HOUSEHOLD EXPENDITURE FOR CHILDREN'S EDUCATION

Kamoltip Arthaud

A Dissertation Submitted in Partial
Fulfillment of the Requirements for the Degree of
Doctor of Philosophy (Population and Development)
School of Applied Statistics
National Institute of Development Administration
2008

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<u>**สัญญาอนุญาตให้เผยแพร่วิทยานิพนธ์**</u>

ทำที่ คณะสถิติประยุกต์ สถาบันบัณฑิตพัฒนบริหารศาสตร์

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สัญญาฉบับนี้ทำขึ้นระหว่าง กมลทิพย์ ดาร์ร็อส ที่อยู่เลขที่.......... หมู่.......... ถนน.......... แขวง.......... เขต.......... จังหวัด.......... ซึ่งต่อไปในสัญญานี้เรียกว่า "ผู้อนุญาต" ฝ่ายหนึ่ง กับ สถาบันบัณฑิตพัฒนบริหารศาสตร์ โดย รศ. ดร. สุรพงศ์ เอื้อวัฒนามงคล คณบดีคณะ สถิติประยุกต์ สถาบันบัณฑิตพัฒนบริหารศาสตร์ ที่อยู่เลขที่ 118 หมู่ 3 ถนน เสรีไทย แขวง คลองจั่น เขต บางกะปิ จังหวัด กทม. ซึ่งต่อไปในสัญญานี้เรียกว่า "ผู้รับอนุญาต" อีกฝ่ายหนึ่ง คู่สัญญาทั้งสองฝ่ายได้ตกลงทำสัญญามีข้อความดังต่อไปนี้

1. ผลงานลิขสิทธิ์

ผู้อนุญาตเป็นเจ้าของลิขสิทธิ์งานวิทยานิพนธ์ เรื่อง HOUSEHOLD EXPENDITURE FOR CHILDREN'S EDUCATION ซึ่งสร้างสรรค์ โดย กมลทิพย์ ดาร์รอส ผู้อนุญาตรับรองว่า เป็นผู้สร้างสรรค์งานขึ้นเอง

2. เงื่อนไขการอนุญาต

ผู้อนุญาต ตกลงให้ผู้รับอนุญาตใช้สิทธิดังต่อไปนี้

2.1 ผู้รับอนุญาตมีสิทธิเผยแพร่ต่อสาธารณชน ซึ่งงานวิทยานิพนธ์ตามข้อ (1) เพื่อประโยชน์ในการวิจัย หรือศึกษา อันมิได้มีวัตถุประสงค์เพื่อหากำไร

2.2 ผู้อนุญาตอนุญาตให้ผู้รับอนุญาตใช้สิทธิตาม 2.1 เพื่อใช้ในห้องสมุด และเครือข่ายอินเทอร์เน็ตของห้องสมุด สถาบันบัณฑิตพัฒนบริหารศาสตร์ รวมทั้งเครือข่ายอินเทอร์เน็ตของโครงการพัฒนาเครือข่ายห้องสมุดในประเทศไทย (ThaiLIS)

3. การโอนสิทธิและ / หรือหน้าที่ตามสัญญานี้

ผู้อนุญาตและผู้รับอนุญาตไม่สามารถโอนสิทธิและหรือหน้าที่ ความรับผิดชอบของตนตามสัญญาฉบับนี้ให้แก่บุคคลภายนอกได้ เว้นแต่จะได้รับความยินยอมเป็นลายลักษณ์อักษรจากอีกฝ่ายก่อน

4. สิทธิของเจ้าของลิขสิทธิ์

ภายใต้บังคับแห่งสัญญาฉบับนี้ ผู้อนุญาตยังคงเป็นเจ้าของลิขสิทธิ์ในงานวิทยานิพนธ์ตามสัญญานี้ทุกประการ

สัญญานี้ทำขึ้นเป็นสองฉบับมีข้อความถูกต้องครบถ้วน คู่สัญญาได้อ่านและเข้าใจข้อความในสัญญาโดยตลอดดีแล้ว จึงลงลายมือชื่อพร้อมทั้งประทับตรา (ถ้ามี) ไว้เป็นสำคัญต่อหน้าพยานและเก็บไว้ฝ่ายละหนึ่งฉบับ

ลงชื่อ.....ผู้อนุญาต
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ลงชื่อ.....ผู้รับอนุญาต
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ลงชื่อ.....พยาน
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ABSTRACT

Title of Dissertation	Household Expenditure for Children's Education
Author	Mrs. Kamoltip Arthaud
Degree	Doctor of Philosophy (Population and Development)
Year	2008

For both develop and developing countries, in today's modern society an educated workforce is essential to development and growth, knowledge, as well as skills, not only equip people for work, but also increase social awareness and aid the development of the country as a whole. Education also enables a developing society to adjust itself more readily to changing markets and emerging technologies. And whereas it is predominantly to responsibility of governments to create policies which relate to the implementation of budget allocation, education expenditure invariably becomes an burden to the household.

In the study on "Household Expenditure for Children's Education", research data were taken from the Socio Economic Survey (SES) conducted annually by the National Statistical Office (NSO). The study will focus on surveyed data from 1998 to 2002, and a stratified two-stage sampling was adopted for the survey. Sample size was carefully considered in order to find out estimate household expenditure on children's education in any education level and provider. The results are presents by percentage, frequency, mean and standard deviation, including four items of expenditures, which include total expenditure, tuition fee/school fee, miscellaneous expenses, and the proportion of education expenditure in relation to total household expenditure. In addition, Multiple Classification Analysis (MCA) is employed to analyze the influence of household head characteristics, household characteristics, and social context on household expenditure for children's education.

The results of the analysis on the household expenditure for children's education show that the tuition fee/school fee in private educational institutions is higher than that in public educational institutions, at all education levels: The findings

indicate a 3.83 times higher expenditure at fundamental school level, a 3.47 times higher expenditure at vocational school level, and a 2.89 times higher expenditure at higher education level. Data for miscellaneous expenses show that at both private and public institutions the average expense per month for students at fundamental school level is 1,458.61 baht, for students at vocational school level 2,522.23 baht, and 5,020.20 baht for students at higher education level.

The findings of factors affecting the proportion of education expenditure in relation to household expenditure at each education level are also revealed. At the fundamental school level, it was found that the explanatory models for both private and public schools were statistically significant at .05. At this level, significant factors include age, type of household, size of household, total income, total expenditure, number of children attending school, region, and year. At the vocational school level, the related factors include age, work status, size of household, total expenditure, number of children attending school, region, and year. Similarly, at the higher education level, the influential factors include age, work status, size of household, total expenditure, number of children attending school, region, and year.

Results from this analysis suggest that with respect to the allocation of government expenditure policies should be created that will enhance education systems in both private and public institutions. In addition, subsidies for education expenditures must be consistently revised and adjusted since education expenses vary for each household. Government subsidies should also consider the particular and differing necessities and requirements of each region. Finally, the number of children attending school (at any education level) is the key variable that affects household expenditures, and a strategy should therefore be implemented to assist families with children. If households have more than one child attending school, the government must be able to assist these households in order for their children to have equal access to education.

ACKNOWLEDGEMENTS

This dissertation on Household Expenditure for Children's Education has been completed with kind assistance from many generous persons. First of all, I would like to express my gratitude to Associate Professor Dr. Duanpen Teerawanviwat, advisor and chairman of dissertation committee, Professor Dr. Somboonwas Satyarakwit, Assistant Professor Dr. Sujittra Chamnivickorn and Assistant Professor Dr. Preecha Vichitthamaros, who gave close consultation, very useful advices and recommendations to the dissertation. Their strong encouragement is also highly appreciated. Thanks are also due to Dhurakij Pundit University (DPU.) who granted a scholarship and permitted me to take leave to further my education.

I also wish to thank all the faculty staff of the National Institute of Development Administration (NIDA), particularly the teaching staff of the School of Applied Statistics, from whom I have learnt a lot about statistics. I owe my gratitude to the School's staff that facilitated my work and assisted me with various related matters there. Special thanks are due to Professor Dr. Boonserm Veesakul, his strong push and encouragement throughout my study.

Many beloved friends have helped me stay sane through these difficult years. Their support and care help me overcome setbacks and stay focused on my graduate study. I greatly value their friendship and I deeply appreciate their belief in me.

Last but not least, I wish to express my heartfelt thanks, and devote all the success in the fulfillment of my dissertation, to my dear parents and all family members, who gave their strong support and excellent encouragement.

Kamoltip Arthaud

November 2008

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CHAPTER 1

INTRODUCTION

1.1 Background and Significance of the Problems

Many countries have realized the importance of educational investment, and as a result, educational development has expanded in both quantity and quality. For developing countries, including Thailand, it has been found that the high level of fertility in the past resulted in an increase in the number of children. The statistics in 2003, show that there were 14,007,016 children (of this 75.27% attending school) between the ages of 3 and 21 across the whole country. This can be compared with figures from 1998 when 61.25% of the youth were attending school (Office of the National Education Committee, 2003c). This fast pace of change in population forced the government to increase the expenditure on education in every aspect.

The expenditure on education of children and youth represents an immense cost. When comparing the educational investment of a number of countries between 1993 and 1996, it was found that the countries which invested most in education (i.e. more than 5 percent of the Gross National Product [GNP]) were Australia (5.6%), the United States of America (5.4%), the United Kingdom (5.4%) and Malaysia (5.2%). The countries with the least investment in education (less than 4 percent of the GNP) were Korea (3.4%), Japan (3.6%), Singapore (3.0%), Vietnam (2.7%), China (2.3%), the Philippines (2.2%) and Indonesia (1.4%). It is worth noting that even though Thailand is an Asian country, the Thai government invested 4.1% of the GNP on average in education, a percentage which is, with the exception of Malaysia, higher than that of any other Asian countries (UNDP, 1999). However, Thailand's investment is still less than the 4.8% world average. The above percentages are shown in Figure 1.1:

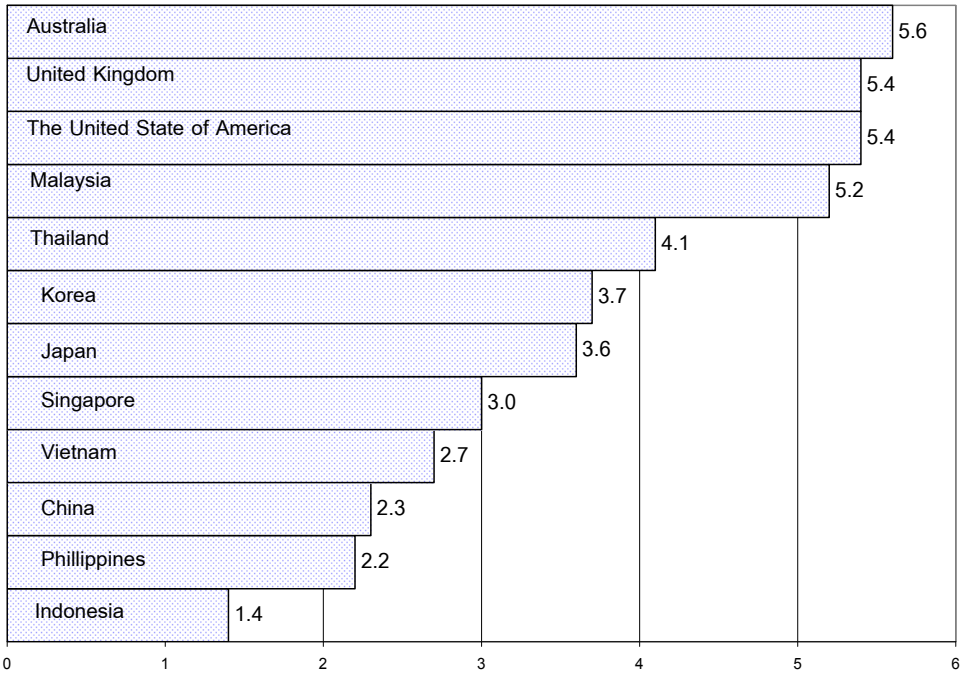

Figure 1.1 Expenditure on Education per GNP from 1993 to 1996.
Source: UNDP, 1999.

Nevertheless, on the whole, Thailand has invested in education at a higher rate than many other countries when compared with GNP, and when compared with the total expenditure of the government sector. Be that as it may, when compared with the expenditure per capita, Thailand has a significantly lower expenditure per student than that of many countries. Thailand's expenditure per student is about 114.6 US dollars, whereas Japan has a per student expenditure of about 1,360.9 US dollars, Singapore 857.5 US dollars and Korea 370.8 US dollars. These comparative student expenditure figures are shown in Figure 1.2:

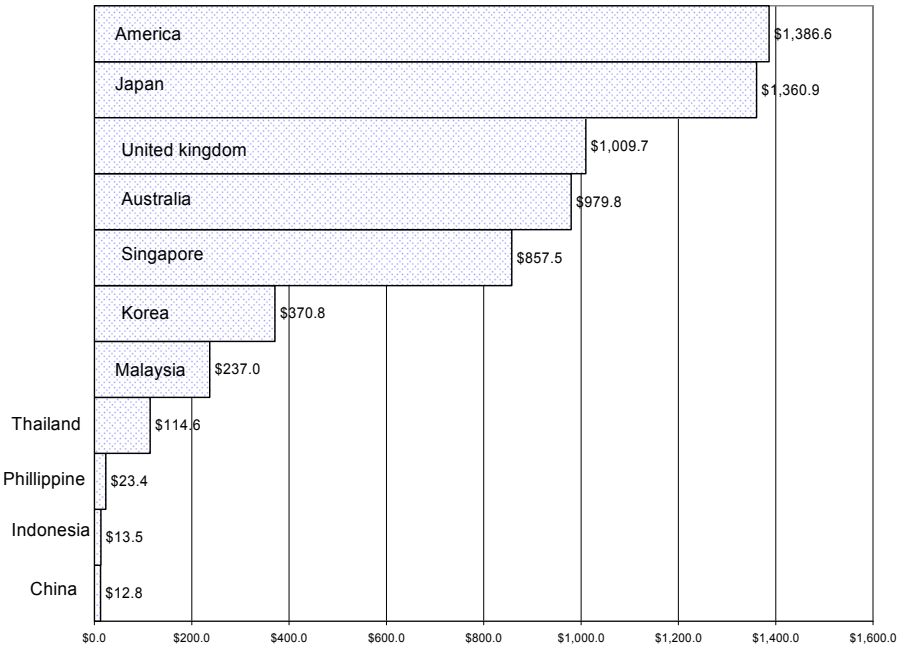

Figure 1.2 Expenditure per Student in Government Sectors in 1995.
Source: UNDP, 1999.

Thailand put a great deal of emphasis on education. This was evident in the laws the country adopted, especially the national Education Act of 1999 – the law which provided for educational reform. In addition, this emphasis on education is indicated in the proportion of the national budget allotted to support education. During this time, the percentage of the annual budget set aside for the development of the entire education system was 25%, placing education as one of the top three areas of the national budget (The National Statistical Office, 2003). It is clear that much attention was given to education.

The budget of education was divided into two parts: fundamental education and higher education levels. The investment of the education budget at both levels is 80 percent and 20 percent respectively (Bureau of the Budget, Thailand, 2003). However, there are some distinctive differences; that is, every household will receive equal financial support for education at fundamental education right across the country. For examples, in 2004 the government allocated per semester at elementary school level 500 baht per head; at secondary school level, it cost 900 baht per head; at upper-secondary school level, it cost 1,350 baht per head; and at kindergarten level, it cost 97.50 baht (Office of the Educational Council, 2002). For higher education level,

the government gives partial financial support for the education; partial financial support is provided for state-run universities only. Moreover, the government also provides a funded education loan for needy students, those whose parents cannot adequately afford their children's education in either public or private universities.

Nevertheless, despite these efforts, the government's investment in education has not been able to meet all demands of needy households. The expense per capital supported by the government is not sufficient for all level of education, for instance (Office of the Educational Council, 2003), and it is therefore incumbent for the household to take responsibility for other expenses not supported by the government, expenses such as bus fares, stationery, clothes, shoes, school-bags, lunch, etc. Any families with a high economic status are not faced with any significant financial problems. On the other hand, families with low economic status are adversely affected, and in some cases have to solve their financial problems by forcing their children to drop out of school.

Thai government allocated education budget for all of education levels, especially at fundamental level, but it is not enough to cope with this problem, the public schools call for financial support from other sources especially from student's parents. The purpose of this study is therefore to describe and to determine how families spend money on their children's education at each level, and propose a more relevant and accurate framework for the planning of education expenditure.

1.2 Objectives of the Study

The objectives of the investigations into the household expenses of the children's education were as follows:

1) To investigate the expenditure on education for household with children attending school and the trend of household expenditure for children's education in Thailand in the last five years (from 1998 to 2002), by examining expenditure for household's education at fundamental education level, vocational education and higher education levels.

2) To analyze the influence of household head characteristics, household characteristics and social context on educational expenditure.

1.3 Benefits of the Study

The perceived expected outcomes of the study were as follows:

1) To assist households in preparing a budget or saving for their children's education at each educational level.

2) To be useful to the government for the collection of information. On the one hand, this may help determine policies relating to budget allocation for national education. Additionally, such information could be used for more appropriate and effective management of the education loans project.

3) To add to the body of knowledge of children's education and household expenditure, and to be of value to those interested or involved in research in these particular subject areas.

1.4 Scope of the Study

1) This study, "Household expenditure for children's education", used secondary data from The Survey of the Economic and Social Status of Households (SES), conducted by the National Statistical Office (NSO), the Ministry of Technology and Communications. This survey was concentrated on individual households both inside and outside municipalities throughout Thailand.

2) This study used five rounds of the SES from 1998 to 2002.

3) The analysis of household expenditure was restricted to the private households which had at least one child attending school at any level at the time of the survey.

4) The study of the expenditure on education focused on three levels: fundamental education, vocational education and higher education. At each of the three levels, the study incorporated household having children attending private as well as public institutions.

1.5 Operational Definitions

The National Statistical Office, within the Ministry of Technology and Communication, has defined key terms used in The Survey of the Economics and Social Status of the Household. Their definitions of key terms are presented below.

1.5.1 The Private Household Includes Following:

1.5.1.1 One-person households, i.e. a person making provision for their own food and other essentials of living without combining with any other people.

1.5.1.2 Multi-person households, i.e. a group of two or more persons making common provision for food and other essentials of living. They might be either related or unrelated such as:

1) A household comprising of a group of related people by blood, marriages or adoption.

2) A household comprising of a group of unrelated people, not exceeding five, who live together and share the lodging (included as one private household).

3) A household comprising of a group of employees living together, not exceeding five people (included as one private household).

4) A household comprising of a group of six or more people, among them at least four people who are relatives, or not exceeding three relatives where one among them is responsible for all expenses (included as one private household).

1.5.2 Household Membership

Private household members are people who usually live in a particular household, including people who were temporarily absent at the time of interview (but do not normally live somewhere else permanently), and fit into one of the following categories:

1) Those living away from home temporarily for less than three months, such as in-patients, priests (excluding the members who moved away for education or occupation and therefore have another permanent residence), prisoners, soldiers and psychiatric patients.

2) Those living away from home for more than three months without permanent residence, such as crews, salesman, etc.

3) Those going abroad for less than six months for education or training.

4) Those who work away from home temporarily for less than 30 days per year, such as sugar cane harvesters.

Household members also include unrelated boarders or lodgers who have lived at the address temporarily for more than three months.

1.5.3 The Household Head

The head of household is the person recognized as such by other members, whether he or she is responsible for financial support or welfare of the household members or not.

1.5.4 Size of the Household

The size of the household refers to the numbers of all the members living in the same household ranging from one member per household to more than ten members per household.

1.5.5 Type of Household

The type of household refers to the characteristics of the relationship of the members living together in the same household. It is divided into groups: a one member household, a household with the head of the family and spouse, a household with only one head of the family with children who are single, and so on.

1.5.6 Region

Region refers to the place where a household is geographically located. A region can be classified into five groups. These are: Greater Bangkok and its three satellite towns of Nonthaburi, Pathumthani and Samutprakan; northern; north-eastern; southern and central. Regions included the provinces within each region in accordance with the classification of provinces in each region of the National Statistical Office.

1.5.7 Area

The housing district is classified into three areas: Municipal area, Non-Municipal area and Village. However, in 2002, districts were divided into only two types: Municipal and Non-Municipal areas.

1.5.8 Work Status

Work status is classified into 6 different categories as follows:

1) An employer is defined as a person who operates his or her own enterprise for profit or dividends and hires one or more person as his or her employee(s).

2) An own-account worker is a person who operates an enterprise on his or her own account, or operates it jointly with others in the form of a partnership either for profit or dividends, and does not hire employees. A member of a producers' cooperative is a person who holds a "self-employment" job in a cooperative producing goods and services, in which each member takes part on an equal footing with other members in determining the organization of production, sale and / or other work of the establishment, and the investment and distribution of the proceeds of the establishment amongst their members.

3) An unpaid family worker is a person who works without pay on a farm or in a business owned or operated by the household head or other household members.

4) A government was a person who worked for a public employer and received remuneration in wages, salary, commission, tips, piece-rate or payment in kind. Employers were classified as government and state enterprise.

5) A private employee was a person who worked for a private employer and received remuneration in wages, salary, commission, tips, piece-rate or payment in kind from private employers.

6) A person looking for job is a person who has not worked at all during the last 52 weeks but has applied for work either at business establishments or by mailing letters of application. These persons include:

(1) An economically inactive person such as the following:

a. A housewife or person who worked around the house

b. A student

c. A retired person or old person

d. A disabled person who was unable to work because of physical or mental disability or because of chronic illness

e. A person doing nothing who was voluntarily idle

f. A beggar

(2) A person with no occupation

1.5.9 Earners and Income Receiver

Earners are referred to as household members who are economically active. Self-employed workers, employees, and unpaid family workers are counted as earners. The income receivers are household members who receive monetary income from profits, wages and salaries, rent, or transfer payments from non-household members. Income receivers may be either economically active or inactive.

1.5.10 Household Income

Total household income includes:

1) Wages and salaries, tips and bonuses, etc.

2) Net profits from farming and from non-farming.

3) Property income such as property rent, land rent, royalties, interest, and dividends.

4) Current transfer received such as assistant payments, pension, etc.

5) Non-money income (income in-kind) such as the value of goods and services received as part of pay, home-produced and consumed (including the rental value of owner occupied dwellings), or received free from other sources.

6) Other money receipts such as insurance proceeds, lottery winnings and other windfall receipts.

Current income is the total household income excluding other money receipts.

1.5.11 Household Expenditure

Total household expenditure includes:

1) The amount spent on purchasing goods and services needed for essential living.

2) The value of goods and services received as part of pay, home-produced and consumed (including the rental value of owner occupied dwellings), or received free from other sources.

3) The amount spent on taxes, contributions, insurance premiums, lottery tickets, interest on debts, and other non-consumption items.

Consumption expenditures are total household expenditures, excluding non-consumption expenditures.

Household expenditures exclude capital formation expenditures such as purchase or hire purchase of house and land, purchase of jewelry, savings-life insurance premiums and providence funds, etc.

1.5.12 Expenses for Education

Expenses for education refer to the expenses the household have paid for the education of all the children in the family at each educational level per month. The expense for education can be divided into the following two parts:

1) Tuition fee, which covers the tuition fee and other school fees at the vocational level and higher education level including adult education classified as either government or private sectors.

2) Supporting expense for education, such as textbooks, learning materials, daily allowance, private tuition fee, and including other expenses concerned with education such as music lessons, dance lessons, painting lessons, fees for cram schools, and allowance for lunch per semester, per month or per day.

