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FEMALE LABOR FORCE PARTICIPATION, FERTILITY AND QUALITY OF CHILD CARE FOR PRE-SCHOOL CHILDREN

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CHAPTER 1

INTRODUCTION

Significance of the Problem

During Sukhothai and early Ratanakosint periods Thai women, by customs and beliefs, kept themselves in the house, doing housework and refraining from outside social activities.[1] Since then the status and role of Thai women have considerably changed. Instead of keeping themselves in the households, they participate in outside activities. In 1960, women comprised 37.0 percent of the total labor force,[2] in 1966, 38.6 percent,[3] and in 1972, 44.7 percent.[4] In 1975 approximately 8,317,690 persons or about 45.8 percent of the total national employed were women.[5] It is obvious that Thai women have increasingly played a significant role in the country's social and economic development.

Arising from their participation in the country's economy are the problems of childrearing. Statistics reveal that among the working women, those who have been married and had children are increasing in number and proportion, and that young married women who have a relatively low income and have to work outside the home to maintain their living standard, are likely to face problems of childrearing. The magnitude of the problems depends on several factors including the health of mothers and children, spouse relationship and attitudes toward childrearing. The problems tend to cause maternal anxiety as they are related to household economic well-being. Women who have to look

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1 Sinee Komolnavin, Changing Social Role and Status of Thailand Women (Bangkok: National Institute of Development Administration, undated), p. 1.

2 Ibid., p. 26.

3 Ibid.

4 National Statistical Office, Quarterly Journal of Statistics, Vol. 21, No. 3, Sept. 1973, p. 26.

5 National Statistical Office, Quarterly Journal of Statistics, Vol. 24, No. 2, June 1976, p. 26.

after small children become dependent. The problems are further intensified particularly when they have had to continue their work and could not find anyone to take care of childrearing.

Usually when a woman has to do both housekeeping and working outside home, there is a problem with childrearing.[1] The significance of the problem lies not only in feeding children but in socializing them as well. The most common solution adopted by Thai women is either getting a servant to take care of their children or taking them to nurseries. But whether the servants or nurseries can take over the role of mothers is an important research question. The problem of childrearing is a significant one but no study has been done particularly in relation to female labor force participation.

Children are the nation's future only if they are physically able and well socialized. But if they are not physically well, they are more likely to be liabilities than assets to the families and the nation. Even more so when they are unhealthy. Within the families when they become ill it is the mothers who look after them. The role of mothers in the labor force is consequently reduced. Thus childrearing is related to the role of women and consequently national social and economic development.

Objectives of the Study

The objectives of this study are manifold:

1) To investigate how female labor force participation, either within or outside the households, affects the children's health.

2) To find out the nature of the problems faced by women who work outside the home.

3) To discover a way in which the conflict between childrearing and participation in economic activities outside the home can be solved.

Hypotheses

Major hypotheses in the study are:

1) The nature of female labor force participation affects the pattern and quality of childrearing in terms of time spent with children, nutrition, health and child-rearers.

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1 Adul Vichienchareon, Thammasat Journal, Vol. 2 (June-October, 1973), p. 15

2) Women who work outside the home tend to have more problems of childrearing than those who work at home.

3) Women who work outside the home recognize the impact of family size on their economic role. They tend to have a smaller size and practice more family planning than those who work at home.

Research Contribution

The research project will provide basic data necessary for the country on female labor force participation and related problems regarding the health of children and attitudes toward childrearing. The findings could be used to formulate policies on the quality of the Thai population, particularly of children and female labor force participation.

In addition, data made available by the research project will be useful for students and people who are interested in demography, sociology and related social sciences.

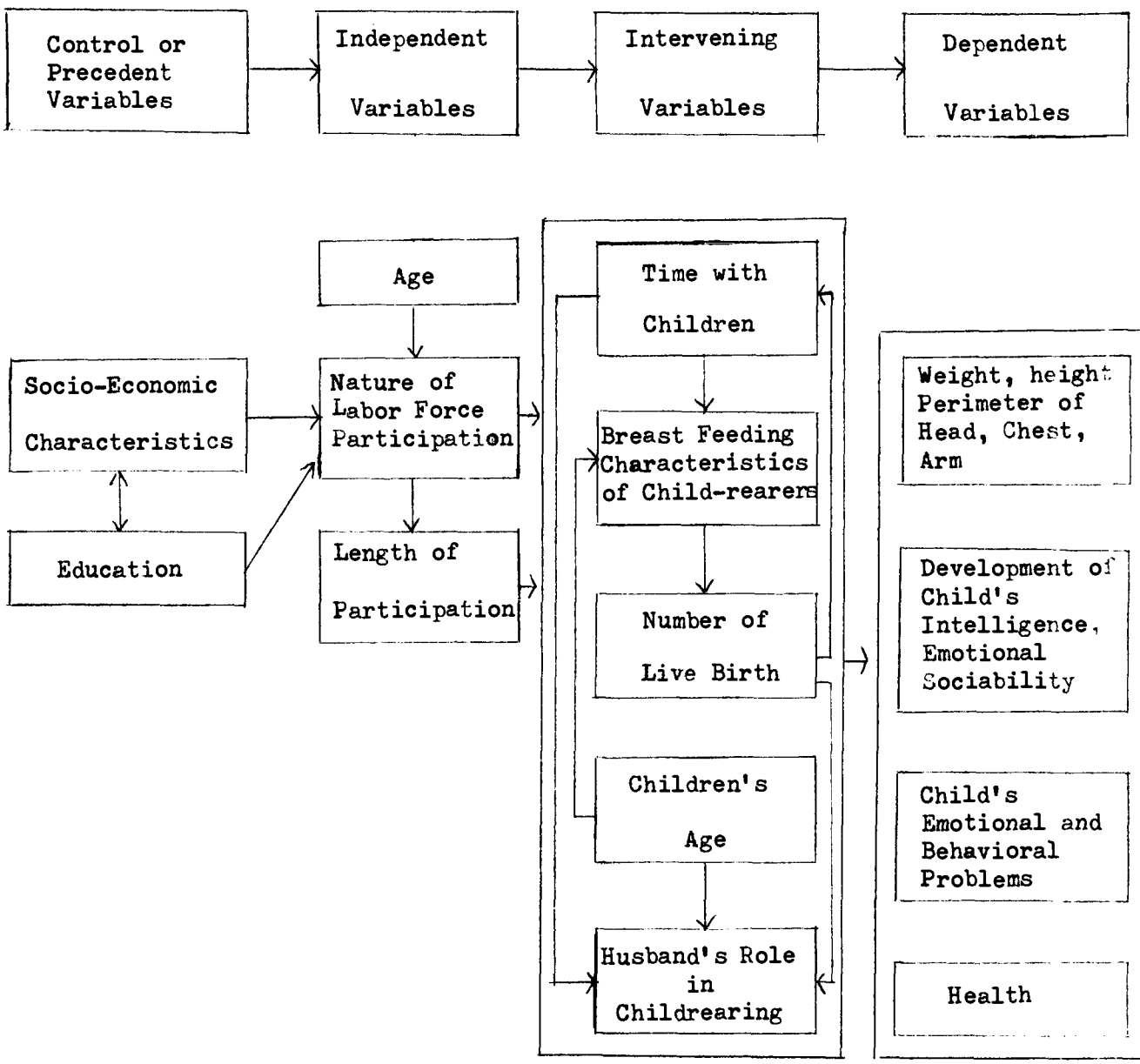
Variables and Diagrammatic Relationships Among Them

Variables included in the study can be classified into four types: (1) control, (2) independent, (3) intervening and (4) dependent variables. Each type differs in its content. The control variables deal with socio-economic and educational characteristics of the respondents. The independent variables are those concerned with the nature of female labor force participation, duration of work, number of live births, and women's current age. The intervening variables are the amount of time spent with children, breast-feeding, characteristics of the persons who take care of children, and the husbands' role in childrearing. The dependent variables include children's health as measured by weight, height, perimeter of child's head, breast, and arm, emotional development, intelligence, sociability, and child health history.

The pattern of interrelationships among the four sets of variables can be diagrammatically shown as follows.

Definition of the Terms

1. Female labor force participation is defined as women's engagement in income-generating activities either in terms of wage or salary, whether outside or inside the home.


Control or Precedent Variables
Independent Variables
Intervening Variables
Dependent Variables
Age
Socio-Economic Characteristics
Education
Nature of Labor Force Participation
Length of Participation
Time with Children
Breast Feeding Characteristics of Child-rearers
Number of Live Birth
Children's Age
Husband's Role in Childrearing
Weight, height Perimeter of Head, Chest, Arm
Development of Child's Intelligence, Emotional Sociability
Child's Emotional and Behavioral Problems
Health

2. Quality of childrearing refers to the following characteristics:

2.1 Physical, emotional, intelligence and social development of children.

2.2 Health problems as measured by frequency of illness and nature of illness.

2.3 Basic health care for children which includes all immunity prevention within specified periods.

2.4 Relationships among mother, father and children, and method of childrearing.

General Conceptual Framework

With modernization, a social system generally changes its role from diffusion to specificity.[1] Insofar as family is concerned, changes in economic activities which were formerly based on kinship have stripped the families of some of the roles which they used to play in the past. The role of families becomes more specific; they are no longer self-sufficient as economic units. The members of a family have to work outside the home to earn their living. There is an increasing tendency to disengage economic functions from the families.

Another consequence of the social change is its impact on women's status. Women become less inferior to men in economic, social and political roles than they were in the past. They can go outside the home to participate in economic activities, at least for a period of life.[2]

Formerly the role of women was clear and not complex. The first role they played as an adult was that of wife and mother. They knew what was expected of them: i.e., taking care of children and household chores. When women's roles change, their status within the families change accordingly. Technological change has also reduced the amount of household work. Despite all the changes, women still perform various functions they traditionally did in the past.

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1 Amaitai Etzioni and Eva Etzioni, ed. Social Change, New York: Basic Books, Inc., Publishers, 1964, pp. 261-267.

2 William J. Goode, The Family, U.S.A.: Prentice-Hall, Inc., 1964, p. 68.

Several of these changes confuse women about their roles.[1] They have lost a number of their past functions. This leads to a change in attitude toward their proper role. They may feel guilty of not performing women's traditional role as well as the older generation. Their work outside the home causes a role conflict. They cannot perform all work satisfactorily. A solution to the problem is to delegate housework and childrearing to someone else, albeit a maid or kin. Whatever solution they adopt is likely to affect the health of their children.

Interrelationships Among the Variables

Economic variables are likely to have differential effects on the nature of women's labor force participation. A decision to work is generally induced by economic motives, particularly among low income families. Women work to earn additional income, to enjoy their living, to make use of their knowledge, or to seek professional advancement. Economic factors partly determine the nature of women's work. Those who are better off are likely to work in occupations requiring skills, knowledge, and technical competence. The kind of work they are engaged in is likely to earn them higher income, better security and carry more social prestige or recognition than those who come from poorer economic conditions. The latter are likely to work in occupations requiring no skill with little training, mostly manual labor with low pay and less opportunities to become better off. The former are generally found to have better economic opportunities than the latter.

Education also plays a significant role in the nature and type of occupation a person is engaged in. The better educated people are likely to be engaged in professional work, whereas the less educated serve as skilled labor with low pay. The kind of work reflects personal educational achievement.

The age cohort of the women also affects the rate of female labor force participation and its nature. Women who are under 34 years of age participated in labor force more than those 35 years of age and over.[2]

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1 Robert R. Bell, Marriage and Family Interaction: Illinois: The Porsey Press, Inc., 1963, p. 257.

2 Suchart Prasith-rathsint, "Relationship Between Labor Force Participation and Fertility of Rural Thai Women, Journal of Social Sciences, Vol. 8 (Oct. 1971), pp. 23-48.

Regardless of their urban-rural residence, it has been found that those who worked outside the home considered childrearing a problem more than those who did not. The former had more opportunities to associate with other people and were more exposed to social movements and modern social values, including views on family size, than their non-working counterparts. The former also tended to believe they could increase their earnings by working outside the home and better their lives by participating in the national economy.

Several social and economic factors are also related to family size that affect the health of the family members. For instance, family size is likely to be inversely related to children's weight and health. That is to say, the development of children in a larger family size is likely to be worse than those in a smaller family size. In addition, family size is also adversely related to children's health. Children of a family size of four or more are likely to have poorer health and get ill more frequently than those of a smaller family size. Consequently, the former need more and better health expenditures and care from their mothers.

