

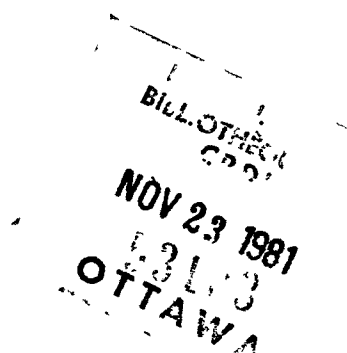
**SEAPRAP RESEARCH  
REPORT NO. 37**

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**RAPID POPULATION GROWTH, LIVING CONDITIONS  
AND FERTILITY REDUCTION IMPLICATION  
(BANGKOK METROPOLIS)**



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April 1979**

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## PREFACE

This is a report of the implementation of a research proposal that was selected for an award from the Southeast Asia Population Research Award Program (SEAPRAP) from the International Development Research Centre, Regional Office for Asia, Singapore.

I would like to take this opportunity to thank the coordinator of the SEAPRAP project and the committee members.

While carrying out this research and writing the report, I received much assistance and direction from Dr. Sucharti Prasitrathsin, as a consultant in this research.

I am also thankful to Dr. Pedro V. Flores and Dr. Ampon Na-Marn for their advice to do this research.

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April 1979

## TABLE OF CONTENTS

	Page
PREFACE .....	i
TABLE OF CONTENTS .....	ii
CHAPTER I. INTRODUCTION .....	1
A. The Distribution of Population in Bangkok Metropolis Area ...	3
B. The Living Conditions .....	3
C. Child Rearing .....	3
D. Attitude Towards Family Planning .....	3
CHAPTER II. METHODOLOGY AND RESEARCH IMPLEMENTATION .....	6
A. Objective .....	6
B. Variables .....	6
C. Research Methodology .....	7
D. Conceptual Framework and Hypotheses .....	8
CHAPTER III. RESULTS OF THE SURVEY .....	10
A. Demographic Structure of the Bangkok Metropolis Population ..	10
B. Distribution of Respondents .....	15
C. Living Condition, Child Rearing Practices, Ideal Family Size and Attitude Toward Family Planning .....	22
D. Relationships Between the Number of Living Children and Housing Conditions .....	30
E. Relationship Between Ideal Number of Children and Housing Conditions .....	33
F. Multiple Regression Analysis .....	36
CONCLUSION .....	41

## CHAPTER I

## INTRODUCTION

The Bangkok Metropolis has been experiencing rapid population growth at 5.1 percent per annum for 1960-1970 and 5.7 for 1970-1977.<sup>1</sup> This high rate is due to natural increase and heavy rural-urban migration.

The rapid growth of population has caused various problems, e.g., housing shortages, and economic, social, political and environmental problems. There have been many attempts from time to time to solve or reduce these problems by means of controlling the population growth in the Metropolitan area. Two of the major strategies have been family planning and rural development.

For urban areas it is obvious that the birth rate has decreased, especially in Bangkok Metropolis. However the rate of population growth has been high because the rate of mortality has declined more rapidly than the birth rate, and the rate of internal migration has been high. So further reduction in the birth rate in Bangkok Metropolis is still necessary. Factors affecting it should also be studied in greater detail than was done in previous studies.

There are many studies on fertility and birth rates. Most of these studies focus on the relation between age, education and economic status with fertility variables. However the impact of living conditions on fertility reduction has not been studied before. This research project evaluates the implications of the rapid population growth and living conditions on fertility and birth rates.

There are numerous studies on fertility, and factors affecting it. For instance, the Institute of Population Studies, Chulalongkorn University made a study on "The Rural and Urban Population of Thailand:

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<sup>1</sup>Formula  $\frac{P_2}{P_1} = e^{rn}$  by using population figures from population registers.

Comparative Profiles".<sup>1</sup> The study shows that fertility in the urban areas declines more rapidly than that in rural areas for various reasons. The average of education in urban areas is higher than rural areas, so the family planning project is more readily accepted among the urban population than among the rural people. Urban life is more concerned with economic problems than rural life, thus the urban people desire a smaller family than the rural people. The average age of those who get married in the urban population is higher than their rural counterparts.

Another study by Sidney Goldstein,<sup>2</sup> "Interrelations Between Migration and Fertility in Population Redistribution in Thailand", shows the fertility level of the migrant women is not only below that of the non-migrant in Bangkok but also far below that of both non-migrant and migrant women in rural, agricultural areas. However, his study focused on interrelations between migration and fertility disregarding the living and housing condition factors which may have a very significant impact on the fertility reduction of the urban people.

Some studies related to fertility and housing shortages in the Metropolitan area, have also been made. For instance the Thai University Research Associates, in a study on urbanization in the Bangkok Centred Region, Thailand, discussed the problem of housing shortages and slum settlements.<sup>3</sup> The National Research Council and Department of Sociology, Chulalongkorn University, made a study of the needs and problems of children and youth in four slums in Bangkok. The Faculty of Social Administration, Thammasat University, made a survey of the squatter slum at Klong Toey, Bangkok. These studies recognized the existing problems of the housing shortage in Bangkok but no attempt was made to explain the interrelations between housing problems and fertility reduction. This research project intends to study this specific interrelated problem.

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<sup>1</sup> See, Visid Prachuabmoh and Others, The Rural and Urban Population of Thailand: Comparative Profiles, Research Report No. 8, Institute of Population Studies, Chulalongkorn University, 1972.

<sup>2</sup> See, Sidney Goldstein, 1971, Interrelations Between Migration and Fertility in Population Redistribution in Thailand. Institute of Population Studies, Chulalongkorn University.

<sup>3</sup> See, Thai University Research Associates, Urbanization in the Bangkok Centred Region Thailand, Final report 1975.

This research project was designed to study the structure and inter-relations of population growth, living conditions and fertility. Specifically to meet the objective the research project encompasses the following inter-related subjects:

A. THE DISTRIBUTION OF POPULATION IN BANGKOK METROPOLIS AREA

A detailed map that shows the distribution and density of population in Bangkok Metropolis will be made. This will show the pattern of population growth and present distribution.

B. THE LIVING CONDITIONS

The evaluation of living conditions will include housing shortage, sub-family in extended family, house ownership, size of house and land, number of rooms, distribution of residential location from the centres of business, education and other community parameters. An attempt will be made to investigate whether these factors are related to a decrease or an increase of fertility levels.

C. CHILD REARING

Another variable that may be closely related to fertility reduction is child rearing practices. If the child rearing responsibilities are given to another non-working relative member of the household the probability of the married couple to have more children may be greater than if there is no non-working relative member to take care of the children. A series of questions will be asked selected families to obtain data which will be further analyzed to determine interrelationships of fertility reduction with housing and living conditions.

D. ATTITUDE TOWARDS FAMILY PLANNING

Another aspect of this research project will involve knowledge, attitudes and practices of family planning as related to fertility. The factors in turn will be related to living conditions and attitudes towards population growth in the urban area.

Two major sources of data are used in this research project: population registers and a sample survey.

### Population Registers

Basic characteristics of the population will be collected on a sampling basis from the population registers at the district offices. Sample selection is 1 : 10 for families.

Migration, fertility and mortality data will be collected from the population statistics at the district offices by using monthly statistics.

In assembling statistics on birth and death from the district offices it became evident that there were some anomalies. There is a high birth rate in a district where there is a hospital, because there are some people from other districts or other provinces near Bangkok Metropolis that come to the hospital to have their children. Similarly, there is a high death rate in a district where a hospital is located.

### Sample Survey

Data on living conditions, fertility, KAP variables, and child rearing problems will be collected with the use of an interview sample survey.

In order to meet the objectives of this research project, the following data will be collected.

Basic characteristics of population such as age, sex, geographical distribution of population, occupation and education will be collected from the population registers and sample interviews.

Data on fertility and family planning such as number of children born, number of living children, number of household members, knowledge about contraceptive methods, attitudes towards contraception and specific contraceptive methods, practices of contraception and experiences with specific methods will be collected.

Child rearing practices such as who takes care of the children, time parents spend at home and with children, and parents' aspirations for children's education will be determined from sample interviews.

Housing characteristics such as family and household structure, attitude toward the housing shortage, house ownership, size of land, number of rooms and room-sharing among the household members will be obtained in the sample interviews.

