8,669	6,692	51.1	77.2
1970 Census						
Both sexes	34,398	11,936	22,462	16,850	49.0	75.0
Male	17,124	6,044	11,080	8,911	52.0	80.4
Female	17,274	5,892	11,382	7,939	46.0	69.8
1980 Census						
Both sexes	44,825	12,775	32,050	21,090	47.0	65.8
Male	22,329	6,597	15,732	11,722	52.5	74.5
Female	22,496	6,178	16,318	9,368	41.6	57.4

Note:

$$\text{Crude Activity Rate} = \frac{\text{Economically Active Population}}{\text{Total Population}}$$

$$\text{Labour Force Participation Rate} = \frac{\text{Economically Active Population}}{\text{Population Aged 11+}}$$

Source: 1. CSO, 1962, Table 1.
2. NSO, 1973, Table 1.
3. NSO, 1983a, Table 1.

As can be seen in Table 3.1, the size of the economically active population has been increasing. This is because of the present age and sex composition of the population. In 1980, 28 per cent of the total population was under 11 years. This group will be entering the labour force in the 1990s, and comprises a higher proportion of the total population than the group affected by fertility decline. That is, women aged 15-49, who will be affected by fertility decline, comprise only 25 per cent of the total population. Furthermore, although the percentage of population under age 11 years has declined during 1970-80, their number is increasing; this implies that the number of people entering the labour force will continue to increase for some time to come.

In absolute terms, the economically active population increased from 14 million in 1960 to 17 million in 1970 and 21 million in 1980. However, the crude activity rates and the labour force participation rates showed a downward trend, exemplified by the fact that the NESDB (cited in ESCAP, 1976: 183-185) projected a labour force participation rate of 78.5 percent for the year 1980; but the actual participation rate for that year as reported by the Population and Housing Census (NSO, 1983a) was 65.8 percent. This indicates that the labour force participation rate declined more rapidly than anticipated. The downward trend in the labour force participation rate could be explained by the fact that

the proportion of the working age population (11 years and over) to total population for the period also declined; this affected the crude activity rate. More importantly, the overall socio-economic development helped to expand the educational system thereby improving the enrolment in schooling and consequently lowering the labour force participation rate.

3.3 Age and Sex Structure

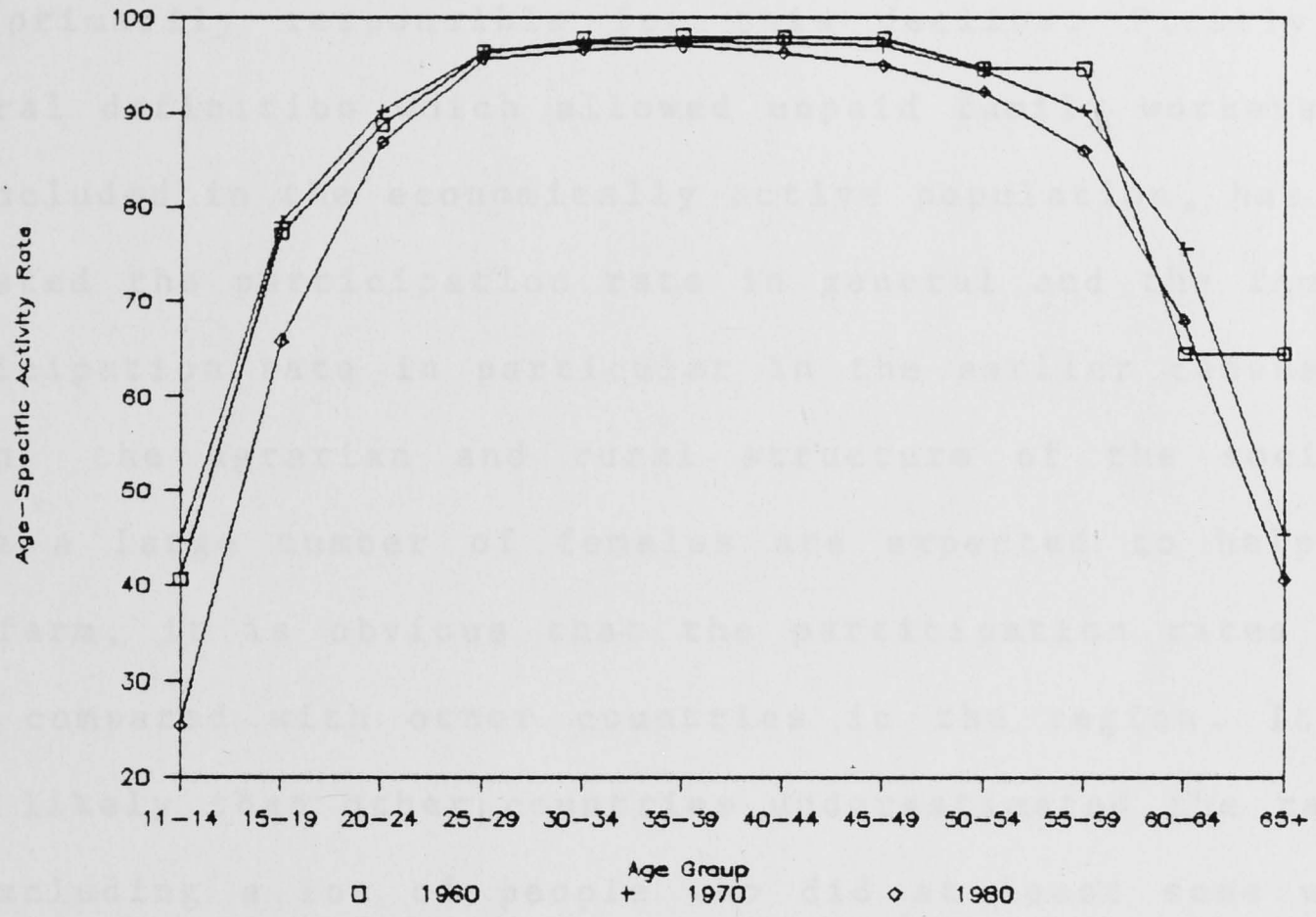
The effect of the expansion of educational facilities on the labour force participation rate becomes evident if the age and sex structure of the economically active population and the participation rate are examined. This is shown in Table 3.2, Figure 3.2 and Figure 3.3.

Table 3.2 Age-Sex Specific Activity Rates for Thailand, 1960, 1970 and 1980

Age Group	1960		1970		1980		% Change 1960 to 1980	
	Male	Female	Male	Female	Male	Female	Male	Female
11-14	40.6	50.7	44.6	52.0	25.4	28.6	-37.0	-43.6
15-19	77.1	84.9	78.3	78.4	65.8	62.4	-14.7	-26.5
20-24	88.6	86.9	90.1	80.3	86.8	69.2	-2.0	-20.4
25-29	96.3	85.1	96.4	79.8	95.7	69.8	-0.2	-18.0
30-34	97.7	85.5	97.3	80.0	96.6	69.9	-1.1	-18.2
35-39	98.0	86.7	97.5	81.4	97.0	70.4	-1.0	-18.8
40-44	97.8	87.7	97.4	81.6	96.3	69.5	-1.5	-20.8
45-49	97.8	97.0	97.0	81.3	95.0	67.6	-2.9	-30.3
50-54	94.7	81.1	94.4	74.9	92.2	62.5	-2.6	-22.9
55-59	94.7	81.1	90.1	66.9	86.0	55.2	-9.2	-31.9
60-64	64.5	40.1	75.5	48.3	67.9	38.9	+5.3	-3.0
65+	64.5	40.1	45.2	21.5	40.5	17.7	-37.2	-55.9
Total	82.7	72.2	80.4	69.8	74.5	57.4	-10.0	-26.0

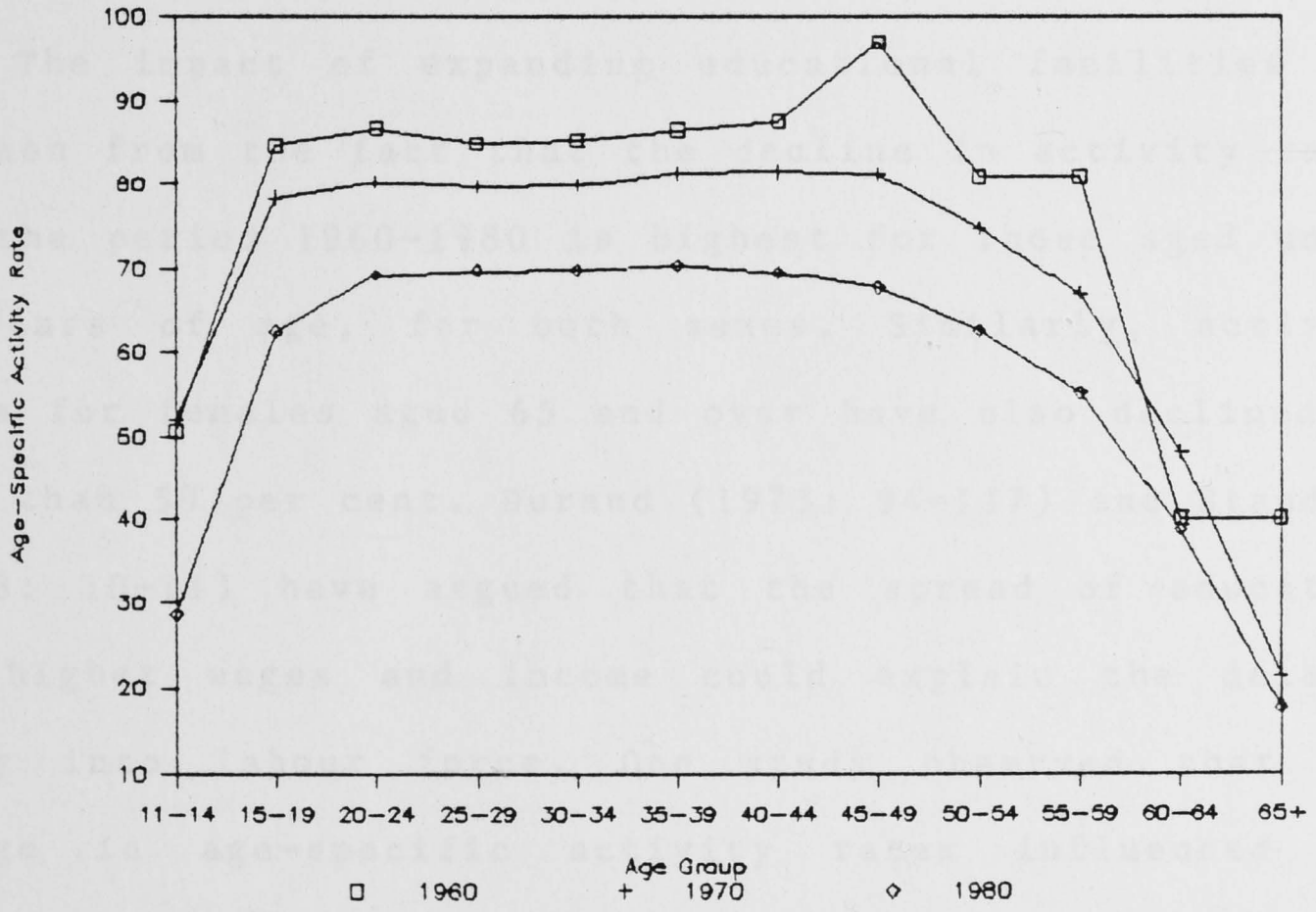
Source: 1.NSO, 1973, Table 34.
2.NSO, 1983a, Table 4.

Figure 3.2 Age-Specific Activity Rate for Males, Thailand, 1960, 1970 and 1980



Source: Based on Table 3.2.

Figure 3.3 Age-Specific Activity Rate for Females, Thailand, 1960, 1970 and 1980



Source: Based on Table 3.2.

It can be discerned from Table 3.2 that activity rates have declined between 1960 and 1980. Two factors are primarily responsible for this decline. Firstly, a liberal definition which allowed unpaid family workers to be included in the economically active population, has inflated the participation rate in general and the female participation rate in particular in the earlier censuses. Given the agrarian and rural structure of the society where a large number of females are expected to help on the farm, it is obvious that the participation rates are high compared with other countries in the region. It is most likely that other countries underestimated the rates by excluding a lot of people who did at least some work (Leoprapai et al, 1976: 137). Secondly, the decline in activity rates may be attributed to expanding educational facilities and modernizing economy which tend to lower the rate at young and old ages.