Children with abnormal development caused by abnormal physical and emotional conditions need more attention from mothers. Different ways of breastfeeding and mild-feeding could make a difference in appetite for food and the consequent growth of children. In less developed countries women who breastfeed their children are generally of lower socio-economic status than women who do not. The latter are also found to have fewer children and more likely to work outside the home.

Review of Literature

A study by Sinee Kamolnawin on the changing role and status of Thai women also revealed that the majority of women preferred to work outside the home rather than stay at home. Those who worked outside the home tended to have familial problems as they could not satisfactorily carry out the functions of a wife. They were also not able to properly socialize their children.[1]

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1 Sinee Kamolnawin, op.cit., p. 1.

Rapeepun Hunpanich classified urban families into three economic groups - poor, moderate, and well-to-do. She found that about 27 percent of urban women worked outside the home. The better off tended to work in a greater proportion than the poorer ones. This could be interpreted to mean that the better off women were in a better position to work outside the home. They had greater economic opportunities and more training to the extent that they were better qualified to perform industrial kinds of work than the less fortunate ones.

The study also included an analysis of the nature of female labor force participation by occupational classification. It was found that about one-third of urban women engaged themselves in commerce and service industries, about 8.7 percent in professional work, 7.2 percent manual work, and 4.5 percent in agriculture. Those who did not work constituted 48.4 percent of all the respondents. Data also showed that women who were economically better off worked outside the home in a greater proportion than the poorer ones.[1]

Paris and others also found that the idea of mothers working outside the home was generally acceptable, particularly among better educated women who tended to work outside the home.[2] They also studied the occupation of husbands and wives in a university and discovered that husbands did not prevent wives from working as they needed additional income. But if there were other alternatives, husbands would prefer their wives not to work.

With respect to age as an important factor affecting labor force participation, Suchart Prasith-rathsint found that the percentage of female labor force participation in rural areas increased with age.[3]

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1 Rapeepun Hunpanich, "A Comparative Study of Female Labor Force Participation in Rural and Urban Thailand." M.A. Thesis, Department of Sociology and Anthropology Graduate School, Chulalongkorn University, 1977, p. 37.

2 Netrsai Rungruengthum and Chariyawat Kompayak, "Childrearing of Thai Women in Siriraj Tambol, Ban Chang Lor Tambol of Bangkok Noi District, Bangkok Metropolis", Department of Public Health Nursing, Faculty of Nursing, Mahidol University, 1968, p. 7.

3 Suchart Prasith-rathsint, op.cit., pp. 23-48.

Only 10.9 percent of women aged 20-24 as compared to 20.6 percent of women aged 35-39, and 26.5 percent of women aged 45-49 years participated in outside home economic activities. The relationship between age and level of participation in labor force is significant at .05.

James A. Sweet found that in the U.S.A., the rate of ever-married women's labor participation is high between 14-19 and 45-49 years of age and declined at the age of 55-59.[1] The age differential participation rate is related to economic factors, marital status, and childbearing. Physical health also declines with age. Women aged above forty years are likely to be in a better economic position than the younger ones who are still energetic and could work to earn income to strengthen their families' economic position.

Hunpanich's study also revealed that women in the middle and upper income groups were found in professional work in a greater proportion than those in the lower income groups. Women who were 15-24 and 25-34 years also worked in a greater proportion than those who were thirty-five years and over. Women tended to be engaged in commerce and service occupations in a greater proportion than in any other occupations and their participation rate in these occupations rates increases with age. As for laboring occupations, data showed that the participation rate of the income groups declined after forty-five years of age.

With respect to childbearing, James Sweet[2] found that about 43 percent of America women who worked outside the home had no children, 33 percent had one and 20 percent had two. The study also found that rates of labor force participation of the working women declined as the number of children increased. In Sweden, Murray Gendell found that the percentage of women working full-time varied inversely with the number of children.

Having children is a barrier for women to participate in economic activities, particularly the outside home ones. In the urban areas, for the middle and well-to-do women, the number of living children

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1 Rapeepun Hunpanich, op.cit., p. 13.

2 Rapeepun Hunpanich, op.cit., p. 15.

adversely affects the proportion of women in professional occupations. It was found that the number of living children has no relationship with women's participation in commerce and service industries. As for the laboring occupation, it was found that the number of children only affected women's participation when they had five children or more.

In rural areas, the number of living children had only positive impact on women's participation in agricultural occupations, if their children did not exceed four.

Other studies also found that in less developed countries, female employment is crucial as it not merely increases women's role in economic development but also has a negative impact on fertility.[1] The latter impact was considered more important than the former. Freedman pointed out that the relationship between fertility and female labor force participation depends not only on family planning practices which included birth control methods of varying effectiveness, but also on the nature of the work women participate in. That is to say, whether the work physically separates husbands and wives. The relationship between the two variables is a reciprocal one as some women went out to work because they wanted few children, and others had few children so they went out to work. Consequently, in studying the relationship between fertility and female employment, one has to take into account differences in family planning practices as well as the nature of work.

Based on the 1960 Population Census, Suchart Prasith-rathsint, with the use of stepwise multiple regression, analyzed the percentage of women employed in agriculture in seventy-one provinces in Thailand: that of literate women, and that of women in an economically active age, on the one hand, and fertility index, on the other. It was found that the set of variables could significantly explain the fertility of women at various age groups by 22 to 48 percent, and that fertility was positively related to the percentage of women in agriculture, but negatively with the percentage of women in the industrial and service occupations, and that about one-fifth of the women worked after marriage. Whether women worked or did not work outside the home after marriage, the number of livebirths increases with age. The difference in the

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1 Suchart Prasith-rathsint, op.cit., pp. 34-48.

number of livebirths between these two groups of women mostly has no statistical significance. But if it is significant, it is generally found that women who worked or used to work had more children than those who never did. The study concludes that female labor force participation is related to fertility decline and that the nature of work has no less significant impact on fertility decline. Women who worked in agriculture had more children than their counterparts in industry and service.

Another study found that urban women who worked had fewer children than those who did not. The finding is consistent with the findings in more developed countries. However, there are basic differences in female labor force participation between the less and the more developed countries. In the latter, women who participated in labor force were generally engaged in wage earning and outside home activities. Thus they had to choose between childrearing and work as the families they lived in were mostly nuclear, consisting of married couples and their children, while they worked outside the home, it is also somewhat difficult to have a maid unless they are really well-to-do. In contrast, women in the less developed countries tend to be engaged in agriculture and live in extended families with someone to take care of their children. Thus, it is frequently found that working women have the same family size as do the non-working ones. Even in the urban areas, most women tend to work in the households. They are in a position to look after children while they work.

When the age of children is considered, it has been found that the age of the youngest child is related to the probability of mothers' working outside home. Glendell's study discovered that in Sweden and the U.S.A., the probability of mothers' working outside the home increased with the age of the youngest child. Mothers whose children were still young and not yet schooled mostly did not participate in labor force.

Napaporn Hawanondh found a significant difference in the division of labor between families of women who work and those of women who do not work outside the home. Among the former, only half of the wives took care of children whereas among the latter, 85 percent did so. The difference is statistically significant. As working mothers took

the responsibility of childrearing in a smaller number than the ones who did not work, some other persons had to take their place in taking care of the children. One-third of these people were maids or kin. Only 18.3 percent were husbands. Data also show that husbands whose wives work outside the home tend to share the burden of childrearing more than those whose wives do not work. However, the difference between them is not statistically significant, implying that whether wives did or did not work outside the home, husbands did not actually increase their share in childrearing.

Supa Malakul Na Ayudhaya found that most families had kinfolk to bring up children. They are breast-fed as well as given formula (powdered) milk. Netrsai Rungruentham and Chariyawatr Kompayak found that whether women worked or not did not make any statistical difference in the kind of milk given to children. With respect to immunization, it has been found that a month after delivery, about 84.8 percent of mothers took their children for physical check-ups and immunizations on time. For the subsequent appointments, about 94 percent of them regularly kept the appointments. There was no statistical difference in education and occupation between mothers who worked outside the home and those who did not. However, there was a significant difference in the duration of breast-feeding. Working mothers were allowed a month or a month and a half leave of absence. During this time, they breast-fed their babies but stopped breast-feeding them soon after they returned to work. In contrast, the non-working mothers could continue their breast-feeding. The practice of breast-feeding among working and non-working mothers has an impact on child health but many other social, economic and demographic are also associated with child well-being. For instance, Dingle and his colleagues who made a longitudinal study of families of various social classes in Cleveland, Ohio, discovered that family size was related to children's health. For example, infectious gastroenteritis increased with family size.[1] Illness is more prevalent in a larger family. Consequently children demand more attention from their mothers and the family spent more on health. Specifically, the study discovered that infectious

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1 Rachatawan Chanroonthorn, "Relationship Between Population Dynamics and Health," Term Paper, Medical Social Sciences Program, Graduate School, Mahidol University, 1969 (mimeograph), p. 10.

gastroenteritis and respiratory diseases were more prevalent in larger families as the probability of being infected in the larger families was greater than in the smaller ones.[1]

The Mahidol Institute of Nutritional Research also found that the quantity of food children received was reduced when the size of the family increased, and that the quality of food was better in smaller than in larger families.[2] A survey by a team of medical students of the Ramathibodhi Hospital at Bang Pa In found that about 55 percent of pre-school aged children who suffered from malnutrition came from families with four children or more, and 42 percent from children with three children or less.

Recent studies on pre-school aged children in the Philippines similarly found that nutritional status of a family member became worse with an increase in family members. Children of large families had lower nutritional status than those of smaller ones.[3] The Laguna's studies also revealed that the growth of pre-school aged children who were of the fourth or the third parity was slower than that of the older ones. Social and economic factors were also associated with children's nutritional status, particularly when their mothers did not have the time to pay adequate attention to their children. It is conceivable that if mothers have children at close intervals and have to look after their children alone, their children's nutritional status, is adversely affected due mainly to the lack of calories, protein, vitamin A and iron, including poor physical and emotional environment.

Alfredo, who made a nutrition study of the pre-school aged children at Candelaria, Columbia, also found that family size was a factor affecting children's malnutrition. Children from a larger family suffered from malnutrition more than those from a smaller one. About 32 percent of children from families of four or fewer as compared to 44 percent of those of four or more suffered from malnutrition.

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1 Ibid.

2 Ibid.

3 Pinthip Boriboonsuk and Somsong Sitrayun, Population Education in Home Management Course (Bangkok: New Thammada Karnpim, 1977), p. 53.

There are also numerous longitudinal studies of the relationship between family size and children's physical development. For instance, the National Health Survey of Health and Development of Children in England found that among all the one-week-old infants of March 1946, the difference in family size did make a difference in physical growth not only among the lower but all social classes. However, there was no relationship between child's height and family size among the upper and the middle class who were employed in professional occupations and the owners of businesses. But the relationship between the two variables increased among the lower classes and became most evident among manual workers. Nonetheless, children of both sexes in all social classes and all age groups were found to be equally well developed.

Studies by Grant (1964)[1] and Scott (1962)[2] found that the height and weight of children were inversely correlated with family size. That is to say, physical development of children from larger families was worse than that of children from smaller families.

It has also been found that emotional and psychological well-being of children is related to the number of their siblings. Adolescents of small families were psychologically and emotionally better adjusted than those of larger ones. The former were found less in mental hospitals than the latter. In Maryland, it was also found that children's colds were more frequently found in larger than smaller families.

Syvia, who studied the childrearing of the white mothers in South America in 1959, discovered that families of different socio-economic status differed in their childrearing. In the families of higher socio-economic status whose spouses earnestly seek social status and who had frequent social functions, their children suffered emotionally from their mothers' indifference. Nevertheless, in the families of lower social status whose spouses had to struggle to make a living, children who were not regularly well treated also suffered emotionally.

In brief, the review of literature has shown that children's health is affected not only by female labor force participation but

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1 Ibid., p. 11.

2 Ibid., p. 11.

also by other social, economic and demographic factors. Significant among them are family size, birth parity, social class occupation, and education of mothers. It is the objective of this research to study the relationship among them.

CHAPTER 2

RESEARCH METHODOLOGY

Target Population and Sampling Procedure

This research project will focus its study on the population of Bangkok Metropolis. Five districts were proportionally sampled from the total twenty-two districts in Bangkok Metropolis. From each district 120 households were sampled, half of which consisted of working women and the other half of non-working women. The total sample size is 600 working and non-working women.