1.6 Organization of the Presentation

This dissertation is divided into six Chapters. Chapter 1 is the introduction, and consists of the background and significance of the problems. Chapter 2 provides the theoretical perspectives, the literature review and conceptual framework. Chapter 3, the research methodology, explains the concepts and statistics utilized in this study, and also includes the presentation of the characteristics of sample households with at least one child attending school at any one of the three educational levels at the time of the survey. Chapter 4 presents the analysis results of proportion of households with children attending school, expenditure of households, households expenditure for children's education and comparative expenditure on education of all items of expenditure from 1998-2002 between public and private institutions. Chapter 5 is concerned with the analysis of factors affecting the household expenditure on children's education, and Chapter 6 gives a summary of the study and offers suggestions for policies and further research.

CHAPTER 2

LITERATURE REVIEW

This chapter, which addresses related concepts, theories and research studies, is divided into two parts: concept of human capital, expenditures on education.

2.1 Concept of Human Capital

The concept of human capital, however, is by no means new. The objective of this topic is to review some of the past literatures in order to primarily to determine which, authors who treated human beings as capital, the motives for doing so, and their methods for evaluating man as capital. However, it will be shown, in essence that the concept of human capital was somewhat prominent in economic thinking until Marshal discarded the notion as "unrealistic."

Economists who considered human beings or their skills as capital include such well-known names in the history of economic thought as Petty, Smith, Say, Senior, List, Ernst Engel, Sigdwick, Walras, and Fisher. Basically, two methods have been used to estimate the value of human beings: the cost-of-production and the capitalized-earning procedure. The former procedure consists of estimating the real costs (usually net of maintenance) incurred in "producing" a human being; while the latter consists of estimating the present value of an individual's future income stream (either net or gross of maintenance). Several of the motives for treating human beings as capital and evaluating them in money are listed as follows:

1) To demonstrate the power of a nation
2) To determine the economic effects of education, health investment, and migration
3) To propose tax schemes believed to be more equitable than existing ones
4) To determine the total cost of war
5) To awaken the public to the need for life and health conservation and the significance of the economic life of an individual to his family and country

6) To aid courts and compensation boards in making fair decision in cases dealing with compensation for personal injury and death

Concepts relating to the theory of human capital that have been studied thus are divided into five groups:

2.1.1 Statisticians and actuaries have developed a relatively scientific procedure to estimate the monetary (or capital) value or either a human being as such or the population of a nation. Their methods, which are essentially a cost-of-production approach or some form of a capitalized-earning approach, are examined in this section, as are variations in the approaches.

One of the first attempts to estimate the money values of a human being was made around 1691 by Sir William Petty (quoted in Hull, 1899) "father of wealth." He included in any estimate of national wealth and placed a money value on laborers. Petty's interest in the monetary evaluation of human beings developed out of his interest in public finance. However, he used the notion of human capital in an attempt to demonstrate the power of England and the economic effects of migration. The money value of human life destroyed in war, and the monetary loss to a nation resulting from deaths. Petty estimated the value of the stock of human capital by capitalizing the wage bill to perpetuity, at the market interest rate; the wage bill he determined by deducting property income from national income.

Petty's methods make no allowance for the cost of maintenance of workers before capitalization. In spite of this limitation, his procedure gives a close approximation for determining the capital value of a nation. It is wholly inadequate, however, when used for purposes where human-capital values by age, sex, and economic status are needed, as in several of the cases mentioned earlier.

The first truly scientific procedure, and the one followed today by many economists and others for finding the capital or money value of a human being, was devised in 1853 by William Farr. Like Petty's, Farr's interest in the evaluation of human capital developed out of his interest in public finance. He advocated the substitution of the existing English income tax system by a property tax that would include property consisting of the capitalized value of earning capacity. His procedure for estimating the latter is to calculate the present value of an individual's net future

earning (future earning minus personal living expenses) allowance being made for deaths in accordance with a life table. Farr's work suggests a way in which 'human capital' can be a misleading analogy. He suggests that human beings are productive and they should be regarded and traced as capital. Since this would oblige people to pay tax on wealth that they do not have in hand, it could lead to absurd results.

In 1883, a cost-of-production procedure for estimating the monetary value of human beings was introduced by Ernst Engel to discriminate Petty's approach. This approach is modified to allow the limited number of years a man in employed, but the yield value of certain human beings cannot be determined. The modification from Ernst Engel is a cost to their parents, which might be estimated and taken as a measure of their monetary value to society. A modification of Engel's approach is useful in determining the components, such as education and health-service capital, of human capital value. This is so simple because it is less difficult to estimate the direct (and opportunity, if appropriate) cost incurred in forming a particular component of human-capital value than to attribute future earning differentials to specific items such as education and health services.

Furthermore, human beings as capital goods and employed a variation of both Farr's capitalized-earnings and Engel's cost-of-production approaches to value human capital was conducted by Theodore Wittstein in 1867. His interest in the concept of human capital arises from a desire to determine a guide to be used as a basis for claims for compensation from loss of life. He assumed that an individual lifetime earnings are equal to their lifetime maintenance cost plus education. Although Wittstein's analysis is interesting, his basic postulate that lifetime earning and lifetime maintenance cost are equal is unjustified. Moreover, any combination of the capitalized-earnings and cost-of-production method is dangerous, owing to the possibility of the duplication of values.

Nevertheless, the calculations of human values were conducted by Dublin and Lotka in 1930. They considered that calculations of human values could be useful in ascertaining as how much life insurance a man should carry. These calculations are useful in estimating the economic costs of preventable disease and premature death.

The works of Farr and Dublin and Lotka are the starting point for anyone interested in estimating either human-capital values or their components. Their discussion of the capitalized-earning approach is clear, concise, and one of the best expositions available. Although there are obvious conceptual difficulties associated with this approach, it gives the most accurate results if the data necessary for measurement are available. On the other hand maintenance costs are neglected by Petty and Engel. They are, however, considered to be equal to personal living expenses by Farr, Wittstein, and Dublin and Lotka. This is a dubious procedure then, more particularly at the date Dublin and Lotka published, and would be wrong in developed countries today. At present, maintenance costs have been neglected by economists who have advocated the human-capital concept. Some of these costs, however, are incurred during the investment period; a portion of them are continuous throughout the life of the human capital.

2.1.2 Economists have included human beings, or their acquired abilities and skills as a component of capital. Although some of them attempt to estimate the value of this capital at both microeconomic and macroeconomic levels, and to employ these estimates for a specific purpose (for example, to estimate the total economic losses resulting from war), but the others have merely included human beings, or their acquired abilities and skills, in their definition of capital and recognized the importance of investment in human beings as a means of increasing their productivity. Whereas, the latter group, generally, has neither attempted an evaluation of human capital nor employed the concept for any specific purpose. At last, most of the economists have hold that human beings should be included in the concept of capital for three reasons;

1) The cost of rearing and educating human beings is a real cost
2) The production of their labor adds to the national wealth
3) An expenditure on human being will increase productivity.

The important components of a nation's of capital in term of skills and acquired abilities of human beings, which were largely an inheritance from the past and the result of past labor and self-restraint, was introduced by Friedrich List in 1928. He asserts that, in both production and distribution, the distribution of this

human capital to output must be considered, but this economist, who basically defines capital as "produced means of production," does not explicitly include the human beings as capital as asserted.

The other economist, Sidgwick (1901) pointed out that we needed to consider the conventional capital as a joint factor with labor in production, by the aid of which the laborers could enable to produce more than they the otherwise could do. In order to keep this view to be clear, we have to maintain the distinction between capital and laborers. On the contrary, John Ramsay McCulloch argued his concept of considering human being as capital that instead of understanding by capital all that portion of the produce of industry extrinsic to man, there seemed to be considered man himself as forming a part of the national capital. These two concept theories are close analogy between conventional and human capital. Then an investment in a human being should yield a rate of return consistent with other investments, plus a normal rate of return determined by the market interest rate, during the probable life-time of the individual.

To treat human capital as skills and acquired abilities and not to man himself was suggested by Senior (1939). He treated the human being himself as capital with a maintenance cost, incurred with the expectation of obtaining a future yield. He asserted that there is little difference between talking about the value of a slave and about the value of a free man. The principle difference is that the free man sells himself for a certain period of time and only to a certain extent, whereas the slave is sold for his lifetime.

The productive of human beings as fixed capital was conducted by Henry D. Macleod (1881). In his view, however, if they are not productive they do not enter economic analysis. This view contrasts sharply with that of Leon Walras (1954), who includes all human beings in the concept of capital, and the value, or prices, of these human beings. It determined like that of any other capital good. He, moreover, was aware of the inner reluctance of economists to treat human beings as capital. His argument indicates that in pure theory "it is proper to abstract completely from considerations of justice and practical expediency" and to regard human beings "exclusively from the point of view of value in exchange." Although Alfred Marshall admits that an estimate of the capital value of a man may be useful and discuss clearly

as the capitalized-net-earnings approach to human-capital evaluation, but he disregards the notion as "unrealistic," since human beings are not marketable. Human beings are included in Irving Fisher's definition of capital. Capital, he asserted, was a "useful appropriated material object," since human beings had their characteristics. However, the skill of an individual who should be placed in the category of capital, is not capital in addition to the individual himself.

Technological progress, which was embodied in physical capital and simply to refer to changes in the quality of capital goods, was introduced by Edward Denison in 1964. His aspect of skills and acquired abilities were embodied in the human being and presumably increase his quality as a producing unit. However, it is questionable whether one should speak of them alone as capital; if this view is taken, it is the skilled individual who is the capital. It has been suggested that the answer to the question posed above depends upon the definition of value. If value is defined as "net benefit" to society where the excess of total output over total consumption determines net benefit, the addition of a skill or useful ability would increase output, whereas the addition of an individual increases not only output but also consumption. The value of a skill and a useful ability and the value of an individual, both measured by the amount of net benefit added, in this case might certainly be different.

2.1.3 Stock of human capital has been used to demonstrate the magnitude and economic in relation to stock of human resources. The estimation of the value of a nation's human wealth are thought to give some insight into the economic power of a nation.

The attempt to estimate the stock of human, or "living," capital was first introduced in the United Kingdom in 1891, by J. Shield Nicholson, to capitalize the portion of national income. His attempt is to find the capital value of such things as the wage bill, the earnings of management, the earnings of capitalists, the earnings of salaried government officials, and "domesticated humanity."

Furthermore, Nicholson capitalized the wage bill to determine the capital value of the "wage earner" and he added this to the other values of his estimation, including the value of "domesticated humanity." However, the cost of production of

wage earners appears in the estimate of the value of "domesticated humanity" and also in the estimate of the capitalized value of their earnings, there is a duplication of values, which seems to be historically characteristic of combinations of the cost-of-production and capitalized-earning approaches. To fix these blunders, Nicholson concluded that the value of the stock of "living" capital of the United Kingdom was about five times the value of the stock of conventional capital. In his attempt to estimate the value of the stock of capital in France around 1900, Alfred de Foville asserted that any procedure for estimating the value of the stock of human capital by capitalizing the earnings before deducting consumption expenditures was incorrect. The error in this procedure, is greater than the value of the stock of conventional capital. To deduce the consumption expenditures (maintenance) from earnings, Petty's method is applied to estimates the value of the stock of human capital in France. In some respects, this approach is an improvement over Petty's, as it improves the analogy between the valuations of the aggregate stocks of human and conventional capital.

2.1.4 Economists and Statisticians have utilized the human capital concept to estimate the total economy lost in combatants resulting from war. The presumption is that a man's capitalized earnings stream is capital and that his death or disability reduces the stock of wealth.

In attempting to estimate the total cost to the combatants of the Franco-German War, Sir Robert Giffen used what was essentially Petty's method of valuing in money terms, the lives destroyed in the war. He emphasized, however, that his estimates were crude and imperfect and that the loss of human life was not amenable to monetary evaluation. Hence, he omitted it from his estimate of the total cost of the war.

Several writers utilized Barrilo's method (1910) of the capital value of a man in an attempt to estimate the money value of human life destroyed as the result of World War I. Yves Guyot (1914) suggest that man is capital and society should be interested in loss of life not only for humanitarian but also for economic reasons. Although an estimation of the monetary value of human lives destroyed in war is "a procedure of doubtful statistical propriety," but only a monetary value could convey

to the mind that the enormous economic importance of these human lives are destroyed.

The capitalized-earning approach to human-capital evaluation was preferable by Boag in 1916. It attempts to value material things, and the cost of production approach is included expenditures on the individual apart from those that increase his earning power. Besides, the "gross" concept is preferred when valuing monetary losses resulting from war. To calculate of material loss, the loss of income is usually compared with the total national income and not with the national savings. This mean is often better to arrive at a capitalized value of the diminution of gross income instead of the surplus income.

2.1.5 Education, since the days of Sir William Petty, many economists have included man in the category of fixed capital because, like capital, man costs an expense and serves to repay that expense with a profit. Their conclusions, however, have been carried on chiefly in general terms, reference being made to all men as capital, and to all kinds of expenses in rearing and training as their cost.

The economic importance of higher education then took up by Walsh and now being treated by T. W. Schultz, Gary Becker, and others. Walsh was particularly interested in the notion that people in professional careers were a capital investment, made in a profit-seeking, equalizing market, and in response to the same motives that led to investment in conventional capital. To test his hypothesis, he examined the earnings of men at various levels of education. Their present values were estimated, using the capitalized-gross-earning approach, at the average age at which their education ended. The costs of the various levels of education were then estimated, and a comparison was made of these costs and capital values to determine if they were equal. Walsh found that the value of a general college education exceeded the cost of its acquisition. Hence, his hypothesis of a competitive equalizing market in education was rejected. When he calculated the capital values and costs of professional training, however, he found that cost exceeded value in the cases of master degree, doctoral degree and medical degree. The reason for this is that only monetary returns are considered and individuals with these degrees receive special satisfactions and advantages such as travel, vacations, and services to man. A consideration of these

factors should equate the value estimate to its cost. In the other side, value exceeds cost in the cases of engineers, bachelor degree and lawyers. The reason for this is because of a short-run excess demand for their services. More people can be trained in the occupations over time, and value can become equated to cost. Hence, there is no evidence that the ordinary adjustment which is characteristic of a competitive market is prevented from taking place. It should be pointed out that Walsh's work is quite similar to that currently being done on the economics of education. He has applied the human-capital analytical framework to the topic and asked many of the questions being posed today.

In summary, many economists and non-economists in the past considered human beings or their skills as capital. Several motives for treating human beings as capital and valuing them in money terms are to be found. Besides, most of the well-known names in the history of economic thought neither attempted an evaluation of human capital nor employed the concept for any specific purpose are included humans or their skills in their definition of capital and are also recognized the importance of investment in human beings as a factor increasing their productivity.

2.2 Expenditure on Education

Expenditure on education, it has been found that countries allocate their expenditure differently depending on their policies. They are: (1) The allocation of education budget by the percentage of Gross Domestic Product (GDP); (2) The allocation of the percentage of the total budget that is allocated for the expenses of educational activities and (3) The allocating of the expenses per capita that are the responsibility of both public and household.

2.2.1 Calculation of Expenditure on Education

The calculation of the expenditure on education is found to be that it was mostly allocated per capita. The formulas used for calculating the expenses are based on various concepts. Some countries allocate it by determining tax rate, whereas some countries uses GDP to calculate. Details are presented below.

2.2.1.1 Australia

This program allocates support funds by determining the lowest expenditure for each student, then adjusting them by considering the potentialities for gaining income in each region. Per capita funds allocated will be the amount of the income gained from individual district tax (per capita) subtracted from standard tax base per capita and multiplied by standard mandatory tax rate. In general, standard tax rate might be higher than individual district tax, as is event in the following equation:

$$G_i = T_s x (Y_s - Y_i)$$

G_i = grant per capita

T_s = standard mandatory tax rate

Y_s = standard tax base per capita

Y_i = individual district tax base per capita

Each region has freedom to collect a higher tax rate than the standard mandatory tax base when they wish to increase expenditure to be higher than the determined lower rate. This causes disadvantages among regions. The strong economic regions might be able to manage a higher standard of education than the lowest standard when they are compared with the weaker economic regions (Witham, 2000).

Australia also has the calculation of allocation of funding, by using the following formula:

$$N_i = ((2a + b)/(2A + B)) + ((2x + y)/(2X + Y)) ,$$

where

N_i = percentage share of total funds available for education authority i

a = students reside in settlements of less than 1000 persons

A = total Australian students reside in settlements of less than 1000 persons

b = students reside in settlements with 1000-4999 persons

B = total Australian students resident in settlements with 1000-4999 persons

x = students resident more than 150 km from a town of 10000 persons or more in the same State of Territory

X = total Australian students resident more than 150 km from a town of 10000 persons or more in the same State of Territory

y = students resident within 101-150 km from a town of 10000 persons or more in the same State of Territory

Y = total Australian students resident within 101-150 km from a town of 10000 persons or more in the same State of Territory

2.2.1.2 South Africa

It is found that South Africa uses two equations of regression for its calculating (Roux, 1994). They are:

EDGOVE=6.59-0.12MILGOV+0.81EDGOVE(t-1)-0.19ARGDP-0.26ARGDP(t-1) (1)

where

EDGOVE = education spending as a percentage of total government spending

MILGOV = military spending as a percentage of total government spending and

ARGDP = annual rate of growth in real GDP.

EDGDP = 0.13-0.09MILGDP+0.78DEGDP(t-1)+0.06GOVGDP-0.07ARGDP…(2)

where

EDGDP = education spending as a percentage of GDP

MILGDP = military spending as a percentage of GDP

GOVGDP = total government spending as a percentage of GDP

2.2.1.3 Thailand

The expenditure on education bases on per capita funding. The calculation procedure is shown below.

1) The number of students multiplied by 2

2) The result in 1 multiplied by 80%

3) The result in 2 subtracted by the number of students allocated in the school year. If the result is a decimal of 0.6 or higher it will be rounded off to the next higher integer. If it is less than 0.6, its decimal will be kept.

4) The result in 3 multiplied by the amount of per capita funds per capita for students in each school level. The result will be the allocated funds.

5) In a case that schools have less than 120 students, the allocation is increased in pre-primary education and primary education by 250 Baht per student and 500 Baht per student in upper-secondary education

6) The result in 4 plus the result in 5 will be total allocated funds.

2.2.2 Expenditure on Education Paid by the Household

Household Factors, which affect educational expenses, can be classified into three groups.

1) Household head's characteristics namely, sex, age, education and work status

2) Household characteristics namely, type, size, total income, total expenditure and the number of the children attending school.

3) Household social context namely, region, area and year.

2.2.2.1 Household Head's Characteristics

Sex of the household head

Naturally, males and females are basically different in their physical structure, mentality, and interests. Moreover, males and females are socially different; society does not expect males and females to have the same behavior. Therefore, in society, males and females are cultivated with different values. That is to say, males must be physically and mentally strong. A female is expected by society to be weaker and more gentle than the male. As a result, parents have to take care of a daughter more carefully than sons. A female is expected to look after the family, and bring up household members properly in every aspect, for instance.

It have been found that girls graduating from high school in developed countries with have better economic and social status, better health and their families with produce children with good education (World Bank, 1995). Thus, sex of the household members can be one of the most important variables affecting expenses for education paid by the household. On the contrary, some researches indicated that different sexes resulted in different expenses for education. For instance, Chiraporn Boonying (1998) argues that male and female students pay a different amount of expenses for education, that is, male students pay higher average expenses (74,946.34 baht per person per year) than female students (69,336.65 baht per person per year).

Suppasit Pannarunothai et al. (2000: 162-184) show that most families plan the investment of education for sons and daughters but households with a low economic status usually estimate the expenses before deciding to invest in future education for their children. They evaluate their children's academic achievement and attention to learn in school. In some households, parents intentionally support their daughter's education because their daughters are not roguish, but obedient and perseverant in learning. Parents expect their daughters to achieve higher than sons (World Bank, 1995; Knodel and Malinee Wongsith, 1991). Regarding the evaluation of achievement of educational investment for children in a family, the findings are that a daughter's academic achievement is better than a son's (Kusol Sunthornthada, (2001); Suppasit Pannarunothai et al. (2000)). Daughters are better than sons at learning and they are likely to be supported to study at high education level. If the family could not afford every family member to study and if female have a bargaining

power, then expenses for children in the household would increase. (International Food Policy Research Institute, 2000). Furthermore, it is found that the women's property during marriage is significant and has a positive effect on expenses for education of their children, but men's property doesn't have such an effect.

A study on women's education in Pakistan World Bank (1995), concludes that the education of women in Pakistan encounter cultural obstacles and a lack of parents' interest. Even though there are schools, parents don't allow their daughters to attend. On the issue of graduation, the studies of Knodel and Malinee Wongsith (1991) draw conclusion that more males graduate from secondary education than females. However, difference of sexes in the ratio of upper-secondary graduates is not found. The difference of sexes found among teenagers is, that girls are work harder than boys, and as a result, girls are better learners than boys and have better chances to sit for entrance examination, especially at a university level.

Age of the household head

Human capital theory states that elder people have less time left to invest in education or training (Bryant, 1990), so it can be postulate that the older the family members are, the fewer expenses the household will pay for their children's education.

Bryant (1990) concludes that age is an important factor which has an effect on expenses for education of the children in the household with female household head and has positive a influence, that is, the older the household head is, the more expenses for education he has to pay. However, age is not an important factor that has an effect on the household where marriage couple lives together.

Houston (1995) also studies the proportion of household expenses and finds that age negatively affects the proportion of household expenses on education. That is to say, the proportion of household expenses for education would decrease when the age of the household head increases. Some research, such as that of Lino (2002) studies the expenses for the children in the household. It discovers that the expenses for children are generally low when they are very young and the expenses will increase when they get older.

Education of the household head

Generally, the households want their children to have more education than their parent at least a reason that they do not want their children to face the hardships like them. Educated households with high education have a better chance to learn new things and have more motivation to pay for their children's education than households with less education. Thus, the education of the members in a household is an important factor that has an effect on the expense for their children's education.

Chang and Young (quoted in Jang, 1995) show that educated household heads have more human capital required to allocate the expenses for education, reading, or recreation than the households with less education. It is consisted with that of Foster et al. (quoted in Jang, 1995) a educate households with high education usually allocate a large amount of income for education. The education of the household head is an important factor that has an effect on the expense for their children's education. The household head with high school education would pay less for education than the household head with a higher level of education.

On the contrary, Jang (1995) studies the expense for education of the household with female heads and the households with married couples living together. The findings are that in the households with female heads, the education of the household head does not have any effect on the children's education.

In Thailand, Thienchay Kiranandana (1989: 33-34) find that education of parents is usually an independent variable that conveys the economic and social meaning. Defined in economic terms, education as a variable refers to income and cost. On one hand, education is defined as an ability to earn income. On the other hand, education of parents will be defined as cost for an opportunity to have children.

Defined in social terms, education refers to new technological knowledge, both theory and practice, especially the application of such knowledge to daily life in raising children physically and mentally. In addition, education refers to an opportunity to receive and understand news, including information that contains knowledge, to be applied in routine life to develop the well-being of the family. In this sense, parents with better education will acquire the knowledge to provide better

life quality for their children and it certainly means that the expenses of their children will be comparatively higher.

Knodel and Malinee Wongsith (1991) concludes that education of children correlate with education of their parents, especially the differences between children whose father or mother are high school graduates and children whose father or mother are elementary education graduated. In contrary, Mother and father's education have an influence on their children's education. That is, at every educational level of the father and mother, the proportion of children who graduated at the secondary level increased according to the increase of their parents' educational levels.

Work status of the household head

Work status will indicates a person's social status, i.e., how much he/she is regarded or accepted by the society. In an extended family, members of the household help one another in various aspects. For example, in the aspect of economy, if anyone in the household is financially stable, having a high income and a good job, he/she will support other members or relatives of the family. This practice is in accordance with Caldwell's Wealth Flow Theory (1976b). Therefore, the occupation of household members can be an important factor that has an effect on the expense of the household for the children's education.