The research project will provide the pattern of population distribution, population density, population growth, fertility and living conditions. All of these data should be useful in establishing future guidelines for a population policy in Bangkok Metropolis.

In implementing family planning programs the policy-makers ought to know not only how people generally behave and what their attitude towards family planning are, but also how housing, living and social conditions are related to fertility reduction.



## CHAPTER II

## METHODOLOGY AND RESEARCH IMPLEMENTATION

## A. OBJECTIVE

This research project is a study of the structure and interrelations among the population growth, living conditions and fertility. Attempts have therefore been made to obtain answers to the following questions:

- 1) Do fertility levels differ according to living condition?
- 2) From among the different living condition variables, which factors are related to a decrease or an increase of fertility levels?
- 3) What are the attitudes towards family planning?

Fertility levels in relation to living condition variables will be determined with the aid of multiple regression analysis. The survey will cover 12 districts in the Bangkok Metropolis.

## B. VARIABLES

In this project, variables investigated are classified as dependent or independent variables as follows:

Dependent Variables

- 1) Number of children ever born, as a measure of fertility.
- 2) Attitude towards the planning of families;
  - a) the total number of children considered ideal
  - b) attitudes towards family planning.

Independent Variables

- 1) Demography
  - a) number of children still living
  - b) age at marriage for husband and wife
  - c) age of wife
- 2) The living conditions
  - a) housing shortage
  - b) sub-family in extended family

- c) house ownership
  - d) size of house and land
  - e) number of rooms
  - f) distribution of residential location from the office and the school
  - g) child rearing practices
- 3) Other
- a) education
  - b) religion of husband and wife

## C. RESEARCH METHODOLOGY

### Data Collection Method

Two major sources of data were used in this research project: population registers and a sample survey.

#### a) Population Registers

Basic characteristics of the population, i.e., number, age, sex, were collected on a sample basis from the population registers at 24 district offices. Sample selection is 1 : 10 for families.

Migration, fertility and mortality data were collected from the population statistics at the district office by using monthly statistics.

#### b) Sample Survey

In this study, a sample size of 300 families (0.1%) was used. One half of the sample was in inner area and the other half was in the outer area of Bangkok Metropolis.

#### c) Questionnaire (consists of 3 parts)

##### Part 1 : Housing characteristics collected

from Head of Household or spouse:

- family and household structure
- attitude toward housing shortage
- house ownership
- size of land
- number of rooms
- room sharing among the household members
- sharing among the household members
- household income
- household expense

Part 2 : Data collected from both head of household and spouses:

- attitude toward housing shortage
- child rearing practices

Part 3 : Fertility and Family Planning collected from both head of household and spouses who are not older than 59 years old:

- family planning practices
- knowledge about contraceptive methods
- attitude towards contraception and specific contraceptive methods
- number of children born
- number of living children

#### D. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The conceptual framework is as follows: rapid population growth in the metropolitan area has an adverse impact on the living conditions of its people by increasing the required number of rooms in each house and reducing the size of land on which a house is built, thereby pushing people out to live in the suburban areas. The unfavorable living condition, in turn, has a negative impact on fertility. The smaller size of the house, the fewer number of rooms and the reduced size of land force people to have fewer children.

The living condition also has an impact on child rearing practice through the formation of a nuclear family. Couples who live with their parental families after a childbirth can have their parents take care of the child. They have less of a burden in having a child than those who are pushed to live in a nuclear family situated in a smaller house. The latter also practice family planning more than the former.

The above statements can be systematized in equation form. These equations indicate the manner in which the variables are analyzed. They are as follows:

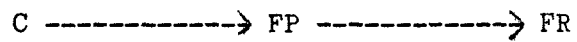
1. Rapid population growth (RP) unfavorably affects the living condition (L) (e.g. smaller house, smaller piece of land, locate in a suburb)

RP -----> L

2. Unfavorable living Condition (L) unfavorably affects child rearing practices (C)



3. Child rearing practices adversely affect fertility (FR) through family planning practice (FP)



Thus it is expected that rapid population growth in the metropolitan area would have a negative effect on the fertility of its people.

## CHAPTER III

## RESULTS OF THE SURVEY

## A. DEMOGRAPHIC STRUCTURE OF THE BANGKOK METROPOLIS POPULATION

1. Age

The sample survey from the Population Registers at the district offices shows the following:

Number of population aged at 0-4 is fewer than 5-9, 10-14 and 15-19 consecutively. These statistics show fertility has been decreasing in Bangkok Metropolis since 1966.

Number of population aged at 15-19 is the largest group due to previously high fertility rates and rural-urban migration. This is evident in Table 1.

2. Sex Ratio

Number of males is always greater than females. This is shown in Figure 1.

3. Population Distribution

The growth area of Bangkok Metropolis covers about 1,600 square kilometers. Expansion of the city has followed the lines of the old klongs although many are now replaced by streets and highways. Beyond the central city, residential, commercial and industrial sites are interspersed with huge pockets of unused land. The central city itself has also expanded. (See map 1, map 2).

4. Population Growth

The development of Bangkok Metropolis is one manifestation of population growth in Thailand. Ten per cent of Thailand's people live there. After World War II, the population of Bangkok Metropolis was about 700,000 people; today, it exceeds four-and-a-half million.

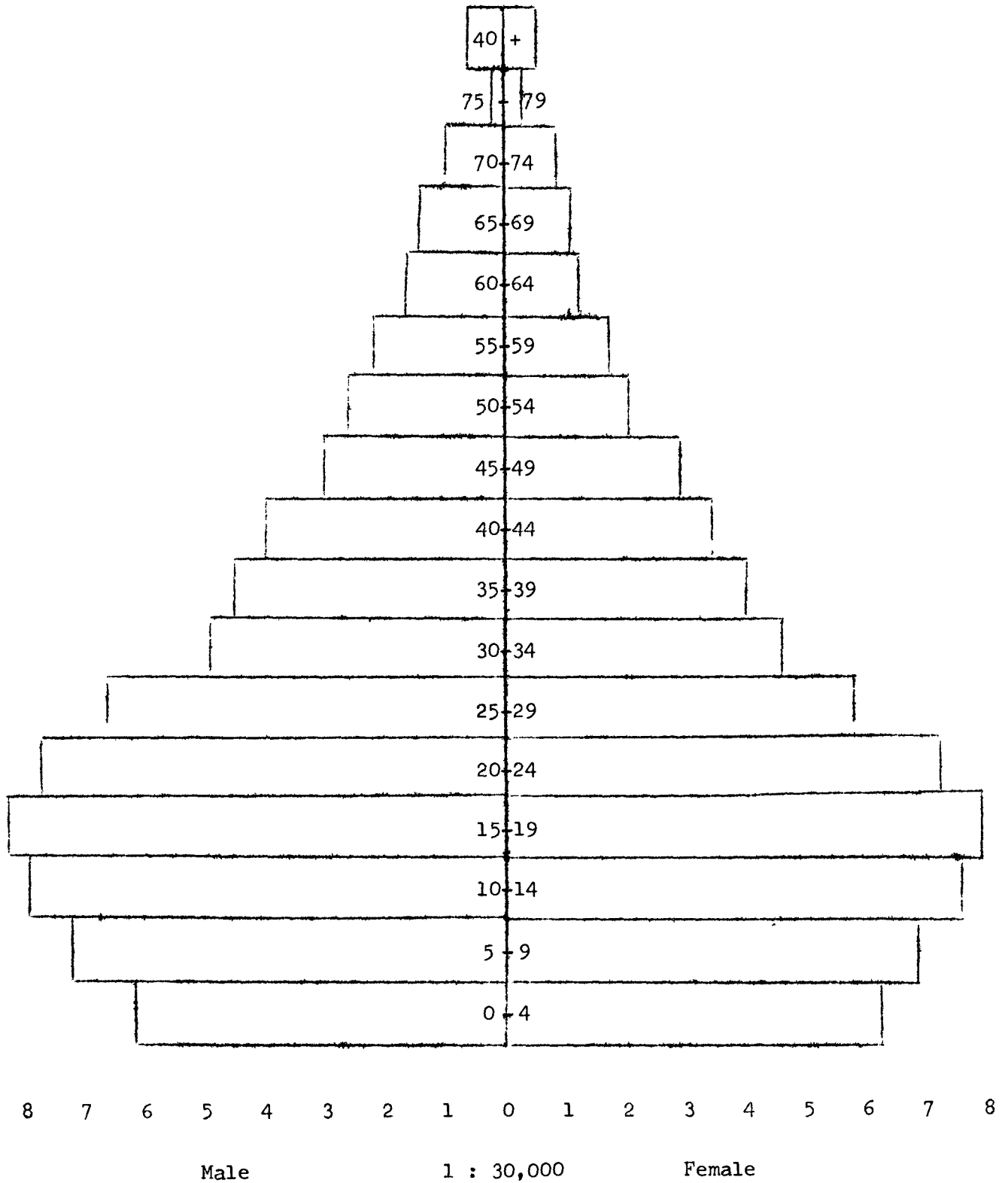
The population in Bangkok Metropolis has been growing at increasing rates. The present annual rate of growth is estimated to be between 4.2 and 4.5 per cent. A population growing at a rate of 4.5 per cent per year will double in about 15½ years. A projection of the expected population in selected future years is shown by the following estimates (see Table 2).