Data Collection

The investigator, together with other co-investigators, collected information related to social, economic and demographic characteristics of mothers at childbearing ages: between 15 to 49 years. They were interviewed about childbearing practice from infancy to six years of age, fertility, family planning practice and desire for additional children. A questionnaire was developed and pretested. Children whose age was under seven years were weighed. Also, their height, and the perimeters of their head, chest and left-hand arm were measured.

Data Processing and Analysis

Data were coded, recoded, and verified by trained coders, and then key punched. The methods of data analysis used in this study are cross-tabulations with statistical tests, multiple classification analysis and multiple regression analysis.

Insofar as scaling is concerned, Guttman's technique is used with a criterion of a minimum coefficient of reproducibility of .90. Four scales have been developed. They are a) children's emotional and social development; b) problems of children's emotional and social development; c) children's health development; d) other development of children's eating and sleeping habits; and e) father's behavior.

The purpose of the scaling is to set up a scoring system based on the ordering structure generated by Guttman's scaling technique.

The individual children were accordingly assigned a sum of scores for each scale.

General Characteristics of the Sample

1) Characteristics of Mothers

All women covered in this study are mothers aged between 15-49 years, having a child less than seven years of age at the time of interview. Their general characteristics are shown in Table 2.1 and briefly described as follows:

With respect to education, slightly over half the interviewed mothers had four years of primary education, about one-fifth had education between the fifth year of primary and the third year of secondary education, and 14.3 percent had education beyond the fourth year of secondary level. The rest had three years of primary education or less (See Table 2.1).

About one-fourth of the mothers were aged 24 years and younger, one-third of them aged between 25 and 29 years, less than one-fifth between 30 and 34 years, and the rest aged 35 years and over.

Regarding their employment status, half of the mothers did not work, 29.2 percent worked outside the home and the rest worked within the households.

With respect to monthly family income, about two-fifths of the women's families had an income of US$100 to US$200 per month. Only a small minority had a lower income than that. The rest had a monthly income of more than US$200.00. In terms of family income per capita, about 43.6 percent of the families had a monthly income per capita of US$25 or less, 39.7 percent had a monthly income per capita of US$25 - US$50. The rest had more than US$50.00 per month.

Regarding the age of mothers in relation to employment, data showed that the majority of women who worked outside the home were 30 years old and over. About one-third were of 25 to 29 years of age. Only a small minority of them were aged 24 years or younger. As for those who worked within the households, about 57 percent were 30 years old and over, only 14.6 percent were 24 years old or younger. Among

Table 2.1 Selected Characteristics of the Sampled Population

Characteristic	N of Cases	Percent
District		
Bangkok Noi	124	19.7
Phaya Thai	123	19.5
Dusit	125	19.9
Nongkhaem	122	19.4
Prakanong	136	21.6
Total	630	100.0
Educational Attainment		
3 years of primary or less	69	10.9
4 years of primary	345	54.8
5 years of primary to third year of secondary	126	20.0
4 years of secondary	90	14.3
Total	630	100.0
Age		
24 years or less	162	25.7
25 - 29	208	33.1
30 - 34	149	23.7
35 and over	110	17.5
Total	629	100.0

cont'd

Characteristics	N of Cases	Percent
Employment		
Working outside home	184	29.2
Working at home	128	20.3
Non-working	318	50.5
Total	630	100.0
Family Income Per Month		
US $ 100.00 or less	177	28.7
100.00 - 200.00	251	40.7
200.00 and over	189	30.6
Total	617	100.0
Income Per Capita Per Month		
US $ 25 or less	269	43.6
25 - 50	245	39.7
50 and over	103	16.7
Total	617	100.0

Table 2.2 Percentage Distribution of Women by Labor Force Participation, Family Income Per Month, and Income Per Capita

Age and Income	Labor Force Participation			Total	χ^2	Level of Significance
	Working		Non-Working			
	Outside	At home				
Age						
24 years or less	18.5	15.6	34.0	25.7		
25-29 years	32.6	27.3	35.7	33.1	38.88	0.001
30 years and over	48.9	57.0	30.3	41.2		
Total	100.0	100.0	100.0	100.0		
N of Cases	184	128	317	629		
Family Income Per Month						
US $ 100 or less	15.3	13.4	43.0	28.7		
100-200	38.3	47.2	39.5	40.7	80.74	0.0000
200 and over	46.4	39.4	17.5	30.6		
Total	100.0	100.0	100.0	100.0		
N of Cases	183	127	307	617		
Income Per Capita						
US $ 25 or less	30.0	32.3	56.4	43.6		
25-50	37.6	52.0	35.5	39.5	69.41	0.0000
50 and over	32.4	15.7	8.1	16.9		
Total	100.0	100.0	100.0	100.0		
N of Cases	183	127	307	617		

the non-working mothers, the majority of them were 25-29 years of age, and one-third of them were 24 years or younger. It could be inferred that as women became older, they participated more in the labor force. The relationship is statistically significant at .001.

As for the relationship between family income and female labor force participation, data showed that the majority of women who worked outside the home had an average family income of US$200 or more per month. Only a small minority had less than US$100.00. Those who worked at home had an average monthly income of US$100 to $200 per month. Slightly over one-tenth had an income of less than US$100.00. Those who did not work had an average family income of less than US$100.00, and only a small minority had more than US$200 per month. It could also be inferred that women who worked were generally better off than those who did not. The relationship is statistically significant at .0001. A similar relationship is found between monthly family income per capita and female labor force participation.

2) Characteristics of Children

With respect to pre-school aged children, the study included 755 children. Boys constituted about 51 percent. The age distribution of these children is shown in Table 2.3. Over half of them were younger than three years of age.

Table 2.3 Distribution of Children by Age in Months

Age in Months	Number	Percent
11 months old and younger	175	23.2
12 - 23	173	22.9
24 - 35	145	19.2
36 - 47	111	14.7
48 - 59	77	10.2
60 - 71	61	8.1
72 - 83	12	1.6
Total	754	100.0

Regarding the history of pregnancy, it has been found that the great majority of mothers had taken pre-natal care, and had their births delivered at hospitals, clinics, and health stations. Less than 4 percent delivered babies at home. About 89 percent had normal births, 5.3 percent caesarian, 6 percent with surgery. About 89 percent of births were delivered at the full term, 6.4 percent exceeded the full term, and only 4.5 percent before the full term.

CHAPTER 3

FEMALE LABOR FORCE PARTICIPATION, FAMILY SIZE, DESIRE FOR ADDITIONAL CHILDREN, AND BIRTH CONTROL

The review of literature has revealed that female labor force participation and the quality of pre-school aged childrearing are related to numerous factors. The present study confines itself to the characteristics of mothers, children, fathers, the families themselves, and childrearing practices.

Mothers' characteristics include labor force participation, age, education, number of children, desire for additional children, and birth control practice. Childrearing practice variables include characteristics of the persons who look after the children, the persons who made decisions on children's food, the relationship between mother and child, children's physical check-up, immunization, child mortality experience, children's illnesses, malnutrition, emotional and social development and its problems; children's eating, sleeping and toilet habits and socialization. Children's characteristics are pre-natal care, full-term delivery, duration of breast-feeding, sex, age, and parity. Paternal characteristics include fathers' participation in childrearing, social and familial habits. Family characteristics consist of monthly family income, monthly income per capita, family type, and number of family members.

This chapter will analyze the relationships between women's participation in the labor force, on the one hand, and the desire for children, birth control, and fertility, on the other hand. The subsequent chapter will analyze female labor force participation and the quality of pre-school aged childrearing.

Labor Force Participation and Family Size

The previous review of literature provides a general conceptual framework relating female labor force participation with fertility. Empirically, it has been found that among women in Bangkok Metropolis, about one-third had one child, slightly less than one-third had two children, 16.3 percent had 3, and 18.3 percent had at least four.

Table 3.1 also shows that women who worked outside the home tended to have lower fertility than those who stayed or worked at home respectively. The relationship between the two variables is significant at .001.

When the current age of mothers is controlled, it has been found that the majority of women aged 24 years and younger had one child, regardless of their labor force participation status. The older age groups had more children than the younger ones. The chi-square test confirms the statistical significant relationship between the two variables.

In order to further investigate the relationship between the two variables, other variables are brought into the analysis. They are education of mothers, income and family type. The result of the analysis of variance shown in Table 3.3 indicates a strong relationship between the family size, on the one hand, and the age and education of mothers, on the other. All the covariates-income variables and family type are significantly related to the dependent variable.

Table 3.1 Percentage Distribution of Women by Current Family Size

Current Family Size	Labor Force Participation			Total	Statistical Test	Level of Significance
	Working		Non-Working			
	Outside	At home				
1	37.0	22.7	36.5	33.8		0.001
2	35.3	29.7	30.2	31.6	$\chi^2 = 27.72$	
3	12.0	15.6	19.2	16.3	C = 0.20	
4 and more	15.8	32.0	14.2	18.3		
Total	100.0	100.0	100.0	100.0		
Number	184	128	318	630		

Table 3.2 Percentage Distribution of Women by Labor Force Participation, Age and Current Family Size

Age and Current Family Size	Labor Force Participation			Total	χ^2	Level of Significance
	Working		Non-Working			
	Outside	At home				
24 years or less						
1	67.6	55.0	67.5	66.0	3.85	0.44
2	32.4	45.0	28.7	31.5		
3 and more	0.0	0.0	3.7	2.5		
Total	100.0	100.0	100.0	100.0		
Number	34	20	108	164		
25-29 years						
1	41.7	31.4	25.8	31.3	11.48	0.02
2	45.0	37.1	37.1	39.4		
3 and more	13.3	31.4	37.1	29.3		
Total	100.0	100.0	100.0	100.0		
Number	60	35	113	208		
30 years and over						
1	22.2	9.6	14.6	15.8	8.78	0.07
2	30.0	21.9	22.9	25.1		
3 and more	47.8	68.5	62.5	59.1		
Total	100.0	100.0	100.0	100.0		
Number	90	73	96	259		

χ^2_{pooled} = 24.11; C = 0.19; sig. = 0.02

Table 3.3 Analysis of Variance of the Current Family Size

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	638.815	8	79.852	57.693	0.000
Age of Mothers	425.859	3	141.953	102.562	0.000
Education of Mothers	86.805	3	28.935	20.906	0.000
Labor Force Participation	6.928	2	3.464	2.503	0.083
Covariates	113.084	3	37.695	27.235	0.000
Family Income for Month	24.975	1	24.975	18.044	0.000
Income Per Capita Per Month	103.765	1	103.765	74.971	0.000
Family Type	24.123	1	24.123	17.429	0.000
Explained	751.899	11	68.354	49.386	0.000
Residual	835.981	604	1.384		
Total	1587.881	615	2.582		

Covariate Raw Regression Coefficient

Family Income Per Month	0.000
Income Per Capita Per Month	-0.001
Family Type	-0.467

Table 3.4 shows the patterns of relationship between the dependent and the independent variables. With respect to age and current family size, the younger women tend to have a smaller family than the older ones. However, when other independent variables and covariates are controlled, the relationship between the two variables are somewhat reduced but the patterns of the relationship remain the same.

Insofar as education is concerned, data show that women who are better educated have smaller family size than those who are less educated. The relationship remains the same even when the differences in other characteristics are controlled.

It has also been found that labor force participation is related to fertility. Generally, women who worked outside the home had a smaller family than those who stayed or worked at home.

However, when differences in age and education are controlled, those who simply stayed at home had smaller family size than those who worked outside the home and those who worked at home respectively. The implication is that working at home does not conflict with having a larger family size. In fact they complement one another. Those who simply stayed at home were likely to be in a poorer economic condition, and other things being equal, they could not afford to have a larger family. The three independent variables could explain about 47 percent of the variance of the dependent variable.

In order to estimate women's current family size as a function of these independent variables - age and education of mothers, labor force participation, income per capita and monthly family income, multiple regression analysis is utilized. Table 3.5 illustrates basic statistics of these variables and their simple correlation coefficients. It reads as follows: women average about 29 years old, 6 years of education, two to three children with monthly family income of US$187 and monthly per capita of US$37.00. All the independent variables are lowly correlated in the expected directions.