The impact of expanding educational facilities can be seen from the fact that the decline in activity rates for the period 1960-1980 is highest for those aged under 19 years of age, for both sexes. Similarly, activity rates for females aged 65 and over have also declined by more than 50 per cent. Durand (1975: 94-117) and Standing (1978: 10-11) have argued that the spread of education and higher wages and income could explain the delayed entry into labour force. One study observed that the change in age-specific activity rates influenced the change in crude activity rate more than the change in age structure (Pinyopusarerk, 1986: 22-23).

Similarly, changes in the economic structure and increase in urbanization affect the activity rates. That is why despite the rapid growth of industrial output, the employment generation capacity of the industrial sector has been limited, resulting in a declining participation rate which discouraged from finding appropriate jobs. A similar finding was reported from the Philippines (NEDA, 1983: 20-21). It has been further argued that as the economy modernizes, fewer jobs will be available in the core sector of the economy because of technological change. Furthermore, the more educated tend to displace the non-educated and men enter the traditional areas of employment where women used to be prominent (Eviota, 1985: 90-91). It should also be noted that the drop in the labour force participation between 1960 and 1970 could have been caused by a tightened definition of work and improvement in techniques of data collection. All this tends to depress the participation rates in general and, more importantly, the rates for females in particular.

From Table 3.2, it is clear that the activity rates in Thailand are high. It has been argued that the choice between economic activity and non-economic activity is limited only to the young and old phases of the life span (UN., 1968: 18). However, as .discussed earlier, the choice of activity is related basically to the level of socio-economic development and as a country achieves higher socio-economic development, the participation rate

in general and in extreme age groups in particular tends to decline.

Despite this fact, the level of female activity rates in Thailand remains one of the highest in the world. The activity rate for females shows a `centre peak´ or `plateau´. According to Durand (1975: 37-44), activity rates with a maximum in the central adult ages between 30-44 are found mainly in less developed countries where most of the women in the labour force are unpaid family workers or employed at home in handicrafts and retail trade. Jones (1983: 12) noted the wide participation of females in such countries in the time-honoured profession of commerce. Lucas (1977: 31-38) and Jones and Lucas (1979: 19-49) analysed the female labour force participation for urban Nigeria and observed that the Yoruba ethnic group who were involved in trade and commerce had a substantially higher participation rate than other ethnic groups; this once again supports the notion that in societies where women are involved in petty trade and commerce, female labour force participation tends to be higher.

Such a high level of activity rate may also be a reflection of disguised unemployment or underemployment. This is because activity centering around the household tends to find work for all available hands whatever the minimum labour needed (NSO, 1974: 42-44). This creates a problem of disguised unemployment because all members of the household may not be fully employed.

3.4 Structure of the Labour Force

There has been a gradual change in the occupational and employment status of labour in Thailand. Table 3.3 gives the distribution of the labour force in terms of employment and occupational status as of 1980. The Table indicates that majority of the work force still have agricultural activities as their occupation (71 per cent). The service sector which included in the informal sector in Table 3.3 is growing moderately and it is now Thailand´s second largest sector employing 24 per cent of labour. The informal sector is comprised of workers in transport and communication, craftmen, production process workers (tailors, dressmakers, carpenters, food and beverage processing workers and laborers), service, sports and workers not classified by occupation. As in other agrarian societies, employment status is dominated by own-account workers or the self-employed.

Table 3.3 Percentage Distribution of Employed Persons by Work Status and Occupation, Thailand, 1980

(Per cent)

Work status \ Occupation	Professional technical workers	Administration and clerical workers	Farmers, fishermen miners, and related workers	Informal sector
Employer	0.4	17.7	0.8	0.6
Government employee	74.3	42.7	0.2	8.4
Private employee	21.6	36.6	6.7	43.0
Own account worker	3.1	0.3	32.1	31.1
Unpaid family worker	0.6	2.7	60.2	16.9
Total column	100.0	100.0	100.0	100.0
Total row	2.5	3.0	70.9	23.6

Source: NSO, 1981, Table 10.

3.5 Trends in the Educated Labour Force

One of the objectives of this study is to examine the amount and utilization of educated manpower. In general, the economy of any country is composed of traditional and modern sectors, which could be further grouped into sub-sector and sub-industry. Developing countries are primarily dominated by the agricultural sector, which is the core of the traditional sector. Much off-farm employment is generally considered as being in the modern sector and includes manufacturing, trade and commerce, services, transport and communication. The traditional sector is characterized as demanding unskilled labour while the modern sector is characterized as requiring skilled labour. Therefore, the transition from traditional sector to modern sector has an important bearing on overall development. This is where the role of education becomes important. Educated manpower requires employment opportunities more specifically in the modern sector of the economy. However, the creation of employment opportunities outside agriculture has been very limited. As a result, educated manpower has also to be absorbed within the traditional sector. This is particularly true in the case of developing countries like Thailand, where growth of the modern sector is moderate and all educated manpower cannot be absorbed outside agriculture. Table 3.4 gives the distribution of educated manpower according to sector of the economy and supports the above reasoning.

Table 3.4 Number Employed by Sector and Level of Education, 1982

Level of Education \ Economic sector	Agriculture	Industry	Service		Total row	Total column (%)
			Public	Private		
Below high school (N)	17,170	2,444	595	3,014	23,223	94.5
(%)	(73.9)	(10.5)	(2.6)	(13.0)	(100.0)	
High school: Academic (N)	53	25	48	82	208	0.8
(%)	(25.5)	(12.0)	(23.1)	(39.4)	(100.0)	
High school: Vocational (N)	75	32	142	91	340	1.4
(%)	(22.0)	(9.4)	(41.8)	(26.8)	(100.0)	
Upper vocational education (N)	8	9	67	29	113	0.5
(%)	(7.1)	(8.0)	(59.3)	(25.6)	(100.0)	
Teacher training (N)	82	24	373	16	495	2.0
(%)	(16.6)	(4.8)	(75.4)	(3.2)	(100.0)	
Higher education (N)	17	26	101	43	187	0.8
(%)	(9.1)	(13.9)	(54.0)	(23.0)	(100.0)	
Total (N)	17,405	2,560	1,326	3,275	24,566	100.0
(%)	(70.8)	(10.4)	(5.4)	(13.3)	(100.0)	

Note: N = Numbers

Source: NEC et al, 1985, Table 7.

It is evident from Table 3.4 that despite planned efforts to shift labour from agriculture to the industrial sector, the predominance of the agricultural sector continues. As expected, a lower level of educational attainment is associated with a higher proportion employed in agriculture. Manpower with less than high school education represents about 95 per cent of the total labour force. Of the total labour force below high school level, about 74 per cent is engaged in agriculture. Among the higher educated, the upper vocational education group has the lowest proportion (7 per cent) engaged in agriculture and the highest in the

public service sector (59 per cent). Once again, it should be emphasized that different sectors of the economy require different levels of educated manpower. Given the predominance in the economy of the agricultural sector which does not require much highly educated manpower, the need for highly educated manpower may be limited. Yet if the agricultural sector has to be transformed from traditional subsistence to modern commercial, its requirement for educated manpower may change. Therefore, the question asked in manpower planning in Thailand is what type of education is required to allow effective farming to accelerate the pace of socio-economic development in the country (Hongladarom, 1983: 22-23). The country is attempting to develop such a policy.

The excess of certain levels of educated manpower suggests that there is a gap between the supply and demand of labour force in general and a gap between the level of education and manpower requirements of the various sub-sectors of the economy in particular. This becomes more clear if the extent of educated unemployment is examined.

As can be seen in Table 3.5, the unemployment rate as of 1982 is highest for the two categories of vocational education: high school vocational and upper vocational education. The relatively low unemployment for teacher training is attributed to government policy to improve the teacher-student ratio (NEC et al, 1985: 5).

The lowest unemployment rate of 1.3 per cent was found among those who had not reached high school and are thought to have been absorbed in the agricultural sector.

Table 3.5 Unemployment Rates of Educated Persons, Thailand, 1982

Education level	Employed ('000)	Unemployed ('000)	Unemployment rate (%)
Below high school	23,227.7	317.3	1.3
High school: Academic	222.8	14.5	6.1
High school: Vocational	340.2	55.2	13.4
Upper vocational education	113.4	10.0	8.1
Teacher training	484.9	13.5	2.7
Higher education	187.0	14.5	7.2
Total	24,571.0	425.0	1.7

Note:

$$\text{The Unemployment Rate} = \frac{\text{No. Unemployed}}{\text{No. Employed + Unemployed}} * 100$$

Source: NEC et al, 1985, Table 1.

However, the unemployment rate is marked by sex differences. The unemployment rate for educated females is more than twice the male unemployment rate for the high school academic, upper vocational and higher education categories. This is shown in Table 3.6.

In a country where the employment structure is dominated by the agricultural sector, underemployment is likely to be high. Recent data on the level of underemployment is lacking. Studies carried out during the period 1968-1972, revealed that up to 50 per cent of the agricultural work force and 21 per cent of the non-

agricultural labour force did not work in various months of the year (ESCAP, 1976: 184). Therefore, the rate of unemployment understates the prevailing level of underutilization of labour.

Table 3.6 Unemployment rates Classified by Sex and Level of Education, Thailand, 1982

Level of Education	Total	Male	Female
Lower than high school	1.3	1.5	1.1
High school: Academic	6.1	4.4	9.2
High school: Vocational	13.4	12.6	14.7
Upper vocational	8.1	5.7	12.6
Teacher training	2.7	2.1	3.5
Higher education	7.2	5.0	10.5

Source: NEC et al, 1985, Table 2.

As stated before, unemployment is the consequence of the growing imbalance between the supply of and demand for labour. Furthermore, this is also a reflection of the government's inability to integrate education sector and manpower planning for effective and balanced results. This is primarily because population growth adds more people to the supply of labour than can be effectively absorbed into employment. As opposed to an overall increase of 3.4 per cent in the labour force during the period 1977-1982, the educated labour force is assumed to have increased at a very high rate because of ever expanding educational facilities and a lack of employment which forced some segments of the population to be in education. Table 3.7 gives evidence of this phenomenon. The increase in both supply and absorption into work of

educated manpower in the upper vocational category was the highest (23 per cent over the five year period) followed by the high school academic category (20 per cent). The Table also indicates that the higher the rate of increase in the supply, the higher the rate of absorption and the lower the rate of increase in supply, the lower the rate of absorption.

Table 3.7 Annual Rates of Increase in Supply and Absorption Rates of Educated Persons, Thailand, 1977-1982

Level of Education	Rate of increase in supply (%)	Absorption rates (%)
High school: Academic	19.8	20.0
High school: Vocational	13.3	12.0
Upper vocational	22.5	22.5
Teacher training	14.2	15.1
Higher education	13.2	13.2

Source: NEC et al, 1985, Table 3.

Note: This source does not define the absorption rate.

The experience of Singapore in education and manpower planning is worth mentioning here. During the last two decades (1960-82), Thailand's economy has grown at an average annual rate of 4.5 per cent compared to an average rate of 7.4 per cent per annum for Singapore (World Bank, 1984: Table 170). Unlike Thailand which is a late-comer in experiencing fertility decline and moderate economic growth, Singapore experienced rapid industrialization, general economic growth and substantial fertility decline. Compared to the average

annual growth rate of Thailand's labour force (1977-82) of 3.4 per cent, Singapore's labour force increased by 2.6 per cent per annum during 1970-82. As expected, rapid industrialization and economic development have created demand for new skills in Singapore. New skills required to sustain higher economic development were introduced by making suitable changes in the educational system (Clark, 1971; Economic Research Centre, n.d.). Some of the changes brought into the planning were technical secondary schools, combining typical academic education with technical training in broad-based skills and creation and expansion of polytechnic-type institutions. Above all, to cater for the manpower needs of the private sector and the public sector, industrial training centres and vocational training institutes were established. One such example is the establishment of a joint industry-government training programme with the collaboration of international companies. In other words, it can be safely said that while Singapore has been a pioneer in the successful planning of the educational system and manpower needs, Thailand has still to overcome the lacuna of its educational system, which is not meeting the requirements of its moderately developing economy.

A further inquiry into the labour absorption rate (proportion absorbed out of total) for the period 1971-1982 indicates that (1) educated labour absorption was higher in rural areas probably because it was growing from a very small base (2) strangely, absorption of the below high school educated was faster in urban areas and

(3) labour absorption was higher in urban areas for each major sector. This can be attributed to the expansion of the industrial sector in rural areas and the modernization of the agricultural sector in urban areas; urban jobs in agriculture are probably related to the high technology areas of agriculture. This is a positive sign for transformation of the subsistence economy to the commercial economy. Differential educated labour absorption for rural and urban areas is presented in Table 3.8.