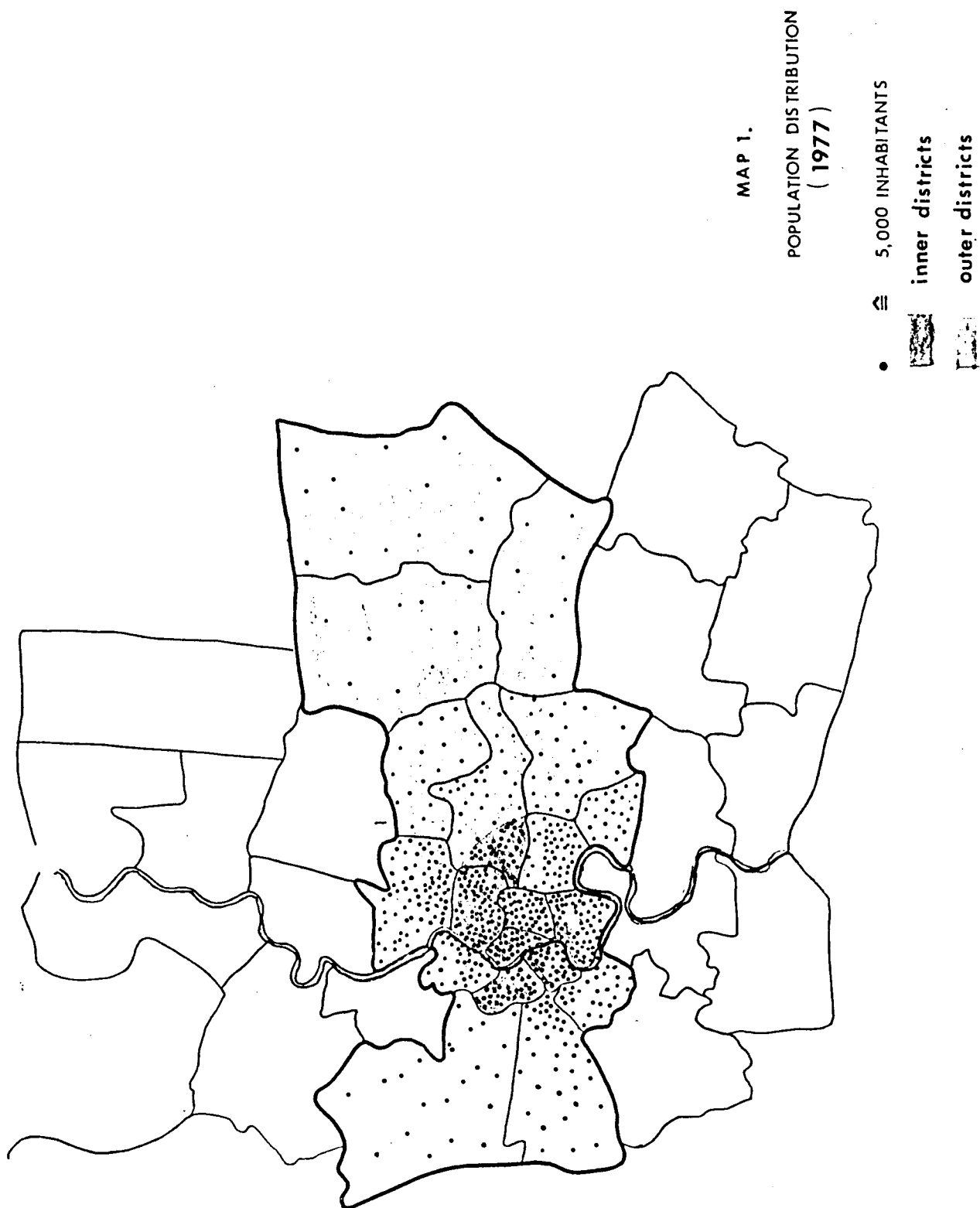
Table 1. Population By Age and Sex in Bangkok Metropolis : July 1976

Age	Total		Inner Districts				Outer Districts			
	Male	Female	Male		Male	Female	Male		Male	Female
			x100	x100			x100	x100		
			Female	Male			Female	Male		
0-4	8.6	9.4	97.2	8.1	8.9	95.7	99.1	9.3	10.2	10.2
5-9	10.6	10.6	106.0	10.1	10.2	103.3	109.8	11.4	11.2	11.2
10-14	11.5	11.7	104.1	11.1	11.4	102.3	106.7	12.1	12.3	12.3
15-19	11.8	11.9	105.4	11.9	11.8	106.2	104.2	11.6	12.1	12.1
20-24	10.9	10.9	105.9	11.3	11.2	105.5	106.6	10.3	10.5	10.5
25-29	9.5	8.9	112.6	9.6	9.2	108.9	118.8	9.4	8.6	8.6
30-34	7.0	6.9	108.6	7.1	6.8	109.5	106.9	6.9	6.9	6.9
35-39	6.7	6.3	113.0	6.7	6.3	110.7	116.1	6.7	6.3	6.3
40-44	5.7	5.4	113.2	5.8	5.5	110.7	117.7	5.7	5.2	5.2
45-49	4.3	4.3	107.3	4.4	4.4	105.7	110.0	4.2	4.1	4.1
50-54	3.2	3.2	105.8	3.3	3.4	102.3	111.8	3.1	3.0	3.0
55-59	2.6	2.6	104.1	2.8	2.8	104.4	103.9	2.2	2.3	2.3
60-64	1.8	1.9	100.1	2.0	2.1	101.2	99.6	1.6	1.8	1.8
65-69	1.6	1.6	106.8	1.8	1.8	104.8	113.2	1.4	1.3	1.3
70-74	1.2	1.3	98.5	1.3	1.4	95.7	103.1	1.0	1.0	1.0
75-79	0.9	0.4	106.1	0.4	0.4	104.7	111.8	0.3	0.3	0.3
80 and over	0.7	0.8	99.3	0.8	0.8	94.8	108.1	0.7	0.7	0.7
Unknown	1.8	1.9	99.9	1.5	1.6	99.6	99.2	2.1	2.3	2.3
Total	100.0	100.0	106.0	100.0	100.0	104.8	108.2	100.0	100.0	100.0
	(215,031)	(202,651)		(129,095)	(123,217)		(85,934)		(79,433)	