Jang (1995) studies discovers that female household heads who work as experts, salesclerks, or technicians spend more money on education than those who work in other occupations, and there is a positive correlation between the proportion of expenses and occupation of the household head.

A study of the comparison of expenses for education of undergraduate students in the Faculty of Economics of several universities (Krik University, Kasetsart University and Sripathum University) in Thailand was (Chiraporn Boonying, 1998: 20) find that the students whose fathers (household heads) have different occupations spend different amounts of money on education. The students whose fathers work in the government sector spend an average of 5,144.25 baht on education per person annually; while those whose fathers work in the private sector spend 75,571.06 baht per person annually.

Knodel and Malinee Wongsith (1991) argue that the percentage of children who graduate from secondary or upper-secondary school correlates with the household wealth. The proportion of the children whose parents are not farmer graduated upper-secondary school more than those whose parents are farmer, or whose mothers are unemployed.

Chalongphob Susangkarn (1988) shows similar finding. Agricultural households would have a low demand for education because of many reasons. For example, households need the child's labor for household works. So The return on education for traditional agricultural families might will be low. In the other side, the households whose heads were white collar workers in offices will have a high demand for education for their children. Beside, the household who was self-employed would have a higher demand for education at a higher level than the secondary level.

2.2.2.2 Household Characteristics

Type of households

According to this variable, Jang (1995) find that when comparing the expenses for education of households with a female head (who had to look after the children by herself) and households with a married couple living together, there were no differences of expenses for education between the two household types.

It can be note that the expenditure of education is low in the case of extended households, and nucleus households with relatives, compares with nucleus households. (Schultz, 1997)

Size of households

The demand for consumption usually increases with number of members in the household. Human capital theory suggests that while the size of household increases, the proportion of expenses for education will increase. Therefore, Foster et al. (quoted in Jang, 1995) and Houston (1995) find that the size of household has an effect on the proportion of the expenses for education of the household and the correlation is positive, that is, as the size of the household increases, the proportion of the expenses for education increases. However, some studies have different results, Houston and Hafstrom (quoted in Houston, 1995) find that the size of the household has a negative effect on the amount that allocate for reading and recreation, which is the activity of education.

Jang (1995) argues that the size of the household does not affect the expenses for education in two groups of households: households head by female and married household.

Income

The household with financial stability is generally wealthy enough to afford education for their children. The rich families have better chances to support their children's education than moderately rich families or poor families. Parents whose income is high will spend or invest much more money for their children's education. (Kusol Sunthornthada, 2001: 263; the National Statistical Office; 1998) and similarly, the poor households also want to upgrade their social status, although they have to borrow money for their children's education. Parents who are poor might invest for their children for a while. For example, after their children have receive the compulsory education or graduated from secondary school, they will have them out on allowing their own parents to invest for the next child's education, or have the eldest child help parents invest for younger siblings. It is clear that younger sisters or brothers in many families have higher education than the eldest ones (Kusol Sunthornthada, 2001: 268).

Lino (2002) He investigated the expenses of child-from infancy to 17 years of age in the United States of America and found that the estimated expenses of a child would increase as the level of income increased, depending on the age of the child. The expenses annually ranged from $6,490 to $7,560 for the household in the group with the lowest income, from $9,030 to $10,140 for the household with medium income and from $13,410 to $14,670 for the household with the highest income.

Suppasit Pannarunothai et al. (2000), the investment for children finds that household income is the source of the capital for children nearly four out of ten gained from grandparents and relatives especially in the rural area. In additional source of educational capital is the loan from schools. This source of capital enable parents with low income to support their children to get more education. In contrary the family with high income or high education could provide unlimited investment for their children and they didn't expect any economic return from them since the parents

in this group believed that they could depend on themselves, especially expenses for cost of living (Thailand Development Research Institute, 1989).

In the same way, Saisuree Chutikul (1988) examines the demand for education. He finds that the income of the household has an effect on the demand for education. If household income increases, the demand for children's education will increase, particularly in poor households.

However, the results of some studies indicated that the income of the household did not any effect on the expense for children's education. The study of Houston (1995) investigated the proportion of expenses the household paid for education and found out that the income of the household did not have any effect on the proportion of the expenses paid for children's education.

Total expense of household

The total expense of the household is different not only by resident area, but also on their consumption such as transportation, entertainment, education and so on. The study of household expenditure (average monthly) in Northern and Eastern province in Sri Lanka in the year 2002, found that expenditure on education in the Northern was in the rank of 7^{th}, whereas in the Eastern is in the rank of 9^{th} (Department of Census and Statistic in Sri Lanka, 2002). Besides, Piyavan Skulcharoen (2002) investigated the factors influencing the expenses for the agricultural household's consumption at Amphoe Sriracha. It was indicated that the proportion of expenses for food was the highest; came in the second place were the expense for education, transportation and communication.

The number of children attending school

Households with a large number of children are like to have a low demand for their children's education. This implied a tradeoff between the quantity and quality of children (Wansiri Nairithit and Tan, 1980; Thailand Development Research Institute, 1989) a similar result is found in Tsang (2002), who discover that the number of the children attending school is a significant variable of school attendance. However, some studies reveal different results. Chung and Choe (2001) find that the number of children in the household does not have any statistical significance towards. However, Lino (2002) explains that even though expenses for

children are not different by the order of birth, but there are differences between household with one child and more than two children.

In conclude, the size of the household that has effect on the proportion of expenses for education, is not definitely clear. The size of the household may increase the proportion of the expenses paid for children education. Therefore, this research is interested in using the size of the household, for analyzing the expenses for education of the children in the household, in Thailand from 1998 to 2002, to find out whether there is a relationship between the size of the household and the expenses for the children's education or not.

2.2.2.3 Place of Residence

Place of residence refers to living areas classified by region and area. Thienchay Kiranandana's study (1981) stated that one thing found, to have an important role in influencing the children's behavior, is place of residence district.

Jang (1995: 45-50) differs expenses for education in the group with a married couple living together. The married couple living together in the cities in the northeast paid more expenses for education than those living in rural areas. In the group with female household head, the results were opposite there was no difference between the expenses for education of the household in the city and those in rural areas. Jayatilleke (1993) find that a variable of population influencing the expenses of the households for education in Sri Lanka in only rural areas. Horton and Hafstrom (1985), explain that people in the cities have an opportunity to access education easier and more conveniently.

In contrast, Noppawan Chongwattana and Chutha Manaspaiboon (1986: 25) finds that the expenses on tuition and fees in rural areas are less than the expenses of children in the cities. Other studies had opposite results such as Chiraporn Boonying (1998: 78), who compared the expenses for education of the undergraduate students in Economics in many universities: Krik University, Kasetsart University and Sripathum University. The finding was that the students whose families living in different areas would have different percentage of expenditure on education. That is, students in each university whose hometowns were in Greater Bangkok, spent less expenses of 63,224.37 baht per year, while students from the northeast paid higher expense than that amount. Suppasit Pannarunothai et al. (2000: 163) investigated the

money provided for children. It was concluded that the people living in Greater Bangkok and in the cities had a tendency to invest for their children's higher education more than the parents in rural areas.

Furthermore, when considering the differences of graduation from educational institutions in living areas, Knodel and Malinee Wongsith (1991), find that the children from the family in Bangkok are educated at the secondary level more than the children in other regions. Besides, it was concluded that if Bangkok was determined as a city district and the rest were rural districts, the educational levels of the children living in the city and rural are very different. However, Houston (1995) indicates that people are that living area did not correlate with the proportion of expenses for education. Besides, it is found that the household located in the northeast has a tendency to make the proportion of expenses for education on average more than the household located in other regions, but not significant differences between living areas are found.

In conclusion, education expenditure is a controversy with a place of residence. Some studies show strong relationship between place of residence and education expenses, while some studies do not. So in this study, place of residence should include in the analysis process to predict education expenditure in Thai situation.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter explains the research methodology adopted in this study. These include details of population and sample, data collection and data processing, variables and measurement, statistics for data analysis and the characteristics of the sample households. Each is described in sections below.

3.1 Population and Sample

The data used in this study were taken from the Socio Economic Survey (SES) conducted annually by the National Statistical Office (NSO), within the Ministry of Information Technology and Communications. The study focuses on survey data from the years 1998 to 2002.

In 1957 the NSO initiated a survey project, originally called "Survey of Household Expenditure", to study the economic and social conditions of households. In 1968 and 1969, however, this project was renamed the "Survey of Economic and Social Conditions". It was conducted every five years until 1987 when the government came to realize the benefits the survey's results, perceiving that the results could be used as a guideline in determining the policy for solving poverty related problems. From that point on, The NSO was assigned to carry out the survey biennially.

3.1.2 Sample Design

A stratified two-stage sampling was adopted for the survey. All provinces (or Changwats) were considered to be constituted strata, a total of 76 strata. The primary sampling units were blocks for areas administered by municipal systems and were villages for those by non-municipal ones. The secondary sampling units were private households.

3.1.2.1 Stratification

Provinces, altogether 76, were considered to be constituted strata. Each stratum was divided into three parts according to the type of local administration, namely municipal areas, sanitary districts and non-municipal areas outside sanitary districts.

3.1.2.2 Selection of primary sampling Unit

The sample selection of blocks/villages was performed separately and independently in each part, by using probability proportional to the size of the total number of households.

3.1.2.3 Selection of secondary sampling Unit

Private households were our ultimate sampling units. A new listing of private households was made for every sample block/village to serve as the sampling frame. In each sample block/village, a systematic sample of private households was selected with the following sample size:

1) 15 households from each sample block in municipal areas.
2) 9 households from each of the sample villages in the sanitary districts, and
3) 7 households from each of the sample villages

In 1999 the Ministry of the Interior upgraded sanitary districts to municipalities. However, in the 1999 survey the households were divided by three types of areas to compare with the data obtained in 1998, and began to be classified into 2 districts: sanitary districts and outside municipality areas. So, the following data have been used since 2000.

1) 15 households from each sample block in municipal areas, and
2) 10 households from each sample village in non-municipal areas.

Before selecting private sample households in each sample block/village, the list of private households was rearranged according to the household's size, i.e., the members of the household and economic type of household.

3.2 Data Collection and Data Processing

3.2.1 Data Collection

3.2.1.1 Data collection was done by the face-to-face interview method. The interviewers from the Central office and the NSO provincial branch offices were sent out to interview the heads of the sample households or other household members. The data obtained were recorded on the questionnaire forms. There are two types of questionnaire forms –the SES 2 for household composition, demographic and economic characteristics of household members, income and housing facilities, and the SES 3 for household expenditures and 7-day food consumption.

3.2.1.2 Collection period

As income and expenditure of some types of household varies from season to season, all sample households were divided into twelve equally representative sub-samples so as to obtain data showing the changes. Each sub-household group was interviewed for a period of one month. The interviews were conducted between 1998 and 2002, over the following periods:

1998: February 1998- January 1999

1999: June- July 1999

2000: February 2000- January 2001

2001: March-May and August-October 2001

2002: January 2002 – December 2002

3.2.1.3 Data reference period

1) Data for goods and services expenditure were obtained in the previous month of interview. For example, in the interview result of February 1998, "the previous month" referred to was 1-31 January 1998.

2) Data for expenditure on items not frequently purchased was obtained for the twelve months prior to the month in which the interview was conducted. For instance, in an interview result of March 1998, "during the past twelve months" referred to the period between March 1997 and February 1998. The expenditure in this part was calculated as an average expense per month by dividing the total amount by 12.

3.2.1.4 Data quality control

To ensure the highest quality of data, each completed questionnaire was subjected to thorough field editing, followed by a follow-up interview if the information was found to be incomplete or internally inconsistent. Moreover, a household account balance sheet was prepared for each completed interview. This balance compared total money "disbursements" with total money "receipts" for the preceding month. If the account was more than 15 percent out of balance, the interviewer was expected to revisit the household to reconcile the difference.

During the survey period, the supervisors were assigned to assist interviewers in solving the arising problems. Moreover, members of the Central Office staff conducted periodic visits to the field to review questionnaire reports and clarify data collection procedures.

From the process of data collection (as mentioned above, and including this set of data), there are a number of variables, such as household economic status, household income and expenditure, payments, debt, housing, medical services, consumption expenditure and non-consumption expenditure. This set of data was chosen to be used for the analysis of household expenditure on children's education from 1998 to 2002 so as to be able to predict the trend of changes. The latest data were collected in 2002, as shown in table 3.1.

Table 3.1 The Number of Households and Members from the "Socio Economic Survey" (1998 to 2002)

Year	Sample household	Total household	Percentage of sample size	members	Number of households with children attending school
1998	23,549	16,385,600	0.14	86,058	13,336
1999	7,789	16,706,400	0.05	28,247	4,517
2000	24,747	17,185,700	0.14	87,432	9,547
2001	12,116	17,429,900	0.07	42,821	4,592
2002	34,785	17,882,700	0.20	118,763	12,888

Table 3.1, shows data collected from 1998 to 2002. Particularly in 1999, the number of households was conspicuously less than that of the other years. Since the 1999 survey was a special case for obtaining the impact indicator from the economic recession on the population's livelihood (due to the economic crisis), the 1999 and 2001 surveys were also conducted in order to find perpetual data to investigate the economic and social changes in the well-being of various groups of the population adversely affected by the economic crisis, and for evaluating the recovering economic state.

3.2.2 Data Processing

In analyzing the household expense for children's education, the researcher proposed the following stages of data processing:

1) From the Literature Review of this study, "Independent Variables" were divided into three groups: characteristics of household head (sex, age, education and occupation); characteristics of household (type of household, household size, the total household income, the total household expenses and number of children attending school); and the social context (region, area and year). The "Dependent Variable" which was the household expense for education, could be analyzed in individual items, such as text books, school equipment and lunch at school, donations for education and tuition fee at every educational level (school fees and other fees in

private and public schools; private and public vocational schools; private and public college/university).

2) The existing five-year data (which were in the form of text files) were transferred to Excel and SPSS files; only the aforementioned variables were retrieved to be analyzed. Data taken from some years were adjusted to be in the same coding system before being analyzed. This entire datum was examined in terms of accuracy and completeness since the NSO had collected the data from every member of the household, and in this research the unit used in the analysis was the household. The collected data were aggregated into the household data to correspond with what was studied and to prepare for the analysis. The data collected was examined annually in terms of accuracy in order to reduce any possible deviation. The package software SPSS and Excel were both utilized for examining the accuracy and completeness of the data.

3.3 Variables and Measurement

3.3.1 Variables

The review of literature previously conducted concerned the factors influencing the expenses of the households for children's education. These studies concentrated on the total income of the household included factors such as size and structure of the household. Apart from this, some studies investigated variables, age, sex and educational level of the household head that had an effect on the expenses for education. This research divided the factors influencing the expenses of the household into three groups. That were the characteristic factors of the household head using four indicators, the characteristic factors of the household using five indicators, and the characteristic factors of the community using three indicators (as in Figure 3.1) as follows:

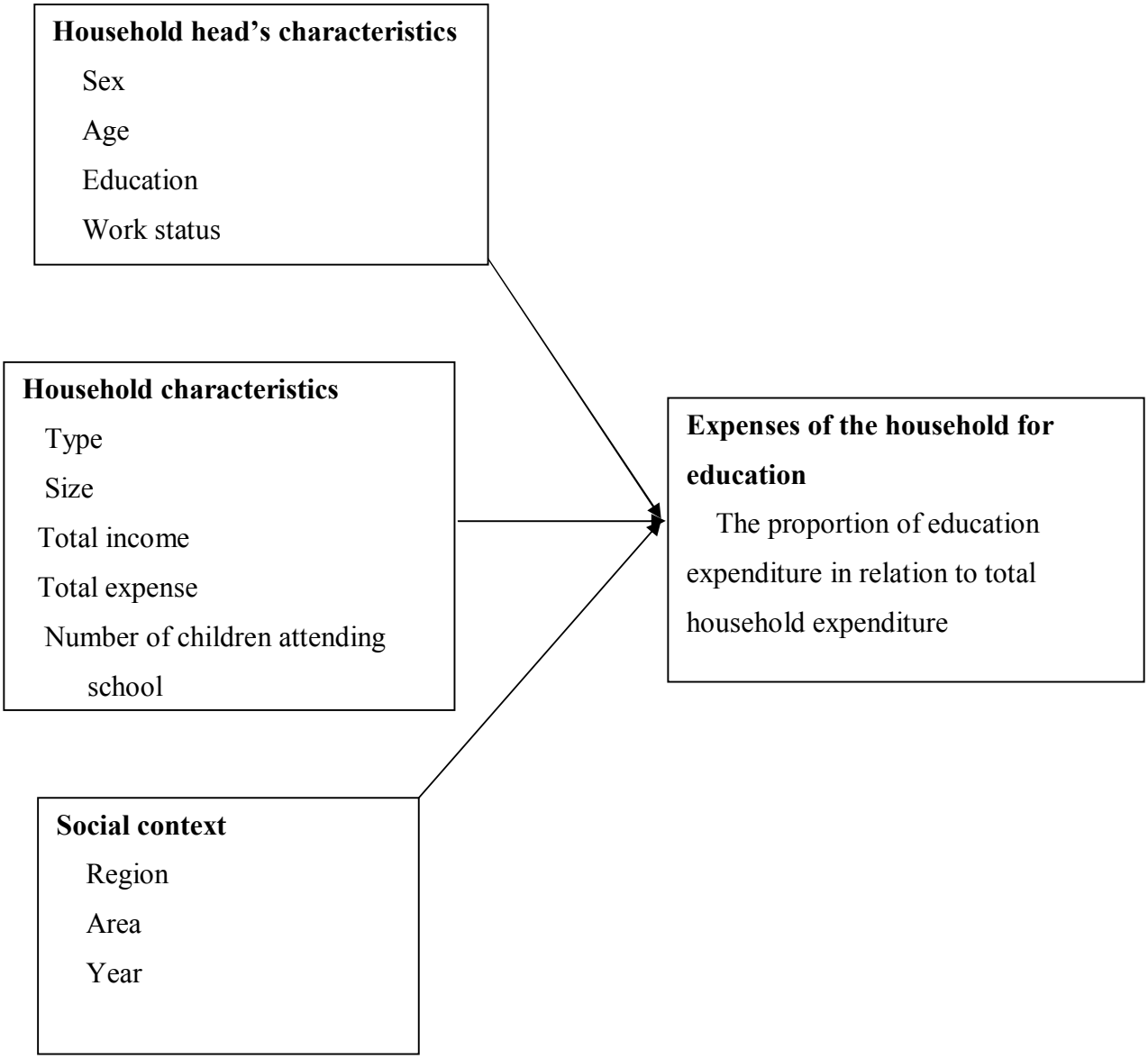

Figure 3.1 Conceptual Framework

3.3.2 Measurement

All variables in this research are classified by variable types and measurement as shown below.

Table 3.2 Variables and Measurement

Variables	Scale Types	Measurement
	Dependent variables	
Expenditure on Education		
Proportion of expenditure on education in relation to total expense	Ratio	Percentage
	Independent variables	
Sex of household head	Nominal	Two categories 1= male 2= female
Age of household head	Ordinal	Five categories 1= less than or equal to 30 2= 31-40 3= 41-50 4= 51-60 5= 61 years and above
Education of household head	Ordinal	Five categories 1= no education 2= elementary 3= lower secondary 4= upper secondary 5= higher education and above

Table 3.2 (Continued)

Variables	Scale Types	Measurement
Work status of household head	Nominal	Six categories 1= Employer 2= own-account worker 3= unpaid family worker 4= employee-government/state enterprise 5= employee-private 6= no occupation
Type of household	Nominal	Two categories 1= head and spouse present 2= All others (one person only, one parent with unmarried child)
Size of household	Ordinal	Three categories 1= 1-2 people 2= 3-4 people 3= 5 people and above
Total income (Baht per month)	Ordinal	Six categories 1= less than or equal to10,000 2= 10,001-20,000 3= 20,001-30,000 4= 30,001-40,000 5= 40,001-50,000 6= more than 50,000
Total expense (Baht per month)	Ordinal	Four categories 1= less than or equal to 10,000 2= 10,001-20,000 3= 20,001-30,000 4= more than 30,000

Table 3.2 (Continued)

Variables	Scale Types	Measurement
Number of children attending school	Ordinal	Three categories
		1= 1 person
		2= 2 persons
		3= 3 persons and above
Region	Nominal	Five categories
		1= Greater Bangkok
		2= Central
		3= North
		4= Northeast
		5= South
Area	Nominal	Two categories
		1= municipal
		2= non-municipal
Year	Interval	Five categories
		1= 1998
		2= 1999
		3= 2000
		4= 2001
		5= 2002

3.4 Data Analysis

Data analysis was divided into two parts. Part 1 concerns with the analysis of household characteristics and expenditure for children's education. Part 2 presents an analysis of the factors affecting household expenditure for children's education.

Part 1: Analysis of the Characteristics of Household head and Expenditure for Children's Education.

This part of the analysis was further divided into three sections. The first section was an analysis of characteristics of the sample household with children attending school, namely sex, age, education and work status of the households head etc. The analyzed data were presented in percentage for each categories. The second section was an analysis of the expenses the households spent on their children's education at each level. The data analyzed is presented in percentage for each year. The final section was an analysis of the household expenses for children's education, by comparing expenses for education at each level in the same year and trend of education expenses from 1998 to 2002. Descriptive statistics are used to explain the results of the analysis.

Part 2: Analysis of Factors Affecting the Household Expenditure on Children's Education.

To analyze the factors affecting the household expenses for children's education, Multiple Classification Analysis (MCA) is applied. The analysis considered independent variables or all 12 factors, and whether or not these factors had an effect on the household expenditure for children's education. The factors were divided into three groups. The first group was characteristics of household head (sex, age, education and work status). The second group was characteristics of household (type of household, size of household, the total household income, the total household expenses and number of children attending school) the last group was the social context (region, area and year).

The Multiple Classifications Analysis has a regulation on independent variables, that is, if any variable are interval or ratio scale needs to be adjusted to nominal or ordinal scale before analyzing. In this study, there are 6 quantitative variables including household head's age, education background, household's size, total

income, total expense, and number of children attending school. Meanwhile, dependent variable must be quantitative (interval or ratio).

The analysis of variables having effects on educational expense of households can be explained in the model of proportion of total expenses of the households and educational expenses of all educational level with private and public institutions.

Statistics used in the Multiple Classification Analysis (MCA)

Let

Y_k = Individual $k's$ score on the dependent variable

W_k = Individual $k's$ weights

a_{ij} = Adjusted deviation of j^{th} category of predictor i

i = subscript for predictor

j = subscript for category within a predictor

k = subscript for case

$$\overline{Y} = \frac{\sum W_k Y_k}{\sum_k W_k} \quad \text{and} \quad \overline{Y_{ij}} = \frac{\sum_k W_{ijk} Y_{ijk}}{\sum_k W_{ijk}}$$

where $\overline{Y}$ = Grand Mean of Y

$\overline{Y_{ij}}$ = Mean of Y for category j of predictor i

1) The **unadjusted mean** refers to the arithmetic mean of each independent variable.

2) The **adjusted mean** refers to the arithmetic mean of each independent variable after other independent variables are controlled. This value is equal to each unadjusted mean when independent variables do not correlate to each other.

3) **Eta value** refers to the variation of dependent variables resulted from one of the independent variables without controlling other independent variables.

Eta^2 can be interpreted as the percent of variation in the dependent variable that can be explained by one of independent variables without controlling other independent variables.That is, if we want to know how much effect each independent

variable has on each dependent variable Y, the Eta value is calculated by the following formula:

$$Eta = \sqrt{\frac{\sum_j \sum_k W_{ijk} (X_{ij} - \bar{Y})^2}{\sum_k W_k (Y_k - \bar{Y})^2}}$$

$Eta^2 = 1$ can be interpreted as the percent of variation in the dependent variable that can be explained by one of independent variable with 100% . However, if $Eta^2 = 0$ it means that independent variables investigated have no effect on the dependent variable.