Table 3.8 Annual Rates of Absorption by Area, Thailand, 1971-1982

Level of education	Agriculture	Manufacturing	Services	Total
		Urban Area		
Below high school	29.5	9.8	4.2	9.9
High school: Academic	12.6	10.5	10.7	10.8
High school: Vocational	7.1	8.2	14.2	13.2
Upper vocational	4.4	12.3	16.0	13.5
Teacher training	3.3	4.1	13.2	11.1
Higher education	5.5	4.1	9.9	8.5
Total	28.0	9.4	5.6	10.1
		Rural Area		
Below high school	1.9	6.3	2.1	2.2
High school: Academic	28.0	29.1	62.9	38.2
High school: Vocational	26.1	43.9	51.7	33.2
Upper vocational	5.6	30.6	48.5	23.6
Teacher training	12.3	13.0	18.6	17.8
Higher education	13.0	37.0	51.2	27.4
Total	2.0	6.6	4.2	2.5

Source: NEC et al, 1985, Table 10 and Table 11.

3.6 Future Employment Structure of the Educated Labour Force

The National Education Commission (NEC et al, 1985) has projected the future employment structure by level of education. Some of the important assumptions in the projection include: (1) there will be no radical shift in the present structure of the labour force; that is, the trend will assume a continuation of the present degree of labour absorption discussed earlier; (2) the government will continue to pursue its development policy on capitalist lines and there will be no corrective measures to alter the present incentive structures, both economically and socially; and (3) the world economy will continue to have its current economic growth rate. Based on these assumptions, the projected employment structure is reproduced here as Table 3.9.

Compared with the earlier figures (Table 3.4), it is seen that there would be some change in employment structure. The share of the agricultural sector in total labour absorption is expected to continue to decline from 71 per cent in 1982 to 66 per cent in 1991, which would be followed by an expansion of the industrial sector from 10 per cent in 1982 to 14 per cent in 1991 and of the service sector from 18 per cent in 1982 to 20 per cent in 1991. By level of educational attainment, the unemployment rate for the less educated would increase with a subsequent increase in the employment of the higher educated. This is mainly because as the supply of

higher educated workers increases, the pressure for employment opportunities also increases and the highly educated are absorbed into jobs which do not require such qualifications. This tends to displace unskilled labour.

Table 3.9 Number Employed by Sector and Level of Education, 1991

(Thousands)

Level of Education \ Economic sector	Agriculture	Industry	Service		Total
			Public	Private	
Below high school	19,688	3,921	477	4,024	28,110
	(70.0)	(14.0)	(1.7)	(14.3)	(100.0)
High school: Academic	305	87	41	118	551
	(55.4)	(15.8)	(7.4)	(21.4)	(100.0)
High school: Vocational	303	68	181	97	649
	(46.6)	(10.6)	(27.9)	(14.9)	(100.0)
Upper vocational education	103	184	168	215	670
	(15.4)	(27.4)	(25.1)	(32.1)	(100.0)
Teacher training	37	16	584	69	706
	(5.2)	(2.3)	(82.7)	(9.8)	(100.0)
Higher education	43	68	214	156	481
	(9.0)	(14.1)	(44.5)	(32.4)	(100.0)
Total	20,479	4,344	1,665	4,679	31,167
	(65.7)	(13.9)	(5.4)	(15.0)	(100.0)

Note: Figures in parentheses are percentages

Source: NEC et al, 1985, Table 8.

Therefore, the NEC predicts that the future unemployment rate would be doubled from 1.7 per cent in 1982 to 3.5 per cent in 1991. In absolute terms, of the total unemployment, 60 per cent would come from the `below high school´ level followed by `high school vocational´ and `upper vocational´ education. Table 3.10

shows projected unemployment rates for Thailand. The future scenario of unemployment would be dominated by the less educated for whom the unemployment rate would nearly double from 1.3 per cent in 1982 to 2.4 in 1991.

Table 3.10 Projected Unemployment Rates, 1991

Level of Education	Workforce ('000)	Employed ('000)	Unemployed ('000)	Unemployment rate (percent)
Below higher school	28,791	28,110	681	2.4
High school: Academic	620	552	69	10.1
High school: Vocational	765	649	116	15.1
Upper vocational education	780	669	111	14.2
Teacher training	804	705	99	12.2
Higher education	537	482	54	10.1
Total	32,297	31,167	1,130	3.5

Source: NEC et al, 1985, Table 9.

This chapter has used secondary data to examine the growth of the labour force in general and the employment structure of the educated labour force in particular. Other things remaining constant, there will be a moderate shift of labour force from the traditional sector to the modern sector of the Thai economy. However, the unemployment rate will more than double for the less educated who will constitute 60 per cent of the total unemployed. Efforts should be directed to reduce this

proportion by creating more off-farm employment opportunities in rural areas.

CHAPTER 4

POPULATION, EDUCATION AND LABOUR FORCE PARTICIPATION: A CASE STUDY OF THE POPULATION AGED 15-19 YEARS

4.1 Introduction

As stated in earlier chapters, one of the objectives of this study is to examine the participation of the population aged 15-19 years in school and the labour force. The age group 15-19 years is selected because of its specific importance in the socio-economic and demographic transition which is on the way in Thailand.

The analysis of data is divided into three sections: growth of population in recent decades, participation in schooling and in the labour force and projection of the population aged 15-19 years for the next 25 years. Data are primarily drawn from four sources: Population and Housing Censuses, Reports of Economic Characteristics, Reports of Labour Force Surveys and primary analysis of the 1 per cent sample of the 1980 census. Therefore, source of data is acknowledged after each table is presented and discussed. Because of the varied sources, it was noted in the earlier chapters that these data are not strictly comparable but provide reasonable results.

4.2 Growth of the Population Aged 15-19 Years

4.2.1 Size of Population

In 1980, the total size of the population aged 15-19 years was 5,408,261, a net addition of 1,690,713 persons or 45 per cent to the 1970 population of the same age group. This reflects the rapid overall population growth of Thailand during the 1960s and 1970s. Of the total population aged 15-19 in 1980, the share of the population aged 15, 16, 17, 18 and 19 years was 22, 21, 20, 19 and 19 per cent respectively. In the 1970 census, the corresponding figures for the population aged 15, 16, 17, 18 and 19 years were 23, 21 21 18 and 18 per cent respectively (see Figure 4.1). The figures suggest that the proportion of the population aged 15, 16 and 17 years in 1980 has slightly decreased compared with 1970 while that of the population aged 18 and 19 years has slightly increased. This may also be a reflection of the onset of the fertility decline during the early 1960s.

Table 4.1 Growth of Population Aged 15-19 Years by Age and Sex, 1970 and 1980

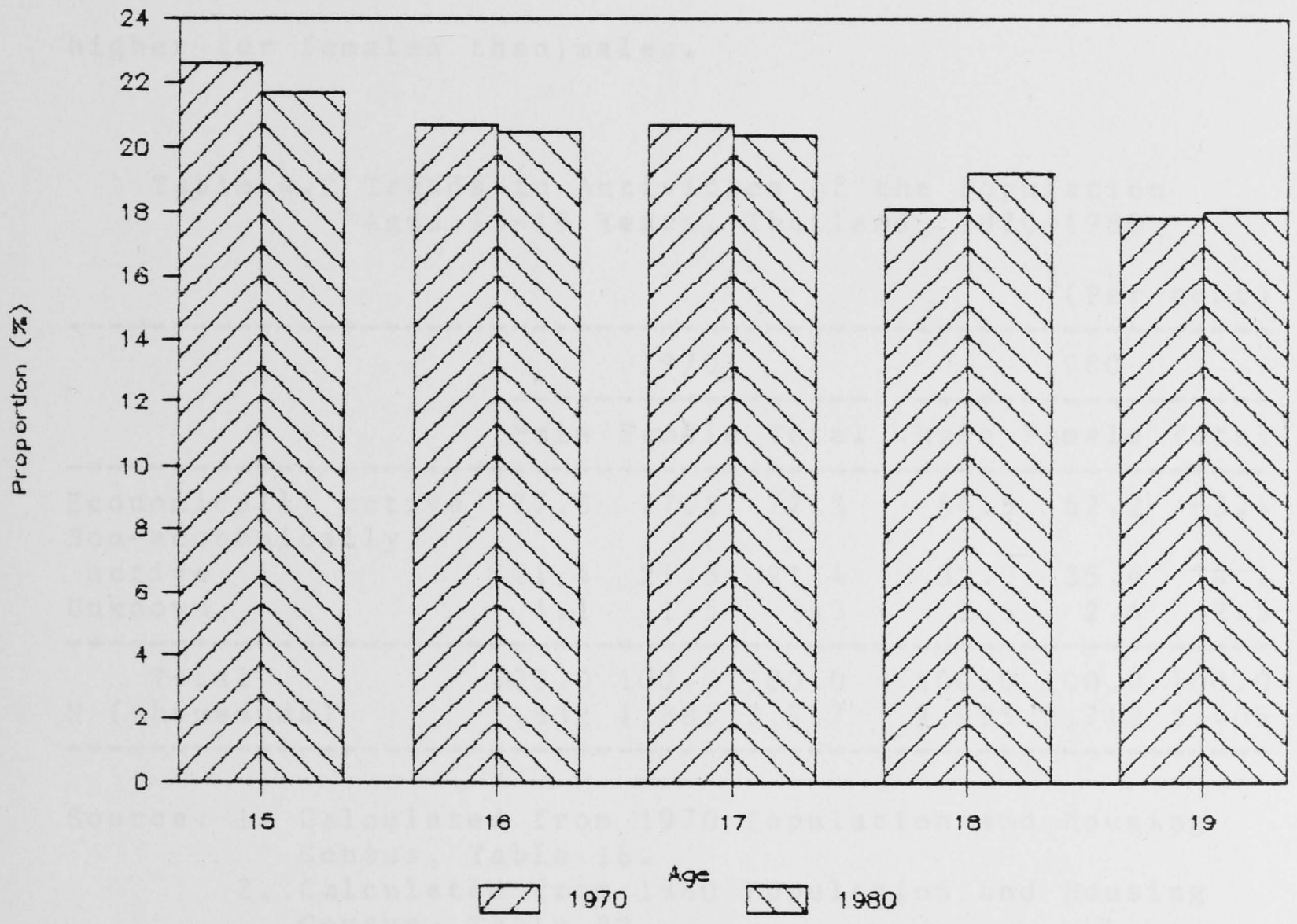
(in Thousands)

Age	1970			1980		
	Male	Female	Total	Male	Female	Total
15	416	424	840	589	586	1,175
16	383	387	770	557	556	1,113
17	382	388	770	551	553	1,104
18	327	347	674	515	522	1,037
19	324	339	663	484	495	979
Total	1,832	1,885	3,717	2,696	2,712	5,408

Source: 1. NSO, 1973, Table 3.
2. NSO, 1983a, Table 3.

In 1970, the sex ratio for the 15-19 group was 97 males per 100 females; this improved to 99 in 1980. The improved sex ratio may be attributed to a decline in infant and child mortality of the male population during the period under study.

Figure 4.1 Proportion of the Thai Population, Aged 15-19, 1970 and 1980



Source: Based on Table 4.1.

4.2.2 Trends in the Economically Active Population

Over the years, there has been a gradual decline in the participation rate of the population in general and for the 15-19 age group in particular. As discussed in the earlier sections, as a country's socio-economic development speeds up, it is usual to observe the decline in participation rates in the extreme age groups. Table 4.2 shows that in 1970, about 77 per cent of the total population aged 15-19 were economically active, declining to 63 per cent in 1980. During the 1970-1980 inter-censal period, the decline in the overall participation rate was higher for females than males.

Table 4.2 Trends in Activities of the Population Aged 15-19 Years, Thailand, 1970-1980

(Per cent)

	1970			1980		
	Male	Female	Total	Male	Female	Total
Economically active	77.5	77.2	77.3	64.5	62.2	63.4
Non-economically active	21.4	21.3	21.4	32.9	35.4	34.1
Unknown	1.1	1.5	1.3	2.6	2.4	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	1,832	1,885	3,717	2,695	2,710	5,405

Source: 1. Calculated from 1970 Population and Housing Census, Table 16.
2. Calculated from 1980 Population and Housing Census, Table 22.

Panel 1 of Table 4.3 considers the economically active population. In 1970, 52 per cent were employed, 3 per cent were unemployed and 45 per cent were waiting for the farm season.