Figure 1

Population, By Age and Sex in Bangkok Metropolis: July 1976







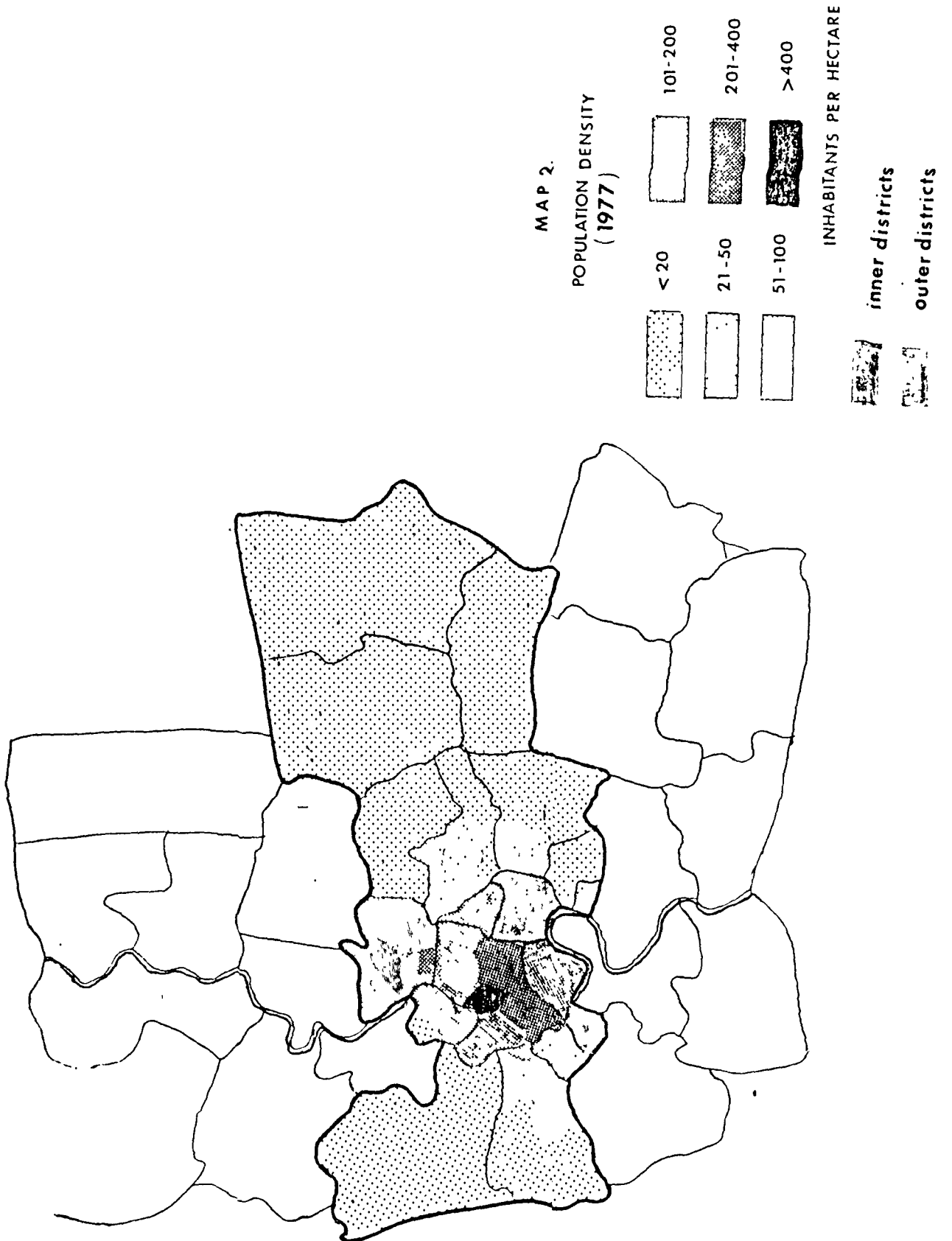


Table 2. Population Projects

Year	r = 4.3	r = 4.5
2520	4,732,249	4,749,647
2525	5,841,026	5,918,925
2530	7,209,592	7,376,057
2535	8,898,816	9,191,909
2540	10,983,830	11,454,791

r = Annual growth rate

#### B. DISTRIBUTION OF RESPONDENTS

The method of collecting data for the study was to interview by a questionnaire a total of 300 respondents. The respondents were spread over two areas, the inner districts and outer districts of Bangkok Metropolis. Distribution according to certain characteristics is presented as an overall view of these respondents.

Details of the educational level of the respondents is presented in Table 4. The difference in the educational level of the respondents between inner districts and outer districts are clearly evident. In inner districts the educational level is higher than found in the outer districts. In inner districts, the respondents who completed university level secondary vocational, Maw Saw 4-5 and Pratom 5-7 were larger than the respondents in outer districts. (see Table 4).

##### 1. Age and Sex

When the respondents were grouped by age, the largest number of respondents fell into the 26-35 year category. The smallest proportion being in the 15-25, 56-65 years age groups. The number of males is only slightly greater than the number of females. There is no difference in age and sex between inner districts and outer districts. This distribution is shown in Table 3.

Table 3. Distribution of Respondents by Age and Sex

Age	Ave.		Inner Districts		Outer Districts	
	Male	Female	Male	Female	Male	Female
15-25	5.9	15.4	3.5	19.1	8.4	11.8
26-35	32.4	44.6	35.6	42.9	28.9	46.3
36-45	32.4	23.9	29.9	20.6	34.9	26.9
46-55	19.4	13.1	18.4	11.1	20.5	14.9
56-65	9.4	3.1	12.6	6.3	7.2	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(170)	(130)	(87)	(63)	(83)	(67)

Table 4. Distribution of Respondents by Education

Education Level	Ave.	Inner Districts	Outer Districts
No Education	5.0	6.7	3.3
Primary Level			
Pratom 1-4	23.3	14.7	32.0
Pratom 5-7	6.7	7.3	6.0
Secondary Level			
Maw Saw 1-3	23.7	22.7	24.7
Maw Saw 4-5	3.0	4.7	1.3
Vocational			
Primary	14.3	13.3	15.3
Secondary	6.3	8.7	4.0
University Level	14.7	16.0	13.3
Other Education	0.3	0.7	0.0
Unknown	2.7	5.3	0.0
Total	100.0	100.0	100.0
(N)	(300)	(150)	(150)

## 2. Education

The educational level for respondents was divided into four groups; primary level (pratom 1-4), secondary level (Maw Saw 1-3) vocational (primary) and university level. Only about 14.7% had completed university level education and 14.3% had graduated from primary vocational school. The largest group of respondents 23.3% and 23.7% had completed primary school in Pratom 1-4 and secondary school Maw Saw 1-3 respectively.

## 3. Religion

The religion predominating in both inner and outer districts is Buddhist; 96.4% of the respondents were Buddhist and 3.3% were Muslims. Data on distribution by religion are shown in Table 5.

Table 5. Distribution by Religion

Religion	Ave.	Inner Districts	Outer Districts
Buddhist	96.4	96.0	96.7
Christian	0.3	0.7	0.0
Islam	3.3	3.3	3.3
Total	100.0	100.0	100.0
(N)	(300)	(150)	(150)

## 4. Income

The majority of respondents in Bangkok Metropolis earned 1,000-3,000 Baht per month, the average income in inner districts is higher than in the outer districts. This is evident in Table 6.

Table 6. Distribution by Income

Income per month (Baht)	Ave.	Inner Districts	Outer Districts
Less than 1,000	16.3	10.7	22.0
1,000-2,000	45.7	44.7	46.7
2,001-3,000	27.0	30.6	23.3
Over 3,000	11.0	14.0	8.0
Total	100.0	100.0	100.0
(N)	(300)	(150)	(150)

### 5. House Ownership and Land Ownership

It is well known that there is an acute housing shortage in the Metropolitan Area. The phenomenon which reflects this shortage of housing, especially for people with low incomes, is the existence of a large number of slums in the Metropolitan Area.

This study shows that 59.7% of respondents own their homes, 41.3%, do not own their residence in the group of non-ownerships, 15.3% live with their parents, 7.0% are trying to buy the house by hire-purchase and 18.0% rent (see Table 7).

Table 7. Distribution by House Ownership

House Ownership	Ave.	Inner Districts	Outer Districts
House owner	59.7	51.3	68.0
Not house owner			
- Living with extended family	15.3	19.3	11.3
- hire-purchase	7.0	10.0	4.0
- renting	18.0	19.3	16.7
Total	100.0 (300)	100.0 (150)	100.0 (150)

Only 34.7% of the respondents own land; 65.3% do not own land (see Table 8).

We may also estimate the housing shortage by considering the number of applications for public housing units in comparison to the number of public housing units actually built in each year. Table 9 shows that from 1963 to 1969 there were 68,398 applications exceeding the available number of public housing units. It may also be noted that the large majority of these applications (60,237) are for rental units, which usually are for people with low incomes.