4) **Beta value** is used to explain the variation of the dependent variable Y after other independent variables are controlled. The Beta value is calculated by the following formula:

$$\text{Beta} = \sqrt{\frac{\sum_j \sum_k (W_{ijk})(a_{ijk})^2}{\sum_k W_k (Y_k - \bar{Y})^2}}$$

$Beta^2$ can be interpreted as the percentage of variation in the dependent variable that can be explained by one of independent variables when other independent variables are controlled.

5) **R** is the statistic which is derived from the consideration that after all independent variables are combined, the variation in dependent variable is well explained. The process of Multiple Classification Analysis is similar to Multiple Regression Analysis. The R value can be calculated by the following formula:

$$R = \sqrt{\frac{\sum_i \sum_j a_{ij} (\sum W_{ijk} Y_{ijk})}{\sum_k W_k (Y_k - \bar{Y})^2}}$$

Naturally, the variation of dependent variable stems from several sources. They can be the sources in which this study is interested or others that might be ignored. Practically, an attempt is made to know that the variation in the dependent variable come from the sources the study is keen on investigating. Therefore, the study tries to draw out as many reasons as possible.

R^2 is often called the coefficient of determination has the highest value which is equal to 1. In Multiple Classification Analysis they have R^2 and R^2_{adj}; R^2 is the percent of variation in dependent variable explained by groups of independent variables directly calculated from that set of data. However, R^2_{adj} is the transformed value form R^2 by using adjust mean relating to the number of sample, The number of category and the number of independent variables. The R^2_{adj} can be calculated by the following formula:

$$R^2_{adj} = 1 - (1 - R^2)\left(\frac{n-1}{n+p-c-1}\right)$$

n = number of sample
p = number of independent variables
c = number of categories

Multiple Classification Analysis should be used with a large number of samples. The larger sample is, the more the value R^2 is approximately equal to R^2_{adj}

3.5 Characteristics of Sampled Households with at Least One Child Attending School

3.5.1 Characteristics of Household Head

Table 3.3 shows the results of characteristics of household head, including sex, age, education background, and occupation.

Table 3.3 Percentage of Sample Households with Children Attending School, Classified by Characteristics of Household Head (1998 to 2002).

Characteristics	1998	1999	2000	2001	2002
Sex					
Male	76.6	74.5	81.5	81.7	79.3
Female	23.4	25.5	18.5	18.3	20.7
Age					
≤ 30 years	8.6	7.7	6.3	5.6	6.0
31 – 40 years	29.6	28.9	38.8	39.2	39.7
41 – 50 years	29.0	29.2	39.8	40.1	39.9
51 – 60 years	15.6	15.6	12.2	12.1	11.9
> 60 years	17.3	18.7	3.0	3.0	2.5
$\bar{x}$	46.55	47.15	42.30	42.42	42.22
S.D.	13.62	13.83	8.47	8.30	8.26
Education					
Uneducated	6.6	6.5	3.4	3.2	3.1
Elementary level	65.9	56.1	48.9	62.1	62.0
Secondary level	9.0	9.7	14.0	11.3	10.8
Upper Secondary level	3.9	8.7	10.6	5.2	5.5
Bachelor's degree and above	14.7	18.9	23.1	18.2	18.6
Average number of years ($\bar{x}$)	6.02	6.94	7.69	7.19	7.28
S.D.	5.15	5.15	5.06	4.50	4.52

Table 3.3 (Continued)

Characteristics	1998	1999	2000	2001	2002
Work status					
Employer	24.7	23.3	25.9	15.1	17.2
Own-account worker	38.7	41.4	26.7	35.5	33.4
Unpaid family worker	20.7	20.0	1.2	1.4	1.8
Employee-government	15.3	14.7	17.6	17.0	16.0
Employee-private	0.5	0.5	23.9	25.9	26.8
No occupation	0.2	0.1	4.7	5.2	4.8
n	**13,336**	**4,517**	**9,547**	**4,592**	**12,888**

1) Sex of Household Head

From the analysis results of sex of household head (in families with at least one child attending school, from 1998 to 2002), the majority of household heads were male, accounting for more than 74%. Furthermore, this trend was increasing; from 76.6% in 1998 it is dramatically increased to 81.7% in 2001, and then slightly declined in 2002 to 79.3%. It can be concluded that 3 in 4 in sample households have males as the household head.

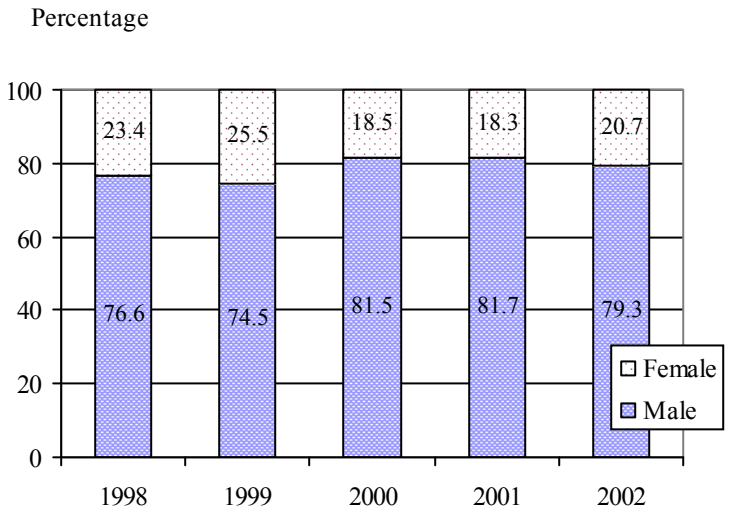

Figure 3.2 Percentage of Households with Children Attending School, Classified by Sex of Household Head.

2) Age of Household Head

A comparison of the age of household heads in the families with children attending school from 1998 to 2002 revealed that throughout the five years of this study, the study results have the same aspect. Most household heads were between the ages of 41 and 50, though the proportion slightly increased from 29.0% in 1999 to 39.9% in 2002. The average age of household heads decreased from an average age of 46.55 in 1998 to 42.22 in 2002. It can be concluded that the household heads of the families with children attending school are getting younger, whereas for elders (those in their sixties), the percentage reduced from 17.3% in 1998 to only 2.5% in 2002.

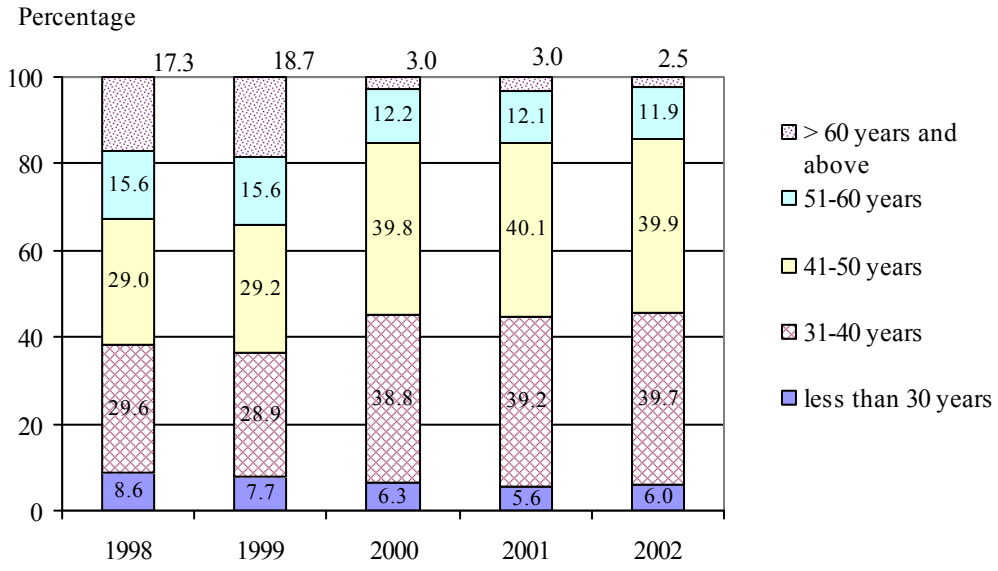

Figure 3.3 Percentage of Households with Children Attending School, Classified by Age of Household Head.

3) Education Background of Household Head

When considering the education background of the household heads from 1998 to 2002, it is apparent that there was a dramatic decrease in the number of household heads who were uneducated – from 6.6% in 1998 to 3.1% in 2002. The number of household heads who finished primary education was the largest, and the percentage was the same over the five years, with the trend continually reducing. On

the other hand, the number of household heads with secondary and upper-secondary education increased.

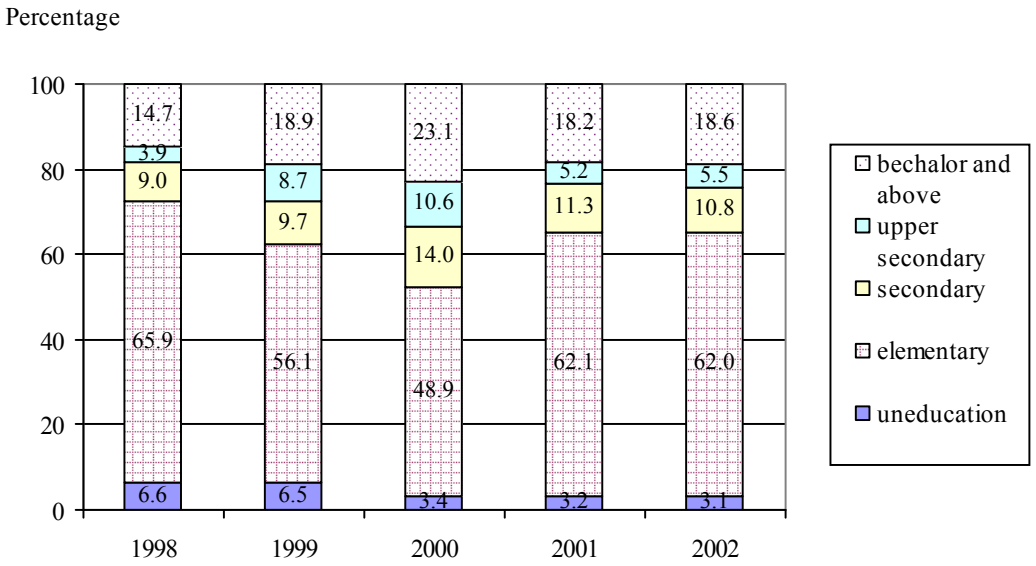

Figure 3.4 Percentage of Households with Children Attending School, Classified by Education of Household Head.

4) Work status of Household Head

From 1998 to 2002 it was found that the majority of household heads most were own-account worker. They ran their own business without hiring any employees and the situations were the same every year this study was carried out, but the proportion respectively decreased. That is, it declined from 38.7% in 1998 to 33.4% in 2002 but, it was found that the proportion of unemployed household heads did not change from 1998 to 1999 although the situation has changed dramatically since then. There was another remarkable point – the number of employers decreased. That is to say, it reduced from 24.7% in 1998 to 17.2 in 2002. The number of household members helping run the family's business without being paid from 1998 to 1999 was very large - around 1 in 5 of all work status. However, after 2000 the proportion obviously decreased; that is, the percentage was less than 2.0% and the rest of it was anticipated to add up in the groups of private sector's employees and the unemployed, because the results of the analysis yielded adversely.

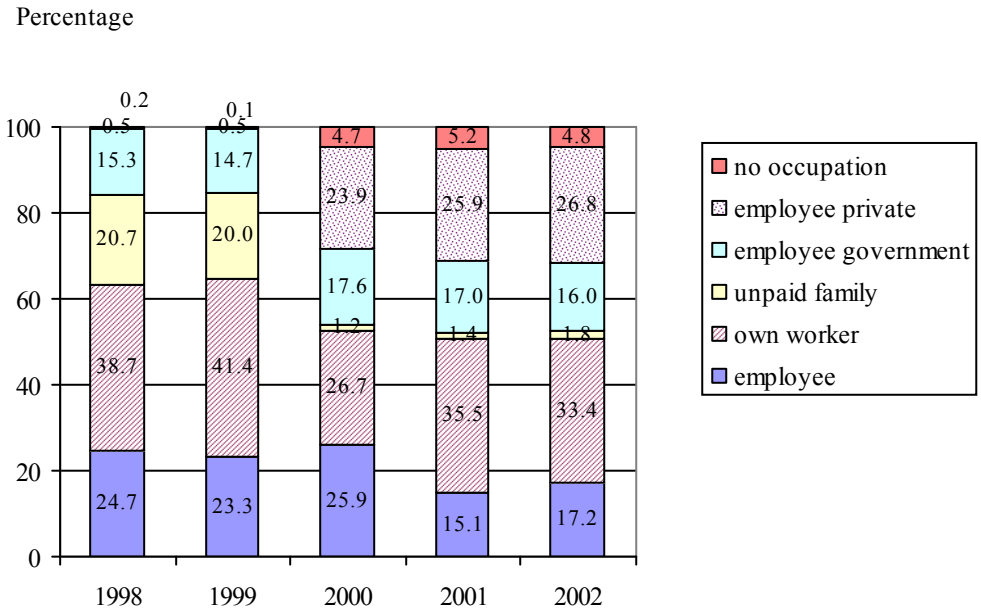

Figure 3.5 Percentage of Households with Children Attending School, Classified by Work Status of Household Head.

3.5.2 Characteristics of Household

Table 3.4 shows characteristics of household, including household type, size, total income, total expenditure and number of children attending school. The analyzed results are presented below:

1) Types of Household

Between 1998 and 2002 it was found that the households with children attending school represented the largest number of households, with family heads and married couples living together, and the trend was increasing, climbing from 74.9% in 1998 to 83.6% in 2002. The types of household had the same tendency; that is, the number of households with one single parent (either a father or mother) with unmarried children significantly increased – from 7.6% in 1998 to 15.8% in 2002. The trend of households with only one family member decreased.

Table 3.4 Percentage of Households with Children Attending School, Classified by Characteristics of the Household (1998 to 2002).

Characteristics	1998	1999	2000	2001	2002
Type of Household					
One person only	1.3	1.8	0.1	0.2	0.1
Head and spouse present	74.9	72.8	84.0	81.7	83.6
One parent with unmarried children	7.6	7.8	11.6	12.3	15.8
All others	16.1	17.6	4.3	5.8	0.5
Size of household					
1- 2 people	6.8	7.1	5.0	4.9	5.0
3 - 4 people	54.4	55.3	63.6	66.5	67.0
5 people and above	38.8	37.6	31.4	28.6	27.9
$\bar{x}$	4.40	4.36	4.18	4.12	4.07
S.D.	1.60	1.62	1.32	1.29	1.24
Total income (per month)					
≤ 10,000 Baht	56.2	57.2	53.3	51.4	50.0
10,001 – 20,000 Baht	25.4	24.2	25.9	26.5	27.7
20,001 – 30,000 Baht	9.2	9.1	9.3	10.7	10.2
30,001 – 40,000 Baht	4.4	4.9	5.5	5.3	5.4
40,001 – 50,000 Baht	2.0	1.7	2.6	2.5	2.8
≥ 50,001	2.9	3.0	3.4	3.5	3.9
$\bar{x}$	14,178.92	13,970.66	14,944.11	15,009.52	15,916.72

Table 3.4 (Continued)

Characteristics	1998	1999	2000	2001	2002
Total expense (per month)					
≤ 10,000 Baht	64.5	65.7	62.8	61.2	59.1
10,001 – 20,000 Baht	26.9	26.0	27.5	28.2	29.4
20,001 – 30,000 Baht	5.2	5.1	6.0	5.9	7.1
≥ 30,001 Baht	3.3	3.1	3.7	4.7	4.4
$\bar{x}$	10,323.99	10,146.60	10,807.57	11,196.08	11,731.54
S.D.	9,059.93	9,115.94	10,390.59	10,308.98	12,065.86
Number of Children attending school					
1 person	52.1	53.8	54.2	54.7	56.3
2 people	35.3	34.9	36.1	36.7	35.6
3 people and above	12.7	11.3	9.8	8.6	8.0
$\bar{x}$	1.64	1.61	1.57	1.56	1.53
S.D.	.80	.79	.72	.71	.69

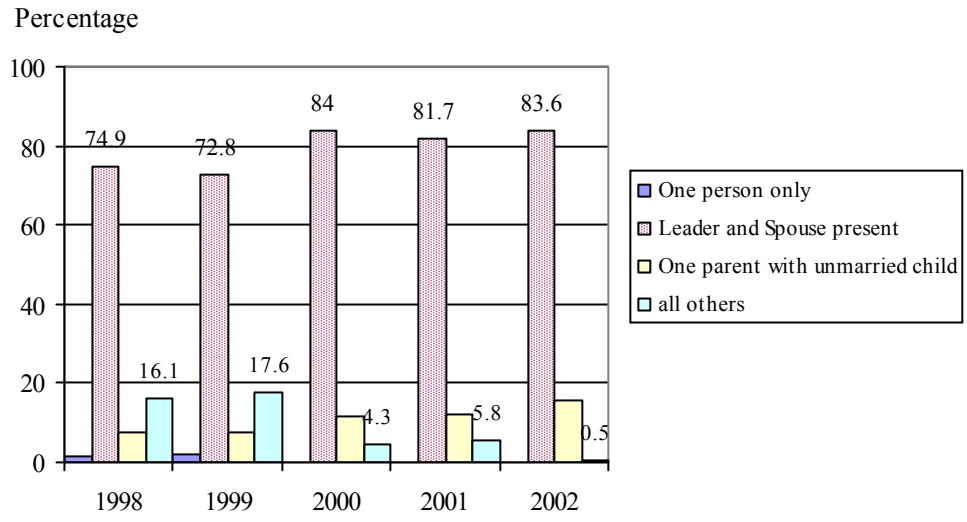

Figure 3.6 Percentage of Households with Children Attending School, Classified by Types of Household.

2) Household Size

The comparisons from 1998 to 2002 revealed that more than 50% of the households with children attending school were those with 3-4 family members. The number of 3-4, family member households drastically increased, from 54.4% in 1998 to 67.0% in 2002, whereas the number of both the smaller households (1-2 family member households) and the larger sized households (households with more than five members) had a tendency to decrease. The most remarkable thing was that the number of large families sharply decreased; from 38.8% in 1998 to 27.9% in 2002. The average size of households with children attending school also decreased; a household size of 4.40 members in 1998 decreased to 4.07 members in 2002.

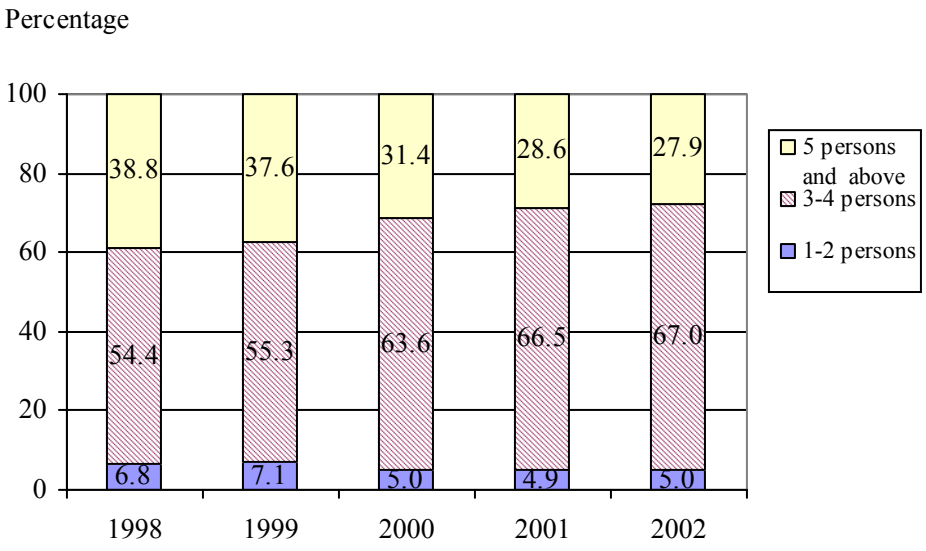

Figure 3.7 Percentage of Households Classified by Size.

3) Total Household Income

The analysis results of the households with children attending school revealed the same results throughout the five years in which this survey was carried out. Approximately 50% of the total number of the households earned the lowest rate of income – less than or equal to 10,000 baht. However, this trend seemed to decline, from 56.2% in 1998 to 50.0% in 2002. Next we see households with an income of between 10,001 and 20,000 baht. Households with a total income within this bracket continuously increased in numbers, from 25.4% in 1998 to 27.7% in 2002. The

number of the households with the high total income was not so large. When considering the average total income of the households with children attending school, it was found that the households with children attending school have a total income of between 14,000 and 16,000 baht per month. It is remarkable that the gap of the income between the high-income and low–income brackets was still large, especially in 2002.

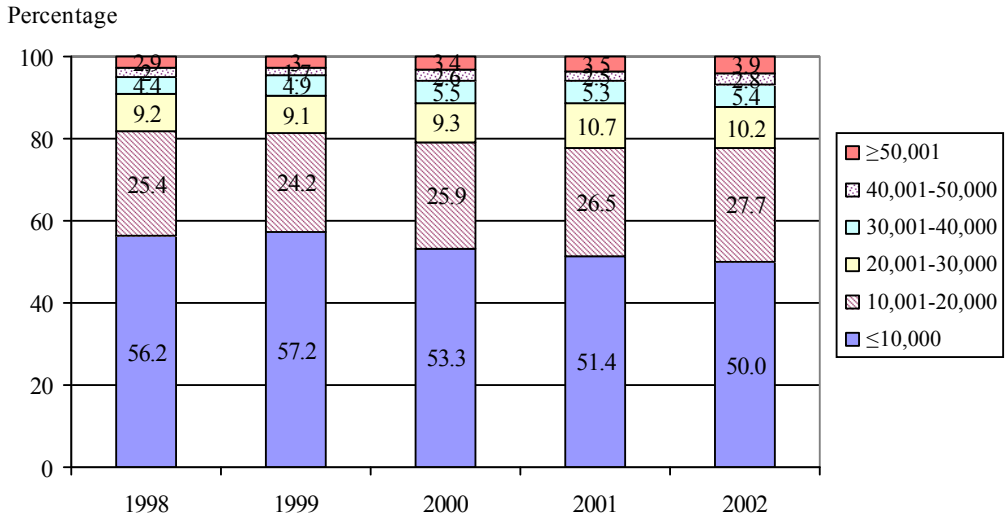

Figure 3.8 Percentage of Households Classified by Total Income.

4) Total Household Expenditure

When considering the total expenditure of the households with children attending school, it can be seen that there is a pattern which corresponds to the total income of the household. That is to say, approximately 60% of the entire number of households had a total expenditure less than or equal to 10,000 baht and this trend declined - from 64.5% of the entire number of households in 1998 to 59.1% in 2002. Next were households with a total expenditure of between 10,001 and 20,000 baht. The proportion of all households which had a total expenditure in this bracket accounted for more than one quarter of the total number. In addition, the trend also increased; from 26.9% in 1998 to 29.4% in 2002. Considering the total expenditure on average, it was found that the households with children attending school had a total expenditure of between 10,000 and 12,000 baht. The standard deviation will increase over time. This means that monthly expenditure of the households with children

attending school was not significantly different between the low - income and the high - income groups when compared with the total income of the household.

When considering the total income and the total expenditure, it was found that from 1998 to 2002, households had a higher total income than the total expenditure - on average more than 3,000 baht per month.