Table 4.3 Trends in Activities of the Population Aged 15-19 Years, Thailand, 1970-1980

(Per cent)

	1970			1980		
	Male	Female	Total	Male	Female	Total
1.Economically active						
N (in '000)	1,419	1,456	2,875	1,739	1,687	3,426
(%)	100.0	100.0	100.0	100.0	100.0	100.0
1.1 Employed	53.9	50.1	52.0	59.6	61.9	60.7
1.2 Unemployed	3.5	1.9	2.7	7.3	5.3	6.3
1.3 Waiting for farm season	42.6	48.1	45.3	33.1	32.8	33.0
2.Non-economically active						
N (in '000)	392	400	792	886	958	1,844
(%)	100.0	100.0	100.0	100.0	100.0	100.0
2.1 Homemakers	9.2	49.0	29.3	9.8	32.4	21.5
2.2 Students	70.4	47.0	58.6	80.0	64.3	71.9
2.3 Unable to work	1.5	1.3	1.4	1.4	1.0	1.2
2.4 Other	18.9	2.7	10.7	8.8	2.3	5.4

Source: 1. Calculated from 1970 Population and Housing Census, Table 16.
2. Calculated from 1980 Population and Housing Census, Table 22.

Across the non-economically active population, the highest proportion was contributed by students (59 per cent) followed by homemakers (29 per cent). There was a decline in the proportion of people who were waiting for the farm season during the inter-censal period. The increased proportion employed in general and of females in particular may be attributed to the availability of jobs, gradual improvement in the socio-economic conditions and economic growth. Although the proportion employed in the economically active population has increased, the far more interesting and relevant trend is

that the proportion employed to the total population has increased (from 42 to 20 per cent for males and from 39 to 22 per cent for females).

The second panel of Table 4.3 considers changes in the categories of the non-economically active population during the inter-censal period. Marked differences are apparent between males and females in the student category. In 1970, about 70 per cent of the male economically inactive were students, compared with 47 per cent for the females. By 1980 the proportion had increased to 80 per cent and 64 per cent respectively. Although the percentage of male students in the total non-economically active population continued to be higher than that of females, the percentage increase in female students during the period was higher than that for males in the same age group.

In Table 4.4 and Table 4.5, economic activity rates are calculated by single year of age using the one percent sample tape of the 1980 census. Because of grouping of single year of age into a broad age group and sampling variations, the numbers do not exactly tally with those in Table 4.2 and 4.3.

As can be seen in Table 4.4, of the total population aged 15-19 years, about 64 per cent were economically active, 34 per cent were not economically active and the economic status of 2 per cent was not known.

Table 4.4 Proportional Distribution of Activities of the Population Aged 15-19 Years by Age, Thailand, 1980

(Per cent)

Activities of Population	15	16	17	18	19	Total
Economically active	57.4	63.4	64.4	68.8	70.0	64.5
Non-economically active	40.6	34.8	34.1	29.9	28.3	33.8
Others	2.0	1.8	1.5	1.3	1.7	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	9864	9534	9895	9076	8068	46436

Source: One Percent Sample Tape of the 1980 Census.

Within the economically active population, employed persons accounted for 60 per cent, followed by the `waiting for farm season´ category (34 per cent). The proportion of unemployed persons, that is the unemployment rate, is calculated at 6 per cent. This is shown in Table 4.5.

A study in India found the highest rate of unemployment in the age group 10-29 years. The study also found higher unemployment for males in the same age group (Visaria, 1981: 110-111). In spite of possible differences in the definition of unemployed, similar results were observed for Indonesia. In Indonesia, it was observed that the unemployment rate was higher for urban areas than rural areas, with much higher rates among younger ages (10-24) than older ages and higher rates among the better educated. For the age group 15-19 years, the unemployment rate for Indonesia was 3.5 for male and 4.1 for females (Hugo et al, 1987: 287-288).

Table 4.5 Proportional Distribution of Activities of the Population Aged 15-19 Years, 1980

(Per cent)

Activities of Population	15	16	17	18	19	Total
Economically	5,660	6,044	6,369	6,244	5,646	29,963
	100.0	100.0	100.0	100.0	100.0	100.0
Employed	58.0	58.6	61.1	61.7	62.0	60.3
Unemployed	5.8	5.8	6.3	6.8	6.5	6.2
Waiting for farm	36.2	35.6	32.6	31.5	31.5	33.5
Non-economically	4,007	3.318	3,374	2,712	2,283	15,694
	100.0	100.0	100.0	100.0	100.0	100.0
Homemakers	16.8	18.7	22.1	25.2	31.1	21.9
Students	82.3	80.4	76.9	73.7	67.4	77.1
Unable to work	0.9	0.9	1.0	1.1	1.5	1.0
Others	197	172	152	120	139	782
Total N (thousands)	9,864	9,537	9,895	9,076	8,068	46,436

Source: One Percent Sample Tape of the 1980 Census.

Across single year age categories, the proportion of the economically active population increases with age. The same applies to the proportion employed and unemployed. However, there is a corresponding decline in the proportion of people in the `waiting for farm season´ category. This may be attributed to the fact that younger age groups are more likely to be involved in family farm business. It is also a fact that the younger age groups are less educated, are relatively less likely to be employed in organized sectors and are less likely to become employed outside agriculture. More importantly,

the higher proportion of the young age groups is still in schooling.

Further breakdown by sex of the economically active population (Table 4.6) shows that the unemployment rate is higher for males at 7 per cent as against 5 per cent for females, whereas the national average where educated females have higher unemployment rate (refer to Chapter 3), females in this age group have lower unemployment rate. It is also interesting to note that the female unemployment rate exceeds that of males, at age 15, 16 and 17 years but male employment overtakes female employment in ages 18 and 19 years. It is likely that women seek employment at earlier ages than males. This may have resulted in higher employment of females. The same trend is observed in the `waiting for farm season´ category, the proportion for females being smaller than for males.

The non-economically active population is dominated by students. For both sexes, students account for 77 per cent of the total non-economically active population, followed by homemakers (22 per cent). Those `unable to work´ account for 1 per cent of the economically inactive population. The proportion of students in the economically inactive population decreases, and the proportion of homemakers increases, with increase in age. This suggests that people in higher age groups start to enter the family life stage while more people in the younger age group will still be in schooling. This is

particularly true for females. The case becomes clearer if sex differences are examined (refer to Table 4.6). The share of female homemakers in the 15-19 year age group is 80 per cent; this indicates that among the non-economically active population, females are bound to work around the house. As expected, the proportion of inactive females in the student category is lower than males across the age groups. Similarly, the proportion of `unable to work´ is higher for males than females in all ages.

Table 4.6 Proportional Distribution of Activities of the Population Aged 15-19 Years by Age and Sex, Thailand, 1980

Economically active population	15		16		17		18		19		15-19	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1.Economically	2793	2867	3042	3002	3253	3116	3190	3054	2946	2700	15224	14739
	(56.4)	(58.4)	(63.0)	(63.8)	(65.9)	(62.8)	(71.7)	(66.0)	(73.8)	(66.3)	(65.7)	(63.3)
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1.1 Employed	55.5	60.3	57.1	60.1	59.3	63.0	61.2	62.2	61.4	62.6	59.0	61.7
1.2 Unemployed	7.3	4.3	6.9	4.6	7.5	4.9	7.7	6.0	7.3	5.7	7.3	5.1
1.3 Waiting for farm	37.2	35.4	36.0	35.3	33.2	32.1	31.1	31.8	31.3	31.7	33.7	33.2
2.Non-economically	1992	2015	1649	1669	1571	1803	1177	1535	950	1333	7339	8355
	(40.3)	(41.0)	(34.1)	(35.5)	(31.8)	(36.4)	(26.5)	(33.2)	(23.8)	(32.7)	(31.7)	(35.9)
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2.1 Homemakers	8.7	24.7	10.4	26.9	9.1	33.3	8.9	37.7	9.3	46.7	9.3	32.9
2.2 Students	90.0	74.7	88.3	72.6	89.8	65.7	90.0	61.3	88.9	52.0	89.4	66.2
2.3 Unable to work	1.3	0.6	1.3	0.5	1.1	1.0	1.1	1.0	1.8	1.3	1.3	0.9
3.Others	165	31	141	31	113	39	85	35	98	41	602	177
	(3.3)	(0.6)	(2.9)	(0.7)	(2.3)	(0.8)	(1.8)	(0.8)	(2.4)	(1.0)	(2.6)	(0.8)
Total	4950	4913	4832	4702	4937	4958	4452	4624	3994	4074	23165	23271
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: Figures in Parentheses are Percentage of Total

Source: One Percent Sample Tape of The 1980 Census

4.2.3 Structure of the Economically Active Population

There has been a gradual decline in the share of the employment generation from agriculture and a resultant increase in modern sectors such as construction, commerce and manufacturing. As noted above, a tightened definition employed in successive censuses presumably has affected the overall participation rate. It is interesting to note from Table 4.7 that for the 15-19 age group in 1970, the proportion of females employed in agriculture was more than the proportion of males, while the proportion of males employed in other sectors of the economy was more than that of females. However, in 1980, the proportion of females employed in agriculture dropped slightly below that of males; this suggests that women have benefited most from development programs. This is further exemplified if the proportion of male and female participation within sectors of the economy is examined. The proportion of females is higher than that of males for manufacturing, commerce and services which are considered to be constituents of the modern sector. However, high participation of females in commerce in Thailand is dominated by involvement in petty trade which is basically traditional (Jones, 1983). Therefore, these figures are to be treated cautiously.

Table 4.7 Economically Active Population Aged 15-19 Years By Major Industry Group and Sex, 1970 and 1980

(Per cent)

Major Industry Group	1970			1980		
	Male	Female	Total	Male	Female	Total
Agriculture	83.5	84.5	84.0	80.8	79.3	80.0
Mining	0.7	0.3	0.5	0.6	0.3	0.4
Manufacturing	5.3	5.1	5.2	6.4	6.9	6.7
Construction	1.4	0.5	0.9	2.2	0.9	1.5
Electricity	0.1	0.0	0.0	0.1	0.0	0.1
Commerce	2.9	3.8	3.4	3.2	4.8	4.1
Banking	0.0	0.0	0.0	0.1	0.1	0.1
Transportation	1.2	0.1	0.7	1.5	0.2	0.8
Services	3.4	5.0	4.2	2.1	5.1	3.6
Unknown	1.5	0.7	1.1	3.0	2.4	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	1373	1429	2801	1700	1774	3474

Source: 1. Calculated from 1970 Population and Housing Census, Table 21.
2. Calculated from 1980 Population and Housing Census, Table 25.

An examination of the occupations of the employed population in 1970 revealed that a large majority (58 per cent) stated agriculture as their last week occupation, followed by production (24 per cent). A total of about 6 per cent had service as their occupation while sales accounted for 4 per cent (Table 4.8). In 1980, agricultural occupations still continued to be the occupation of the majority. The proportion of population whose occupation was sales doubled between 1970 and 1980. It is interesting to note that more males were engaged in agriculture than females while more females were involved in the modern sector. This has been attributed to the high status of women in the society and their time-bound role in petty trade and commerce. However, as pointed out

before, high proportion of women in so called modern sector may be deceiving.

Table 4.8 Employed Population Aged 15-19 Years by Last Week Occupation and Sex, 1970 and 1980

(Per cent)

Occupation	1970			1980		
	Male	Female	Total	Male	Female	Total
Professional	0.7	0.9	0.8	0.7	0.9	0.8
Administrative	0.4	0.0	0.2	0.4	0.0	0.3
Clerical	1.0	0.6	0.8	1.3	0.9	1.1
Sales	3.0	5.3	4.1	6.2	10.1	8.2
Agricultural	59.6	55.8	57.7	60.5	54.8	57.6
Miners	1.0	0.5	0.8	0.9	0.5	0.7
Transportation	2.0	0.1	1.1	2.2	0.1	1.1
Production	24.3	23.4	23.8	25.7	24.7	25.5
Service	2.9	8.4	5.6	2.0	7.9	4.9
Unknown	5.1	5.0	5.1	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	764	729	1494	1036	1044	2080

Source: 1. Calculated from 1970 Population and Housing Census, Table 18.
2. Calculated from 1980 Population and Housing Census, Table 23.

4.2.4 Trends in School Attendance

General trends in school enrolment have already been discussed and it was noted that because of declining fertility, universal primary enrolment is about to be achieved in Thailand. However, the secondary school enrolment target has yet to be achieved partly because the cohorts of the high birth rate era are still entering the secondary school age group. In what follows, educational characteristics of the population aged 15-19 years are discussed.