The result of the multiple regression analysis reveals that among the set of the independent variables, age of mothers is the most significant one as far as family size is concerned. The two variables are positively related. Next in importance are income per capita,

Table 3.4 Multiple Classification Analysis of the Current Family Size

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mothers							
24 years or less	158	-1.05		-1.06		-1.01	
25 - 29	205	-0.34		-0.27		-0.22	
30 - 34	146	0.36		0.40		0.38	
35 - 49 years and over	107	1.69		1.54		1.40	
			0.57		0.54		0.50
Education of Mothers							
3 years of primary or less	63	1.23		0.84		0.74	
4 years of primary	339	0.09		0.10		0.05	
5 years of primary to third year of secondary	125	-0.38		-0.18		-0.18	
4 years of secondary	89	-0.68		-0.74		-0.45	
			0.31		0.25		0.19
Labor Force Participation							
Outside	183	-0.20		-0.09		-0.02	
At home	127	0.68		0.21		0.24	
Non-working	306	-0.16		-0.03		-0.09	
			0.22		0.07		0.08
Multiple R Squared					0.402		0.474
Multiple R					0.634		0.688

Table 3.5 Means, Standard Deviations, and Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis of the Current Family Size

Independent Variables	ME	NLC	TW	HIN	PIN	Means	Standard Deviation	Total
MA : Age of Mothers	-0.026	0.605	0.243	0.197	0.059	28.852	6.077	616
ME : Education of Mothers		-0.282	0.225	0.414	0.394	5.927	3.971	616
NLC : Living Children			0.101	-0.037	-0.261	2.419	1.607	616
TW : Labor Force Participation				0.278	0.208	0.503	0.500	616
HIN : Family Income Per Month					0.680	3740.802	2729.547	616
PIN : Income Per Capita Per Month						737.330	606.181	616

Table 3.6 Summary of the Stepwise Multiple Regression Analysis of the Current Family Size

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Age of Mothers	0.605	0.366	0.366	0.605	0.154	0.583	0.008	364.810**
Income Per Capita Per Month	0.674	0.454	0.089	-0.261	-0.001	-0.313	0.1D-03	61.570**
Education of Mothers	0.693	0.481	0.026	-0.282	-0.084	-0.208	0.013	40.482**
Family Income Per Month	0.700	0.490	0.010	-0.037	0.1D-03	-0.136	0.2D-04	10.409**
Labor Force Participation	0.701	0.491	0.001	0.101	0.108	0.034	0.100	1.175
Constant						-1.271		
Multiple R						0.701		
F						117.856		

**Level of significance at .01

Table 3.7 Percentage Distribution of Women by Labor Force Participation, Desire for Additional Children and Current Family Size

Desire for Additional Children	Nature of Labor Force Participation			Total	Statistical	Level of Significance
	Working		Non-working			
	Outside	At home				
Desire	30.9	25.6	29.8	29.2	χ^2=1.08	0.59
Non	69.1	74.4	70.2	70.8	C =0.04	
Total	100.0	100.0	100.0	100.0		
Number	178	125	309	612		
Women who had one child						
Desire	65.6	42.9	54.5	56.4	χ^2=4.46	0.11
Non	34.4	57.1	45.5	43.6	C =0.15	
Total	100.0	100.0	100.0	100.0		
Number	64	28	110	202		
Women who had two children						
Desire	18.8	36.1	25.3	25.1	χ^2=3.69	0.17
Non	81.3	63.9	74.7	74.9	C =0.14	
Total	100.0	100.0	100.0	100.0		
Number	64	36	95	195		
Women who had at least three children						
Desire	2.0	11.5	7.7	7.4	χ^2=3.60	0.17
Non	98.0	88.5	92.3	92.6	C =0.13	
Total	100.0	100.0	100.0	100.0		
Number	50	61	104	218		

χ^2_p = 11.75; C = 0.23; sig. = 0.07

mothers' education and monthly family income. They are negatively correlated with fertility. All the independent variables significantly explain about 70 percent the variance of the dependent variable. Thus the derived regression equation can provide good estimates of fertility of the Thai women in Bangkok Metropolis.

With respect to female labor force participation, it has been found that, with the model of analysis, it is not significantly related to the current family size. However, it could be related to the desire for additional children and thus their future fertility performance. The following analysis deals with the relationship between the two variables.

Female Labor Force Participation and Desire for Additional Children

With respect to the relationship between female labor force participation and desire for additional children, it has been found that mothers who worked outside the home somewhat desired additional children in a greater proportion than those who worked at home and those who did not work at all. However, the difference among them is not statistically significant as other factors are also related to the desire for additional children.

It is likely that desire for additional children is affected by the number of children women already have. Preliminary analysis shows that women who had fewer children desired additional children in a greater proportion than those who had more, and that after having one child, those who worked outside the home desired fewer children than those who simply stayed or worked at home respectively.

When the other variables, such as age and education of mothers, number of children, monthly family income, monthly income per capita, and family type, are considered, analysis of variance shows that the number of children is the most significant variable that determines the desire for additional children. None of the income variables is statistically significant as shown in Table 3.8.

With the use of multiple classification analysis, it has been found that the younger mothers generally desired to have additional children in a greater proportion than the older ones, as shown in Table 3.9.

Table 3.8 Analysis of Variance of the Desire for Additional Children

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	26.492	11	2.408	14.495	0.000
Age of Mothers	0.524	3	0.175	1.051	0.369
Education of Mothers	1.113	3	0.371	2.233	0.083
Current Family Size	14.923	3	4.974	29.939	0.000
Labor Force Participation	0.390	2	0.195	1.173	0.310
Covariates	0.348	3	0.116	0.699	0.553
Family Income Per Month	0.015	1	0.015	0.088	0.767
Income Per Capita Per Month	0.135	1	0.135	0.815	0.367
Family Type	0.064	1	0.064	0.384	0.536
Explained	26.840	14	1.917	11.539	0.000
Residual	97.029	484	0.166		
Total	123.869	598	0.207		

Covariate Raw Regression Coefficient

Family Income Per Month	-0.000
Income Per Capita Per Month	0.000
Family Type	-0.025

Table 3.9 Multiple Classification Analysis of the Desire for Additional Children

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mothers							
24 years or less	152	0.16		0.03		0.04	
25 - 29	199	0.01		0.01		0.01	
30 - 34	144	-0.04		0.01		0.01	
35 years and over	104	-0.20		-0.07		-0.08	
			0.25		0.08		0.08
Education of Mothers							
3 years of primary or less	61	-0.08		-0.01		-0.01	
4 years of primary	331	-0.03		-0.02		-0.02	
5 years of primary to third year of secondary	121	0.01		-0.03		-0.03	
4 years of secondary	86	0.16		0.12		0.11	
			0.16		0.11		0.10
Number of Current Family Size							
1	197	0.27		0.26		0.25	
2	190	-0.04		-0.05		-0.05	
3	100	-0.19		-0.17		-0.17	
4 and over	112	-0.24		-0.20		-0.19	
			0.45		0.41		0.40
Labor Force Participation							
Outside	177	0.02		-0.03		-0.03	
At home	125	-0.04		0.05		0.05	
Non-working	297	0.00		-0.00		-0.00	
			0.04		0.06		0.06
Multiple R Squared					0.214		0.217
Multiple R					0.462		0.465

However, when the analysis is controlled for education, number of children, female labor force participation, desire for additional children declined below the average after women reached 35 years of age. When the analysis is further controlled for income and female labor force participation, the difference in desire for additional children is slightly accentuated among the mothers of different age groups.

Regarding mothers' educational attainment, data show mothers with lower educational attainment desire less for additional children than those with higher education. With control for age, number of children, and labor force participation, the relationship becomes a J-shaped curve. The pattern of the relationship remains the same with further control for family type and income variables.

With respect to the relationship between the number of children and desire for additional children, it has been found that desire for additional children becomes less as women have more children. The relationship between the two variables remains the same when the analysis is controlled for other independent variables and covariates.

Regarding the relationship between female labor force participation and desire for additional children, without any control for other variables, those who worked outside the home express the desire for additional children in a greater proportion than those who stayed or worked at home. However, when control is made for women's age, education, the number of children, family type and income variables, the opposite is true.

As desire for additional children is most likely to be related to the sex composition of children, the following analysis includes the number of boys and girls women already have as the independent variables. Analysis of variance shows the relationships between desire for additional children and the number of boys and girls are statistically significant (Table 3.10). But the number of boys is more significantly related to the desire for additional children than that of girls.

The result of the multiple classification analysis shows that mothers who had no boys wanted to have more children than the others. The desire for additional children declined as the number of boys increased up to three; thereafter the desire for additional children increased probably because girls became wanted. The relationship between the number of boys

Table 3.10 Analysis of Variance of the Desire for Additional Children

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	30.476	15	2.032	12.620	0.000
Age of Mothers	0.353	3	0.118	0.730	0.534
Education of Mothers	0.801	3	0.267	1.659	0.175
Current Family Size	2.401	3	0.800	4.972	0.002
Number of Boys	1.787	3	0.596	3.701	0.012
Number of Girls	1.313	3	0.438	2.318	0.044
Covariates	0.177	4	0.044	0.275	0.894
Labor Force Participation	0.001	1	0.001	0.008	0.927
Family Income Per Month	0.000	1	0.000	0.003	0.957
Income Per Capita Per Month	0.044	1	0.044	0.272	0.602
Family Type	0.052	1	0.052	0.323	0.570
Explained	30.654	19	1.613	10.021	0.000
Residual	93.215	579	0.161		
Total	123.869	598	0.207		

Covariate	Raw Regression Coefficient
Labor Force Participation	-0.003
Family Income Per Month	-0.000
Income Per Capita Per Month	0.000
Family Type	-0.022

and desire for additional children was somewhat less, when the analysis is controlled for other independent variables and covariates as shown in Table 3.11.

A similar relationship between women's desire for additional children and the number of girls has been found even when the analysis is controlled for other independent variables and the covariates. It could be inferred that the desire for additional children simply results from the need to balance the sex composition of children. It should also be noted that the inclusion of the variables on the sex composition of children better explains the variance of the dependent variables than their exclusion.

The technique of multiple classification analysis shows the pattern of the relationship between the dependent and each of the independent variables before and after the control for other independent variables and the covariates. However, it cannot provide an estimate of the dependent variables when there is a change in the value of the variable as does multiple regression analysis.

Among the variables included in the multiple regression analysis are mothers' age and education, the number of children, labor force participation, monthly family income and income per capita. Table 3.12 shows basic descriptive statistics of all the variables and their simple correlation coefficients. No single part of the variables are highly correlated. The relationship between monthly family income and monthly income per capita has a moderate coefficient of .68. Data show that age is negatively correlated with education; desire for additional children negatively related to the number of children and labor force participation. There are positive correlations between education and desire for additional children, labor force participation, and income variables, but a negative correlation between education and family size. As the number of children increases, desire for additional children and income decrease and labor force participation increases. There is a positive correlation between labor force participation and the income variables.

Table 3.13 illustrates the result of the stepwise multiple regression. Among all the independent variables, the number of children is the most significant one related to desire for additional children, and they are negatively related. The next variables are income and age of mothers.

Table 3.11 Multiple Classification Analysis of the Desire for Additional Children

(Grand Mean = 0.29)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mothers							
24 years or less	152	0.16		0.02		0.03	
25 - 29	199	0.01		0.00		0.00	
30 - 34	144	-0.04		0.02		0.01	
35 years and over	104	-0.20		-0.06		-0.06	
			0.25		0.06		0.07
Education of Mothers							
3 years of primary or less	61	-0.08		-0.02		-0.01	
4 years of primary	331	-0.03		-0.01		-0.01	
5 years of primary to third year of secondary	121	0.01		-0.03		-0.03	
4 years of secondary	86	0.16		0.09		0.09	
			0.16		0.08		0.08
Number of Current Family Size							
1	197	0.27		0.19		0.18	
2	190	-0.04		-0.04		-0.04	
3	100	-0.19		-0.14		-0.14	
4 and over	112	-0.24		-0.14		-0.14	
			0.45		0.31		0.30

cont'd

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Number of Sons							
None	169	0.23		0.16		0.16	
1	243	0.00		-0.04		-0.04	
2	112	-0.19		-0.10		-0.10	
3 and over	75	-0.25		-0.08		-0.08	
			0.38		0.23		0.23
Number of Girls							
None	163	0.10		0.07		0.07	
1	251	0.01		-0.05		-0.05	
2	117	-0.09		-0.01		-0.01	
3 and over	68	-0.13		0.04		0.04	
			0.17		0.11		0.11
Multiple R Squared					0.246		0.247
Multiple R					0.496		0.497

Table 3.12 Means, Standard Deviation, and Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis

Independent Variables	ME	NLC	DAC	TW	HIN	PIN	Means	Standard Deviation	Total
MA : Age of Mothers	-0.014	0.600	-0.254	0.246	0.199	0.064	28.872	6.082	599
ME : Education of Mothers		-0.278	0.148	0.225	0.429	0.396	5.912	3.966	599
NLC : Current Family Size			-0.368	0.099	-0.043	-0.265	2.437	1.912	599
DAL : Desire for Additional Children				-0.009	0.045	0.178	0.292	0.455	599
TW : Labor Force Participation					0.284	0.208	0.504	0.500	599
HIN : Family Income Per Month						0.680	3749.748	2742.277	599
PIN : Income Per Capita Per Month							739.209	610.367	599

Table 3.13 Summary of the Stepwise Multiple Regression Analysis of the Desire for Additional Children

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Current Family Size	0.368	0.136	0.136	-0.368	-0.077	-0.271	0.015	26.164**
Income Per Capita Per Month	0.378	0.143	0.007	0.178	0.1D-03	0.134	0.4D-04	5.878**
Age of Mothers	0.384	0.147	0.005	-0.254	-0.007	-0.092	0.004	3.327*
Family Income Per Month	0.385	0.148	0.001	0.045	-0.1D-04	-0.062	0.1D-04	1.250
Education of Mothers	0.387	0.150	0.001	0.148	0.005	0.040	0.005	0.804
Labor Force Participation	0.387	0.150	0.4D-03	-0.009	0.019	0.021	0.037	0.273
Constant					0.606			
Multiple R					0.387			
F					17.410			

** Level of significance at .01

* Level of significance at .05

As income rises, desire for additional children also increases. However, as women's ages increase, their desire for additional children significantly decreases. These variables are not found to have any statistical significant relationship with the dependent variable.