Table 8. Distribution by Land Ownership

Land Ownerships	Ave.	Inner Districts	Outer Districts
Land Owner	34.7	30.7	38.6
Not land owner			
- Lodgers	22.0	25.3	18.6
- Hire-purchase	4.3	6.0	2.6
- Renting	39.0	38.0	40.0
Total	100.0	100.0	100.0
(N)	(300)	(150)	(150)

Table 9. Comparison Between the Number of Public Housing Units Built and The Number of Applications

Year	Number of Public Housing		Number of Application		Number of Application
	for hire- purchase	for rent	for hire- purchase	for rent	Exceeding the Number of Units Available
1963	-	320	-	20,212	19,892
1964	21	656	1,254	19,082	20,469
1965	-	336	-	2,821	2,485
1966	524	190	5,882	1,803	1,613
1967	263	672	4,819	7,919	11,703
1968	-	480	-	8,500	8,020
1969	154	400	4,870	4,870	4,716
Total	962	3,406	16,825	60,237	68,898

Source: Public Housing Office, Department of Public Welfare,  
Ministry of Interior

#### 6. Age at First Marriage

With respect to age at first marriage, data show the largest percentage of men were in the 30 years and over age group; the largest percentage of women were in the 22-23 years age group (see Table 10).

Table 10. Age at First Marriage

Age at Marriage (Years)	Ave.		Inner Districts		Outer Districts	
	Men	Women	Men	Women	Men	Women
Below 16	0.3	1.7	0.7	2.0	0.0	1.3
16-17	1.3	5.3	0.7	7.3	2.0	3.3
18-19	2.7	16.7	2.0	17.3	3.3	16.0
20-21	12.0	18.7	10.0	17.0	14.0	20.0
22-23	12.7	20.7	9.3	18.7	16.0	22.7
24-25	17.0	18.0	20.0	14.7	14.0	21.3
26-27	16.3	9.0	17.0	11.3	15.3	6.7
28-29	15.7	6.3	16.0	7.3	15.3	6.3
30 +	22.0	3.7	24.0	4.0	20.0	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average	(300)	(300)	(150)	(150)	(150)	(150)

### 7. Marital Status

Data showing marital status for respondents in this study are shown in Table 11. There were no respondents who were widowed or divorced in this study.

Table 11. Marital Status

Marital Status	Average	Inner Districts	Outer Districts
Live together	87.3	86.7	88.0
Temporary separate			
- ½ year	7.0	6.7	7.3
- 1 year	1.3	2.0	0.7
- 2 years	1.7	2.7	0.7
- over 2 years	2.7	2.0	3.3
Total	100.0	100.0	100.0
(N)	(300)	(150)	(150)

Table 12. Characteristics of Sampled Households

Characteristics of Sampled Households	Ave.	Inner Districts	Outer Districts
- Size			
Small 1-3	33.3	34.7	32.0
Medium 4-5	39.7	40.7	38.7
Big 6 and over	27.0	24.7	29.3
Total	100.0	100.0	100.0
- Type of house			
One storey house	36.3	29.3	43.3
Two storey house	51.0	50.7	51.3
Flat	8.0	13.3	2.7
Shop house	4.7	6.7	2.7
Total	100.0	100.0	100.0
- Number of rooms			
1	19.0	18.7	19.3
2	35.0	32.7	37.3
3	27.3	27.3	27.3
4 and over	18.7	21.3	16.0
Total	100.0	100.0	100.0
- Area of the household			
Less than 50	40.3	48.0	33.3
50-100	28.0	26.0	32.0
101-200	20.7	16.0	28.0
201-400	5.0	5.3	4.7
Over 400	5.0	4.7	2.0
Total	100.0	100.0	100.0
	(300)	(150)	(150)



C. LIVING CONDITION, CHILD REARING PRACTICES, IDEAL FAMILY SIZE AND ATTITUDE TOWARD FAMILY PLANNING

1. Living Condition

1.1 Characteristics of Sampled Household

Size: We classified the size of a family into 3 categories: small, medium and large. The small family has 1-3 members, medium has 4-5 and a large family has 6 and over (see Table 12).

Type: Most houses are two storey ones (51.0%) and one storey ones (36.3%). A small percentage are flats and shop houses (see Table 12).

Number of rooms: Most of the houses have 2 rooms (35.3%) and 3 rooms (27.3%) (see Table 12).

Home size: Most of the houses have a living area of less than 50 square metres (40.3%) and 51-100 square metres (28.0%). There are few large houses of 200-400 square metres because the cost of land in the metropolitan area is very high (see Table 12).

1.2 Number of Marriages in Household

The majority of couples, 76.3% in this study married once, 19.7% married twice and 4.0% thrice or more. Most of the sample families are nuclear families (see Table 13).

Table 13. Number of Marriages in a Household

Number	Ave.	Inner Districts	Outer Districts
1	76.3	74.0	78.7
2	19.7	22.0	17.3
3 +	4.0	4.0	4.0
Total	100.0 (300)	100.0 (150)	100.0 (150)

### 1.3 Satisfaction with Living Condition

Most of the respondents were satisfied with their living conditions. Only 29.3% said that they were not satisfied. The main causes for dissatisfaction were (a) wanted to own a house (b) bad environment and (c) the house was too small (see Tables 14, 15).

Table 14. Satisfaction of Respondents with Living Conditions

Satisfied with Living Condition	Ave.	Inner Districts	Outer Districts
Yes	70.7	66.7	74.7
No	29.3	33.3	25.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

Table 15. Causes of Dissatisfaction with Housing

Cause	Ave.	Inner Districts	Outer Districts
a) Wanted owner house	44.3	44.0	44.7
b) bad environment	35.2	34.0	36.8
c) house too small	20.5	22.0	18.4
Total	100.0 (88)	100.0 (50)	100.0 (38)

### 1.4 Planning to Move

The survey revealed that 37.7% of the respondents were planning to move. In inner districts, the trend of planning to move is higher than outer districts (see Table 16).

Table 16. Respondent's Planning to Move

Plan to remove	Ave.	Inner Districts	Outer Districts
Planned	37.7	44.7	30.7
Unplanned	62.3	55.3	69.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

## 2. Child Rearing Practices

### 2.1 Number of Children Born Alive

The number of children in this case study may be divided into two family types as follows: the new family without children and the family with children ranging in number from 1 to (more) 6. Most had 1-3 children (57.0%), 15.0% had no children and the rest had more than 4 children (see Table 17).

Table 17. Number of Children Born Alive

Number of Children	Ave.	Inner Districts	Outer Districts
0	15.0	14.7	15.3
1	23.0	21.3	24.7
2	17.7	20.0	15.3
3	16.3	19.3	13.3
4	12.3	10.0	14.7
5	8.3	8.0	8.7
6 +	7.3	6.7	8.0
Total	100.0 (300)	100.0 (150)	100.0 (150)

## 2.2 Child Rearing Practices

In practice, most of the bridal pairs look after their children. Housewives always take responsibility in self rearing. In the family where both parents work outside the home, their parents (wives' parents or husbands' parents) take over this responsibility. In addition to parents, relatives also helped in the rearing. Only 17.6% hired outside help to assist with the rearing of their children. In inner districts parents either reared children by themselves or hired a maid, whereas in the outer districts a greater percentage of children is taken care of by grand-parents or relatives (see Table 18).

Table 18. Child Rearing Practices

Child Rearing Practices	Ave.	Inner Districts	Outer Districts
self rearing	47.1	48.4	45.7
father-mother	23.1	20.3	26.0
relatives	12.2	11.7	12.6
hired	17.6	19.5	15.7
Total	100.0 (255)	100.0 (128)	100.0 (127)

## 2.3 Desire for Children After Marriage

Slightly over one-half of the couples (57.3%) indicated that they would prefer to delay having children, but not for more than two years. They wanted to have their first child during the second year of marriage. The remainder, 42.7%, indicated that they wanted children as soon as possible. In outer districts the percentage for delay in having children is higher than inner districts (see Table 19).

Table 19. Desire for a Child After Marriage

Desire	Ave.	Inner Districts	Outer Districts
First year	42.7	49.3	36.0
Wait second year	57.3	50.7	64.0
Total	100.0 (300)	100.0 (150)	100.0 (150)

## 2.4 How Children Go to School

The grown-up children go to school by themselves (67.5%). The younger children, 24.2%, are taken to school by their parents. Only 8.3% go to school by bus. In outer districts a higher percentage of children go to school by themselves, but a higher percentage of children from the inner district use the school bus (see Table 20).