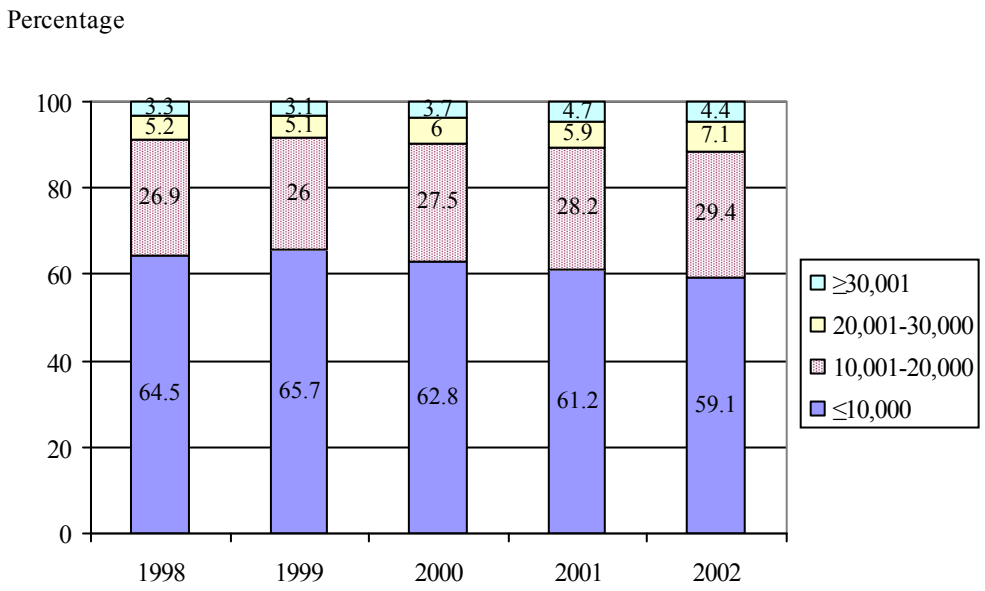

Figure 3.9 Percentage of Households Classified by Total Expenditure.

5) Number of Children Attending School

More than half of all households had children attending school, and the trend continuously increased, rising from 52.1% in 1998 to 56.3% in 2002. Conversely, the number of households with more than 3 children attending school decreased, from 12.7% in 1998 to 8.0% in 2002. The number of households with 2 children attending school, that is around one-third of the entire number of the households, did not change. The average number of children attending school decreased throughout the duration of the investigation. The least number of children attending school was 1.53, in 2002.

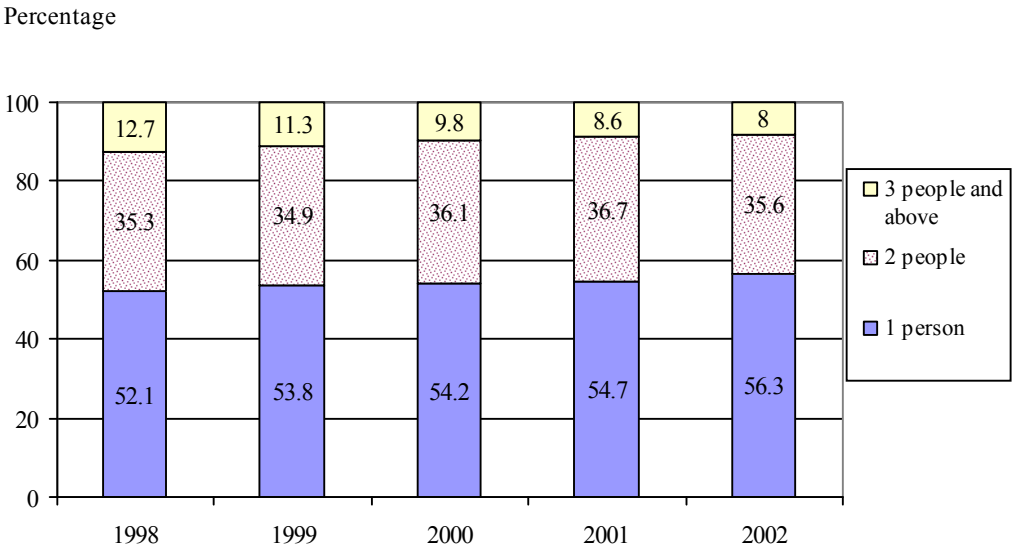

Figure 3.10 Percentage of Households Classified by the Number of Children Attending School.

3.5.3 Social Context

Table 3.5 shows the social context including with region and area.

1) Region

The sample households in this study were located throughout Thailand, with those in the northeast of Thailand accounting for approximately 30%. The next largest representative group was the households in the central and northern parts of Thailand respectively. The households in the Bangkok Metropolis area (and its satellite towns) constituted the smallest of the groups, accounting for less than 10% of the total number of households investigated. Importantly, during the 1998 to 2002 period these overall household location percentages remained similar.

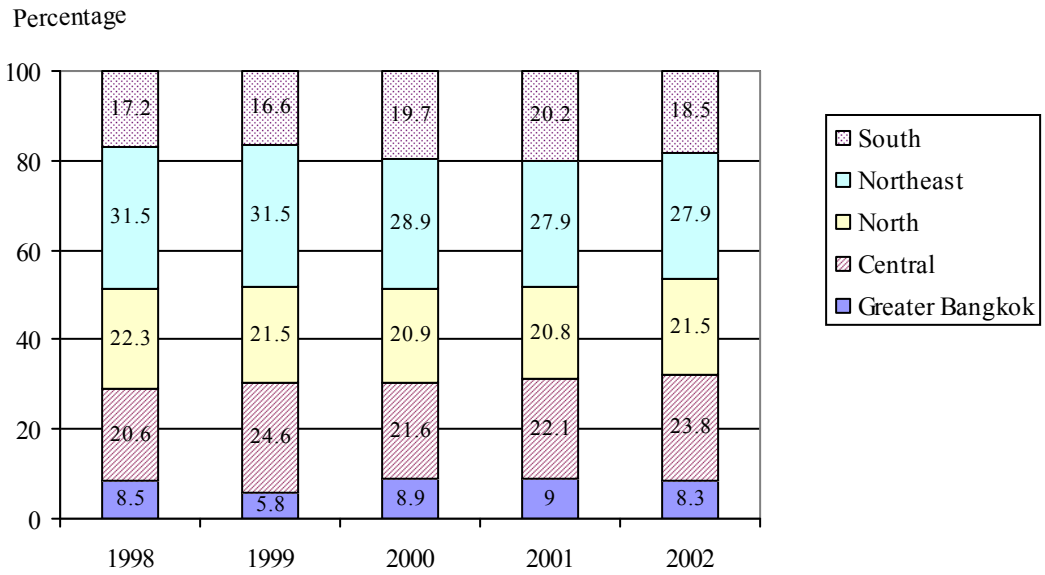

Figure 3.11 Percentage of Households Classified by Region.

Table 3.5 Percentage of Households Classified by Social Context (1998 to 2002).

Characteristics	1998	1999	2000	2001	2002
Region					
Greater Bangkok	8.5	5.8	8.9	9.0	8.3
Central	20.6	24.6	21.6	22.1	23.8
North	22.2	21.5	20.9	20.8	21.5
Northeast	31.5	31.5	28.9	27.9	27.9
South	17.2	16.6	19.7	20.2	18.5
Area					
Municipal Area	52.4	51.2	58.7	59.0	59.0
Non-Municipal Area	47.6	48.8	41.3	41.0	41.0

2) Area

Generally speaking, households are located in the municipality rather than non-municipality. However, as figure 3.12 shows, these two areas are not significantly different from one another. The differences between the municipality and rural areas were mainly in 1998 to 2002. That is, there was an 18.0% difference in

the number of households; 59.0% was the number of households in the municipality and 41.0% accounted for the number of households in non-municipality.

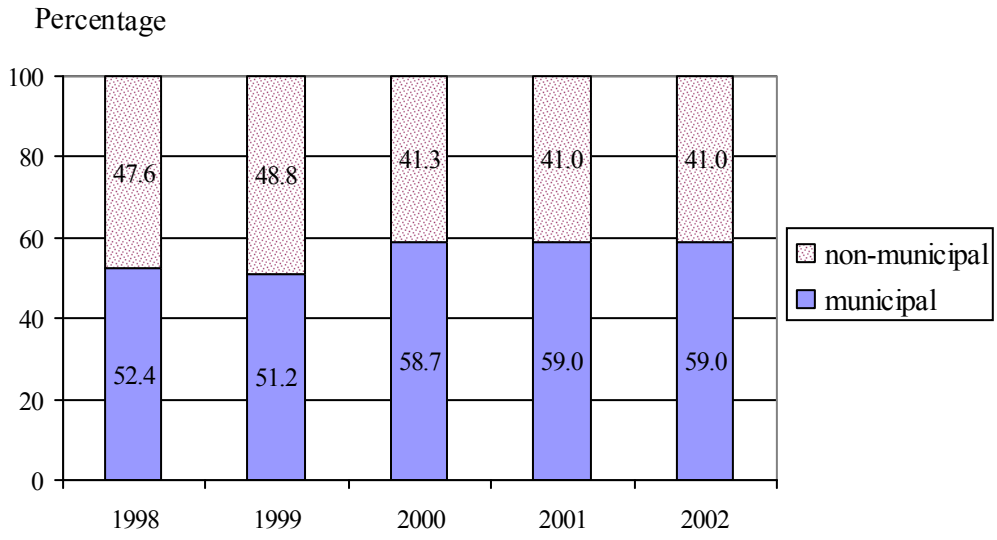

Figure 3.12 Percentage of Households Classified by Area

CHAPTER 4

HOUSEHOLD EXPENDITURE FOR CHILDREN'S EDUCATION

This chapter, a presentation of the analysis results concerning the expenditure for household's child education, is given in four parts. The sections are divided as follows: child education in sample households; household expenditures; household expenditure for child education; comparisons of expenditure on household member's education. All are presented according to education levels.

4.1 Proportion of Household with Children Attending School

According to the survey carried by the National Statistical Office (NSO) during 1998 to 2002, it was found that the tendency of households whose children are attending school is decreasing. In the last year of the survey, the proportion of households whose children were studying in school was only 37.05%. The number of households surveyed each year is shown in Table 4.1.

Table 4.1 The Total Number and Percentage of Households with at Least One Child Attending School

Year	Total number of households	Number of households with children attending school	Percentage of household with children attending school
1998	23,549	13,336	56.63
1999	7,789	4,517	57.99
2000	24,747	9,547	38.58
2001	12,266	4,592	37.44
2002	34,785	12,888	37.05

Source: The National Statistical Office 1998-2002

The sample households in this study comprised the households with children attending school at any of the educational levels categorized as fundamental, vocational and higher education.

When considering the proportion of households with children attending school at each educational level from 1998 to 2002 as shown in Table 4.2, it was found that the proportion of the households with children attending school at fundamental level, during this research period, was the largest (greater than 70%). Nevertheless, there was a remarkable decrease in the proportion of the households with children attending public school from 54.8% in 1998 to 42.6% in 2002. In contrast, the number of households with children attending a private school dramatically increased from 22.1% in 1998 to 27.8% in 2002; the reasons for this might be that there were new private schools which were of a much higher quality, and as working is operated fast and not strictly regulated, schools have to struggle for gaining incomes to cover operational expenses. Therefore there is the competition in the quality of education in order to respond to the parents' requirements (Wanida Rochanasaroch, 1991). Moreover, the teaching efficiency in the secondary school level in the private part is higher than that found in public schools. (Siriwan Sae-Ueng, 2001). Furthermore, the rate of competition to gain entrance to high quality public schools increased so drastically that many families were more interested in encouraging their children to study in a private school, even though the expenses of a private school education as a whole were higher than those of a public school. The differences in expenses are presented in the next section.

The proportion of households with children attending a public vocational school increased slightly over the four year period, from 9.4% in 1998 to 10.2% in 2002. By contrast, the proportion of households with children attending private vocational school decreased from 5.0% in 1998 to 3.8% in 2002. This is evident from the fact that a number of private vocational schools had to close down due to a continual decrease in the number of students. Generally, students seemed more interested in attending public vocational schools than private ones, particularly as private schools charged higher tuition fees.

The study of the last educational level, higher education, indicated that the percentage of households with children studying in public higher educational

institutions almost doubled between 1998 and 2002 – from 6.8% to 12.9%. This implied that many students strived to be educated at the higher educational level. In addition, new public higher education institutions emerged to serve the needs of students in all regions in response to local demand, and to reduce the influx of migrant students to Bangkok. It was a similar case in private educational institutions; the number of students attending private educational institutions had been continuously increasing. However, the proportion was still less when compared with other educational levels, with the percentage ranging from 1.9% in 1998 to 2.5% in 2002.

In summary, it is clear that the educational institutions under public control had more students than private educational institutions, at every educational level. One of the reasons is that the public sectors have higher capacity than the private sectors in all educational level.

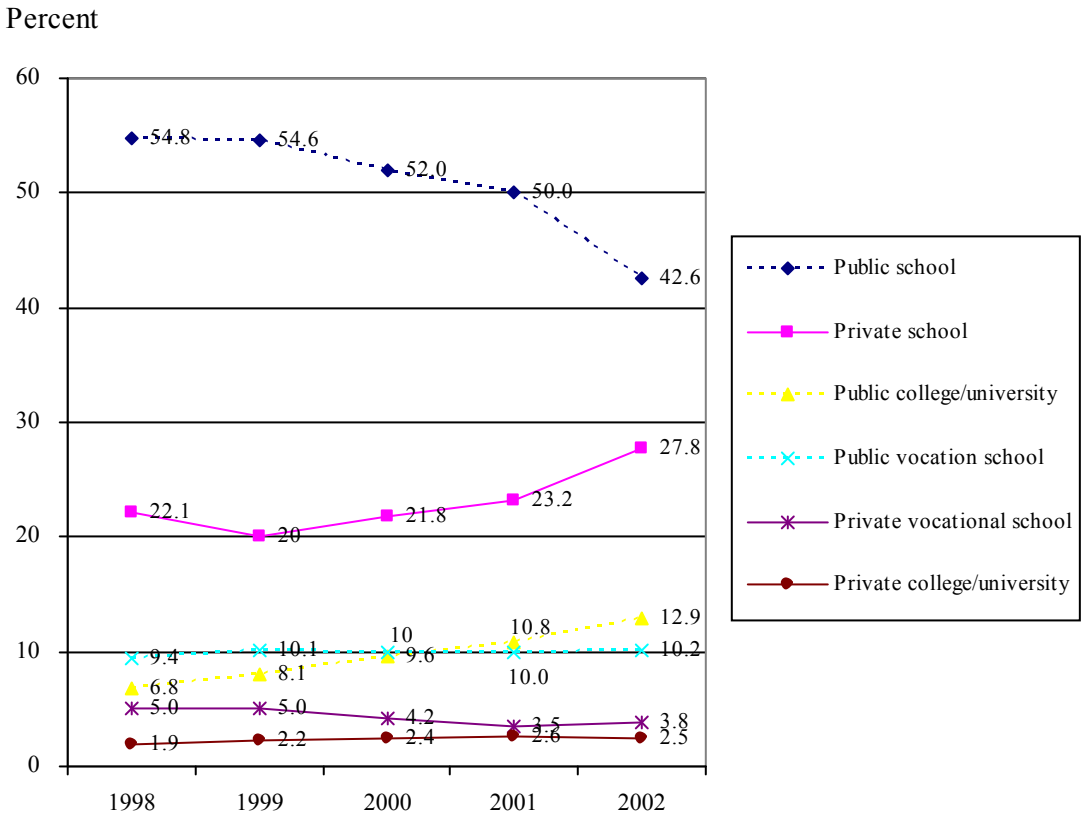

Figure 4.1 The Proportions of Households with Children Attending School Classified by Educational Level from 1998 to 2002

Table 4.2 Percentage of Households with Children Attending School Classified by Educational Level (1998 to 2002)

Educational Level	1998	1999	2000	2001	2002
Fundamental Level					
Private school	22.1	20.0	21.8	23.2	27.8
Public school	54.8	54.6	52.0	50.0	42.6
Vocational Level					
Private vocational school	5.0	5.0	4.2	3.5	3.8
Public vocational school	9.4	10.1	10.0	10.0	10.2
Higher Education Level					
Private college/university	1.9	2.2	2.4	2.6	2.5
Public college/university	6.8	8.1	9.6	10.8	12.9
Total number of households with children attending school	13,336	4,517	9,547	4,592	12,888

4.2 Household Expenditures.

From table 4.3, when considering the proportion of households without children attending school, it was found that households without children studying in school with less than or equal to 10,000 baht for expenditure have the highest proportion. However, the tendency is decreasing; that is, it decreased from 77.4% in 1998 to 64.9% in 2002. By contrast, the expenditure in the 10,000 – 20,000 baht group increased from 17.8% in 1998 to 27.1% in 2002. Furthermore, it was found that the average total expenditure of households without children attending school increased from 9,295.66 baht per month in 1998 to 10,914.94 baht per month in 2002, with the average total expenditure during the 1998 to 2002 period being 9,949.11 baht per month.

As regards households whose were without children attending school, it was found that the patterns of expenses of total household expenditure are similar to those in households with children studying in school. Households with expenditure equal to

or less than 10,000 baht have the most proportion and there was a decreasing tendency from 64.5% in 1998 to 59.1% in 2002. On the other hand, the expenditure in the 10,001 – 20,000 baht group increased from 26.9% in 1998 to 29.4% in 2002. For the average total expenditure of households whose children study in school, there was an increasing tendency from 11,888.22 baht per month in 1998 to 12,269.46 baht per month in 2002. The average total expenditure from 1998 to 2002 was 11,818.36 baht per month.

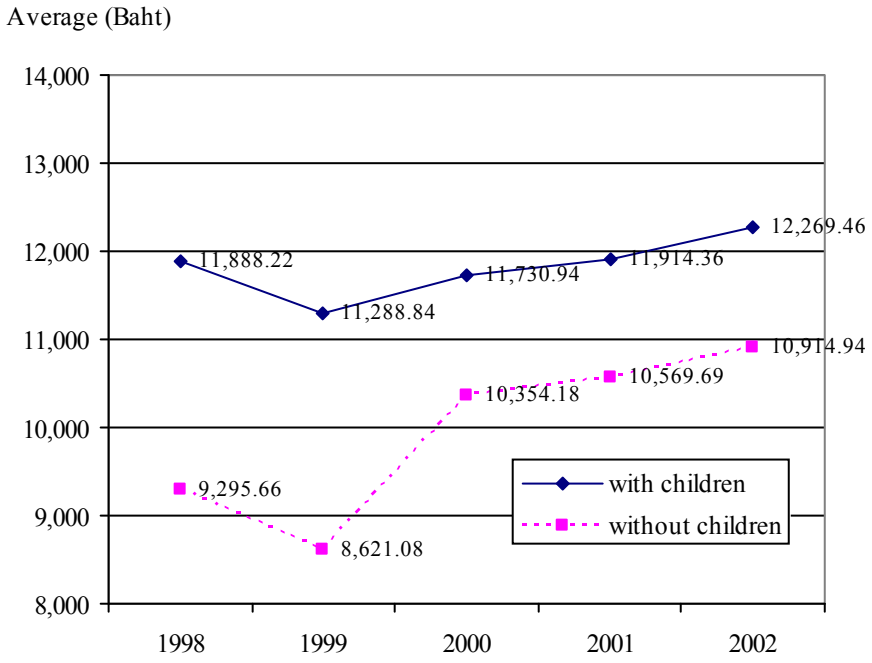

Figure 4.2 The Average Expenditure of Household with and Without Children Attending School during 1998 - 2002

On the whole, it is evident that from 1998 to 2002, households with children attending school had higher total expenditure than households who did not have children attending school; the differentials averaged 1,869.25 baht per month.

Table 4.3 Expenditure of Households Without and with Children Attending School.*

Expenditure	1998	1999	2000	2001	2002	Average
Household without children attending school						
≤ 10,000 Baht	77.4	79.4	69.2	66.8	64.9	
10,001 – 20,000	17.8	16.1	23.7	25.0	27.1	
20,001 – 30,000	2.8	2.9	4.5	5.3	5.0	
≥ 30,001	1.9	1.6	2.6	2.9	3.2	
Current price	8,072.56	7,748.77	9,539.17	9,932.48	10,426.85	9,143.97
Future value at year 2008	9,295.66	8,621.08	10,354.18	10,569.69	10,914.94	9,949.11
Household with children attending school						
≤ 10,000 Baht	64.5	65.7	62.8	61.2	59.1	
10,001 – 20,000	26.9	26.0	27.5	28.2	29.4	
20,001 – 30,000	5.2	5.1	6.0	5.9	7.1	
≥ 30,001	3.3	3.1	3.7	4.7	4.4	
Current price	10,323.99	10,146.60	10,807.57	11,196.08	11,731.54	10,841.16
Future value at year 2008	11,888.22	11,288.84	11,730.94	11,914.36	12,269.46	11,818.36

Note* A current price was adjusted by using mean of interest rates from saving account (see Appendix D: Table D.1) to compare and reflect the future value of education expenditure in the year 2008.

4.3 Household Expenditure for Children's Education

In this section, the analysis results of household expenditure for children's education are presented. These expenses consist of tuition fees and other expenses relating to a variety of things pertinent to education such as textbooks, learning materials, allowances, lunch and daily expenses, etc. All of the items presented show differences in expenditure for education in public and private educational institutions, and at each level of education.

For each educational level, the study analyzed various perspectives of education expenditure, i.e.1) Total expenditure for education; 2) Tuition fees/school fees; 3) Miscellaneous expenses; 4) Proportion of the total expenditure for education and total expenditure of households. The first three perspectives were analyzed based on the future value in 2008.

4.3.1 Fundamental Education Level

4.3.1.1 Total Expenditure for Education

When accounting for household's total expenditure on education from 1998 to 2002, the households with children attending private schools almost annually had to pay a higher amount of total expenses than those whose children were attending public schools. There were various differences in expenses between these two types of household.

The educational expenses of the households with children attending private school decreased from 1,945.87 baht per month in 1998 to 1,837.14 baht per month in 2002, whereas the expenses of the households with children attending public school decreased from 1,669.90 baht per month in 1998 to 1,637.67 baht per month in 2002 (except in 1999, when households with children attending private schools paid less than those with children attending public schools). (see figure 4.3)

When considering average expenditure from 1998 to 2002, It can be seen that the households with children attending private schools had to pay about 1,919.20 baht per month for the expenses on education, whereas the total expense on education of households with children attending public schools was 1,651.59 baht per month. Total expenditure of households with children attending private schools was higher than that of the households whose children were attending public schools – the difference in the expenditure between those types of household being 267.61 baht per month on the average.

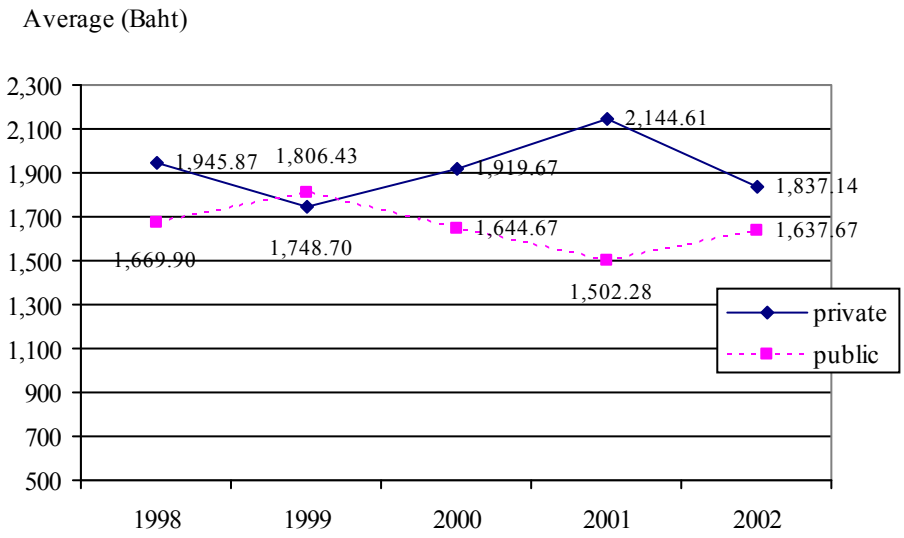

Figure 4.3 Total Expenditure per Person per Month of Households with Children Attending School at Fundamental Level.