Trends in enrolment as reported in the 1970 and 1980 censuses have been summarized in Tables 4.9, 4.10 and 4.11. Table 4.9 gives the distribution of the population under study by level of schooling. In 1970, about 13 per cent of the total population aged 15-19 years were enrolled at the various levels of schooling. This proportion increased to 27 per cent in 1980. In absolute terms, the population in school increased from 465,156 in 1970 to 1,438,340 in 1980, an increase of more than 3 times.

Table 4.9 Trends in School Enrolment for the Population Aged 15-19 Years by Levels of Education and Sex, 1970 and 1980

(Per cent)

Level of Education	1970			1980		
	Male	Female	Total	Male	Female	Total
Primary	1.9	0.9	1.4	3.7	2.8	3.3
Secondary	12.5	8.5	10.5	23.3	19.9	21.6
-General	10.8	7.0	8.9	21.2	17.7	19.4
-Vocational	1.3	1.0	1.1	2.0	2.0	2.0
-Teacher training	0.4	0.5	0.5	0.1	0.2	0.2
University	0.4	0.4	0.4	1.3	1.6	1.4
Others	0.3	0.1	0.2	0.5	0.1	0.3
Total attending	15.2	9.9	12.5	28.8	24.4	26.6
N (thousands)	278	187	465	776	662	1438
Total population (15-19 years)	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	1832	1885	3717	2695	2710	5405

Source: 1. Calculated from 1970 Population and Housing Census, Table 14.
2. Calculated from 1980 Population and Housing Census, Table 20.

Table 4.10 and Table 4.11 shows that in 1970, about 11 per cent of the total population aged 15-19 years in 1970 were attending primary level, increasing to 12 per cent in 1980. Although the population under study is supposed to be enrolled at the secondary level (12-17 years) and the university level (18-19 Years), the increasing proportion of the population attending primary level, implies that there is widespread late entry in schooling and repetition of grades, particularly in view of the contraction of primary schooling from 7 to 6 years after 1977, and the change in the main primary school ages from 7-13 to 6-11. This is supported by other studies. According to one study (Leonor, 1982: 105-125), out of 1000 enrolled in grade 1, only 263 end up in grade 7, the terminal year of primary schooling. Taking the national average of transition from grade 7 to grade 8, at 84 per cent, that study further estimated that out of 1000 who enrolled in grade 1, only 221 will reach grade 8.

Table 4.10 and Table 4.11 also indicate that there has been a tremendous increase in the enrolment at the university level. Among those still attending educational institutions in this age group, the proportion enrolled in university increased from 3.5 per cent to 5.5 per cent, an increase of more than 50 per cent in a span of ten years. During the period 1970-1980, there has been a decline in enrolment in all categories of the secondary level of education except for a slight improvement in the secondary-general level.

Table 4.10 Proportion Distribution of Population Aged 15-19 Years Currently Attending School by Level of Schooling Attended and Sex, 1970

(Per cent)

Level of Education	15 Years		16 Years		17 Years		18 Years		19 Years		15-19 Years		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Both
1.Primary	24.3	17.2	10.7	7.7	5.9	4.4	4.1	3.6	3.1	3.1	12.3	9.0	11.0
2.Secondary	74.5	81.9	87.4	91.2	90.3	92.6	87.1	85.5	78.4	72.3	83.0	85.7	84.0
-General	73.8	80.7	82.7	82.9	75.1	70.0	61.1	52.3	45.0	34.7	71.5	70.0	70.9
-Vocational	0.6	0.7	3.3	4.4	10.3	12.9	19.0	22.1	27.3	28.9	8.5	10.1	9.1
-Teacher training	0.1	0.5	1.4	4.1	4.9	9.7	7.0	11.1	6.1	8.7	3.0	5.6	4.0
3.University	0.0	0.1	0.3	0.3	1.4	2.2	6.1	10.2	15.6	24.1	2.8	4.6	3.5
4.Others	1.2	0.8	1.6	0.7	2.4	0.8	2.7	0.7	2.9	0.5	1.9	0.7	1.5
Total attending	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	88	59	68	45	54	36	40	27	28	20	278	187	465

Source: Calculated from 1970 Population and Housing Census, Table 15.

Table 4.11 Proportion Distribution of Population Aged 15-19 Years Currently Attending School by Level of Schooling Attended and Sex, 1980

(Per cent)

Level of Education	15 Years		16 Years		17 Years		18 Years		19 Years		15-19 Years		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Both
1.Primary	24.2	21.2	11.9	10.2	7.7	7.6	6.8	6.9	6.8	7.2	12.9	11.7	12.3
2.Secondary	74.1	78.3	86.1	89.9	88.9	89.6	84.5	81.8	68.9	61.5	81.0	81.5	81.2
-General	73.8	77.8	83.9	86.1	81.0	79.8	69.4	63.6	47.9	38.2	73.6	72.6	73.1
-Vocational	0.3	0.5	2.1	2.7	7.5	9.0	14.2	16.1	19.9	21.0	7.0	8.0	7.5
-Teacher training	0.0	0.0	0.1	0.1	0.4	0.8	0.9	2.1	1.1	2.3	0.4	0.9	0.6
3.University	0.1	0.1	0.4	0.4	1.9	2.3	7.4	10.9	22.8	30.9	4.6	6.4	5.5
4.Others	1.6	0.4	1.6	0.5	1.5	0.4	1.3	0.4	1.5	0.4	1.5	0.4	1.0
Total attending	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	211	176	179	152	159	135	130	114	97	85	776	662	1438

Source: Calculated from 1980 Population and Housing Census, Table 21.

Looking at the differences by sex, in 1970, the proportion of male enrolment exceeded that of female enrolment at the primary level, secondary-general level and others. However, the proportion of female enrolment exceeded that of male enrolment at the secondary-vocational level, secondary-teacher training level and university level. The same trend continued in 1980, though with a reduced margin. The relatively high enrolment of females at the teacher training and the vocational secondary level could be attributed to the fact that females want to be sure of getting a job after completing each level of schooling. Moreover, teacher training is thought to be the most suitable job preparation for women.

As expected, an increase in age is associated with a decreased participation at primary level of education and a resultant increase at other levels of educational attainment. The 16 years olds have the highest proportion enrolled at general secondary level (83 per cent in 1970 and 85 per cent in 1980). Similarly, increasing age is associated with increasing participation at the vocational, teacher training and university level. For the population aged 19 years, the proportion enrolled at the general secondary level is 43 per cent followed by university level (27 per cent) and vocational secondary level (20 per cent).

Turning to the educational attainment characteristics of the economically active population aged 15-19 in Table 4.12, it has been found that the proportion with no education has almost halved during the period 1970-1980, from about 6.5 per cent to 3.7 per cent. The proportion of females with no education is higher than males in both the censuses.

Table 4.12 Economically Active Population Aged 15-19 Years by Educational Attainment and Sex, 1970 and 1980

(Per cent)

Educational Attainment	1970			1980		
	Male	Female	Total	Male	Female	Total
1.No education	5.3	7.7	6.5	3.0	4.3	3.7
2.Educational attainment	94.1	91.9	93.0	96.8	95.4	96.1
2.1 Primary	91.6	90.4	91.0	87.4	89.3	88.3
2.2 Secondary	2.5	1.5	2.0	9.3	5.9	7.6
-General	2.3	1.2	1.8	8.7	4.9	6.8
-Vocational	0.1	0.1	0.1	0.5	0.6	0.5
-Teacher training	0.1	0.2	0.1	0.1	0.4	0.3
2.3 University	0.0	0.0	0.0	0.1	0.2	0.2
2.4 Other education	0.0	0.0	0.0	0.0	0.0	0.0
3.Unknown	0.6	0.4	0.5	0.2	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	1451	1493	2944	1712	1630	3342

Source: 1.Calculated from `Subject Report No.1 Economic Characteristics', 1970 Population and Housing Census, Table 16.
2.Calculated from `Subject Report No.1 Economic Characteristics', 1980 Population and Housing Census, Table 17.

The share of various levels of schooling has also changed during the period, particularly for the secondary level of education. Of the total number who were educated in 1970, the proportion with primary schooling accounted for 91 per cent, which decreased to 88 per cent in 1980 with a subsequent increase in other levels of education during the inter-censal period 1970-1980. The increase in all categories of the secondary level of education is more than three fold. It is important to note that the change in educational attainment among those in the work force does not fully reflect the educational advances which have taken place, because many of those who have gone to secondary and higher education are still in school and have not entered the work force yet. Therefore, if this age group becomes 25-29 in 1990, the average educational attainment of those in the work force will have risen further.

4.2.5 Marital Status

An inquiry into the marital status of the population aged 15-19 is also important because this is the starting age group for entering into the family formation process. In Thailand, more than 87 per cent are married by age 34 (ESCAP, 1976: 43-47). As shown in Table 4.13, the proportion of males aged 15-19 who were never married during the 1960-1980 inter-censal period increased to 95 per cent while the proportion of females fell to 82 per cent.

Table 4.13 Proportion Never Married for the Population Aged 15-19 Years by Sex, Thailand, 1960,1970 and 1980

(Per cent)

Year	Male	Female
1960	92.9	86.1
1970	93.1	80.8
1980	95.4	81.7

Source: For 1960 and 1970, ESCAP (1976: 44).
For 1980, NSO (1983: 29).

In Table 4.14, the marital status of the economically active population under study is presented. As can be seen in the Table, in 1970 about 89 per cent of the total active population is never married with rates of 96 per cent for males and 82 per cent for females,

Table 4.14 Economically Active Population Aged 15-19 Years by Marital Status and Sex, 1970 and 1980

(Per cent)

Marital Status	1970			1980		
	Male	Female	Total	Male	Female	Total
Never married	95.7	81.5	88.5	94.0	82.3	88.3
Currently married	4.2	17.2	10.8	5.5	16.4	10.8
Widowed	0.0	0.2	0.1	0.1	0.2	0.2
Divorced	0.1	0.4	0.2	0.1	0.3	0.2
Separated	0.0	0.6	0.3	0.1	0.7	0.4
Unknown	0.0	0.1	0.1	0.2	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
N (thousands)	1451	1493	2944	1712	1630	3342

Source: 1. Calculated from `Subject Report No.1 Economic Characteristics', 1970 Population and Housing Census, Table 12.
2. Calculated from `Subject Report No.1 Economic Characteristics', 1980 Population and Housing Census, Table 12.

while the proportion in 1980 for both sexes remained the same; the proportion never married decreased slightly for males and increased slightly for females. Among the ever-married, `currently married´ was the predominant marital status. All categories of marital status except `never married´ are higher for females than males.

CHAPTER 5

Projection of Enrolment and Labour Force

5.1 Introduction and Assumptions

In the preceding chapter, data based on secondary sources were analyzed. In this chapter, enrolment and labour force projection for the population aged 15-19 years is carried out. Firstly, the population is projected for the period 1980-2005. Then by applying labour force participation rates and enrolment rates respectively to this population, the numbers in the labour force and at school are estimated.

One of the common practices in projecting enrolment and labour force has been to take the most probable variant of population projections as the base population and apply different rates of enrolment and labour force participation rates to it (ILO, 1977, Janjaroen, 1985). In this study, the medium variant of the population projection carried out by the Human Resources Planning Division of the National Economic and Social Development Board (NESDB, 1986) is used as the base population and the base year is 1980. This projection has been officially used for planning purposes and is thought to be the most probable variant.

Before considering assumptions for future enrolment and labour force participation, it will be useful to compare the existing enrolment and labour force

participation in some countries in South-East Asia. This is shown in Table 5.1.

Table 5.1 Cross Country Comparison of Economic Activity Rates and Enrolment Rates for the Population 15-19 Years

Country	Economic Activity Rates	Enrolment Rates
Hong Kong (1981)	43.9	51.1
Indonesia (1980)	39.1	33.1
Malaysia (1980)	41.0	41.8
Thailand (1980)	64.2	26.6
(2005)*	42.0	38.9

Note: * Medium Projection

Source: For Hong Kong, Demographic Year Book 1983, Table 39.
For Indonesia, 1980 Population Census, No.2, Table 12.3 and Table 37.9
For Malaysia, 1980 Population and Housing Census, Table M5.1 and M6.1
For Thailand, 1980 Population and Housing Census, Table 20 and Table 22.

A cross country comparison of the enrolment and the economic activity of the population aged 15-19 years in the South-East Asian region shows that Thailand has the highest economic activity rates and the lowest enrolment rates. Therefore, the government of Thailand is improving participation in schooling. This will have a depressing effect on the economic activity rate.