Table 20. School Procedures

Go by	Ave.	Inner Districts	Outer Districts
Themselves	67.5	62.5	71.7
Parents	24.2	26.1	22.6
School bus	8.3	11.4	5.7
Total	100.0 (194)	100.0 (88)	100.0 (106)

## 3. Ideal Family Size

### 3.1 Ideal Family Size

When the respondents were asked about the ideal family size for their own particular family, most, 58.7%, wanted 2 children and 25.0% wanted 3 children. In outer districts, the trend of big size of family is higher than inner districts (see Table 21).

Table 21. Number of Respondents and Family Size Desired

Number of Children	Ave.	Inner Districts	Outer Districts
1	3.0	4.0	2.0
2	58.7	59.3	58.0
3	25.0	26.0	24.0
4 +	13.3	10.6	16.0
Total	100.0 (300)	100.0 (150)	100.0 (150)

### 3.2 Attitude Toward Number of Living Children

About one half of the respondents (49.7%) indicated that they did not want additional children. These families usually had 1 to 3 children. In the families with only one child they indicated that they had some desire for another child (23%). Where there were more than 3 children, about 14%, there was no desire at all for any more children (see Table 22).

Table 22 Attitude Toward Number of Living Children

Attitude	Ave.	Inner Districts	Outer Districts
No more	14.0	12.7	15.3
Some desire for another child	23.0	23.2	22.7
Enough Children	49.7	47.3	52.0
Not Valid	13.3	16.7	10.0
Total	100.0 (300)	100.0 (150)	100.0 (150)

### 3.3 Ideal Family Size in Bangkok

Most respondents (55.3%) felt 2 children represented the ideal family size. Another 27.7%, felt 3 children would be ideal. Only 10.7% wanted 4 or more children although this number was somewhat higher (13.3%) in the outer districts than in the city (8.0%). Only 6.3% of the family surveyed felt that one child was sufficient.

### 3.4 Number of Additional Children Desired

It was determined that 70.3% of the respondents did not want additional children. This group had 1-7 children. But 21.3% still desired one more additional child. There is no difference in the number of additional children desired between inner districts and outer districts (see Table 24)

Table 23. Ideal Family Size in Bangkok

Number	Ave.	Inner Districts	Outer Districts
1	6.3	7.3	5.3
2	55.3	52.7	58.0
3	27.7	32.0	23.3
4 +	10.7	8.0	13.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

Table 24. Number of Additional Children Desired

No. of child	Ave.	Inner Districts	Outer Districts
0	70.3	71.3	69.3
1	21.7	20.0	23.3
2	8.0	8.7	7.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

#### 4. Attitude Towards Family Planning

##### 4.1 Attitude Toward Family Planning

In general, respondents were willing to answer the questions about their attitude toward family planning. Ninety two percent of the respondents agreed with family planning, 5.0% disagreed. There were 3.0% who did not reply. The main reason for disagreement was that it endangered the health of the mother. There was also some religious opposition (see Table 25).

##### 4.2 Knowledge About Contraception Practices

Almost all of the respondents (90.0%) know about contraception. Very few (10.0%) indicated no knowledge of it. (see Table 26).

Table 25. Attitudes Towards Family Planning

Attitude	Ave.	Inner Districts	Outer Districts
Agree	92.0	92.0	92.0
Disagree	5.0	5.3	4.7
No reply	3.0	2.7	3.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

Table 26. Knowledge About Contraception Practices

Knowledge	Ave.	Inner Districts	Outer Districts
Yes	90.0	91.3	88.7
No	10.0	8.7	11.3
Total	100.0 (300)	100.0 (150)	100.0 (150)

#### 4.3 Contraceptive Methods

Contraceptive methods have always been associated with family planning. The "pill" is the most commonly employed method of contraception in both the inner and outer districts. The I.U.D. device is the least common method of birth control (see Table 27).

Table 27. Contraceptive Methods

Method	Ave.	Inner Districts	Outer Districts
I.U.D.	8.4	1.3	9.7
Pill	40.6	40.4	40.9
Rhythm	23.3	24.8	21.5
Condom	27.7	27.5	28.0
Total	100.0 (202)	100.0 (109)	100.0 (93)



#### D. RELATIONSHIPS BETWEEN THE NUMBER OF LIVING CHILDREN AND HOUSING CONDITIONS

##### Type of House

Data show that the type of house in which a couple live has no significant relationship with the number of living children, although those who lived in a two-storeyed house or a flat tended to have a larger number of living children than those who lived in a one-storeyed house or in a shop-house (Table 28).

##### Size of the Household Compound

It was found that those who lived in smaller houses tended to have no children in a greater percentage than those who lived in larger ones. The percentage of those who had 3-4 children was found to increase with the size of the house but no consistency was found among those who had 5-7 children. In brief the number of living children is not significantly related to the size of the house, although those who lived in larger household compounds tended to have more children than those who lived in smaller ones.

##### House ownership

With respect to the ownership of a house, data clearly show that the house owners generally had fewer children than those who lived with their parents or in rented houses. The relationship between house ownership and the number of living children is significant at .01.

##### Number of Rooms

Equally significant is the number of rooms available in the house. Data show that those who lived in houses with fewer rooms tend to house fewer children than those who lived in houses with more rooms. This is an expected crowding effect of housing conditions on fertility.

##### Satisfaction with housing condition

When asked whether they were satisfied with their housing condition, the majority of them said they were. It was also found the general satisfaction was not significantly related to the number of children. However, those who were not satisfied with the housing condition tend to house more children than those who were. Again this is expected and could be explained by the crowding effect of having many children in the house.

Table 28. Relationships between Living Children and Housing Conditions

Housing Conditions	Number of Living Children				Total	Statistical Test
	0	1-2	3-4	5+		
<u>Type of House</u>						
One-storey house	12.8	44.0	28.5	14.7	100.0(109)	$\chi^2=11.2$
Two-storey house	18.4	37.5	30.3	13.8	100.0(152)	d.f.=9
Flat	12.0	40.0	16.0	32.0	100.0(25)	
Shophouse	-	50.0	35.7	14.3	100.0(14)	
<u>Size of the household</u>						
<u>compound</u>						
Less than 50 Metre <sup>2</sup>	18.8	40.2	28.7	12.3	100.0(122)	$\chi^2=11.5$
50-100 "	14.9	43.2	28.7	12.7	100.0(87)	d.f.=12
101-200 "	12.1	37.9	24.2	25.8	100.0(66)	
201-400	6.7	40.0	40.0	13.3	100.0(15)	
Over 400 "	-	40.0	40.0	20.0	100.0(10)	
<u>House ownership</u>						
House owner	12.8	50.8	24.0	12.4	100.0(179)	$\chi^2=20.9$
Living with extended family	15.2	21.7	41.3	21.7	100.0(46)	d.f.=6
Renting	20.0	28.0	32.0	20.0	100.0(75)	
<u>Number of rooms</u>						
1	32.8	32.8	25.8	8.6	100.0(58)	$\chi^2=24.7$
2	13.2	39.6	29.2	17.9	100.0(106)	d.f.=12
3	11.3	41.3	27.5	20.0	100.0(80)	
4	6.7	53.3	28.9	11.1	100.0(45)	
4 +	-	37.4	45.5	17.1	100.0(11)	
<u>Satisfaction with Housing Condition</u>						
Satisfied	16.0	43.9	28.8	11.3	100.0(212)	$\chi^2=11.1$
Not satisfied	12.5	33.0	28.4	26.1	100.0(88)	d.f.=3

Table 28 (Cont'd)

Housing Conditions	Number of Living Children				Total	Statistical Test
	0	1-2	3-4	5-7		
<u>Child Rearing Practices</u>						
Self rearing	-	49.6	32.8	17.6	100.0(119)	$\chi^2=304.5$
Parents	-	42.4	33.9	23.7	100.0(59)	d.f.=12
Relatives	-	41.9	35.5	22.6	100.0(31)	
Hire	-	54.3	34.8	10.9	100.0(46)	
<u>Monthly Income</u>						
0-800 Baht	27.1	47.9	22.9	27.1	100.0(48)	$\chi^2=54.4$
801-1,500 Baht	17.0	49.6	21.5	17.0	100.0(135)	d.f.=18
1,501-2,500 Baht	10.9	26.2	42.9	10.9	100.0(84)	
2,501-3,500 Baht	-	27.8	27.8	-	100.0(18)	
Over 3,500 Baht	-	33.3	33.3	-	100.0(15)	

Child Rearing Practices

Regarding the relationship between child rearing practices and the number of living children, it is interesting to note that slightly less than half of the population reared children by themselves, about one fifth by their parents and one-tenth by their relatives. Only 18 per cent of the respondents had to hire maids to look after their children. What is more interesting is that those who had their parents look after their children had more children than those who had their relatives to do the same job. These two groups in turn had more children than those who had to rear children by themselves; the latter in turn had more children than those who had to hire maids to look after their children. The relationship between the child rearing practice and the number of living children is significant at .01.