4.3.1.2 Tuition Fees/School Fees

There are distinctive differences in tuition fees/school fees expenses between the households with children attending public and private schools. The households with children attending private school were normally required to pay about 3,039.72, 3,222.84,_2,989.14, 3,123.24 and 3,234.00 baht per semester in 1998, 1999, 2000, 2001 and 2002 respectively. From 1998 to 2002 the average tuition fee/school fee was thus 3,121.79 baht per semester. That is to say, on average, the tuition fee/school fee required by a private school was 780.45 baht per month or 6,243.58 baht per year, while the household with children attending public school pay about 846.66, 815.22, 806.22, 803.28 and 806.04 baht per semester in 1998 to 2002 and the average tuition fee/school fee was 815.48 baht per semester; that is to say, on average, a public school would require 203.87 baht per month or 1,630.96 baht per year.

In summary, the tuition fee/school fee of a private school is 3.83 times higher than that of a public school. The reason for this might be that public schools are government-funded, as stipulated by the Educational Act 1999. Consequently, there are only some items of expenditure for which households have to be responsible, such as dancing, computer, swimming or any activity that supports their curriculum

etc., while households with children attending a private school have to pay all expenses by themselves.

When considering the trends in expenditure on tuition fee/school fees, it can be seen that costs for households with children attending private school increased slightly, whereas for households with children attending public school there was not a great difference in cost over the time of the survey for total expenses on education. There was also a significantly wide gap of expenses between the two types schools, as illustrated in Figure 4.4

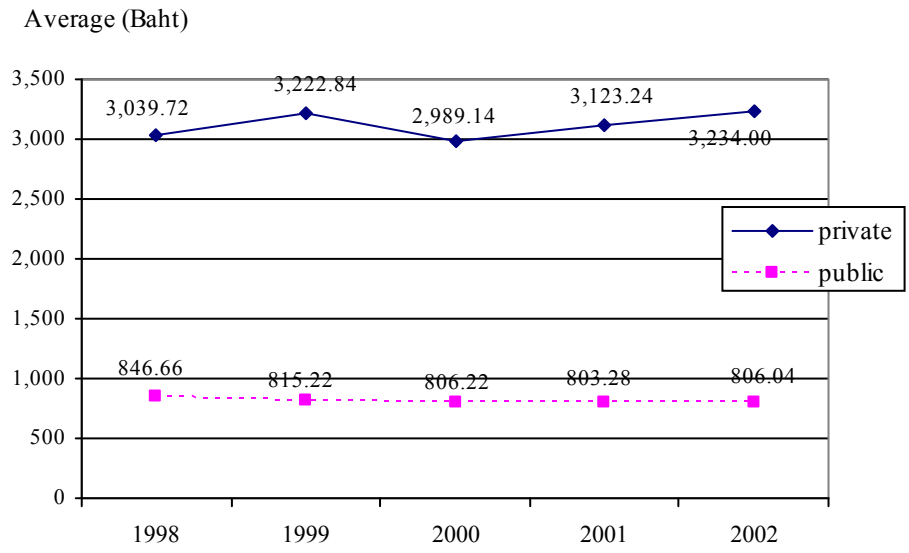

Figure 4.4 The Tuition Fee/School Fee per Person per Semester of the Households with Children Attending School at Fundamental Level.

4.3.1.3 Miscellaneous Expenses

This category includes payment for textbooks, learning materials, lunch, daily expenses, and so on, for which the household has to be responsible.

From 1998 to 2002, there was a miscellaneous expense on education of approximately 1,400.97 baht per month per child for households with children attending private school. This indicated that each student would spend 70.05 baht on average per day. In comparison, when considering the daily expense of students going to a public school (with households paying 1,516.06 baht per month per child), daily expense would be 75.81 baht.

It can be concluded that when comparing miscellaneous expenses per month of the households with children attending public and private schools, the households with children studying in a private school had to pay slightly less than the households with children studying in a public school. However, the difference in expenditure was not significant; about 115.27 baht per month, or 5.76 baht per day.

Major factors which caused public school expenses to be higher than those of private schools were additional private lessons, daily expenses and contributions to education. Other minor items which nevertheless represented a difference in expenses are shown in table 1 of the Appendices.

When considering the trends in miscellaneous expenses by types of school (as shown in Figure 4.5), the expenditure paid from 1998 to 2002 for a private school was less than the amount paid for a public school – except in 2001, at which time private schools had expenses higher than that of public schools, and the trends in miscellaneous expenses of the two types of school fluctuated.

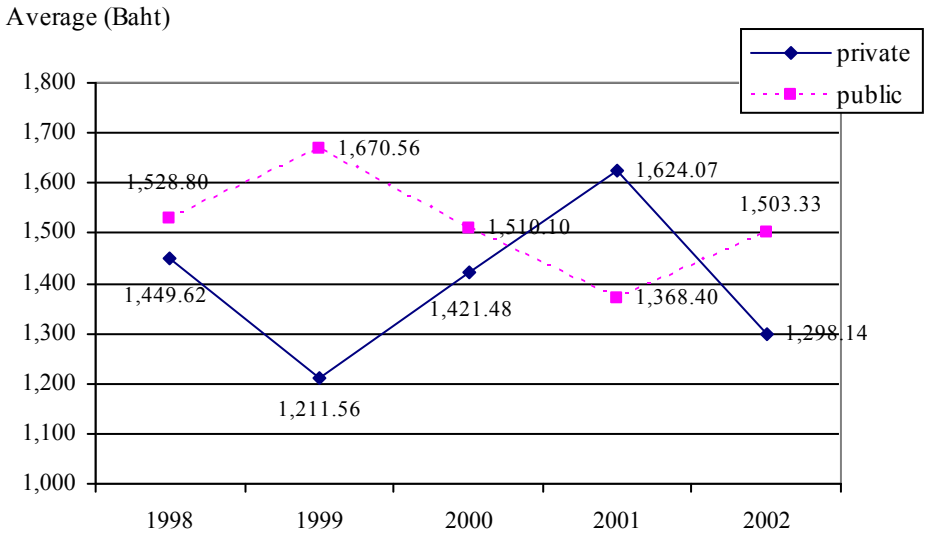

Figure 4.5 Miscellaneous Expenses per Person per Month of the Households with Children Attending School at Fundamental Level.

The proportion of expenditure in households whose children are studying can be classified to 2 main items- tuition fee/school fee and miscellaneous expenses. It is found that in private schools more than 1/4 of the expenditure on education is tuition

fee/school fee. On the other hand, households whose children are studying in state school have responsibility for tuition fee/school fee only little – that is not over than 9%.

Table 4.4 The Percentage of the Expenditure on Education Classified by Types of the Main Expenses.

Types	Items	1998	1999	2000	2001	2002	Average
	Tuition fee	26.04	30.72	25.95	24.27	29.34	27.26
Private school	Miscellaneous	73.96	69.28	74.05	75.73	70.66	72.74
	Total	100.00	100.00	100.00	100.00	100.00	100.00
	Tuition fee	8.45	7.52	8.18	8.91	8.20	8.25
Public school	Miscellaneous	91.55	92.48	91.82	91.09	91.80	91.75
	Total	100.00	100.00	100.00	100.00	100.00	100.00

4.3.1.4 The Percentage of Education Expenditure

When considering the percentage of expenditure on education in relation to the total expenditure (for the households with children attending private schools), we can see that the lowest rate of expenditure accounted for 10.47% in 2002 and the highest rate 17.99% in 2000. From 1998 to 2002, the proportion of expenses was approximately 13.73% of the total expenditure.

The least proportion of expenditure of the households with children studying in public schools was 12.69% (in 2000) and the highest proportion was 16.43% (in 1999). From 1998 to 2002 the average proportion of expenditure accounted for 14.18% of the total household expenditure. It is noticeable that the households with children attending public schools paid higher learning expenses than those with children studying in private schools.

When considering the trend of expenditure for education to the total expenditure of the household as shown in Figure 4.6, It was found that the trend of proportion of the households with their children studying in public schools fluctuated more than that of the households whose children going to private schools.

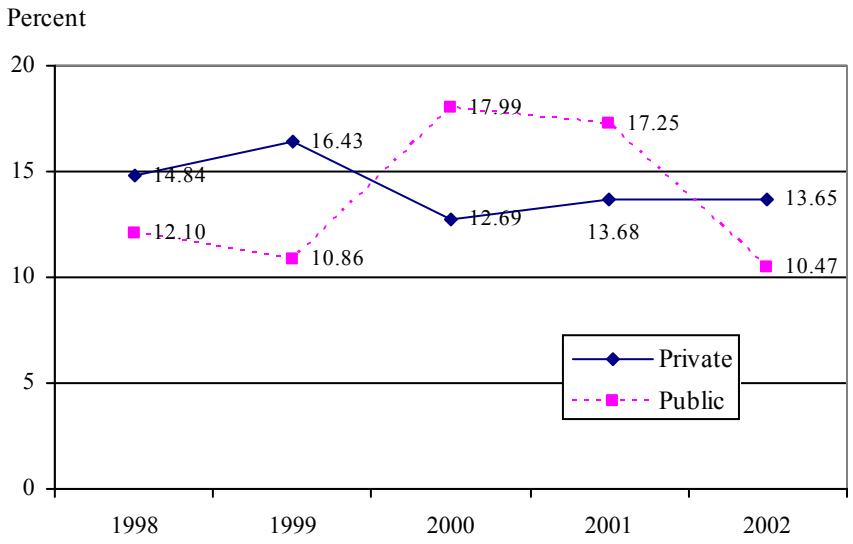

Figure 4.6 The Percentage of the Total Expenditure on Education in Relation to the Total Expenditure of the Households with Children Attending School at Fundamental Level.

The highest percentage of miscellaneous expenses was on the first three items - daily expenses, private lessons and lunch. It is clear that the proportion of expenditure corresponded every year (see Table A.1 in the Appendix A). The expenditure on education paid for public school "tuition fees" has not been a hard burden for households, since it is subsidized by the government, even though some expenses are necessarily paid to the schools. The greatest financial burden for the households with children attending public schools is therefore the expenditure on the aforementioned three items (daily expenses, private lessons and lunch). The households whose children attended public schools had to pay for tuition fee accounting for 8.25% of the total expenditure on education. Those with children studying in private schools paid 3.81 times more in tuition fees than those with children attending public schools. However, it was found that miscellaneous expenses paid by the households with children attending public and private schools were not notably different.

4.3.2 Vocational School Level

4.3.2.1 Total Household Expenditure for Education

The analysis is focused on household's total expenditure, concerning education, and the household with children studying at vocational school level. The dissertation consideration the average of the total expenditure of the household. From 1998 to 2002, the total expenditure of the households whose children attended private vocational schools was much more than that of those with children studying in public vocational schools.

The households with children going to private vocational schools had a burden of total expenses that varied from 3,424.58 baht per month to 4,010.59 baht per month. The households with children attending public vocational schools paid less than those with children attending private vocational schools, with costs varying from 2,664.53 baht per month to 2,950.43 baht per month.

When considering the overall average amounts investigated from 1998 to 2002, it is evident that the households with children attending private vocational schools paid about 3,698.53 baht per month for their total educational expenditure, whereas the households with children attending public vocational schools had to pay a total expenditure of 2,813.02 baht per month. The difference in total expenditure between the households with children attending these two types of educational institutions translated as 885.51 baht per month on the average.

The total expenditure of the households with children studying in either private or public vocational schools are shown in Figure 4.7.

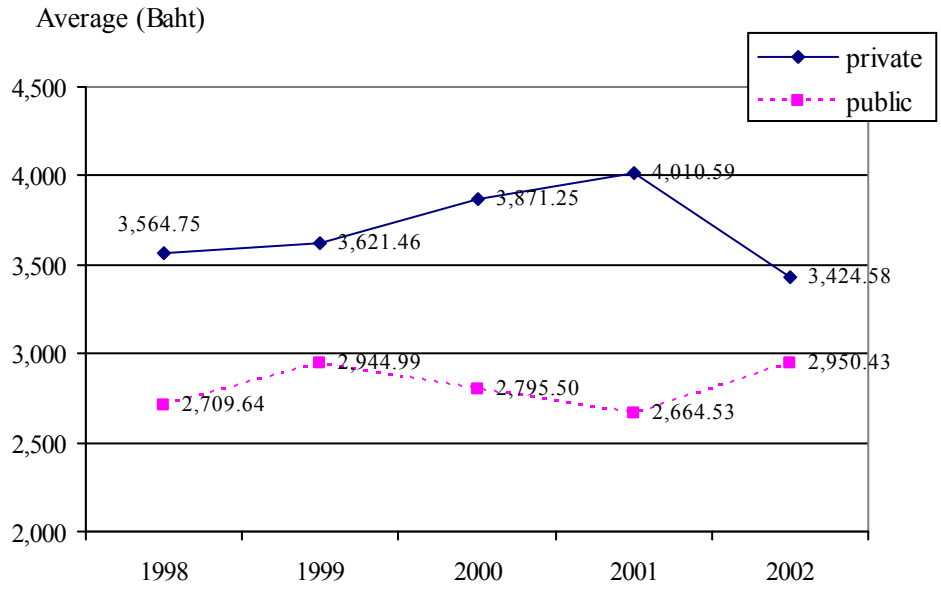

Figure 4.7 The Total Expenditure per Person per Month of the Households with Children Attending School at Vocational Level.

4.3.2.2 Tuition Fee/School Fee

The most significant distinction between households with children attending public and private vocational schools was evident in this aspect of expenditure.

Firstly, the investigation of the expenditure of the households with children attending private vocational schools indicated that from 1998 to 2002, the households had to pay about 6,838.00 baht per semester on average or 13,676.00 baht per year.

When studying the expenditure of the households whose children went to public vocational schools, it can be seen that the household had to pay on the average 1,970.08 baht per semester, or 3,940.15 baht per year. It can be calculated that the tuition fee/school fee of a private vocational school is 3.47 times higher than that of a public vocational school.

When the trends in tuition fee/school fee required by private and public vocational schools (as illustrated in Figure 4.8) were studied, it was found that the tendencies of these two educational institutions followed the same direction.

The differences in expenditure paid for these two types of vocational school were almost equal, the average difference being about 5,000 baht per semester.

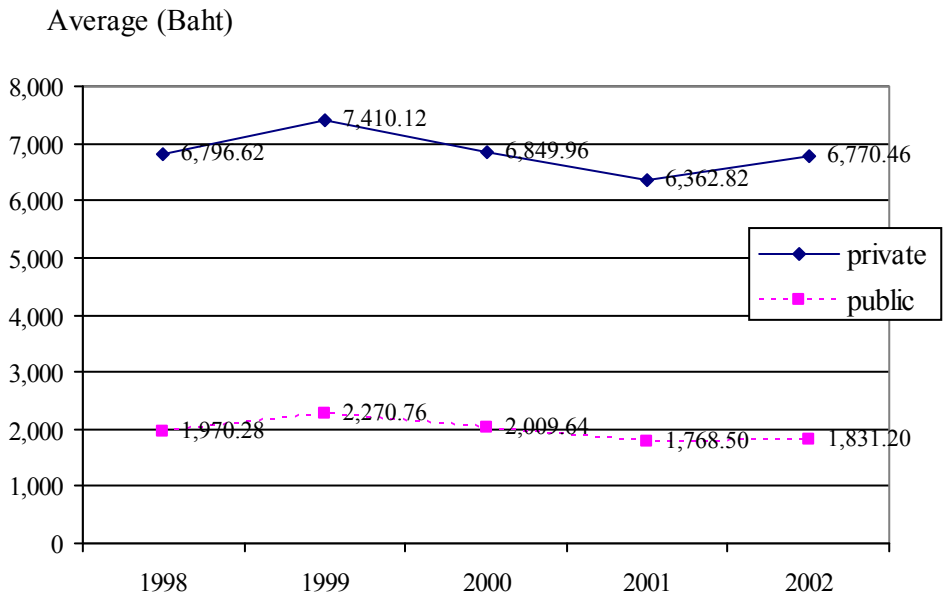

Figure 4.8 The Tuition Fee/School Fee per Person per Semester of the Households with Children Attending School at Vocational Level.

4.3.2.3 Miscellaneous Expenses

Other than tuition fee/school fee, miscellaneous expenses - including lunch, daily expenses, learning materials, etc. - are very necessary and reflect the potential of the households in carefully preparing the budget for their children's education. When taking other expenses into consideration (besides tuition fee/school fee of households with children attending private vocational schools had to cover, as shown in the appendices Table B.2), it can be concluded that the households with children attending private vocational schools would have to pay 2,559.78 baht per month for miscellaneous expenses on average. This implies that a student attending a private vocational school will have to pay 128.00 baht per day for his/her daily expenses.

On the other hand, the households with children studying in public vocational schools had to pay about 2,484.67 baht per month on the average for

miscellaneous expenses other than tuition fee/school fee. A student attending a public vocational school would consequently have about 124.23 baht for his/her daily expense.

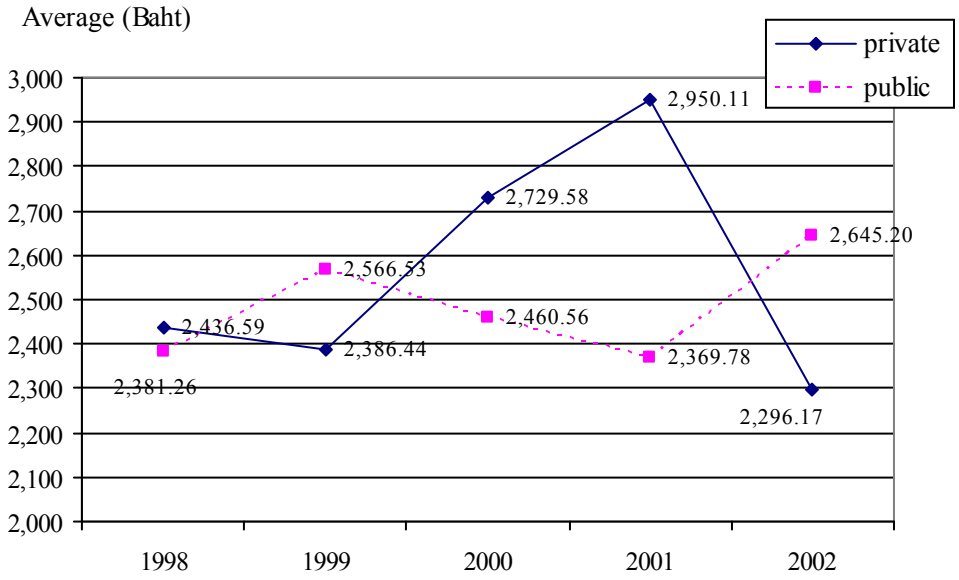

Figure 4.9 The Miscellaneous Expenses per Person per Month of the Households with Children Attending School at Vocational Level**.**

As shown in Table 4.5, it is found that households whose children are studying in private vocational schools have to spend approximately 1/3 of the expenditure on education. On the other hand, the proportions of expenditure in households whose children are studying in public schools have only a minor responsibility for tuition fee/school fee – that is, about 12%.

Table 4.5 The Percentage of the Expenditure on Education Classified by Types of the Main Expenses.

Types	Items	1998	1999	2000	2001	2002	Average
Private vocational school	Tuition fee	31.74	34.10	29.49	26.44	32.95	30.94
	Miscellaneous	68.26	65.90	70.51	73.56	67.05	69.06
	Total	100.00	100.00	100.00	100.00	100.00	100.00
Public vocational school	Tuition fee	12.12	12.85	11.98	11.06	10.34	11.67
	Miscellaneous	87.88	87.15	88.02	88.94	89.66	88.33
	Total	100.00	100.00	100.00	100.00	100.00	100.00

4.3.2.4 Percentage of Educational Expenses

The investigation started from analyzing the percentage of expenditure on education in relation to the total household expenditure of the families with children attending private vocational schools. The study results indicate that the lowest proportion of expenditure of these households was 25.28% (in 1998) and the highest was 34.38% (in 2000). The average proportion over the 5 years (from 1998 to 2002) was 28.57%. When considering the households with children attending public vocational schools, the study found that the lowest proportion of expenditure of these households was 20.61% (in 1998) and the highest was 26.58% (in 2000). The average from 1998 to 2002 was 23.63% of the total expenditure.

It can be concluded that the reason for the fact that households with children attending private vocational schools had a higher percentage of expenditure than households with children attending public vocational schools, was that they had to be responsible for all of the tuition fee/school fee, which was notably higher than that of public vocational schools.

From the results of the trends in expenditure, as illustrated in Figure 4.10, it can be seen that the proportion of expenditure of the households with children attending public vocational schools continuously increased, from 20.61% in 1998 to 26.58% in 2002. The expenditure proportion of the households whose children were studying in private vocational schools, however, had a tendency to be increasingly

higher over the first three years but decreased from 2000 until the last year of this investigation.

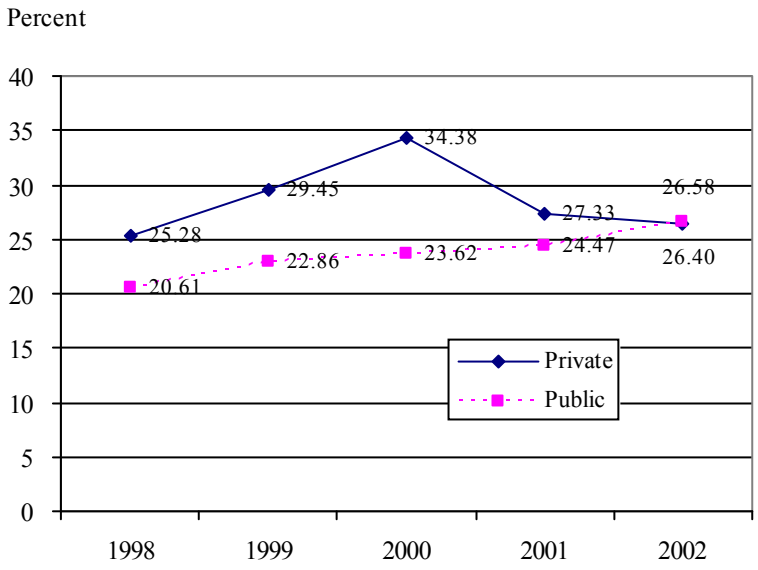

Figure 4.10 The Percentage of Total Expenditure on Education in Relation to Total Household Expenditure of Households with Children Attending School at Vocational Level.

It was found that the tuition fee/school fee required by private vocational schools was higher than that of public vocational schools; that is, it averaged about 3.48 times higher than the tuition fee/school fee of the public vocational institutions.

4.3.3 Higher Educational Level

4.3.3.1 Total Household Expenditure

The total expenditure of the household includes all items concerning education. This study focused on the household whose children studied at the higher education level. The analysis results revealed that the households with children attending private college/ university would have higher expenditure than those with children studying in public college/university, from 1998 to 2002. However, the difference in expenditure became greater in the last three years. The expenditure of households with children attending private college/university varied from 7,304.07 to

9,001.42 baht per month. On the other hand, the expenditure of the households whose children were studying in public college/university varied from 4,661.56 to 5,736.00 baht per month.

After having estimated the average expenditure of the entire five years from 1998 to 2002, the total expenditure of households with children attending private college/university was 8,338.25 baht per month, whereas that of households with children attending public college/university was 5,488.98 baht per month.