Female Labor Force Participation and Birth Control

The majority of the respondents, 63.9 percent, currently practiced birth control as shown in Table 3.14. Data also show that mothers who worked outside the home tended to practice birth control in a greater percentage than mothers who stayed or worked at home respectively. Further analysis, which includes age and education of mothers, the number of children, income, and family type, shows that the most significant variable among them is the number of living children, as shown in Table 3.14. Other variables are not significantly related to the practice of birth control.

Table 3.14 Percentage Distribution of Women by Labor Force Participation and Birth Control Practice

Birth Control Practice	Labor Force Participation			Total	Statistical Test	Level of Significance
	Working		Non-Working			
	Outside	At home				
Control	66.5	61.9	63.1	63.9	$\chi^2 = 0.82$	0.67
Not Control	33.5	38.1	36.9	36.1	C = 0.04	
Total	100.0	100.0	100.0	100.0		
Number	182	126	317	625		

The result of multiple classification analysis also shows that mothers under 25 years of age practiced birth control less than those who were older. However, after the age of 35, the percentage of women practicing birth control declined; probably the majority of them had already achieved the desired family size, became infecund or their husbands had resorted to male fertility control methods. The pattern remains more or less the same when the analysis is controlled for other independent variables and covariates.

Table 3.15 Analysis of Variance of Birth Control Practice

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	11.744	11	1.068	5.004	0.000
Age of Mother	1.434	3	0.478	2.241	0.082
Education of Mother	1.456	3	0.485	2.275	0.079
Current Family Size	8.771	3	2.924	13.704	0.000
Labor Force Participation	0.168	2	0.084	0.393	0.675
Covariates	1.308	3	0.436	2.043	0.107
Family Income Per Month	0.289	1	0.289	1.356	0.245
Income Per Capita Per Month	0.095	1	0.095	0.444	0.506
Family Type	0.140	1	0.140	0.655	0.419
Explained	13.052	14	0.932	4.370	0.000
Residual	127.163	596	0.213		
Total	140.215	610	0.230		

Covariate Raw Regression Coefficient

Family Income Per Month	0.000
Income Per Capita Per Month	0.000
Family Type	-0.036

Table 3.16 Multiple Classification Analysis of the Birth Control Practice
(Grand Mean = 0.65)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mother							
24 years or less	158	-0.08		0.03		0.05	
25 - 29	203	0.02		0.01		0.02	
30 - 34	144	0.08		0.03		0.02	
34 - 49 years	106	-0.03		-0.12		-0.13	
			0.12		0.11		0.13
Education of Mother							
3 years of primary or less	63	-0.10		-0.14		-0.12	
4 years of primary	336	0.01		0.00		0.01	
5 years of primary to third year of secondary	123	-0.00		0.01		0.01	
4 years of secondary	89	0.03		0.08		0.04	
			0.08		0.11		0.09
Number of Children							
1	206	-0.12		-0.15		-0.16	
2	192	-0.02		-0.04		-0.04	
3	101	0.21		0.22		0.23	
4 and over	112	0.07		0.15		0.17	
			0.24		0.30		0.32
Nature of Labor Force Participation							
Outside	181	0.02		0.02		0.02	
At home	125	-0.03		-0.03		-0.04	
Non-working	305	-0.00		0.00		0.01	
			0.03		0.04		0.04
Multiple R Squared					0.084		0.093
Multiple R					0.289		0.305

Table 3.17 Means, Standard Deviation, and Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis

Independent Variables	ME	NLC	BCP	TWO	HIN	PIN	Means	Standard Deviation	Total
MA : Age of Mother	-0.023	0.607	0.038	0.244	0.197	0.060	28.841	6.091	611
ME : Education of Mothers		-0.281	0.060	0.225	0.415	0.393	5.928	3.981	611
NLC : Living Children			0.118	0.108	-0.035	-0.259	2.416	1.606	611
BCP : Birth Control Practice				0.001	0.080	0.036	0.643	0.479	611
TW : Labor Force Participation					0.278	0.207	0.501	0.500	611
HIN : Family Income Per Month						0.676	3740.727	2736.296	611
PIN : Income Per Capita Per Month							736.934	607.557	611

Table 3.18 Summary of the Stepwise Multiple Regression Analysis of the Birth Control Practice

Independent Variables	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Living Children	0.118	0.014	0.014	0.118	0.064	0.216	0.017	14.676**
Education of Mothers	0.153	0.023	0.009	0.060	0.011	0.091	0.006	3.740*
Age of Mothers	0.165	0.027	0.004	0.038	-0.007	-0.094	0.004	3.093*
Family Income Per Month	0.177	0.031	0.004	0.080	0.1D-04	0.060	0.1D-04	1.068
Labor Force Participation	0.181	0.033	0.002	0.001	-0.041	-0.042	0.041	0.967
Income Per Capita Per Month	0.182	0.033	0.4D-03	0.036	0.2D-04	0.030	0.5D-04	0.273
Constant					0.600			
Multiple R					0.182			
F					3.460**			

** Level of significance at .01

* Level of significance at .05

With respect to the relationship between education and birth control practice, data also reveal that more educated women tend to practice birth control in a greater proportion than the less educated ones. The positive relationship between the two variables remains more or less the same when other variables and covariates are controlled.

The percentage of women practicing birth control is also found to be related to the fertility measure even when other independent variables and covariates are controlled.

The result of multiple classification analysis with control for other independent variables and covariates also confirms earlier findings that mothers who worked outside the home practiced birth control in a greater proportion than those who stayed or worked at home.

An attempt has also been made to use multiple regression analysis to investigate which technique could better explain changes in the dependent variable. A matrix of simple correlation coefficients among the set of variables - age and education of women, number of children, labor force participation, and income is presented in Table 3.17. Most of the variables are not strongly correlated. Only the correlation coefficients between age of mothers and the number of children ($r = .607$), and between the income variables are moderate ($r = 0.676$). The result of multiple regression analysis closely resembled that of multiple classification analysis. However, the model of multiple regression analysis better explains the variance of the dependent variable. The model is statistically significant at .01.

CHAPTER 4

FEMALE LABOR FORCE PARTICIPATION, PRE-SCHOOL CHILD CARE AND FERTILITY

This chapter deals with the impact of female labor force participation and child care which includes the method and quality of childrearing. The method of childrearing encompasses the time spent with children and nutritional care. The quality of childrearing is measured by frequency of illness, physical health status, malnutritional status, emotional and social development and developmental problems which include eating, sleeping and toilet habits.

Method of Childrearing

Data show that the great majority of mothers spent a great deal of time with their children; only a few did not. Working mothers generally have less time with children as compared with housewives and mothers who worked at home (Table 4.1). The difference is statistically significant, supporting the hypothesized relationship between female labor force participation and time spent on child care.

In addition, it has been found that the majority of fathers spent little time with their children. However, fathers in the families where mothers were working outside the home generally rendered help in child-rearing more than those in families with non-working mothers.

Illness and Physical Health of Children

Analysis of children's illness and physical health involves many variables that are considered to be significantly related to children's health. They are age of mother, number of live births, labor force participation, monthly household income, monthly income per capita, sex and age of children, vaccination, and mother's time with children. It has been revealed that the number of children is the most significant variable. Next to it is the age of children (Table 4.2).

Using Guttman's scaling technique, a child health index was constructed. Table 4.3 indicates that the great majority of children are in good health. Children of mothers aged 35 years and over least frequently fall ill, followed by those of mothers aged under 25 years.

Table 4.1 Percentage Distribution of Children by Labor Force Participation Statistics, Mother's Time Spent with Children, Father's Participation in Childrearing and Child Rearer

Independent Variables	Labor Force Participation			Total	χ^2	Level of Significance
	Working		Non-Working			
	Outside	At home				
Mother's time with Children						
A great deal	37.3	73.6	94.5	74.4	237.81	0.0000
Little	59.9	25.0	5.3	24.4		
None	2.8	1.4	0.3	1.2		
Total	100.0	100.0	100.0	100.0		
Number	212	140	398	750		
Father's Participation						
A great deal	33.8	23.2	21.8	25.4	12.58	0.01
Only a little	38.6	49.3	50.6	47.0		
None	27.6	27.5	27.6	27.6		
Total	100.0	100.0	100.0	100.0		
Number	210	138	399	747		
Child Rearer						
Mother	55.4	90.8	96.5	83.8	173.94	0.0000
Other	44.6	9.2	3.5	16.2		
Total	100.0	100.0	100.0	100.0		
Number	213	141	399	753		

Table 4.2 Analysis of Variance of Children's Illness

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	89.720	13	6.902	4.087	0.000
Age of Mother	6.052	3	2.017	1.194	0.311
Live births	40.903	4	10.226	6.055	0.000
Nature of Labor Force Participation	5.448	2	2.724	1.613	0.200
Monthly Household Income	3.418	2	1.709	1.012	0.364
Income Per Capita	3.656	2	1.828	1.082	0.339
Covariates	141.206	4	113.301	65.311	0.000
Children's Sex	7.627	1	7.627	4.516	0.034
Children's Age	408.602	1	408.602	241.940	0.000
Vaccination	0.538	1	0.538	0.319	0.573
Mother's Time with Children	3.945	1	3.945	2.336	0.127
Explained	530.926	17	31.231	18.492	0.000
Residual	1210.912	717	1.689		
Total	1741.838	734	2.373		

Covariate	Raw Regression Coefficient
Children's Sex	-0.206
Children's Age	0.041
Vaccination	0.087
Mother's Time with Children	-0.104

Table 4.3 Multiple Classification Analysis of Children's Illness

(Grand Mean = 1.66)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mother							
24 years or less	181	-0.24		-0.07		0.11	
25 - 29	249	0.06		0.10		0.13	
30 - 34	183	0.11		0.04		-0.09	
35 years and over	122	0.06		-0.16		-0.29	
			0.09		0.06		0.10
Number of Children							
1	207	-0.39		-0.37		-0.07	
2	245	0.11		0.09		0.04	
3	139	-0.04		-0.06		-0.24	
4	61	0.21		0.23		0.23	
5 or more	83	0.57		0.59		0.30	
			0.19		0.19		0.11
Nature of Labor Force Participation							
Outside	212	0.08		0.14		0.05	
At home	137	0.02		-0.01		-0.08	
Non-working	386	-0.05		-0.08		-0.00	
			0.04		0.06		0.03

cont'd

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Family Income Per Month							
US $ 100 or less	222	0.15		0.09		0.04	
100 - 200	289	-0.00		0.04		0.02	
200 and over	224	-0.15		-0.13		-0.06	
			0.08		0.06		0.03
Income Per Capita							
US $ 25 or less	342	0.20		0.08		0.11	
25 - 50	279	-0.17		-0.10		-0.12	
50 and over	114	-0.16		0.01		-0.04	
			0.12		0.06		0.07
Multiple R Squared					0.052		0.305
Multiple R					0.227		0.552

With respect to family size, children from families of six were more frequently ill and those from families of three were least frequently ill. In addition, mother's participation in the labor force generally had a negative impact on child health as compared to those who worked at home and those who were not employed. However, it has been found that monthly household income has a positive relationship with child health. As monthly household income increases, the frequency of child's illness becomes less, even when other independent variables are controlled. Unexpected is a curvilinear relationship between income per capita and child health. The frequency of children's illness is reduced as income per capita increases up to US$50 per month but as it increases beyond US$50, children are more frequently ill. A casual explanation for the relationship between the two variables obviously calls for further research.