Monthly Income

Data also show that the great majority of the respondents had a monthly income of 1,500 baht (US.\$75) or less. Those who were poorer averaged a greater number of children than those who were better off, even though over half of the former had 2 children or less, but several of them had quite a large number of children. The relationship between income and fertility is also significant at .01.

In general it could be concluded that fertility is related to several social and economic aspects of housing conditions. The analysis presented so far is a crosstabulation of two variables. The analysis to be presented in the following paragraph deals with the relationship between fertility and several independent variables at the same time.

#### E. RELATIONSHIP BETWEEN IDEAL NUMBER OF CHILDREN AND HOUSING CONDITIONS

##### Type of House

Data show that the type of house in which a couple live has no significant relationship with the ideal number of children, although those who lived in a flat and shop house tended to have a larger number of ideal children than those who lived in a one-storeyed house or in a two-storeyed house (Table 29).

##### Size of Household Compound

It was found that those who live in smaller houses tend to house only one child in a greater percentage than those who lived in larger ones. The percentage of those who wanted 3 children was found to increase with the size of the house but no consistency was found among those who wanted more than 3 children. In brief the ideal number of children is not significantly related to the size of the house, although those who lived in larger household compounds tended to want more children than those who lived in smaller ones.

##### House Ownership

With respect to the ownership of a house, data show that the house owners generally wanted fewer children than those who lived with their parents or in rented houses.

##### Number of Rooms

With respect to the number of rooms, data show that those who lived in houses with fewer rooms tend to want fewer children than those who lived in houses with more rooms. This is an expected crowding effect of housing conditions on fertility.

##### Satisfaction with Housing Conditions

Data show that the satisfaction with housing conditions was not significantly related with the ideal number of children. However those who were not satisfied with the housing conditions tended to want more children than those who were. Again this is expected and could be explained by the crowding effect of having many children in the house.

### Child Rearing Practices

Data show that those who had their parents or their relatives look after their children wanted more children than those who had to rear children by themselves or hire someone. The relationship between the child rearing practice and ideal number of children is significant at 0.01.

### Monthly Income

Data also show that the great majority of the respondents had a monthly income of 1,500 baht or less. Those who were poorer averaged a greater ideal number of children than those who were better off, even though over half of the former wanted 2 children or less. The relationship between income and fertility is also significant at 0.01.

In general it could be concluded that fertility is related with several social and economic aspects of housing conditions. The analysis presented so far is a crosstabulation of two variables. The analysis to be presented in the following paragraph deals with the relationship between fertility and several independent variables at the same time.

Table 29. Relationship Between Ideal Number of Children and Housing Conditions

Housing Conditions	<u>Ideal Number of Children</u>				Total	Statistical Test
	1	2	3	3+		
<u>Type of House</u>						
One-storey house	6.4	54.1	28.5	11.0	100.0(109)	$\chi^2=4.3$ d.f.=9
Two-storey house	7.2	57.2	26.3	9.3	100.0(152)	
Flat	4.0	52.0	28.0	16.0	100.0(25)	
Shop house	-	42.9	42.9	14.2	100.0(14)	
<u>Size of the Household</u>						
<u>Compound</u>						
Less than 50 Meter <sup>2</sup>	7.4	60.7	26.2	5.7	100.0(122)	$\chi^2=18.9$ d.f.=12
50-100 "	8.1	54.0	24.1	13.8	100.0(87)	
101-200 "	4.5	51.5	28.8	15.2	100.0(66)	
201-400 "	-	46.7	33.3	20.0	100.0(15)	
Over 400 "	-	30.0	70.0	-	100.0(10)	

Table 29 (Cont'd)

Housing Conditions	Ideal Number of Children				Total	Statistical Test
	1	2	3	3+		
<u>House Ownership</u>						
House owner	4.5	61.5	24.0	10.0	100.0(179)	$\chi^2=15.6$
Living with extended family	2.2	45.7	41.3	10.8	100.0(46)	d.f.=6
Renting	3.3	45.3	39.4	12.0	100.0(75)	
<u>Number of Rooms</u>						
1	10.3	60.3	25.9	3.5	100.0(58)	
2	5.7	53.8	26.4	14.1	100.0(106)	$\chi^2=10.8$
3	5.0	52.5	28.8	13.7	100.0(80)	d.f.=12
4	6.7	47.8	31.1	14.4	100.0(45)	
4 +	-	45.5	36.4	18.1	100.0(11)	
<u>Satisfaction with Housing Condition</u>						
Satisfied	5.1	56.1	27.8	9.0	100.0(212)	$\chi^2=2.8$
Not satisfied	4.5	52.3	28.4	14.8	100.0(88)	d.f.=3
<u>Child Rearing Practices</u>						
Self rearing	3.4	55.5	30.2	10.9	100.0(119)	
Parents	-	49.2	32.2	18.6	100.0(59)	$\chi^2=60.1$
Relatives	6.5	38.7	38.8	16.1	100.0(31)	d.f.=12
Hire	4.3	52.2	37.0	6.5	100.0(46)	
<u>Monthly Income</u>						
0-800 Baht	10.4	70.8	16.7	2.1	100.0(48)	$\chi^2=46.3$
801-1,500 Baht	6.7	63.0	21.5	8.8	100.0(135)	d.f.=18
1,501-2,500 Baht	5.9	41.7	41.7	10.7	100.0(84)	
2,501-3,500 Baht	-	27.8	38.9	33.3	100.0(18)	
Over 3,500 Baht	-	40.0	33.3	26.7	100.0(15)	

## F. MULTIPLE REGRESSION ANALYSIS

Analysis presented above deals with one independent variable at a time. In reality, several independent variables influence a change in the dependent variable. The analysis to be presented below deals with several independent variables at a time via multiple regression analysis which makes it also possible to assess the relative influence of these variables.

The independent variables to be included in the analysis are size of the household compound ( $X_1$ ), number of rooms in the house ( $X_2$ ), and household income ( $X_3$ ). These variables are together as representing social and economic living conditions. The dependent variables are the number of living children ( $Y_1$ ) and ideal number of children ( $Y_2$ ).

### Selection I. $Y_1$ and $X_1$ , $X_2$ and $X_3$

The means and standard deviations of these variables are presented in Table 30.

Table 30. Means and Standard Deviation of the Variables in the Analysis

Variable	Mean	Standard Deviation
$X_1$	100.65000	99.07091
$X_2$	2.48333	1.07715
$X_3$	1986.33333	1092.40879
$Y_1$	2.44000	0.79278

Table 31 shows the simple inter-correlations between the variables. It indicates that the independent variables are not strongly correlated with one another.

Table 31. Simple Inter-correlations Between the Variables

Variable	$X_1$	$X_2$	$X_3$	$Y_1$
$X_1$	1.00000	0.32205	0.46035	0.14624
$X_2$		1.00000	0.25604	0.07911
$X_3$			1.00000	0.30240
$Y_1$				1.00000

The result of the multiple regression analysis reveals that the levels of household income is the most significant variable related to the number of living children. The regression equation indicates that the variable is significantly related to the number of living children at 01.

$$\begin{aligned} \text{Regression equation: } Y_1 &= 2.00304 + 0.00007X_1 - 0.00001X_2 \\ &\quad (0.13943) \quad (-0.00254) \\ &\quad + 0.00022X_3 \\ &\quad (4.74065) \\ R^2 &= 0.10. \end{aligned}$$

All the three independent variables explain about 10 percent of the variance of the dependent variable. In parenthesis are the t-statistics of the regression coefficients. It should be noted that the relationship between the dependent and the independent variables is significant at 01, despite the fact that they explain only 10 percent of the variance of the dependent variable. The test of significance is presented in the analysis-of-variance Table 32.