When studying the trends or changes in the total expenditure (as shown in Figure 4.11), it can be clearly seen that there was an increase in expenditure for the private college/university.

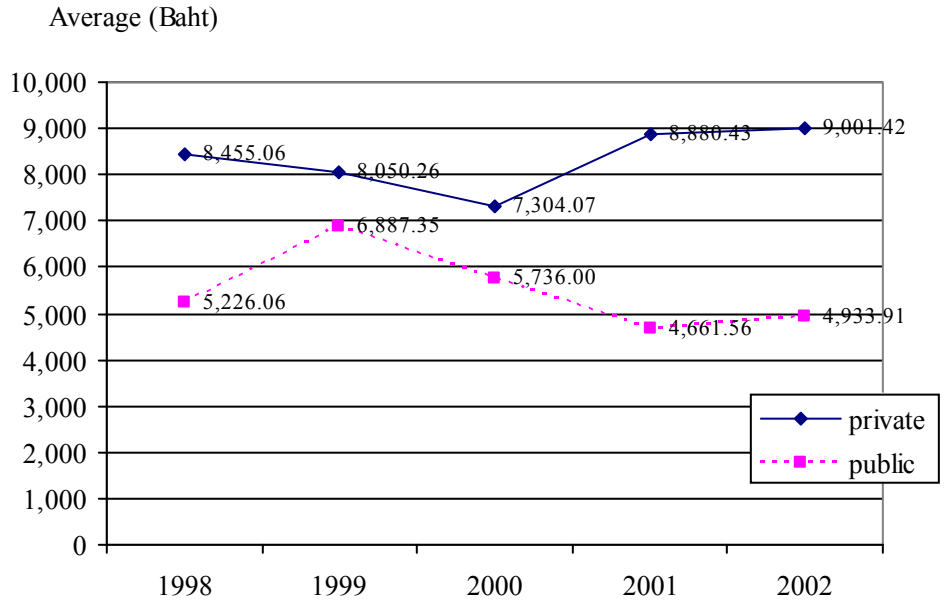

Figure 4.11 The Total Expenditure per Person per Month of the Households with Children Attending School at Higher Educational Level.

4.3.3.2 Tuition Fee/School fee

The households with children studying in private college/university had to pay 33,785.57 baht per year or 16,892.78 baht per semester for this part of expenditure. This compares with the tuition fee/school fee paid by the households whose children were attending public college/university; they had to pay about 5,846.16 baht per semester or 11,692.32 baht per year. In summary, the tuition fee/school fee of private college/university was 2.89 times higher than that of the public college/university.

The trends in the expenditure on education of each educational institution revealed that the households with children attending the private college/university had to pay a higher rate of tuition fee/school fee than those with children studying in public college/university. From 1998 to 2002 the trends in the expenditure on education of private higher college/university fluctuated, which differed from those of the public higher educational institutions.

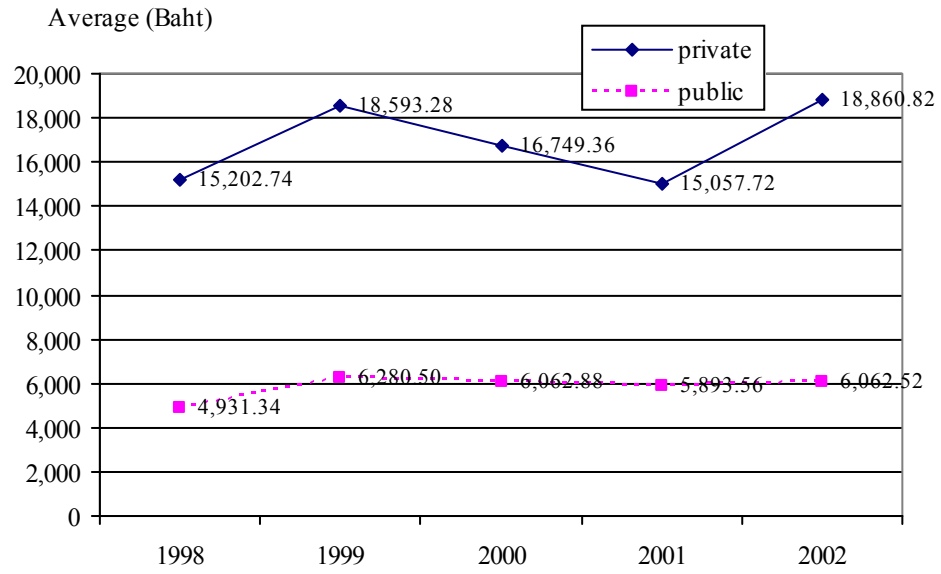

Figure 4.12 The Tuition Fee/School Fee per Person per Semester of the Households with Children Attending School at Higher Educational Level.

4.3.3.3 Miscellaneous Expenses

This refers to the additional expenditure for which households have to be responsible. These expenses are different from tuition fees/school fees in public colleges/ universities, which are subsidized by the public; this is not the case in private colleges/ universities. When investigating in details, the households whose children attended private college/university had to pay at least 4,512.51 baht per month and at most 6,370.82 baht per month. Moreover, it was found that the average expenditure for miscellaneous expenses, calculated from 1998 to 2002, averaged 5,522.79 per month. This indicated that students had an amount of payment of 276.14 baht per day.

For households with children attending public college/university, the minimum payment for miscellaneous expenses was 3,679.30 baht per month and the maximum was 5,840.60 baht per month. Throughout the 5 years, miscellaneous expenses cost 4,517.61 baht per month, meaning that the students paid 225.88 baht per day.

In conclusion, the expenditure on education of the students in private college/ university was higher than that of public college/university; the difference was 1,005.18 baht per month, or 50.26 baht per day.

It was found that trends in other expenses of the households whose children went to private college/university (as shown in Figure 4.13), were more costly than those of the households whose children attended public college/university - except in 1999 and 2000.

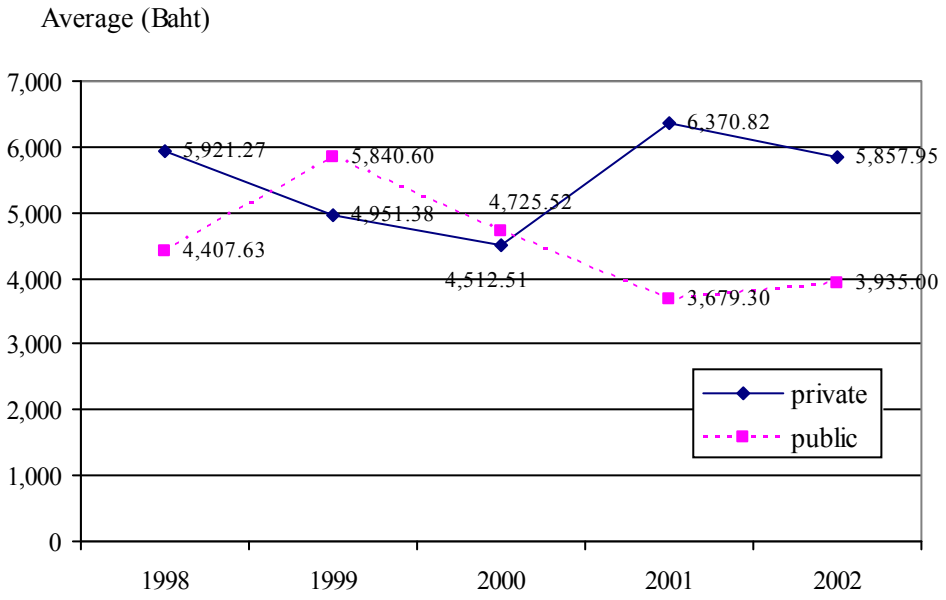

Figure 4.13 The Miscellaneous Expenses per Person per Month of the Households with Children Attending School at Higher Educational Level.

For the proportion of expenditure in households whose children are studying in universities, it is found that households whose students are studying in private universities have main expenses in tuition fee/school fee as same as those found in the 2 levels mentioned.- the average proportion is 33.97% of total expenditure. On the other hand, households whose children are studying in state universities have a minor responsibility for tuition fee/school fee - the approximate average being 17.97%

Table 4.6 The Percentage of the Expenditure on Education Classified by Types of the Main Expenses.

Types	Items	1998	1999	2000	2001	2002	Average
Private higher education	Tuition fee	29.97	38.49	38.22	28.26	34.92	33.97
	Miscellaneous	70.03	61.51	61.78	71.74	65.08	66.03
	Total	100.00	100.00	100.00	100.00	100.00	100.00
Public higher education	Tuition fee	15.73	15.20	17.62	21.07	20.25	17.97
	Miscellaneous	84.27	84.80	82.38	78.93	79.75	80.03
	Total	100.00	100.00	100.00	100.00	100.00	100.00

4.3.3.4 Percentage of Educational Expenses

When considering the proportion of expenditure of the households whose children attended private college/university into consideration, it can be seen that the expenditure proportion of the households ran between 28.79% and 42.81% from 1998 to 2002; the proportion averaged 34.16% for the households with children attending private higher educational institutions. By contrast, the proportion of those whose children studied in public college/university ran between 29.80% and 41.12%. When analyzing the proportions of the whole five years, the average proportion was 33.89%.

In conclusion, the difference in proportion of the total expenditure on education to the total expenditure of the households whose children attended private and public college/university was only 0.27%. This was the lowest amount due to the fact that the total expenditure of the households whose children studied at a public college/university was rather low, whereas that of the household with children attending a private college/university was higher at the same time as the total expenditure was higher. As a result, the proportions were not significantly different. An interesting additional point which was found through the research was that no less than one - third of total expenditure of the household with children studying at higher educational institution was on education; this was deemed considerably high.

When considering trends of expenditure on education of a private college/university, the expenditure proportion of the household whose children

attended a private college/university decreased in the first three years. It then increased in 2001 and then decreased once again in the final year of this study. It was noticeable that the proportion of expenditure on education to the total expenditure closely corresponded with the trend of expenditure in miscellaneous expenses. The reason for this might be that the miscellaneous expenses had more of an influence on the total expenditure on education than the tuition fee/school fee. Therefore, the trends of these two items were compatible to each other, as illustrated in Figure 4.14.

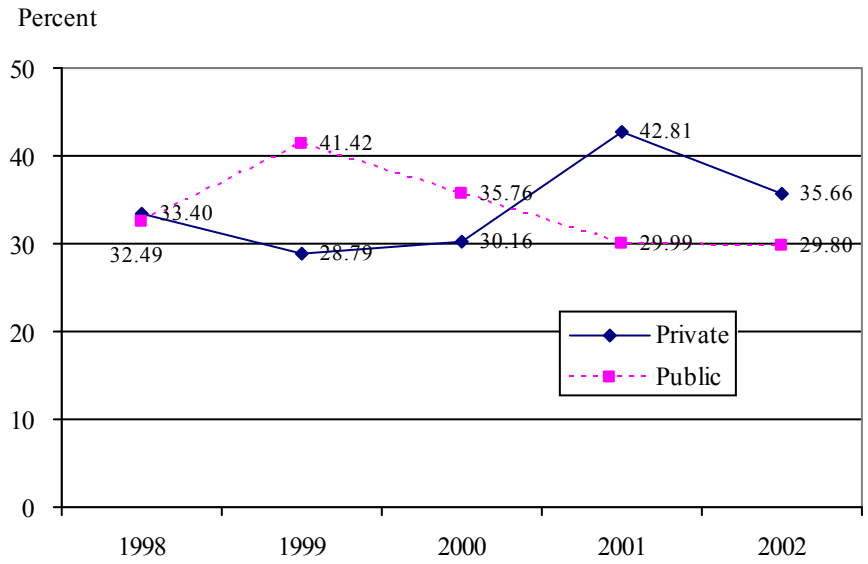

Figure 4.14 The Percentage of Total Expenditure on Education to the Total Household Expenditure of the Households with Children Attending School at Higher Educational Level.

Finally, when considering the percentage of expenditure in order to compare the items of expenditure on education, the highest percentage of expenditure which the household with children attending a private college/university had to pay was the tuition fee/school fee. From 1998 to 2002, this averaged 33.97% of the total expenditure; miscellaneous expenses for which the household took responsibility were lunch and daily expenses. Expenditure on lunch averaged 27.00%, and daily expenses totaled 17.48%. When these three items were included the percentage became 78.45%. The rest of the expenditure was on learning materials or textbooks, etc. (see Table A.3 in the Appendix A)

The households with children attending a public college/university had three major items of expenditure: lunch, averaging 38.12%; tuition fee/school fee and daily expenses, averaging 17.97%; and 17.75% respectively. When combining these three major items, the expenditure totaled 73.84%, which was a slightly lower amount of expenditure than that paid by the households whose children attended a public college/university. The difference between the expenditure on education was tuition fee/ school fee, with the tuition fee/school fee of a private college/university being 2.90 times more costly than that of a public college/university. However, no notable difference was found in miscellaneous expenses.

4.4 Comparisons of Expenditure on Education

The comparison of expenditure on education per person per month is studied in three major aspects: the total expenditure on education, tuition fee/school fee, and miscellaneous expenses. The data are shown in Appendix B Tables B.1-B.6.

4.4.1 Total Expenditure on Education

Total expenditure on education refers to tuition fee/school fee plus miscellaneous expenses, such as payment for text books, learning materials, lunch, daily expenses and so on, which account for expenses per person per month. Details at each educational level are shown in Appendix Table B.4, and illustrated below.

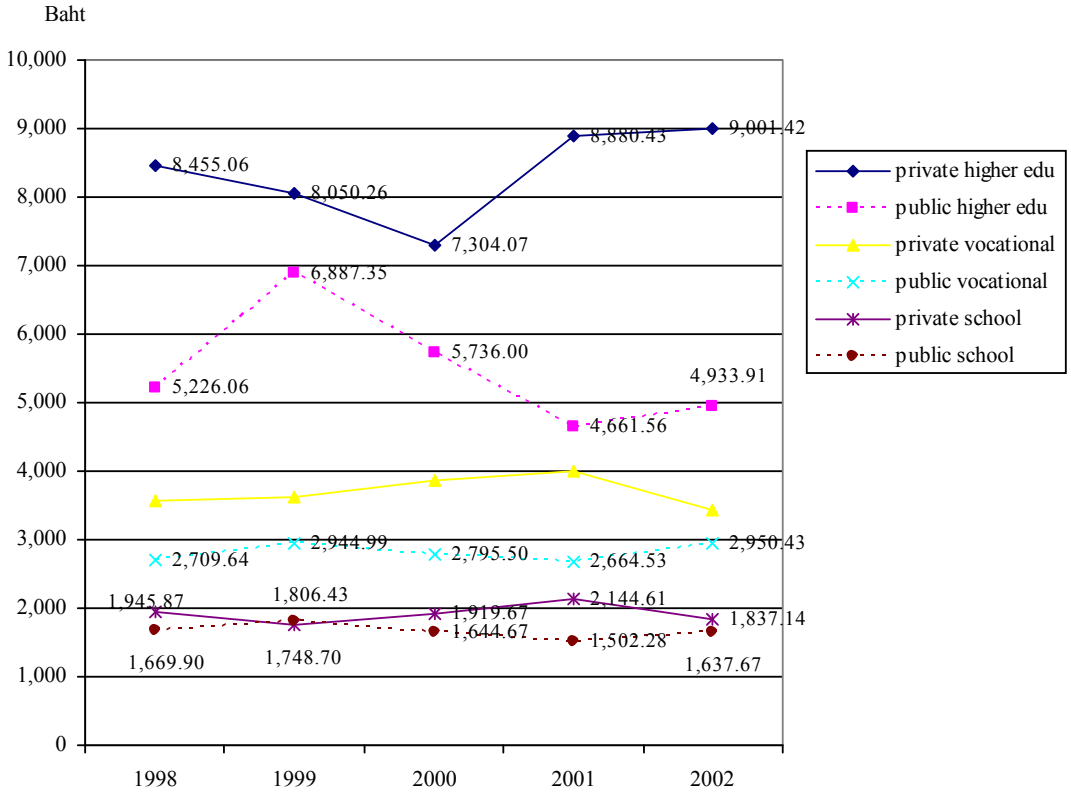

Figure 4.15 Total Expenditure on Education at Each Educational Level from 1998 to 2002

The average total expenditure on education from 1998 to 2002 in private school and public school was 1,919.20 baht and 1,651.59 baht per month respectively, and it was found that for the total expenditure on fundamental education, the households with children attending a private school paid on average 267.61 baht or 1.16 times more than households with children going to public school. The average monthly expense for fundamental level was 1,785.40 baht.

For vocational school, households with children attending private vocational school paid on average 3,698.53 baht, and public vocational school paid on average 2,813.02 baht per month. It can be seen that the households with children attending private vocational school paid on average 885.51 baht or 1.31 times more than those with children going to public vocational school. The average expense for vocational level education was 3,255.78 baht per month.

The last level is the higher educational level. Here, the average monthly expenditure on education in private and public college/university was 8,338.25 baht and 5,488.98 baht respectively, and it was found that households with children

attending private college/university paid on average 2,849.27 baht or 1.52 times more than those with children going to public college/university. The average expense for higher level education was 6,913.62 baht per month.

When considering the total expenditure on education, it is generally found that the higher the level of studying, the more expenses to pay in the aspect of progressive degree. The level of the expense payment is 1.82 times that of the fundamental level, whereas the expenses in the university are calculated as being 2.12 times that of the vocational education level. In the same way, when each level of education between the private institute and the public institute is considers, it is found that the gap or difference of private and public educational institutes increases by the level of education. This means that studying in private institution is more expensive than studying in public institution as 1.16, 1.31 and 1.52 respectively in the levels of fundamental education, vocational education and university. The result is due to the tuition fee/school fee, the main expenses, which causes the total expenditure of the private college/university to be higher than public college/university (see table B.4 of the Appendixs). The miscellaneous expenses will be mentioned in the next section.

The tendency of total expenditure on education, the continuing increase is found in the low rate. The trend difference of private and public educational institutions moves upwards depending on the higher level of education, especially in the university whose tendency in total expenditure on education is wider by the changing period, this probably happens because the government has distributed ore education institutions to the rural areas in order to provide education to people. Those university students they have opportunities to study in the areas which have a cheaper total expenditure. Private universities (which are in the market with other private universities) have to compete against each other as well as against the state universities. They will be able to be in the competitive market if they are of a good quality. To achieve good quality, is costly. Those higher costs become the students' burden. This causes the tendency towards total expenditure on education of the private and public universities to become continually wider.

4.4.2 Tuition Fee/School Fee

The analysis of expenditure on tuition fee/school fee per person per month is shown in Appendix Table B.5 and illustrated below in Figure 4.16.

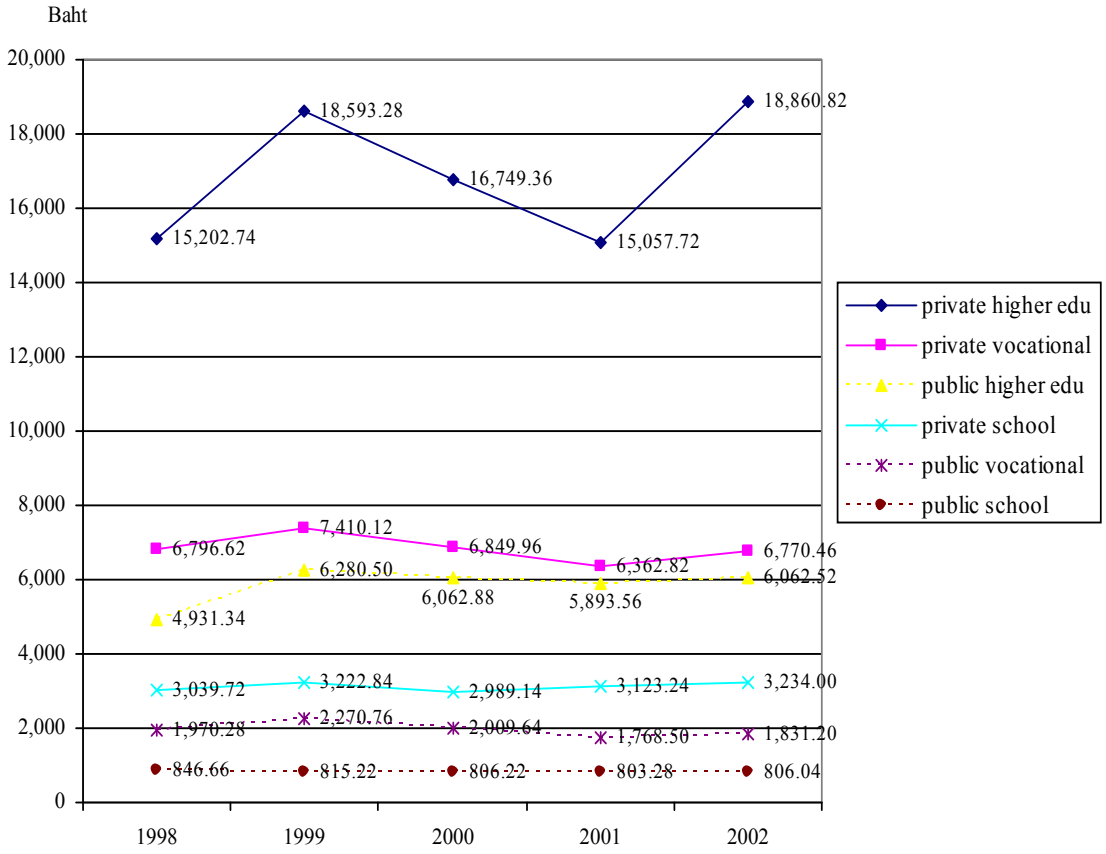

Figure 4.16 The Tuition Fee/School Fee at Each Educational Level from 1998 to 2002

When considering the fundamental level education from 1998 to 2002, the tuition fee/school fee in private school was on average 3,121.79 baht, whereas the tuition fee/school fee in public school was on average 815.48 baht. The difference in expense between the tuition fee/school fee of private school and public school was clear, with the private school 2,306.31 baht or 3.83 times higher than the public school. The average expense for fundamental level was 1968.64 baht per semester.

For vocational level education from 1998 to 2002, private vocational school costs were on average 6,838.00 baht and public vocation school costs were on average

1,970.08 baht per semester. Private vocational school tuition fees/school fees were 4,867.92 baht per semester or about 3.47 times more than public vocational school fees. The average expense for vocational school level was 4,404.04 baht.

At higher education level, the average tuition fee/school fees on education in private and public college/university form 1988 to 2002 was 16,892.78 baht and 5,846.16 baht per semester respectively. The tuition fee/school fee for private college/university was much more than public college/university, on average 11,046.62 baht or about 2.89 times more. The average expense for higher level education was 11,369.47 baht per semester.

When considering tuition fee/school fee in the overall aspect of entire educational system which is a direct burden of the households, it is found that the higher the level of studying, the more expenses to pay in the aspect of progressive degree. However, it is much higher in vocational education, the payments are 2:23 times more expensive than the fundamental level and in the university, it is 2:59 times more expensive than those in vocational education. If considering and comparing them in each level of education, both private part and public parts, it is found that the difference of tuition fee/ school fee decreases respectively by the higher levels of education. It means studying in private institutions is more expensive than studying in public ones 3:83, 3:47 and 2:87 times as much in fundamental education, vocational education and university respectively. The tuition fee/school fee is the main cause affecting the higher total expenditure.

The tendency towards tuition fee/school fee seems only slightly higher at both fundamental and vocational level; the obvious upward tendency is found in the universities. This means the difference of the final and first year explorations is over 35 percent. On the other hand, the tendency towards the difference of the private and public education institutes is almost stable at each education level. This means the difference of tuition fee/school fee in both state and private education institutes has not changed.