5.2 Population Projections

The Component Method of Population Projection has been applied for the projection of population. The program used to project population is Fivsin. The program gives the results in five-year age groups and the single

year of age can be obtained. The Component Method of Population Projection is widely used in estimating the future size of the population. The method takes into account the effects on the population structure brought about by changes in fertility, mortality and migration (Shorter, 1978).

The base year population used for projection is reported in the 1980 Population and Housing Census. Age-specific fertility rates and the mortality levels are taken from the NESDB medium variant projection (NESDB, 1986). As discussed before, the medium variant assumption of fertility and mortality prepared and used by NESDB for projecting the Thai population is widely used in the government plans and programmes. Therefore, rather than using three variants of the population projection, it was thought appropriate to use the medium variant of the NESDB and apply three different rates of enrolment and labour force participation. Before discussing the projected size of the population in schooling and labour force, it will be worthwhile to show the projected size of the population aged 15-19 years over the 1980-2005 period. The results obtained are summarized in Table 5.2. It should be noted here that it is suspected that there is understatement of numbers 0-4 years which will affect the future size of population. Furthermore, unlike the official projection figures which were adjusted, the numbers used in the present projection have not been adjusted. So they will not be compatible with the official numbers.

Table 5.2 Projected Population Aged 15-19 Years, 1980-2005

(in Thousands)

Year	Female	Male	Total
1980	2,712	2,696	5,408
1985	2,880	2,980	5,860
1990	2,827	2,935	5,762
1995	2,596	2,682	5,278
2000	3,130	3,169	6,299
2005	3,025	3,078	6,103

As can be seen in the Table, the size of the population aged 15-19 years will increase from 5,408,000 in 1980 to 6,103,000 in 2005. Of the total population in 1980, this group accounted for 12.1 per cent which will decline to 9.3 per cent by the end of the projection period. However, the size of this group will fluctuate. The fluctuation can be attributed to the changing size of the cohort of population entering into motherhood in the various years of the projection period and also to the understatement of the numbers as noted before. Due to these fluctuations, the figures in the present series are not compatible with the official figures which showed that primary school going population will start to decline. This, combined with assumptions of declining fertility, leads to the fluctuation in the size of this age group. In 1980, of the total male population, this group contributed 12.1 per cent, which will fall to 9.5 per cent in 2005. Comparable figure for females stood at 12.1 per cent in 1980 and 9.2 per cent by the year 2005.

5.3 Enrolment Projection

Although the official ages for completing primary, secondary and university level of education are 6-11, 12-17 and 18-24 years respectively, the trend discussed in section 4.2.3 indicated that a person may take a longer period than specified to complete the program at each level. Therefore, some sections of this population will continue to be at the primary level of schooling. Three levels of alternative enrolment scenarios are given, but in all scenarios it has been hypothesized that through the government's continued program of socio-economic development, enrolment will rise. However, the level of enrolment will also depend on the resources the government will be willing to devote to education.

In alternative 1 (A1), enrolment is expected to increase from 26.6 per cent in the base year 1980 to 32.3 per cent in 2005. This alternative is based on the premise that the level of socio-economic development during the projected period will be lower than expected; this will affect the participation in schooling. This can be referred to as low variant enrolment.

The second alternative (A2) is the most probable enrolment scenario. It is assumed that the enrolment rate will moderately increase with the expansion of socio-economic development. Under this alternative, enrolment will increase from 26.6 per cent in 1980 to 39.0 per cent in 2005. This is referred to as the medium variant.

The third alternative (A3) is an upper limit and assumes that enrolment in schooling of the ages under study will increase rapidly. Under this variant, enrolment will increase from 26.6 per cent in the base year 1980 to 46.5 per cent by the end of the projection period (see Table 5.3 and Figure 5.1 for enrolment rates and Table 5.4 for age-sex specific enrolment rates). These rates are computed assuming a linear increase in enrolment over the 1980 rates.

Under the low, medium and high variants of enrolment, the size of population enrolled in 2005 will be 1,971,000, 2,374,000 and 2,8367,000 respectively. The absolute difference between the low and high variants will be 865,000, and between the medium and high variants 462,000 people. Of the projected school enrolment, share of the population aged 15, 16, 17, 18 and 19 years in the terminal year of 2005 would be 24.4, 22.3, 20.3, 18.3 and 14.7 per cent respectively (Table 5.5).

It is to be noted that one earlier study projected 1.5 per cent per annum increment for the primary level, 1 percent for secondary and zero growth rate for the university enrolment (Kirananda et al, 1984: 43-48). Another study which has been used as a background paper for the Sixth Development Plan also assumed a constant growth rate for university enrolment. Both of these studies assumed that enrolment at the university level has increased insignificantly (excluding enrolment in open universities) during the last decade, therefore,

Table 5.3 Enrolment Rates for the Population Aged 15-19 Years, Thailand, 1970-2005

(Per cent)

Year	Assumption 1 (A1)	Assumption 2 (A2)	Assumption 3 (A3)
1970	12.5	12.5	12.5
1980	26.6	26.6	26.6
1985	27.3	27.8	28.2
1990	28.1	29.5	30.8
1995	29.5	32.1	34.8
2000	30.9	35.3	40.0
2005	32.3	39.0	46.5

Figure 5.1 Enrolment Rates for Population Aged 15-19 Years, Both Sexes, 1980-2005

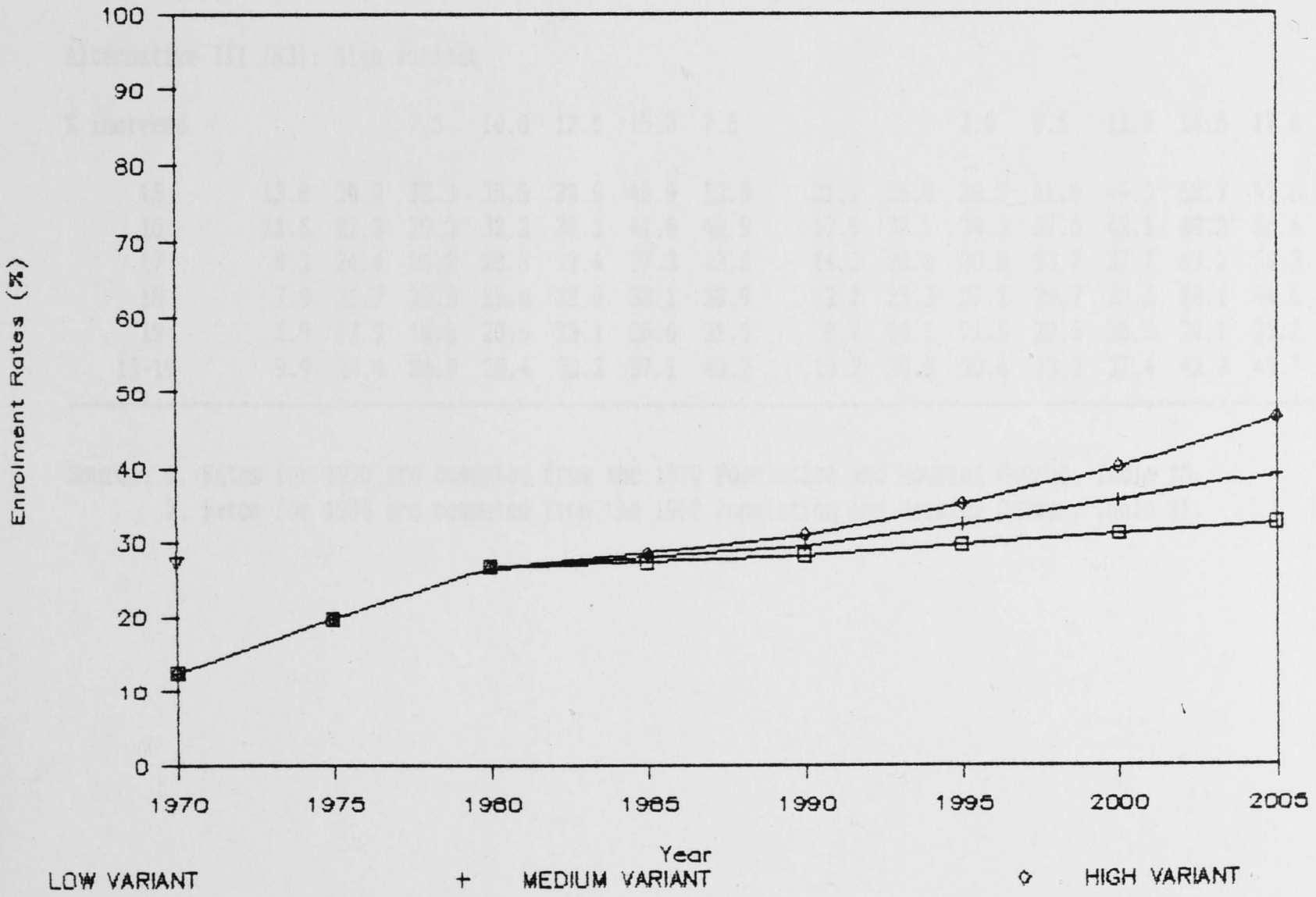


Table 5.4 Estimates of Age-Sex Specific Enrolment Rates for the Population Aged 15-19 Year, Thailand, 1970-2005

Single year of age	Female							Male						
	1970	1980	1985	1990	1995	2000	2005	1970	1980	1985	1990	1995	2000	2005
Alternative I (A1): Low variant														
% increase			3.5	4.0	4.5	5.0	5.5			3.0	3.5	4.0	4.5	5.0
15	13.8	30.0	31.1	32.3	33.8	35.5	37.5	21.1	35.8	36.9	38.2	39.7	41.5	43.6
16	11.6	27.3	28.3	29.4	30.7	32.2	34.0	17.6	32.1	33.1	34.3	35.7	37.3	39.2
17	9.3	24.4	25.3	26.3	27.5	28.9	30.5	14.2	28.8	29.7	30.7	31.9	33.3	35.0
18	7.9	21.7	22.5	23.4	24.5	25.7	27.1	12.2	25.3	26.1	27.0	28.1	29.4	30.9
19	5.9	17.3	17.9	18.6	19.4	20.4	21.5	8.7	20.1	20.7	21.4	22.3	23.3	24.5
15-19	9.9	24.4	25.0	25.9	27.3	28.7	30.0	15.2	28.8	29.4	30.2	31.7	33.2	34.5
Alternative II (A2): Medium variant														
% increase			5.5	7.0	8.5	10.0	11.5			5.0	6.5	8.0	9.5	11.0
15	13.8	30.0	31.7	33.9	36.8	40.5	45.2	21.1	35.8	37.6	40.0	43.2	47.3	52.5
16	11.6	27.3	28.8	30.8	33.4	36.7	40.9	17.6	32.1	33.7	35.9	38.8	42.5	47.2
17	9.3	24.4	25.7	27.5	29.8	32.8	36.6	14.2	28.8	30.2	32.2	34.8	38.1	42.3
18	7.9	21.7	22.9	24.5	26.6	29.3	32.7	12.2	25.3	26.6	28.3	30.6	33.5	37.2
19	5.9	17.3	18.3	19.6	21.3	23.4	26.1	8.7	20.1	21.1	22.5	24.3	26.6	29.5
15-19	9.9	24.4	25.5	27.2	29.7	32.7	36.1	15.2	28.8	29.9	31.7	34.5	37.8	41.6
Alternative III (A3): High variant														
% increase			7.5	10.0	12.5	15.0	7.5			7.0	9.5	12.0	14.5	17.0
15	13.8	30.0	32.3	35.5	39.9	45.9	53.9	21.1	35.8	38.3	41.9	46.9	53.7	62.8
16	11.6	27.3	29.3	32.2	36.2	41.6	48.9	17.6	32.1	34.3	37.6	42.1	48.2	56.4
17	9.3	24.4	26.2	28.8	32.4	37.3	43.8	14.2	28.8	30.8	33.7	37.7	43.2	50.5
18	7.9	21.7	23.3	25.6	28.8	33.1	38.9	12.2	25.3	27.1	29.7	33.3	38.1	44.6
19	5.9	17.3	18.6	20.5	23.1	26.6	31.3	8.7	20.1	21.5	23.5	26.3	30.1	35.2
15-19	9.9	24.4	26.0	28.4	32.2	37.1	43.2	15.2	28.8	30.4	33.2	37.4	42.9	49.7

Source: 1. Rates for 1970 are computed from the 1970 Population and Housing Census, Table 15.
2. Rates for 1980 are computed from the 1980 Population and Housing Census, Table 21.