Data show that sex of children also makes a statistically significant difference on children's illness. Boys are less frequently ill than girls, probably because they were better taken care of than girls. The findings are consistent with the nature of the patriarchal society of Thailand.

The following section presents the multiple regression analysis of children's illness and other factors affecting it. The independent variables involved in the analysis are age and education of mother, number of children, boys and girls, mother's typical illness, mother's monthly income, monthly household income, mother's length of working experience, number of children under six years of age, number of household members, monthly income per capita, social and familial habits of fathers, length of gestation, duration of breastfeeding, child's age, mother's closeness to children.

Table 4.4 presents the means, standard deviations, and simple correlation coefficients of all the variables involved in the multiple regression analysis. Most variables are lowly correlated with one another.

The length of mothers' working experience, age of mother, length of breastfeeding, number of family members, and monthly household income, family size and father's social and familial habits were negatively related to child's illness as expected.

The findings could be interpreted as follows: As women age they become more experienced in childrearing and they probably also have more

Table 4.4 Means, Standard Deviation, and Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis of Children's Illness

Variable	CIL	MA	ME	NLB	NS	ND	MIL	MIN	HIM	WE
CIL : Children's Illness	1.000	0.084	-0.105	0.184	0.134	0.098	0.120	-0.026	-0.070	-0.010
MA : Age of Mother			0.010	0.564	0.439	0.354	0.043	0.268	0.218	0.391
ME : Education of Mother				-0.266	-0.178	-0.178	-0.085	0.368	0.448	0.312
NLB : Number of Live Births					0.715	0.641	0.100	0.014	-0.042	0.146
NS : Number of Boys						-0.058	0.102	0.040	-0.030	0.172
ND : Number of Girls							0.026	-0.009	-0.012	0.043
MIL : Mother's Typical Illness								-0.018	-0.111	0.052
MIN : Mother's Monthly Income									0.525	0.615
HIN : Monthly Household Income										0.319
Means	1.637	28.700	6.104	2.556	1.275	1.246	0.272	919.716	3713.735	2.469
Standard Deviation	1.550	5.830	3.999	1.621	1.204	1.094	0.445	1352.216	2713.902	3.970

cont'd

Variable	NCU6	NHM	FT	PIN	FSFB	DELT	BL	CA	MH
CIL : Children's Illness	0.089	0.062	-0.065	-0.079	0.073	-0.018	0.055	0.518	-0.118
MA : Age of Mother	0.085	0.161	-0.080	0.064	-0.006	0.035	0.091	0.270	-0.063
ME : Education of Mother	-0.033	-0.035	0.177	0.388	-0.147	-0.095	-0.233	-0.096	-0.059
NLB : Number of Live Birth	0.350	0.380	-0.106	-0.275	0.134	0.061	0.207	0.272	-0.064
NS : Number of Boys	0.174	0.268	-0.048	-0.206	0.085	0.034	0.138	0.188	-0.040
ND : Number of Girls	0.304	0.253	-0.091	-0.166	0.098	0.044	0.148	0.174	-0.051
MIL : Mother's Typical Illness	-0.022	0.005	-0.010	-0.080	0.050	-0.093	-0.054	0.066	0.016
MIN : Mother's Monthly Income	-0.132	0.062	0.144	0.430	-0.149	-0.015	-0.116	0.065	0.162
HIN : Monthly Household Income	0.015	0.265	0.275	0.640	-0.188	-0.040	-0.159	0.004	0.054
WD : Mother's length of Working Experience	-0.088	0.111	0.130	0.227	-0.118	-0.001	-0.091	0.099	0.187
NCU6 : Number of Children under 7 years of age		0.237	0.045	-0.160	-0.041	-0.030	0.061	0.117	0.010
NHM : Number of Household Members			0.535	-0.278	0.070	0.023	0.047	0.046	-0.008
FT : Type of Family				-0.073	0.080	-0.010	-0.045	-0.130	-0.006
PIN : Monthly Income Per Capita					-0.164	-0.027	-0.162	-0.063	-0.060
FSFB : Social and Familial Habits of Fathers						0.058	0.064	-0.043	0.068
DELT : Length of Gestation							0.121	0.0010	0.022
BL : Duration of Breastfeeding								0.160	-0.028
CA : Child's Age									-0.110
MC : Mother's Closeness to Children									1.000
Means	1.581	5.867	0.403	711.234	1.865	0.952	6.778	28.010	0.802
Standard Deviation	0.655	2.834	0.491	577.613	1.124	0.215	8.982	19.183	0.764

Table 4.5 Summary of the Stepwise Multiple Regression Analysis of the Children's Illness

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Children's Age	0.518	0.268	0.268	0.518	0.042	0.519	0.003	220.623**
Social and Familial Habits of Fathers	0.526	0.277	0.009	0.073	0.110	0.079	0.047	5.382**
Mother's Typical Illness	0.533	0.284	0.006	0.120	0.251	0.072	0.116	4.690**
Mother's Closeness to Children	0.537	0.289	0.005	-0.118	-0.161	-0.080	0.068	5.710**
Mother's Length of Working Experience	0.542	0.293	0.005	-0.010	-0.018	-0.046	0.015	1.344
Age of Mother	0.543	0.295	0.002	0.084	-0.017	-0.064	0.012	2.034*
Number of Live Births	0.546	0.298	0.004	0.184	0.302	0.316	0.214	1.998
Duration of Breastfeeding	0.548	0.300	0.002	0.055	-0.008	-0.047	0.006	1.860
Number of Girls	0.549	0.301	0.001	0.098	-0.288	-0.203	0.223	1.661
Number of Boys	0.550	0.302	0.001	0.134	-0.242	-0.188	0.223	1.180

cont'd

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Number of Household Members	0.550	0.303	0.001	0.062	0.040	0.074	0.028	2.118*
Monthly Household Income	0.551	0.304	0.001	-0.070	-0.5D-04	-0.087	0.3D-04	2.284*
Monthly Income Per Capita	0.553	0.306	0.002	-0.079	0.1D-03	0.071	0.1D-03	1.710*
Number of Children Under 6 Years of age	0.553	0.306	0.2D-03	0.089	0.042	0.018	0.086	0.235
Length of Gestation	0.553	0.306	0.2D-03	-0.018	-0.098	-0.014	0.238	0.170
Education of Mother	0.554	0.306	0.6D-04	-0.105	-0.003	-0.009	0.015	0.048
Type of Family	0.554	0.306	0.4D-04	-0.065	-0.027	-0.009	0.137	0.039
Constant					0.673			
Multiple R					0.554			
F					17.204**			

**Level of significance at .01

*Level of significance at .05

children. As for the negative relationship between working experience and child's illness, it could be interpreted that there is a conflict between female labor force participation and motherhood. This is also confirmed by a negative regression coefficient between child's illness and the amount of time spent with children. This is expected particularly among the urban Thai women as most of them live in nuclear families, the majority of which have no close relatives living with them. The length of breastfeeding related negatively to child's illness. This is probably due to the lower socio-economic status of those mothers who breastfeed the children for a longer time. They are most likely to have lower education and less income, thus less knowledge and financial ability for childrearing. This is confirmed by a negative regression coefficient between monthly household income and child's illness. The level of fertility also has a significant positive impact on child's illness. Children in a family with a larger number of boys or girls are likely to be ill more frequently than those in a smaller family. It is interesting to note that father's social and familial habits also have a significant impact on child's illness. Children with fathers who share in childrearing and household chores are healthier than those with fathers who do not participate in them.

Child Malnutrition

In addition to illness, the study also includes analysis of child malnutrition. Data show that 44.2 percent of Bangkok children, based on the Bangkok standard of malnutrition as measured by height relative to age, suffered from malnutrition. When malnutrition is measured by weight relative to age, about 30.2 percent of children were malnutritional. There are factors related to malnutrition and child development. They should therefore be brought into consideration. They are mother's age, size of family, labor force participation status, type of family, sex of children, pre-natal care and duration of breastfeeding.

Malnutrition as Measured by Relative Height and Age

Analysis of variance indicates that mother's age, labor force status, child's age and sex, pre-natal care and duration of breastfeeding are all significantly related to malnutrition, as shown in Table 4.6.

Table 4.6 Analysis of Variance of Malnutrition as Measured by the Standard of Relative Height and Age

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	21.444	14	1.532	7.022	0.000
Age of Mother	4.248	3	1.416	6.491	0.000
Number of Children	6.494	4	1.624	7.444	0.000
Nature of Labor Force Participation	1.379	2	0.690	3.161	0.043
Children's Age	10.625	5	2.125	9.743	0.000
Covariates	3.739	4	0.935	4.286	0.002
Type of Family	0.293	1	0.293	1.342	0.247
Children's Sex	1.737	1	1.737	7.963	0.005
Pre-natal Care	0.879	1	0.879	4.028	0.045
Duration of Breastfeeding	1.015	1	1.015	4.653	0.031
Explained	25.183	18	1.399	6.414	0.000
Residual	155.516	713	0.219		
Total	180.699	731	0.247		

Covariate	Raw Regression Coefficient
Type of Family	-0.042
Children's Sex	-0.099
Pre-natal Care	-0.131
Duration of Breastfeeding	0.004

Table 4.7 Multiple Classification Analysis of Malnutrition as Measured by the Standard of Relative Height and Age

(Grand Mean = 0.44)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Mother's Age							
24 years or less	184	0.06		0.14		0.14	
25 - 29	245	-0.01		0.01		0.02	
30 - 34	181	-0.06		-0.11		-0.11	
35 years and over	122	0.02		-0.06		-0.07	
			0.09		0.18		0.19
Number of Children							
1	213	-0.06		-0.08		-0.08	
2	243	0.03		-0.01		-0.00	
3	134	-0.10		-0.06		0.07	
4	61	0.23		0.27		0.28	
5 or more	81	0.09		0.14		0.11	
			0.18		0.21		0.21
Nature of Labor Force Participation							
Outside	209	0.02		0.03		0.04	
At home	138	-0.07		-0.09		-0.09	
Non-working	385	0.02		0.02		0.01	
			0.07		0.09		0.09
Children's Age							
11 months or less	174	-0.19		-0.19		-0.17	
12 - 23	171	-0.03		-0.03		-0.03	
24 - 35	144	0.10		0.09		0.09	
36 - 47	108	0.16		0.16		0.15	
48 - 59	75	0.10		0.11		0.09	
60 - 83	60	-0.03		0.01		-0.01	
			0.25		0.25		0.23
Multiple R Squared					0.119		0.139
Multiple R					0.344		0.373

Table 4.8 Analysis of Variance of Malnutrition as Measured by the Standard of Relative Weight and Age

Source of Variation	Sum of Square	df	Mean Square	F	Signif. of F
Main effects	7.027	14	0.502	2.472	0.002
Age of Mother	3.744	3	1.248	6.146	0.000
Number of Children	2.299	4	0.575	2.829	0.024
Nature of Labor Force Participation	0.837	2	0.418	2.060	0.128
Children's Age	1.043	5	0.209	1.027	0.401
Covariates	3.617	4	0.904	4.452	0.001
Type of Family	0.275	1	0.275	1.355	0.245
Children's Sex	1.595	1	1.595	7.852	0.005
Pre-natal Care	0.982	1	0.982	4.834	0.028
Duration of Breastfeeding	0.942	1	0.942	4.639	0.032
Explained	10.644	18	0.591	2.912	0.000
Residual	144.804	713	0.203		
Total	155.448	731	0.213		

Covariate	Raw Regression Coefficient
Type of Family	-0.041
Children's Sex	-0.094
Pre-natal Care	-0.138
Duration of Breastfeeding	0.004

Table 4.9 Multiple Classification Analysis of Malnutrition as Measured by the Standard of Relative Weight and Age

(Grand Mean = 0.31)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Age of Mother							
24 years or less	184	0.10		0.14		0.14	
25 - 29	245	-0.01		-0.00		0.00	
30 - 34	181	-0.06		-0.08		-0.09	
35 years and over	122	-0.03		-0.07		-0.08	
			0.13		0.19		0.19
Number of Children							
1	213	-0.03		-0.08		-0.07	
2	243	0.04		0.02		0.03	
3	134	-0.05		-0.02		-0.02	
4	61	-0.01		0.05		0.06	
5 or more	81	0.06		0.14		0.11	
			0.09		0.14		0.13
Nature of Labor Force Participation							
Outside	209	0.00		0.02		0.04	
At home	138	-0.07		-0.07		-0.07	
Non-working	385	0.02		0.01		0.01	
			0.07		0.08		0.08
Children's Age							
11 months or less	174	-0.06		-0.06		-0.04	
12 - 23	171	0.01		0.00		0.00	
24 - 35	144	0.02		0.01		0.01	
36 - 47	108	0.05		0.05		0.04	
48 - 59	75	0.03		0.03		0.02	
60 - 83	60	-0.02		0.01		-0.01	
			0.08		0.08		0.06
Multiple R Squared					0.045		0.068
Multiple R					0.213		0.262

The result of multiple classification analysis shows that children who belonged to younger mothers tend to suffer from malnutrition in a large number than those who belonged to the older mothers. Data also show that family size is positively related to malnutrition. Children who belonged to large families tended to suffer more than those from small families. One child children were the least to suffer from malnutrition.