Table 32. Analysis of Variance

Source of Variances	D.F.	S.S.	M.S.	F. Value
Attributable of regression	3	17.19587	5.73196	9.93801*
Deviation from regression	296	170.72413	0.57677	
Total	299	187.92000		

The standard partial regression coefficients of  $X_1$ ,  $X_2$  and  $X_3$  are as follows:

$$\begin{aligned} b_1^* &= 0.087465 \\ b_2^* &= -0.000135869 \\ b_3^* &= 0.3031483 \end{aligned}$$



The positive relationships between the size of the household compound and the number of living children indicates that the smaller the size of the household, the fewer children married couples would like to have. That is, those who had a larger household compound actually desired a larger family size than those who had a smaller one. However, the negative relationship between the number of rooms and living children implies that married couples who were relatively well off invested their money in material comfort (a house with more rooms) and were satisfied with fewer children than those who did not. The positive income-fertility relationships implies that the better-off people tend to have more children than those who were poorer. This is an expected demographic phenomenon in an urbanized area where the poor people would find it most difficult to have a larger family and modern contraceptive technology is within their reach. It has also been shown that several other factors, such as having a relative to look after children, operate against or for having a larger family size. It could be inputed that urbanism and modernity as experienced by the Bangkok people have a negative impact on fertility as in other metropolitan cities of the world.

## Section II. $Y_2$ and $X_1$ , $X_2$ and $X_3$

The means and standard deviations of these variables are presented in Table 33.

Table 33. Means and Standard Deviation of the Variables in the Analysis

Variable	Mean	Standard Deviation
$X_1$	100.65000	99.07091
$X_2$	2.48333	1.07715
$X_3$	1986.33333	1092.40879
$Y_2$	2.45333	1.86711

Table 34 shows the simple inter-correlations between the variables. It indicates that the independent variables are not strongly correlated with one another.

Table 34. Simple Inter-correlations between the Variables

Variable	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	Y <sub>2</sub>
X <sub>1</sub>	1.00000	0.32205	0.46035	0.12967
X <sub>2</sub>		1.00000	0.25604	0.10854
X <sub>3</sub>			1.00000	0.35395
Y <sub>2</sub>				1.00000

The result of the multiple regression analysis reveals that the level of household income is the most significant variable related to the ideal number of children. The regression equation indicates that the variable is significantly related to the ideal number of children at 0.01.

Regression equation :

$$Y^2 = 1.16499 + 0.00094X_1 + 0.05217X_2 + 0.00063X_3$$

$$(0.79438) \quad (0.52049) \quad (5.98808)$$

$$R^2 = 0.10$$

All three independent variables explain about the percent of the variance of the dependent variable. In parenthesis are the t-statistics of the regression coefficients. It should be noted that the relationship between the dependent and the independent variables is significant at 0.01 despite the fact that they explain only percent of the variance of the dependent variable. The test of significance is presented in the analysis of variance Table 35.

Table 35. Analysis of Variance

Source of Variations	D.F.	S.S.	M.S.	F. Value
Attributable of regression	3	132.88275	44.29425	14.41630*
Deviation from regression	296	909.46338	3.07251	
Total	299	1042.34612		

The standard partial regression coefficients of  $X_1$ ,  $X_2$  and  $X_3$  are as follows:

$$b_1^* = 0.0049877$$

$$b_2^* = 0.0300972$$

$$b_3^* = 0.3686003$$

The positive relationship between the size of the household compound and ideal number of children indicates that the smaller size of household, the fewer children married couples would like to have. That is, those who had a larger household compound actually had a larger ideal family size than those who had a smaller one. The positive relationship between the number of rooms and ideal number of children indicates that the married couples who have a big house tend to have more children than those who have a small house.

## CONCLUSION

The Bangkok Metropolis has been experiencing rapid population growth at the rate of 5.1 per cent per annum during the period of 1960-1970 and 5.7 per cent per annum during 1970-1977. This high rate is due to natural increase and heavy rural-urban migration.

The rapid rate of population growth has caused various problems, e.g., housing shortages, as well as economic, social, political and environmental problems. All of these problems are in turn expected to be related to a change in fertility. The present study attempts to investigate the effects of rapid population growth on living conditions and fertility.

Data show that the rapid population growth rate of the Bangkok Metropolis has led to housing shortage and unsatisfactory living conditions. About one-third of the respondents stated they were dissatisfied with their current living quarters. A slightly greater proportion stated they would like to make a change in their living condition. It was found that this has an effect on fertility, i.e., those who were dissatisfied with their living condition tend to have fewer children than those who lived in a satisfactory living condition. Those who lived in a house with a smaller compound and fewer rooms were also found to have fewer children.

In addition it was also found that people who live in the inner core of the Bangkok Metropolis had more problems in child rearing than those who lived in the outer areas. The former either had to take care of the children by themselves or had to hire a maid to take care of them, whereas those who lived in the outer areas could be assisted by their parents or relatives in looking after their children while they were at work.

Data also show that those who lived in the inner areas had fewer children than those who lived in the outer areas, even though the former unrealistically desired a larger ideal family size. It is interesting to find that those who were poorer, having less income and living in a rental house wanted to have a larger family size, compared with those who were better off. But those who were living in a smaller house with fewer rooms wanted a larger family size than those who lived in a larger house. However, other things being equal, those who earned more income tended to have a larger family size than those who earned less.

In brief, the rapid population growth in Bangkok has led to poorer living conditions either in terms of housing or child rearing practices, which in turn leads to fertility reduction.

# SEAPRAP

## THE SOUTHEAST ASIA POPULATION RESEARCH AWARDS PROGRAM

### PROGRAM OBJECTIVES

- \* To strengthen the research capabilities of young Southeast Asian social scientists, and to provide them with technical support and guidance if required.
- \* To increase the quantity and quality of social science research on population problems in Southeast Asia.
- \* To facilitate the flow of information about population research developed in the program as well as its implications for policy and planning among researchers in the region, and between researchers, government planners and policy makers.

### ILLUSTRATIVE RESEARCH AREAS

The range of the research areas include a wide variety of research problems relating to population, but excludes reproductive biology. The following are some examples of research areas that could fall within the general focus of the Program:

- \* Factors contributing to or related to fertility regulation and family planning programs; familial, psychological, social, political and economic effects of family planning and contraception.
- \* Antecedents, processes, and consequences (demographic, cultural, social, psychological, political, economic) of population structure, distribution, growth and change.
- \* Family structure, sexual behaviour and the relationship between child-bearing patterns and child development.
- \* Inter-relations between population variables and the process of social and economic development (housing, education, health, quality of the environment, etc).
- \* Population policy, including the interaction of population variables and economic policies, policy implications of population distribution and movement with reference to both urban and rural settings, and the interaction of population variables and law.
- \* Evaluation of on-going population education programs and/or development of knowledge-based population education program.

- \* Incentive schemes — infrastructures, opportunities; overall economic and social development programs.

### SELECTION CRITERIA

Selection will be made by a Program Committee of distinguished Southeast Asian scholars in the social sciences and population. The following factors will be considered in evaluating research proposals:

1. relevance of the proposed research to current issues of population in the particular countries of Southeast Asia;
2. its potential contribution to policy formation, program implementation, and problem solving;
3. adequacy of research design, including problem definition, method of procedure, proposed mode of analysis, and knowledge of literature;
4. feasibility of the project, including time requirement; budget; and availability, accessibility, and reliability of data;
5. Applicant's potential for further development.

### DURATION AND AMOUNT OF AWARDS

Research awards will be made for a period of up to one year. In exceptional cases, requests for limited extension may be considered. The amount of an award will depend on location, type and size of the project, but the maximum should not exceed US\$7,500.

### QUALIFICATIONS OF APPLICANTS

The Program is open to nationals of the following countries: Burma, Indonesia, Kampuchea, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam. Particular emphasis will be placed on attracting young social scientists in provincial areas.

Applications are invited from the following:

- \* Graduate students in thesis programs
- \* Faculty members
- \* Staff members in appropriate governmental and other organizations.

Full-time commitment is preferable but applicants must at least be able to devote a substantial part of their time to the research project. Advisers may be provided, depending on the needs of applicants.