Table 5.7 Estimates of Age-Sex Specific Participation Rates for the Population Aged 15-19 Year, Thailand, 1970-2005

Single year of age	Female							Male						
	1970	1980	1985	1990	1995	2000	2005	1970	1980	1985	1990	1995	2000	2005
Alternative I (A1): High variant														
% increase			-3.5	-4.0	-4.5	-5.0	-5.5			-3.0	-3.5	-4.0	-4.5	-5.0
15	77.0	59.0	56.9	54.6	52.1	49.5	46.8	72.0	57.0	55.3	53.4	51.3	49.0	46.6
16	79.0	62.0	59.8	57.4	54.8	52.1	49.2	77.0	62.0	60.1	58.0	55.7	53.2	50.5
17	81.0	63.0	60.8	58.4	55.8	53.0	50.1	80.0	67.0	65.0	62.7	60.2	57.5	54.6
18	80.0	64.0	61.8	59.3	56.6	53.8	50.8	84.0	70.0	67.9	65.5	62.9	60.1	57.1
19	81.0	66.0	63.7	61.2	58.4	55.5	52.4	85.0	75.0	72.8	70.3	67.5	64.5	61.3
15-19	79.5	62.7	60.6	58.3	55.5	52.7	49.9	79.2	65.8	64.2	62.1	59.4	56.7	54.1
Alternative II (A2): Medium variant														
% increase			-5.5	-7.0	-8.5	-10.0	-11.5			-5.0	-6.5	-8.0	-9.5	-11.0
15	77.0	59.0	55.8	51.9	47.5	42.8	37.9	72.0	57.0	54.2	50.7	46.6	42.2	37.6
16	79.0	62.0	58.6	54.5	49.9	44.9	39.7	77.0	62.0	58.9	55.1	50.7	45.9	40.9
17	81.0	63.0	59.5	55.3	50.6	45.5	40.3	80.0	67.0	63.7	59.6	54.8	49.6	44.1
18	80.0	64.0	60.5	56.3	51.5	46.4	41.1	84.0	70.0	66.5	62.2	57.2	51.8	46.1
19	81.0	66.0	62.4	58.0	53.1	47.8	42.3	85.0	75.0	71.3	66.7	61.4	55.6	49.5
15-19	79.5	62.7	59.3	55.3	50.5	45.5	40.3	79.2	65.8	62.9	59.0	54.0	48.9	43.7
Alternative III (A3): Low variant														
% increase			-7.5	-10.0	-12.5	-15.0	-17.5			-7.0	-9.5	-12.0	-14.5	-17.0
15	77.0	59.0	54.6	49.1	43.0	36.6	30.2	72.0	57.0	53.0	48.0	42.2	36.1	30.0
16	79.0	62.0	57.4	51.7	45.2	38.4	31.7	77.0	62.0	57.7	52.2	45.9	39.2	32.5
17	81.0	63.0	58.3	52.5	45.9	39.0	32.2	80.0	67.0	62.3	56.4	49.6	42.4	35.2
18	80.0	64.0	59.0	53.1	46.5	39.5	32.6	84.0	70.0	65.1	58.9	51.8	44.3	36.8
19	81.0	66.0	61.1	55.0	48.1	40.9	33.7	85.0	75.0	69.8	63.2	55.6	47.5	39.4
15-19	79.5	62.7	58.1	52.3	45.7	38.8	32.1	79.2	65.8	61.4	55.8	49.0	41.8	34.8

Source: 1. Rates for 1970 are taken from Subject Report No.1 Economic Characteristics, 1970 Population and Housing Census, Table 34.
2. Rates for 1980 are taken from Subject Report No.1 Economic Characteristics, 1980 Population and Housing Census, Table 4.

there will be no significant change for the projection period.

Considering the government drive to improve the participation in secondary schools, most of the projections carried out by various agencies have similar increment rates to those assumed by this projection. As a postscript, it will be worthwhile to compare the projected enrolment in the present series with the government series. In Table 2.5 (Chapter 2), the government projected enrolment is shown. From Table 4.11, it has been observed that of the total population aged 15-19 years who are enrolled about 81.2 per cent are enrolled at the various levels of secondary schooling. Although the proportion of the population under study enrolled at the primary level has shown an increment, it is assumed to remain constant for the projection period for the reasons of improvement in quality of the educational system and it is less likely that there will be dramatic change in the proportion enrolled at the university level. Thus, keeping the projected enrolment at the secondary level constant at 81.2 per cent for the projection period, the absolute number to be enrolled at the secondary level under A1, A2 and A3 in the year 2000 will be 1,582,588, 1,803,452 and 2,046,240 respectively. Although under A1 the number enrolled will be slightly lower than the government projection, interestingly, the medium variant is slightly higher than the government projection. It should also be noted that the government projection refers to the year 2001 whereas the present

series refers to the year 2000, and also that the government base year population is higher than the base year population used in this series. Even then, the present series assumed a 35 per cent enrolment rate for the year 2000 for the population aged 15-19 years; this is higher than the government figure of about 25 per cent for ages 12-17 year in the year 2001.

If there is to be an improvement in quality of schooling, meaning a higher proportion of the official age group being enrolled in the official level of schooling, the above number will significantly increase. This implies that the medium variant is the most likely scenario for the school enrolment projection.

5.4 Labour Force Projection

The labour force participation rate for the ages under study is very much influenced by levels of enrolment. Therefore, the labour force participation rates are assumed in the light of the enrolment assumption.

In alternative 1 (A1), it is assumed that because of the lower level of development activities and slow growth of the economy, the labour force participation rate will not be affected much and will change slowly. The participation rate under this assumption will decrease from 64.2 per cent in the base year to 52 per cent by the end of the projection period. This can be referred to as the high variant labour force which corresponds to the low variant of enrolment.

The second alternative (A2) labour force scenario corresponds to the moderate enrolment scenario and this is the most probable variant. As in the enrolment scenario, it is assumed that government development efforts will gear up the economic development, subsequently increasing participation in schooling and reducing the percentage in the labour force. Under this assumption, the participation rate will decline from 64.2 per cent in the base year to 42 per cent by the year 2005.

Alternative three (A3) of the labour force projection corresponds to the high enrolment assumption and all assumptions applied to high enrolment are expected to hold true for labour force also. Under this assumption, the labour force participation rate will decline from about 64 per cent in the base year to 33.5 per cent in the terminal year of the projection (Refer to Table 5.6 and Figure 5.2 for labour force participation rates and Table 5.7 for age-sex specific participation rates).

Comparison can also be made between labour force participation in the present series and other projections. However, hardly any information is available for comparison for the population aged 15-19 years. One such available source is the International Labour Office (ILO) projection. Even then, the base year populations of the ILO and the present series differ as the ILO projection is based on the 1975 population. The medium

Table 5.6 Projected Labour Force Participation Rates for the Population Aged 15-19 Years, Thailand, 1970-2005

Year	Assumption 1 (A1)	Assumption 2 (A2)	Assumption 3 (A3)
1970	79.4	79.4	79.4
1980	64.2	64.2	64.2
1985	62.4	61.1	59.8
1990	60.2	57.2	54.1
1995	57.5	52.3	47.4
2000	54.7	47.2	40.3
2005	52.0	42.0	33.5

Figure 5.2 Participation Rates for Population Aged 15-19 Years, Both Sexes, 1980-2005

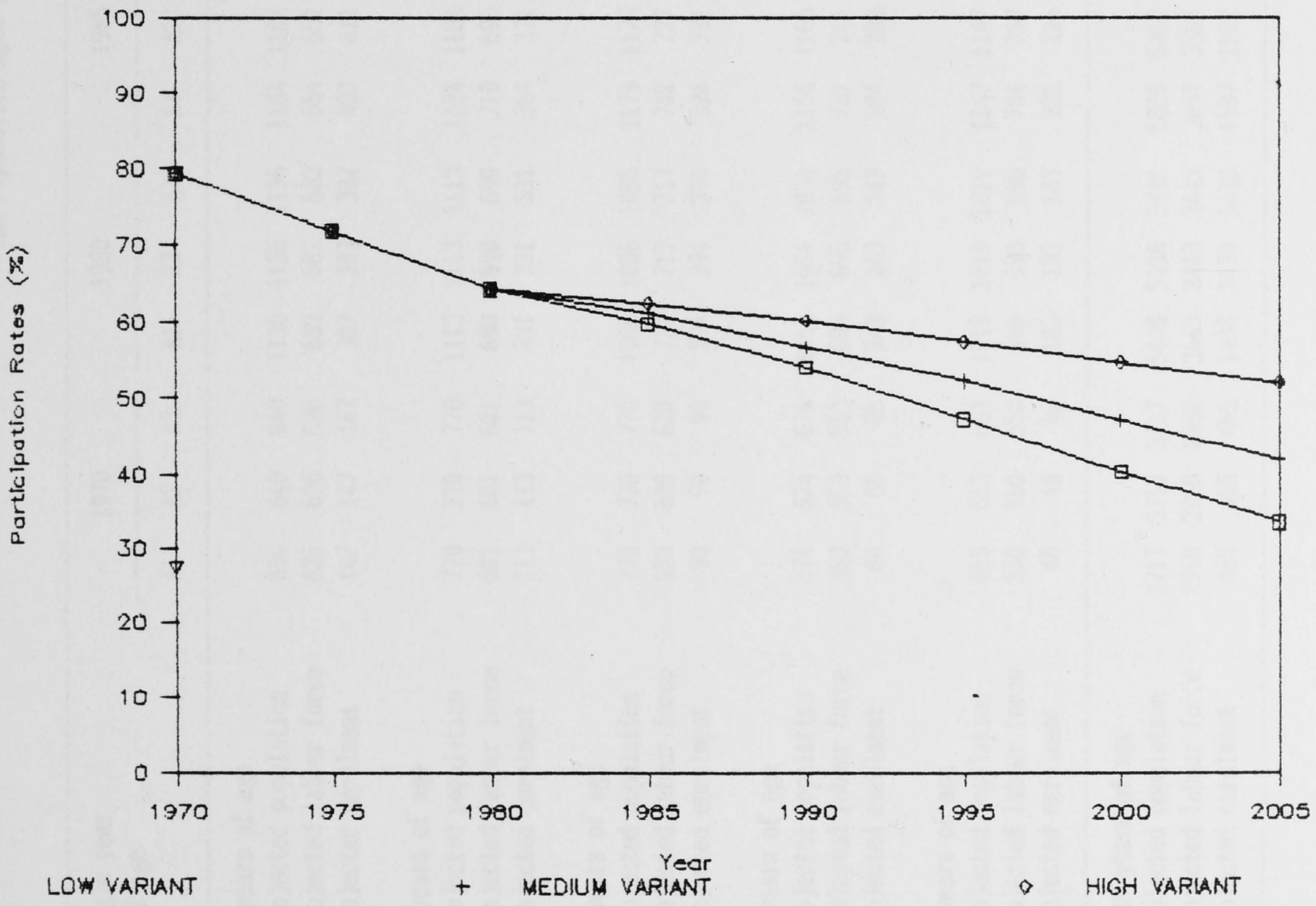


Table 5.5 Projected Population, Labour Force and School Enrolment for the Population Aged 15-19 Years, 1970-2005

(in Thousands)