With respect to female labor force participation, it has been found that children whose mothers worked at home suffered least from malnutrition, followed by non-working and working mothers respectively. Data obviously confirm the general hypothesis on the conflicting roles of motherhood and women's career.

Age of children is also another variable that is found to be significantly related to malnutrition. It is rather unexpected to find that children under one year of age are the least to suffer from malnutrition as they are the most vulnerable group. However, it could be due to the fact that they have been given special care and attention by their parents. Malnutrition increases with the age of children but only up to four years of age. Thereafter, it declines. This is expected and consistent with other medical findings in the country.

Malnutrition as Measured by Relative Weight and Age

Regarding malnutrition as measured by weight and age and factors affecting it, it has been found that only 31 percent of Bangkok children suffer from it as compared to 44 percent when it is measured by height and age. Data also show that age of mother, family size, sex of a child, pre-natal care and duration of breastfeeding are significantly related to malnutrition. The findings can be similarly interpreted as in the previous section. It is interesting to note that despite a moderate preference for boys in the Thai patrilineal society, boys tend to suffer from malnutrition more than girls. This could be due to the process of socialization which encourages boys to be more active than girls. Given the same amount of food, boys would tend to suffer more from malnutrition. However, this is a question that needs more research.

Although the use of multiple classification analysis is most appropriate for the set of the variables used in the previous sections, there are other variables that should be included in the analysis. As many of these variables are measured in an interval scale, the technique of multiple regression is adopted. The means, standard deviations of these variables, and their simple correlation coefficients are shown in Table 4.10 and 4.11.

It has been found that even though more variables have been included, and therefore their variances are controlled and separated from other variables, the age and sex of a child, mother's age, and number of family members are still found to be significantly related to child malnutrition. The results are shown in Table 4.12 for the analysis of malnutrition based on relative height and age, and in Table 4.13 for relative weight and age, respectively.

It should be noted that the findings are consistent with the findings based on analysis of variance and multiple classification analysis in the previous sections. The control for additional variables does not change the findings. The results can therefore be similarly interpreted.

Children's Emotional and Social Development

With respect to children's social and emotional development, a large number of variables that could theoretically be related to child malnutrition are included as independent as well as control variables. They are mother's education, family size, monthly income per capita, father's social and familial behavior, term of delivery, child's age, child care closeness to mothers, age of mother, number of sons and daughters, mother's common illness, number of children under seven years of age, number of family members, type of family, monthly household expenditure and duration of breastfeeding. The means, standard deviations and simple correlation coefficients of these variables are shown in Table 4.14. The coefficients indicate low correlation between the variables.

Data interestingly reveal that the most significant variable related to child's social and emotional development is father's social and familial habits (Table 4.15). Children whose fathers have low responsibility are slower in their development than those with more responsible fathers. Also

Table 4.10 Means and Standard Deviation of the Variables Used in Multiple Regression Analysis of Malnutrition

Variables	Means	Standard Deviation	Number
Malnutrition as Measured by the Standard of Relative Height and Age	0.667	0.878	676
Malnutrition as Measured by the Standard of Relative Weight and Age	0.364	0.604	676
Mother's Age	28.744	5.902	676
Mother's Education	6.111	4.017	676
Number of Children	2.506	1.573	676
Number of Household Members	5.855	2.837	676
Type of Family	0.401	0.490	676
Monthly Household Income	3743.180	2757.735	676
Monthly Per Capita Income	720.948	592.460	676
Social and Familial Habits of of Fathers	1.854	1.136	676
Mother's Typical Illness	0.265	0.442	676
Mother's Closeness to Children	0.805	0.764	676
Take Care of Pregnancy	0.933	0.250	676
Length of Gestation	0.953	0.212	676
Children's Sex	0.488	0.500	676
Children's Age	27.306	18.472	676
Duration of Breastfeeding	6.771	8.989	676

Table 4.11 Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis of Malnutrition

Variables	MWA	MA	ME	NLC	NHM	FT	HIN	PIN
MHA : Malnutrition as Measured by the Standard of Relative Height and Age	0.466	-0.060	-0.095	0.105	0.061	-0.054	-0.087	-0.109
MWA : Malnutrition as Measured by the Standard of Relative Weight and Age		-0.067	-0.059	0.072	0.007	-0.033	-0.088	-0.086
MA : Mother's Age			0.018	0.578	0.157	-0.084	0.233	0.086
ME : Mother's Education				-0.262	-0.042	0.169	0.456	0.397
NLC : Number of Children					0.375	-0.104	-0.038	-0.271
NHM : Number of Household Members						0.536	0.252	-0.279
FT : Type of Family							0.258	-0.082
HIN : Monthly Household Income								0.652

cont'd

Table 4.11 Simple Correlation Coefficients of the Variables Used in Multiple Regression Analysis of Malnutrition

Variables	MIN	FSFB	MIL	MC	PC	DELT	CS	CA	BL
MHA : Malnutrition as Measured by the Standard of Relative Height and Age	-0.074	-0.021	-0.032	0.0001	-0.061	0.034	-0.119	0.144	0.102
MWA : Malnutrition as Measured by the Standard of Relative Weight and Age	-0.063	0.017	-0.012	-0.067	-0.045	0.054	-0.098	-0.002	0.093
MA : Age of Mother	0.272	-0.011	0.047	-0.058	-0.115	0.033	-0.037	0.281	0.091
ME : Education of Mother	0.370	-0.140	-0.080	-0.049	0.121	-0.100	-0.002	-0.087	-0.244
NLC : Number of Children	0.002	0.114	0.108	-0.062	-0.140	0.063	-0.047	0.257	0.217
NHM : Number of Household Members	0.041	0.065	0.014	-0.010	-0.020	0.020	-0.034	0.043	0.053
FT : Type of Family	0.127	0.079	0.002	-0.012	0.025	-0.017	-0.044	-0.139	-0.043
HIN : Monthly Household Income	0.521	-0.188	-0.090	-0.054	0.036	-0.044	-0.024	0.030	-0.158
PIN : Monthly Per Capita Income	0.430	-0.165	-0.060	-0.058	0.020	-0.029	0.037	-0.030	-0.161
MIN : Mother's Monthly Income		-0.158	-0.003	-0.163	-0.030	-0.018	-0.076	0.085	-0.113
FSFB : Social and Familial Habits of Fathers			0.039	0.071	-0.020	0.063	0.053	-0.081	0.061
MIL : Mother's Typical Illness				0.017	-0.015	-0.087	-0.076	0.048	-0.054
MC : Mother's Closeness to Children					0.064	0.025	0.017	-0.107	-0.028
PC : Pre-natal Care						-0.032	-0.012	-0.117	-0.059
DELT : Length of Gestation							0.022	0.010	0.118
CS : Children's Sex								-0.052	-0.001
CA : Children's Age									0.165

Table 4.12 Summary of the Stepwise Multiple Regression Analysis of the Malnutrition as Measured by the Standard of Relative Height and Age

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Children's Age	0.144	0.021	0.021	0.144	0.006	0.136	0.002	11.388**
Children's Sex	0.182	0.033	0.012	-0.119	-0.208	-0.118	0.066	9.894**
Mother's Age	0.211	0.045	0.012	-0.060	-0.028	-0.188	0.008	13.957**
Number of Children	0.259	0.067	0.022	0.105	0.071	0.128	0.031	5.298**
Duration of Breastfeeding	0.265	0.070	0.003	0.102	0.005	0.049	0.004	1.539
Mother's Typical Illness	0.271	0.073	0.003	-0.032	-0.104	-0.052	0.076	1.896
Take Care of Pregnancy	0.274	0.075	0.002	-0.061	-0.158	-0.045	0.133	1.399
Type of Family	0.277	0.076	0.001	-0.054	-0.119	-0.066	0.088	1.824
Number of Household Members	0.281	0.079	0.003	0.061	0.024	0.078	0.016	2.176*
Monthly Household Income	0.283	0.080	0.001	-0.087	-0.1D-04	-0.039	0.2D-04	0.665
Social and Familial Habits of Fathers	0.285	0.081	0.001	-0.021	-0.026	-0.034	0.030	0.771
Length of Gestation	0.286	0.082	0.4D-03	0.034	0.079	0.019	0.156	0.258
Mother's Closeness to Children	0.286	0.082	0.3D-03	0.1D-03	0.018	0.016	0.044	0.174
Mother's Monthly Income	0.287	0.082	0.2D-03	-0.074	-0.1D-04	-0.017	0.3D-04	0.143
Constant					1.284			
Multiple R					0.287			
F					4.236**			

**Level of significance at .01

*Level of significance at .05

Table 4.13 Summary of the Stepwise Multiple Regression Analysis of the Malnutrition as Measured by the Standard of Relative Weight and Age

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Children's Sex	0.098	0.010	0.010	-0.098	-0.124	-0.103	0.046	7.222**
Duration of Breastfeeding	0.136	0.018	0.009	0.093	0.004	0.068	0.003	2.804
Mother's Age	0.157	0.025	0.006	-0.067	-0.015	-0.147	0.005	8.176**
Number of Children	0.195	0.038	0.013	0.072	0.052	0.136	0.022	5.575**
Mother's Closeness to Children	0.205	0.042	0.004	-0.067	-0.054	-0.069	0.031	3.156**
Length of Gestation	0.210	0.044	0.002	0.054	0.125	0.044	0.110	1.299
Monthly Household Income	0.214	0.046	0.002	-0.088	-0.4D-05	-0.019	0.2D-04	0.076
Take Care of Pregnancy	0.217	0.047	0.001	-0.045	-0.097	-0.040	0.094	1.063
Type of Family	0.218	0.048	0.001	-0.033	-0.033	-0.027	0.062	0.288
Children's Age	0.219	0.048	0.5D-03	-0.002	-0.7D-03	-0.023	0.001	0.308
Mother's Typical Illness	0.220	0.048	0.4D-03	-0.012	-0.026	-0.019	0.053	0.235
Education of Mother	0.221	0.049	0.4D-03	-0.059	0.004	0.028	0.007	0.334
Mother's Monthly Income	0.222	0.049	0.3D-03	-0.063	-0.9D-05	-0.020	0.2D-04	0.177
Monthly Per Capita Income	0.222	0.049	0.1D-03	-0.086	-0.2D-04	-0.022	0.7D-04	0.112
Number of Household Members	0.222	0.049	0.7D-04	0.007	-0.003	-0.013	0.013	0.049
Constant					0.784			
Multiple R					0.222			
F					2.282**			

**Level of significance at .01

Table 4.14 Means, Standard Deviation and Correlation Coefficient of the Variables Used in the Multiple Regression Analysis of Social and Emotional Development and the Problems of Those