Single year of age	1970			1980			1985			1990			1995			2000			2005		
	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3	A1	A2	A3
15 years of age																					
Projected population	840	840	840	1136	1136	1136	1184	1184	1184	1105	1105	1105	1124	1124	1124	1278	1278	1278	1184	1184	1184
Projected labour force	626	626	626	682	682	682	664	651	637	597	566	536	581	529	479	629	543	464	553	447	356
Projected enrolment	147	147	147	387	387	387	403	411	418	390	409	428	414	450	488	492	561	636	481	579	692
16 years of age																					
Projected population	770	770	770	1113	1113	1113	1184	1184	1184	1140	1140	1140	1054	1054	1054	1299	1299	1299	1202	1202	1202
Projected labour force	601	601	601	690	690	690	710	696	682	658	625	592	582	530	481	684	590	504	599	484	386
Projected enrolment	113	113	113	331	331	331	364	371	377	363	381	398	350	381	413	452	514	584	440	530	633
17 years of age																					
Projected population	770	770	770	1086	1086	1086	1179	1179	1179	1167	1167	1167	1014	1014	1014	1293	1293	1293	1221	1221	1221
Projected labour force	620	620	620	717	717	717	742	727	711	707	671	636	589	535	485	715	615	527	639	516	412
Projected enrolment	90	90	90	294	294	294	324	331	336	333	349	365	302	328	356	402	459	521	401	486	576
18 years of age																					
Projected population	674	674	674	1054	1054	1054	1166	1166	1166	1176	1176	1176	1023	1023	1023	1248	1248	1248	1240	1240	1240
Projected labour force	553	553	553	695	695	695	757	741	724	734	698	659	612	557	503	711	613	523	669	541	430
Projected enrolment	68	68	68	243	243	243	284	288	294	297	311	326	269	293	318	344	392	444	360	434	518
19 years of age																					
Projected population	663	663	663	1019	1019	1019	1147	1147	1147	1174	1174	1174	1063	1063	1063	1181	1181	1181	1256	1256	1256
Projected labour force	550	550	550	690	690	690	784	767	751	773	733	695	670	609	552	709	611	523	714	577	459
Projected enrolment	48	48	48	183	183	183	222	226	230	235	248	259	222	242	263	259	295	335	289	349	417
15-19 years of age																					
Projected population	3717	3717	3717	5408	5408	5408	5860	5860	5860	5762	5762	5762	5278	5278	5278	6299	6299	6299	6103	6103	6103
Projected labour force	2950	2950	2950	3443	3443	3443	3657	3582	3505	3469	3293	3118	3034	2760	2500	3448	2972	2541	3174	2565	2043
Projected enrolment	465	465	465	1438	1438	1438	1597	1622	1655	1618	1698	1776	1557	1694	1838	1949	2222	2520	1971	2378	2836

Note: 1970 and 1980 figures are actual

variant of the ILO projection estimated a labour force participation rate of 51.5 percent for the population aged 15-19 for the year 2000. The corresponding figure estimated by the medium variant series of the present series is 47.2 per cent. The high variant (A1) labour force participation rate puts the figure at 54.7 per cent. The difference in the medium variant of both projections is about 3 per cent and upon examination, it is found that the ILO projected participation for 1980 stands at 67.5 per cent, whereas the observed participation rate in that year is found to be 64.2 per cent. So the difference between the participation rates can be attributed to the different years of the projection.

5.5 Employment Projection

In projecting employment, consideration is given to (1) enrolment assumptions (2) labour force participation and (3) overall growth of the economy. Three different employment scenarios are assumed and are applied to the projected medium variant labour force participation discussed earlier in this series. Keeping in view these factors the following assumptions are made:

A.1 Reduced employment: Under this assumption, enrolment will slightly increase with labour force participation remaining at a high level. The implied assumption is that the growth of the economy will be slower, affecting these rates. As a result, the proportion of employed is expected to go down.

A.2 Constant growth: The rate of employment prevailing in the country will continue to prevail. Under this assumption, growth rates are held constant at the 1980 level .

A.3 Accelerated Growth: The government plans to reduce unemployment rates. If the projected GNP of 5 percent per annum is achieved, it is likely that more jobs will be created and the proportion of employed will increase despite government efforts to retain the majority of this group in schooling. Although the prospect of enrolment going up is not to be ruled out, it is the attraction of jobs that will be more the driving force for people to enter labour force and remain employed rather than continue schooling and face an uncertain future. Therefore, a linear growth rate of 0.5 percent per year for males and 0.7 percent for females is assumed from 1980 onwards. The alternative scenarios of employment for the next 25 years are shown in Table 5.8.

Table 5.8 Proportion Employed in the Labour Force for the Population Aged 15-19 Years, Thailand, 1980-2005

	Female						Male					
Assumptions	1980	1985	1990	1995	2000	2005	1980	1985	1990	1995	2000	2005
A.1	61.9	60.7	59.5	58.3	57.1	56.0	59.6	58.4	57.2	56.1	55.0	53.9
A.2	61.9	61.9	61.9	61.9	61.9	61.9	59.6	59.6	59.6	59.6	59.6	59.6
A.3	61.9	64.1	66.3	68.6	71.0	73.5	59.6	61.1	62.9	64.2	65.8	67.4

CHAPTER 6

SUMMARY AND CONCLUSION

The objective of this study was to examine the relationship between population dynamics, education and manpower planning in Thailand with particular reference to the age group 15-19 years. Data for the study were primarily drawn from secondary sources, mainly censuses. The study also utilized and analyzed the 1 per cent sample tape of the 1980 census to supplement the study. The topic has particular importance in light of the fact that Thailand is experiencing rapid fertility decline; the age group under study is the last of the cohorts born under the earlier, high fertility regime and will be much affected by the ongoing process of socio-economic and demographic change.

The first chapter was devoted to the discussion of the trends in population growth and education and development planning. As in other developing countries, the population grew very fast in the post-World War II period in Thailand. Alarmed by the rapid increase in population, the government had to change its pro-natalist policy and adopt a policy to control population growth. In 1970, the first official population policy was announced. Since then, the government of Thailand has been attempting a comprehensive population policy. The population policies in Thailand form part and parcel of development planning and are incorporated in the socio-

economic development plans. The government 's population policy aims at improving the quality of life with the improvement in income and state of mind (NESDB, 1987: 1).

The second chapter is devoted to population dynamics and educational planning. There has been a rapid expansion of the educational facilities in recent years. The overall literacy rate is estimated at 88 per cent in 1980, including 92 per cent for males and 85 per cent for females (Table 2.1).

The government of Thailand is committed to further expansion of the educational facilities. The increase in overall average annual enrolments at the primary level was estimated to be around 2 per cent for the 1970s, and the increase in secondary and tertiary level enrolments was highest among the South-east Asian countries (Table 2.2).

Officially, the 6-11 age group is considered as the primary school age, the 12-17 age group as the secondary school age and the 18-23 age group as the university level. In 1985, the enrolment ratios for primary, secondary and higher education stood at 96 per cent, 31 per cent and 6 percent respectively (Table 2.5). Because of declining fertility, universal primary schooling is very close to being achieved. However, it was observed that the school enrolment ratio is usually overestimated because of the counting of late entrants and repetition of grades. Therefore, the enrolment for the official age group may be lower than discussed. By the year 1992, the

primary school going population will start to decline while the secondary school going population will still be growing until 1997 (Table 2.6); this implies that the effect of fertility decline in the higher age groups will be delayed.

The third chapter focuses on the economic activities of the Thai population. It is observed that the level of economic activity is very high, but there has been a gradual decline in the participation rates over the years. The overall participation rate for both sexes declined from 80 per cent in 1960 to 75 per cent in 1970 and to 66 per cent in 1980 (Table 3.1 and Table 3.2).

The decline in the labour force participation for both sexes was highest at 11-14 years and 65 years and over. However, the decline in female labour force participation is more pronounced and is attributed to modernization, industrialization and other aspects of the development of Thai society. It was also recognized that as society modernizes and industrializes, the female work force tends to be replaced by the male work force, despite their eminent role in trade and commerce.

The employment status of the labour force is dominated by the privately employed and own account workers. Similarly, the structure of the labour force is predominantly agricultural (Table 3.3). However, there is a gradual shift from the traditional sector, that is agriculture, to the modern sector (manufacturing and service sectors). According to educational status, those

who had not reached high school predominate in the labour force and this group is concentrated in the agricultural sector. As expected, the more educated tend to be observed in the modern sectors (Table 3.4).

The unemployment rate was estimated at 1.7 per cent in 1982 but was found to be highest for the vocational high school graduates and for females (Table 3.5 and 3.8). This indicates that the educational system is not catering to the specific needs of the various sectors of the economy. This may be partially attributed to deficiency in education and manpower planning. The projected employment structure indicates that the share of the agricultural sector will continue to decline, and so will the share of the below high school educated. The unemployment rate will more than double to 3.5 per cent and the share of the population in the below high school category will be more than 60 per cent in 1992 (Table 3.9 and 3.10).

The fourth chapter takes the case of the population aged 15-19 years and examines its schooling and labour force participation. An examination of the single-year age data indicates that fertility started to decline in Thailand in the mid-1960s (Table 4.1). There has been a substantial decline in the economic activity rate of this group and corresponding increment in the non-economic activity rates. The decline in the female economic activity rate is higher than that for males. As noted before, the overall decline in participation in economic

activity is attributed to the expansion of educational facilities, industrial growth and displacement of the female labour force by male workers (Table 4.2 and 4.3). Looking at the single year age groups, as expected, the proportion of the population economically active increases with age. The proportion of students in schooling ranges from the highest of 82 per cent for age 15 to 77 per cent for age 19. The unemployment rate for the combined age group is 6.2 per cent, and at its highest for age 18. Waiting for the farm season accounts for one-third of the economically active population. It is interesting to note that the female unemployment rate is lower than the male rate which is opposite to the overall situation in which more females are unemployed. It is likely that the growth of the modern sectors has primarily benefited younger females. Across the non-economically active population, the proportion of homemakers increases with the decrease in the proportion of students (Table 4.4-4.6).

Compared to 71 per cent of the total workforce engaged in agricultural pursuits, the proportion for 15-19 years is 80 per cent, with many presumably involved as farm family labour. However, the change in the structure of the labour force follows the overall trend observed at the national level (Table 4.7).

About 26.6 per cent of the 15-19 year age group is participating in school and of those who are enrolled, 84 per cent are enrolled at the secondary level. It should

be noted here that this age group consisted of two official levels of education, those aged 15-17 are supposed to be enrolled at the secondary level and those aged 18-19 at the university level. Tables 4.10 and 4.11, however, show that about 12 per cent of this group were still enrolled at the primary level indicating that there is widespread late entry and repetition in the educational system. Male participation in secondary schooling is lower than that of females at ages 15-17 years but is higher at ages 18-19. However, the overall enrolment for females is higher than for males; this indicates that female education is increasing faster than male education.

In chapter five, using the medium variant fertility and mortality assumptions used in official planning, the future size of population, school enrolments and the labour force for the population aged 15-19 years are estimated. The medium variant of the population projections, as used in the official estimates, is the most probable scenario. According to this projection, the population of this age group will probably start to decline by 2000-2005. Under the low, medium and high variant of educational enrloment rates, the size of the population enrolled will be 1,971,000, 2,375,000 and 2,837,000 respectively in 2005. The enrolment of this age group is estimated to increase to 32, 39 and 47 per cent by the year 2005, from the 1980 base of 26 per cent, under the low, medium and high variant respectively. Because of differential treatment of numbers used in

projection, the numbers projected here are not strictly comparable with the government figures which estimated the size of primary school populaion to decline by 1997.

Taking into account the projected enrolment, the labour force participation for the 15-19 age group is assumed. In all assumptions, the future labour force participation is anticipated to decline from 79.4 per cent in the base year (1980) to 52, 42 and 34 per cent under the high, medium and low variants respectively by the year 2005. Based on both the labour force and enrolment scenarios, the employment rate for the economically active population is assumed to range from 54 per cent to 67 per cent (Table 4.19-4.20) for the projection period. The study considers the medium variant of enrolment, labour force participation and employment as the most probable scenario of future events for the population under study.

From the above series, it appears that for the foreseeable future, despite the decline in fertility, the numbers aged 15-19 in the labour force will continue to grow. But by the end of the 20th century, the population of Thailand will be much more mature. Thailand has been undergoing socio-economic and demographic transition. All strata of the population are being affected, but one of the most affected is 15-19 year age group. The age group 15-19 is not only entering the labour force but is also entering the family formation process. So, it is vital that appropriate policies are formulated and implemented

to shape the future direction of change. If the government succeeds in improving the educational level of the young cohorts, this will have a big effect in raising productivity because these cohorts are large in absolute size, and will be followed by smaller cohorts; they will be in the labour force for a long time. The levels of education they reach now will affect labour productivity over a lengthy period. Similarly, higher levels of education and participation will further accelerate the decline in birth rate, thus ushering in an accelerated demographic transition. One aspect of this transition will be coping with the rising aspirations of the population.

With the decline in population growth, economic development is expected to be faster; the aspirations of younger population will rise faster. Therefore, along with raising the economic growth, efforts should be directed to devising job-oriented curriculum and lowering job expectations. The future schooling policy should be tailored to reduce dropouts, late entrants and repeaters with improvement in course content so that they can fit into the job market of an expanding economy and modernizing society.

Further study is warranted to examine the rural-urban differentials in education and employment. Thailand is characterized by the dominance of Bangkok in many ways, particulary in its monopoly of the so called modern sector. The aggregated figures for the nation as a whole

disguise important regional variations, the main one being Bangkok metropolis and the central region compared with the rest of the country.

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