Variable	CEP	CFP	MA	ME	NLC	NS	ND
CESI : Social and Emotional Development	0.108	-0.026	0.081	-0.183	0.083	0.089	-0.021
CEP : Problem of Social and Emotional Development		0.204	0.046	-0.087	0.032	0.056	-0.018
CFP : Problem of the Development of Eating, Sleeping and Toileting			-0.080	0.119	-0.141	-0.116	-0.077
MA : Age of Mother				-0.098	0.553	0.499	0.249
ME : Education of Mother					-0.353	-0.187	-0.311
NLC : Number of Children						0.742	0.633
NS : Number of Son							-0.048

cont'd

Variable	MIL	MIN	HIN	WD	NCU7	NHM	FT	HEX
CESI : Social and Emotional Development	0.083	0.192	-0.195	0.153	-0.066	-0.018	0.121	0.168
CEP : Problem of Social and Emotional Development	0.091	0.078	-0.073	0.078	-0.033	-0.007	0.014	0.032
CFP : Problem of the Development of Eating, Sleeping and Toileting	0.025	0.053	0.053	-0.011	0.052	0.005	0.091	0.098
MA : Mother's Age	0.064	0.256	0.193	0.381	-0.115	0.305	-0.014	0.164
ME : Mother's Education	-0.115	0.366	0.419	0.376	-0.100	-0.124	0.184	0.278
NLC : Number of Living Children	0.098	0.063	-0.040	0.130	0.193	0.605	-0.044	0.040
NS : Number of Sons	0.144	0.106	0.001	0.204	0.027	0.419	-0.044	0.052
ND : Number of Daughters	-0.024	-0.028	-0.061	-0.043	0.257	0.419	-0.015	-0.001
MIL : Mother's Typical Illness		-0.058	-0.097	-0.010	-0.029	0.041	-0.007	-0.103
MIN : Mother's Monthly Income			0.558	0.667	-0.219	0.122	0.142	0.391
HIN : Monthly Household Income				0.455	-0.016	0.214	0.294	0.755
WD : Mother's Length of Working Experience					-0.170	0.201	0.193	0.318
NCU7 : Number of Children under 7 Years						0.212	0.062	0.012
NHM : Number of Household Members							0.481	0.215
FT : Type of Family								0.222

cont'd

Variable	FSFB	DELT	BL	CA	MC	Mean	Standard Deviation	Total
CESI : Social and Emotional Development	0.287	0.111	-0.018	-0.097	-0.071	2.455	1.919	213
CEP : Problem of Social and Emotional Development	0.231	0.066	-0.016	-0.120	-0.140	3.488	2.064	213
CFP : Problem of the Development of Eating, Sleeping and Toileting	0.039	-0.160	-0.040	0.011	-0.009	1.920	1.045	213
MA : Mother's Age	-0.028	0.097	0.121	0.110	-0.4D-03	30.516	5.619	213
ME : Education of Mother	-0.259	-0.161	-0.255	-0.028	-0.217	5.418	3.759	213
NLC : Number of Living Children	0.241	0.140	0.284	0.044	-0.081	3.070	1.783	213
NS : Number of Sons	0.172	0.110	0.214	0.041	-0.093	1.559	1.381	213
ND : Number of Daughters	0.161	0.082	0.177	0.018	-0.013	1.512	1.196	213
MIL : Mother's Typical Illness	0.036	-0.108	0.013	0.084	0.034	0.329	0.471	213
MIN : Mother's Monthly Income	-0.182	0.005	-0.143	-0.086	-0.308	1034.808	1319.144	213
HIN : Monthly Household Income	-0.181	-0.044	-0.228	-0.054	-0.146	3575.446	2404.925	213

Table 4.15 Summary of the Stepwise Multiple Regression Analysis of the Social and Emotional Development

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Social and Familial Habits of Fathers	0.287	0.082	0.082	0.287	0.410	0.245	0.126	10.604**
Monthly Household Expenditure	0.323	0.104	0.022	0.168	0.1D-03	0.110	0.9D-04	2.215
Mother's Typical Illness	0.341	0.116	0.012	0.083	0.451	0.110	0.272	2.744*
Type of Family	0.357	0.128	0.011	0.121	0.469	0.114	0.357	0.731
Number of Children Under 6 Years	0.370	0.137	0.009	-0.066	-0.170	-0.061	0.207	0.671
Duration of Breastfeeding	0.380	0.144	0.008	-0.018	-0.028	-0.134	0.015	3.600**
Children's Age	0.388	0.150	0.006	-0.097	-0.014	-0.082	0.012	0.543
Number of Boys	0.395	0.156	0.006	0.089	0.102	0.073	0.140	0.527
Mother's Monthly Income	0.406	0.164	0.008	0.192	0.2D-03	0.141	0.1D-03	2.258*
Mother's Closeness to Children	0.416	0.173	0.009	-0.071	-0.414	-0.103	0.290	2.046*

cont'd

Independent Variable	Multiple R	R^2	R^2 Change	Simple R	B	Beta	Std. Error B	F
Length of Gestation	0.422	0.178	0.005	0.111	0.605	0.070	0.591	1.050
Education of Mother	0.426	0.182	0.003	-0.183	-0.047	-0.093	0.042	1.274
Mother's Age	0.429	0.184	0.002	0.081	0.018	0.053	0.030	0.355
Mother's Length of Working Experience	0.430	0.185	0.00	0.153	0.024	0.054	0.044	0.293
Number of Girls	0.431	0.186	0.001	-0.021	-0.077	-0.048	0.151	0.262
Number of Household Members	0.432	0.186	0.4D-03	-0.018	0.029	0.034	0.093	0.096
Constant					3.500			
Multiple R					0.432			
F					2.806**			

**Level of significance at .01

*Level of significance at .05

Table 4.16 Multiple Classification Analysis of the Problems of Social and Emotional Development

(Grand Mean = 3.45)

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Education of Mother							
3 years of primary or less	28	0.15		0.24		0.17	
4 years of primary	134	0.03		0.11		0.11	
5 years of primary to third year of secondary	47	0.46		0.25		0.24	
4 years of secondary	29	-1.04		-1.13		-1.08	
			0.20		0.20		0.20
Number of Children							
1	34	-0.13		-0.08		-0.20	
2	77	0.18		0.37		0.34	
3	57	0.27		0.40		0.51	
4	24	-0.79		-0.94		-1.00	
5 or more	46	-0.13		-0.55		-0.53	
			0.15		0.23		0.25
Nature of Labor Force Participation							
Outside	66	0.26		0.62		0.43	
At home	56	0.72		0.74		0.70	
Non-working	116	-0.50		-0.71		-0.58	
			0.25		0.33		0.28

cont'd

Variable and Category	N	Unadjusted		Adjusted for Independents		Adjusted for Independents & Covariates	
		Dev'n	Eta	Dev'n	Beta	Dev'n	Beta
Monthly Income Per Capita							
US $ 25 or less	110	-0.01		0.09		0.08	
25 - 50	92	0.08		0.07		0.07	
50 and over	36	-0.18		-0.45		-0.42	
			0.04		0.09		0.09
Social and Familial Habits of Fathers							
Good	121	-0.42		-0.43		-0.39	
Normal	49	0.28		0.23		0.21	
Bad	68	0.55		0.60		0.54	
			0.21		0.22		0.20
Multiple R Squared					0.201		0.226
Multiple R					0.448		0.476

children whose mothers were frequently ill developed more slowly than those whose mothers were healthier. Children who were breastfed for a longer duration of time tend to develop better than those who were breastfed for a shorter duration. Furthermore children whose mothers could devote more time to them developed better than those whose mothers could devote less time. Data also show that the amount of income earned by mothers themselves is negatively associated with the child's social and emotional development.

Problems of Children's Social and Emotional Development

The problems of children's social and emotional development are those associated with eating, sleeping and toileting habits. Table 4.16 shows that children whose mothers were better educated had less problems than those whose mothers were less educated. Children who came from one-child families or from four-or-more child families had less problems than those who came from two-or-three child families. Children whose mothers worked either in or outside the home had more problems than those whose mothers did not work. There is a strong positive relationship between fathers' social and familial habits. Children from families whose fathers shared greater responsibilities of parenthood tended to have less problems than those whose fathers shared less responsibilities.

CHAPTER 5

SUMMARY AND CONCLUSION

In earlier days, Thai women, by customs and beliefs, kept themselves in the house, doing housework and refraining from outside social activities. As things are changing so are the status and role of Thai women. Instead of keeping themselves in the households, they increasingly participate in outside activities.

Arising from their participation in the country's economy are the problems of childrearing. Statistics reveal that among the working women, those who have been married and had children are increasing in number and proportion, and that young married women, who have relatively low incomes and have to work outside the home to maintain their living standard, are likely to face problems of childrearing. The magnitude of the problems depends on several factors including actual family size, the health of mothers and children, spouse relationship and attitudes toward childrearing.

Children are the nation's future only if they are physically able and well socialized. But if they are not physically well, they are more likely to be liabilities than assets to the families and the nation. Even more so when they are unhealthy. Within the families when they become ill it is the mothers who look after them.

Usually when a woman has to do both housekeeping and working outside the home, the problems of childrearing arise, not only in terms of feeding children but in socializing them as well. The problems intensify when women have to continue their work and cannot find anyone to take care of childrearing. The most common solutions adopted by Thai women are getting a servant to take care of their children, taking them to nurseries, or leaving their children with relatives.

A review of literature on female labor force participation, fertility and quality of child care for pre-school children leads to the following hypotheses:

a) The nature of female labor force participation affects the pattern and quality of childrearing in terms of time spent with children, nutrition, health and child-rearers.

b) Women who work outside the home tend to have more problems of childrearing than those who work at home.

c) Women who work outside the home recognize the impact of family size on their economic role. They tend to have a smaller size family and practice more family planning than those who work at home.

With respect to labor force participation and fertility, it has also been found that labor force participation is significantly related to fertility. Women who simply stay at home had a smaller family size than those who worked outside the home and those who worked at home respectively. Even though working at home does not conflict with having a large family size, those who idly stayed at home were likely to be in a poorer economic condition, and other things being equal, they could not afford to have a larger family.

Regarding the relationship between female labor force participation and desire for additional children, it has been found that desire for additional children becomes less as women have more children. Preliminary analysis shows that women who had fewer children desired additional children in a greater proportion than those who had more. Regarding the relationship between female labor force participation and the desire for additional children, those who worked outside the home expressed a desire for additional children in a greater proportion than those who stayed or worked at home. It has been found that after having one child, those who worked outside the home desired fewer children than those who simply stayed or worked at home respectively. However, when control is made for women's age, education, the number of children, family type and income variables, the opposite is true. That is, when women are similar in other characteristics, working women tend to desire a smaller family size than those who do not work, due to the fact that those who work outside the home had more children than those who stayed at home.

As for the sex composition of children, data show that mothers who had neither boys nor girls tended to desire more children than the others. It could be inferred that a desire for additional children simply results from the need to balance the sex composition of children.

In addition to its effect on desire for additional children, working outside the home also affects women's practice of birth control. Data also

show that mothers who worked outside the home tended to practice birth control in a greater percentage than mothers who stayed or worked at home respectively, due to the fact that those who work outside the home had more children than those who stayed at home.

In terms of childrearing, working mothers were found to spend significantly less time with children as compared with housewives and mothers who worked at home. In addition, a mother's participation in the labor force generally had a negative impact on child health as compared to those who worked at home and those who were not employed.

The negative relationship between working experience and child's illness could be interpreted as a conflict between female labor force participation and motherhood. This is also confirmed by a negative regression coefficient between child's illness and the amount of time spent with children. The level of fertility also has a significant positive impact on child's illness. Children in a family with a larger number of boys or girls are likely to be ill more frequently than those in a smaller family.

In addition to illness, women's participation in the labor force also affects child malnutrition. It has been found that children whose mothers worked at home suffered least from malnutrition, followed by non-working and working mothers respectively. Data again confirm the general hypothesis on the conflicting roles of motherhood and women's career. Data also show that family size is positively related to malnutrition. Children who belonged to large families tended to suffer more than those belonged to smaller families. One-child children were the least to suffer from malnutrition.

It is most interesting to find that the most significant variable related to the child's social and emotional development is the father's social and familial habits. Children whose father have low familial responsibility are slower in their development than those with more responsible fathers. Furthermore, children whose mothers could devote more time to them develop better than those whose mothers could devote less time.

In relation to fertility, children who came from one-child families or from four-or-more child families had less problems than those who came from two-or-three child families. Children whose mothers worked

either in or outside the home had more problems than those whose mothers did not work. There is a strong positive relationship between father's social and familial habits and child's social and emotional developmental problems. Children from families whose fathers share greater responsibilities of parenthood tend to have less problems than those whose fathers share less responsibilities.

In conclusion, even though women's participation in the labor force outside the home has a positive impact on the level of fertility and the practice of birth control, it also has a negative impact on the desire for additional children, the quality of child care, and thus health and nutritional status of children.

If it is agreed that children are the nation's future only if they are physically able and well socialized, then Thai society must make an effort to see to it that women are relieved of some work and able to spend more time with their children. An attempt should also be made to institutionalize some kind of social organization that will ease the conflicting roles of motherhood and women's career. Men should also participate more in childrearing as it has a favorable effect on children's health and well-being.

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.