When ranking the tuition fee/school fee from the lowest to the highest rate, the tuition fee/school fee of public schools was the lowest, followed by public vocational school, private school, public college/university, private vocational school, and finally private college/university as the highest. In addition, the gap between the first five

institutions listed above is only small, whereas clear differences can be found between private vocational school and private college/university (the last two items). The tendency of tuition fee/school fee fluctuated at almost every education level of both private and public institutions.

4.4.3 Miscellaneous Expenses

The analysis of expenditure on miscellaneous expenses per person per month is shown in Appendix Table 6 and illustrated in Figure 4.17.

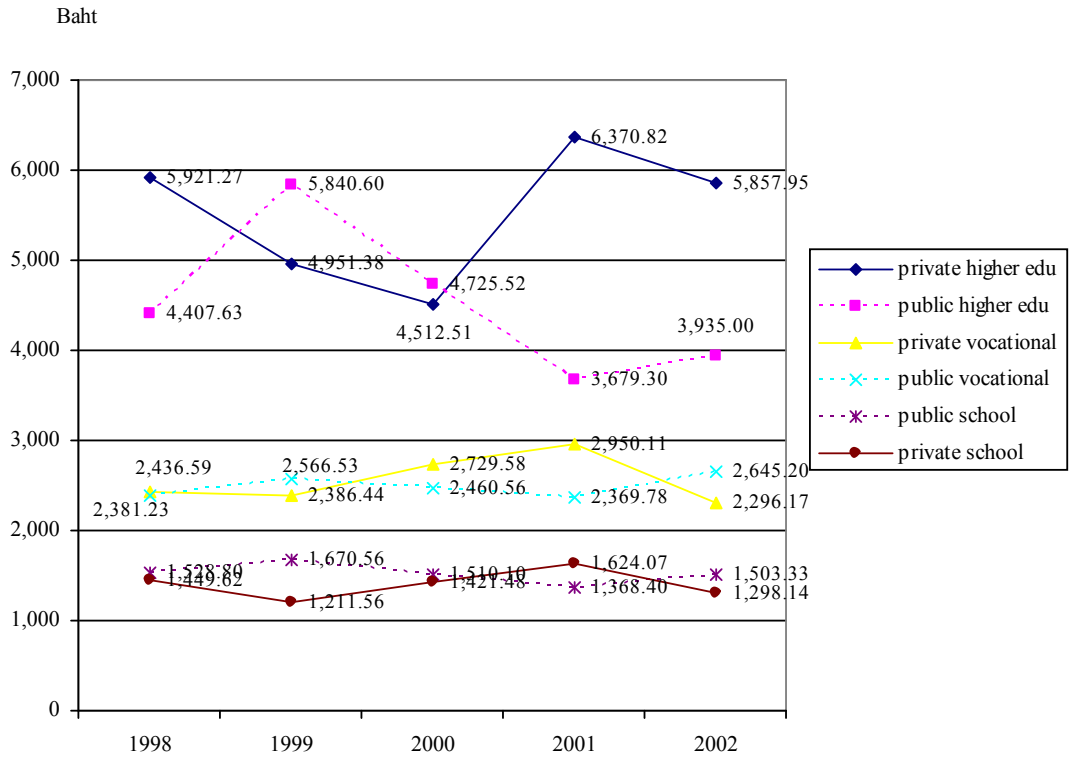

Figure 4.17 The Miscellaneous Expenses per Person per Month at Each Educational Level from 1998 to 2002.

Households with children attending private school from 1998 to 2002 had to pay on average 1,400.97 baht per month or 70.05 baht a day, and households with children attending public school had to pay on average 1,516.24 baht per month or 75.81 baht a day. It was found that miscellaneous expenses for private school were

114.00 baht or 1.08 times less than those for public school, for instance. The average expense for fundamental level education was 1,458.61 baht per month.

For vocational level education, from 1998 to 2002, households with children attending private vocational school had to pay on average 2,559.78 baht per month or 127.99 baht a day, and public vocational school had to pay on the average 2,484.67 baht per month, or 124.23 baht a day. For miscellaneous expenses, private vocational school was more expensive than public vocational school by only 75.11 baht per month. The average expense for education at vocational level was 2,522.23 baht.

For higher level education, from 1998 to 2002, it was found that households with children attending private college/university had to pay on the average 5,522.79 baht per month or 276.14 baht a day, and public college/university had to pay on the average 4,517.61 baht per month or 225.88 baht a day. So, expenses for private college/university were on average 1,005.18 baht per month higher than public college/university, and the average expense for education at higher educational level was 5,020.20 baht per month, mostly due to expenses of private college/university being higher than those of public college/university, especially miscellaneous expenses, daily expenses and learning materials.

When considering miscellaneous expanses, it is found that in vocational education, the payment is 1.73 times as expensive as the fundamental level, and in the university, the payment is 1.99 times that of vocational education. If considering and comparing them in each level of education in both private and public institutions, the difference of private and public educational institutions is hardly found, especially at the fundamental and vocational levels. For the universities, there are differences of expenses which are not the same as the two previous ones. The miscellaneous expanses of the students in public college/university are 1.23 times higher than those found in private college/university. The students who have good economic status and study in the prestigious public universities have much lower expenses. They are able to afford these expenses while the students in the private universities have burdens in tuition fee/school fee, and decrease their daily expanses. It leads to lower expenses than the students in public universities.

The tendency of miscellaneous expenses is to fluctuate in each level of education, including the tendency towards the difference of the public and private

parts at fundamental and vocational levels. In universities, the tendency towards the difference of these expenses is obviously increasing. Perhaps the students in the state universities are not responsible for tuition fee/school fee, and then have more money to spend than those in the private universities. Furthermore, they come from rich families but spend less on tuition fee/school fee. In the opposite way, the students from the poor families study in the private universities and pay expensive tuition fees/school fees. (Boonserm Veesakul, 2003).

It is clear from the findings that the expenditure on education consists of 2 main expenses-tuition fee/school fee and miscellaneous expenses. In particular, the miscellaneous expenses are a direct responsibility of the households. To consider the proportion of expenditure depending on the spending ability which varies with various factors of households, the study of influential factors affecting the proportion of the household expenditure on education to the total expenditure was done; this is presented in the next chapter.

CHAPTER 5

FACTORS AFFECTING HOUSEHOLD EXPENDITURE ON CHILDREN'S EDUCATION

In this chapter, the results of the analysis of the factors affecting household expenditures on their children's education at each level: fundamental education, vocational education and higher education, will be presented. This was achieved by comparisons of private and public educational institutions.

Factors expected to affect the proportion of education expenditures in relation to the household's total expenditures can be divided into three major categories: 1) characteristics of household heads (sex, age, educational level and work status); 2) factors relating to the households' characteristics, which are type of household, size of household, total income, total expenditures, and the number of children attending school; and 3) factors concerning the social context which might have an effect on total expenditures. They include region, area, and the year.

The statistical technique used was Multiple Classification Analysis, (MCA). In order to present the analysis results concisely, this chapter shows only the Beta values, which show how each independent variable affects the dependent variables when the influence of other variables in the study are controlled. The results in full detail can be viewed in Appendix C.

5.1 Factors Affecting Expenditure of the Household with Children Studying at Fundamental Level.

The results of the analysis presented in this chapter are only for independent variables with a statistical significance at 0.05 level. (See Table 5.1). For the full model, see table C.1 in Appendix C. Details of the analysis are as follows.

For the model of private schools, all independent variables can explain 20.6 % (Multiple R^2 = .206) of the variance of the dependent variable (the proportion of total expenditures on education in relation to the total household expenditures) and the correlation coefficient value is .454 with a grand mean proportion of .100. The model of the public schools shows similar results. All independent variables accounted for 20.8% of the total variance of the proportion of total expenditures on education (Multiple R^2 = .208) with the value of the correlation coefficient at .495 and the grand mean proportion at .100. Both models were significant at 0.05 level.

Regarding the variables in the category of the characteristics of the household head there were four variables; sex, age, educational level and work status. For the private school model, it was found that there was only one variable which was ‘age’ and there were two variables for the public school model that were significant at the 0.05 level, ‘age’ and ‘education level.

Table 5.1 Statistically Significant Variables and Their Beta Values Derived from the Multiple Classification Analysis: Fundamental School Level

Categories	Variable	Beta	
Household head Characteristics		Private	Public
	Sex		
	Age	0.143	0.178
	Education		0.036
	Work status		
Household Characteristics			
	Types	0.059	0.057
	Size	0.096	0.134
	Total income	0.05	0.047
	Total expenses	0.129	0.178
	Number of children attending school	0.417	0.43
Social Context			
	Region	0.179	0.168
	Area		0.062
	Year	0.122	0.209

Age of the household head It was revealed that the relationship between the age of the household head and the dependent variables for both the private and public school models had significance at 0.05 level, when other independent variables were controlled. The relationships in the model were positive.

The adjusted mean proportion for education expenditures increased proportionately as the age of the household head increased up until the age of 60 years old. In private schools, the average proportion was 0.081 for the ≤ 30 age group, and it increased to 0.109 for the 51-60 age group. In public schools, the proportion was 0.076 for the ≤ 30 age group, and it increased to 0.110 for the 51-60 age group. However, these proportions decreased slightly in households with household head over 60 years old, they were 0.105 for private schools and 0.098 for public schools.

The correlation between the age of household head and the proportion of expenditures on education to the total expenditures for the private school model (Beta =.143) was lower than that of the model for public schools (Beta =.178).

The educational level of the household head. For the private school model, the correlation between the educational level of the household head and the proportion of total expenditures on education after controlling other variables decreased substantially. The Eta was 0.078 while the Beta was 0.023. Therefore, with the presence of other variables in the models, the influence that the household heads' education had on the proportion of total expenditures for their children's education was not significant, at 0.05 level.

On the contrary, in the public school model, this independent variable affected the expenditures for education of the children at 0.05, a significant level, although the Beta was slightly higher than the Eta (Eta = 0.033 and Beta = 0.036). It can be concluded that the relationship between the 2 variables were more evident in the public school model than the private school model. However, the relationship of the educational level of the household head and the proportion of total expenditures on education in both models were similar in that households with a household head who was highly educated tended to have a higher proportion of expenditures for education than household heads having a lower educational level.

Next are the variables in the category of households' characteristics which consisted of five variables; type, size, total income, total expenditures and the number of children attending school. It was found that all variables were significant at 0.05 level in both the private and public school models. The two variables which were of the most importance were the number of children attending school and the total expenditures. The details are as follows:

The number of children attending school In both the private and public schools, a positive relationship between this variable and the proportion of total expenditures for education was found for the unadjusted as well as the adjusted models.

The number of children attending school affected the proportion of the total expenditures for children's education at private schools (Beta = .417) and was lower than that of the model for public schools (Beta = .430).

The total household expenditures There was a linearly negative relationship between the total household expenditures and the proportion of total expenditures for education. The public school model exhibits a difference between the highest group and the lowest group model, of 4.8 %, whereas the difference in the private schools model was 3.2 %.

The results show that in the relationship between the total expenditures of the household and the proportion of total expenditures for education, the Beta value, in the private school model, was .129, lower than the value in the public schools model which was .178.

The variables of the last group were the social context; region, area and year of study. It was found that private schools had two variables: region and year, which were statistically significant at 0.05 level. In the public schools model all the mentioned variables were significantly related to the dependent variable. The details of the important variables – region and year are given below.

Region When considering the bivariate correlation coefficient, the Eta value, the models of the private and public schools had a similar pattern. Households in greater Bangkok spent a higher proportion on their children's education than those in other regions, whereas those in the northeast paid the lowest proportion. When other variables were controlled, on the average, households with children attending school, whether in public or private schools in greater Bangkok, spent about 13% of their household's total expenditures on their children's education, while households in the northeast spent only 9% of their household's total expenditures on their children's education.

Year The study shows that from the year 1998 to 2002, the proportion of total expenditures on education in private schools was higher than in public schools except in 2000. For both models, there was a small difference between the expenditures in each year. Furthermore, whether controlling or not controlling other variables, the year was still very important variable to the proportion of total expenditures on education for both models.

When other independent variables were controlled, the three most significant variables for the fundamental level in the private school model were the number of children attending school, the region, and the age of the household head, with Beta values of .417, .179, and .143 respectively. Significant variables for the fundamental level in the public school model included the number of children attending school, year, total expenditures of the household, and the age of the household head , with Beta values of .430, .209, .178 and .178 respectively.

5.2 Factors Affecting Expenditure of the Households with Children Studying Vocational School.

The results of the analysis that are presented in this chapter are only those having independent variables with a statistical significance at 0.05 level. (See Table 5.2) For the full model, see table C.2 in Appendix C. The details of analysis are as follows:

In the private vocational schools model, all independent variables could explain 20.4% (Multiple R^2 = .204) of the variance of the proportion of total expenditures on education, with a .452 correlation coefficient value and a grand mean proportion of .167. For the public vocational school model, all independent variables could explain a variance in the proportion of total expenditures of 16.5% (Multiple R^2 = .165) with a .406 correlation coefficient value and a grand mean proportion of .144; both models had the a statistically significance at 0.05 level.

Table 5.2 Statistically Significant Variables and Their Beta Values Derived from the Multiple Classification Analysis: Vocational School Level

Categories	Variables	Beta	
Household head Characteristics		Private	Public
	Sex		
	Age	0.129	0.092
	Education		
	Work status	0.152	0.148
Household's Characteristics			
	Type		
	Size	0.146	0.091
	Total income	0.03	
	Total expenses	0.244	0.165
	Number of children attending school	0.351	0.337
Social Context			
	Region	0.18	0.247
	Area		0.149
	Year	0.334	0.323

When considering the relationship between the independent variables representing the household head characteristics and the dependent variables, two variables: age and work status were statistically significant at 0.05 level in both models. The details of the variables which corresponded are as follows:

Age of the household head The relationship between the age of the household head and the proportion of total expenditures on their children's education at the vocation school level for both the private and public vocational school models fluctuated.

The adjusted mean proportion for education expenditures increased in the 31-40 age group and continued to increase proportionately up to the age of 60. In private vocational schools, the average proportion was 0.156 for the 31-40 age group and it

increased to 0.176 for the 51-60 age group. In public vocational schools, the proportion was 0.125 for the 31-40 age group and it increased to 0.150 for the 51-60 age group.

Moreover, the household head in the ≤ 30 age group for private vocational schools spent the highest proportion, 0.205, whereas for the public vocational schools the highest proportion spent was 0.150 in the 51-60 age group.

The correlation between the age of the household head and the proportion of total expenditures on education in the private vocational model (Beta =.129) was higher than that of the model for public vocational schools (Beta =.092).

Work status of the household head. Considering the unadjusted model, in private vocational schools, in the household head group the categories of working as an unpaid family worker and private employees had the highest and lowest unadjusted mean proportion of total expenditures on education, highest at 0.189 and lowest at 0.104 respectively. In public vocational schools, the household with no occupation and government employee had the highest and lowest unadjusted mean proportion, highest at 0.152 and lowest at 0.119 respectively.

For the adjusted mean proportion in private vocational schools, the household head working as an unpaid family worker had the highest proportion at 0.174 and private employee had the lowest proportion at .106 respectively. In public vocational schools, the household head working as an unpaid family worker had the highest proportion at 0.149 and employee-government had the lowest proportion at .120

The correlation between the work status of the head of the householdand the proportion of expenditures on education to the total expenditures for private vocational schools (Beta =.152) was higher than that of the model for public vocational schools (Beta =.148).

Next are the variables in the category of households' characteristics, which consisted of five variables; type, size, total income, total expenditures and the number of children attending school. There were four statistically significant variables out of the five in the private vocational schools model; size, total expenditures, total income and the number of children attending school, whereas there were three statistically significant variables for the public vocational schools model; size, total household expenditures and the number of children attending school. The details of the corresponding variables are as follows:

Size of household It was revealed that the relationship of the size of the household with the proportion of total expenditures on education, whether independent variables were controlled or not, was linearly negative in both the private and public vocational schools models.

Considering the adjusted mean proportion, households with 1-2 people spent the highest proportion at 0.197 in private vocational schools and 0.163 in public vocational schools. Whereas, households with 5 people or more spent the lowest proportion at 0.153 in private vocational schools and 0.136 in public vocational schools. The Beta value for the private vocational schools model was .146 while the Beta value for the public vocational schools model was .091.

Total households' expenditures The relationship between this variable and the proportion of total expenditures on education at the vocational school level appeared to be similar in both models, showing a linearly negative relationship, whether the other independent variables were controlled or not. When considering the difference of the proportion in each group between the two models, it was found that the difference in the proportion of expenditures for the private vocational schools model was higher than that of the public vocational schools model, 7.6% and 4.6% respectively.

The results show that the relationship between the households' total expenditures and the proportion of total expenditures on their children's education, the Beta value was .244 in private vocational schools which was higher than the value in public vocational schools, which was .165.

Number of children attending school Whether other independent variables were controlled or not, the analytical results were found to have the same pattern in both the private and public vocational schools models. If households had many children attending school, they had a larger proportion of educational expenditures. On the other hand, if households had a smaller number of children attending school, they had a smaller proportion of expenditures on education. The proportion of educational expenditures to the total expenditures therefore varied due to the number of children studying in school.

A household with more than 3 children attending private vocational school had an adjusted mean of the proportion for educational expenditures of 0.223 and 0.189 if the children attended a public vocational school.

The correlation between number of children attending school and the proportion of expenditures on education to the total expenditures for private vocational schools (Beta =.351) was higher than that of the model of public vocational schools (Beta =.337).

The variables in the last category were the social context. It was found that the private vocational school model had two statistically significant variables; region and year of study, whereas in the public vocational school model, the two significant variables were region and area. The details of the significant variables – region and year are given below.

Region Considering the unadjusted mean of the proportion of households' expenditures for private vocational schools, households in greater Bangkok had the highest at about 19%, whereas households located in the central area and in the northeast had the lowest proportion of about 16%. In public vocational schools, it was found that the proportion of total expenditures on education of households in greater Bangkok was also the highest at 19%, whereas households located in the northeast had the lowest proportion which was 13%.

When considering the adjusted mean of the proportion, it was found on the average, households with children attending school, whether in private or public vocational schools, in greater Bangkok spent the highest amount about 20% of their total household expenditures on their children's education, while households in the northeast spent the lowest amount about 16% for private vocational schools and 14% for public vocational schools.

The correlation between region and the proportion of expenditures on education to the total expenditures for private vocational schools (Beta =.180) was lower than that of the model for public vocational schools (Beta =.199).

Year. The last statistically significant variable was the 'year', which showed the change in cost of living expenses. The study shows that from the year 1998 to 2002, the bivariate and partial correlation coefficients of the private vocational school model showed the same pattern. The proportion of expenditures for children's education plunged to the lowest point at 13% in 2000 and increased from 2001 onward.

The proportional difference increased throughout the years, especially in the private vocational school model where the proportional difference had a high of 6.8% while the public vocational school model only had a 1.3% difference.

The correlation between the year and the proportion of expenditures on education to the total expenditures of private vocational schools (Beta =.334) was higher than that of the model for public vocational schools (Beta =.323).

5.3 Factors Affecting Expenditure of the Household with Children Studying at Higher Education Level.

The results of the analysis presented in this chapter are only the independent variables with a statistical significance at 0.05 level. (See Table 5.3) For the full model, see table C.3 in Appendix C. The details of analysis are as follows:

Table 5.3 Statistically Significant Variables and Their Beta Values Derived from the Multiple Classification Analysis: Higher Education Level

Category	Variables	Beta	
Household head Characteristics		Private	Public
	Sex		
	Age	0.190	0.173
	Education		
	Work status	0.149	0.148
Household's Characteristics			
	Type		
	Size	0.108	0.126
	Total income	0.188	
	Total expenditures	0.11	0.098
	Number of children attending		
	School	0.276	0.348
Social Context			
	Region	0.219	0.118
	Area		
	Year	0.359	0.242

In the models of the private colleges/universities, all independent variables produced 24.3% (Multiple R^2 = .243) of the variance of the proportion of total expenditures for education, with a .492 correlation coefficient value and a grand mean proportion of .183. In the model of the public colleges/universities, all independent variables produced 15.2% (Multiple R^2 = .152) of the variance of the proportion of total expenditures on education and was not different from the correlation which was .389; the grand mean proportion was .1506. Both models had significance levels at 0.05 level.

When considering the relationship between independent and dependent variables in the category of the household head characteristics, it was found that, in both models the three significant variables for both the private and public college/university models

were age, education, and work status. The details of the variables which corresponded are detailed as follows:

Age of the household head. Whether other variables were controlled, in the private college/university model, the adjusted mean proportion for education expenditures increased to 0.140 in the head of household group aged 31-40 and increased to 0.189 in the 51-60 age group. In the public college/university model for the household head age groups from 41-50, 51-60, and 61 years and over spent the same proportion, 0.160.

If the other variables were not controlled, in both the private and public college/university model, they had the same pattern and fluctuation for all age groups.

The correlation between the age of the household head and the proportion of expenditures on education to the total expenditures of the private college/university model (Beta =.190) was higher than that of the model for public colleges/universities (Beta =.173).

Work status When considering the bivariate correlation coefficient, the Eta value, the model for private and public colleges/universities had a similar pattern. Households with household heads who spent the highest proportion of total expenditures on education were own-account workers. The average proportion was 0.187 for private colleges/universities and 0.156 for public colleges/universities. The households with the households heads who spent the lowest proportion were employee-government. The average proportion was 0.146 in private colleges/universities and 0.125 in public colleges/universities.

When considering the partial correlation coefficient, the Beta value, both models had similar patterns in the highest proportion but had different results in the lowest proportion. Households with household heads who spent the highest were own-account worker. The average proportion was 0.188 for private colleges/universities and 0.158 for public colleges/universities. Whereas, the lowest proportion in private colleges/universities was 0.143 in households with the household head working as an employee-private and 0.122 in households with the household head working as an employee-government in public colleges/universities.

The correlation between the work status of the household head and the proportion of total expenditures on education for the private college/university model (Beta =.149) was similar to the model of public colleges/universities (Beta =.148).

The next category was households' characteristics. The four significant variables for the private college/university model were size, total household expenditures, total income, and the number of children attending school. Meanwhile, the three significant variables in the public college/university model were size, total expenditures and the number of children attending school. The details for the corresponding variables are as follows:

Size of household. It was revealed that the relationship of the size of the household with the proportion of total expenditures on children's education, whether independent variables were controlled or not, was linearly negative in both private and public colleges/universities models.

Considering the adjusted mean proportion it was found that the group who had the highest proportion of expenditures for their children's education of about 21% in private colleges/universities and about 17% in public colleges/universities were those with families consisting of 1-2 members, while those who had the lowest proportion, of about 17% in private colleges/universities and 14% in public colleges/universities were those consisting of 5 or more members. The Beta value for the private college/university model was .108 while, the Beta value for the public vocational schools model was .126.

The total households' expenditures There was a relationship between the total households' expenditures and the proportion of the total expenditures for education and both models for private and public colleges/universities were positive.

The proportion of education expenditure increased with the total expenditures of the household when total expenditures increased up to 20,001-30,000 baht per month. In private colleges/universities the average proportion was .169 for the ≤ 10,000 baht total expenditures' group, and increased to 0.201 for the 20,001-30,000 baht total expenditures' group.

But, the proportion for education expenditures increased with the total expenditures of the household when total expenditures increased up to 10,001-20,000. In public colleges/universities the average proportion was 0.152 for the ≤ 10,000 baht total expenditures group, and increased to 0.156 for the 10,001-20,000 baht group of total expenditures. However, these proportions decreased slightly in households earning 30,000 baht and more, being 0.173 in private colleges/universities and 0.127 in public

colleges/universities. In the private college/university model, Beta value was .110 while it was .098 in the public college/university model.

Number of children attending school. This variable was also found to be significant at every level of education. The relationship of both models considered, either by bivariate correlation or partial correlation coefficients, had the same pattern: a positive linearly relationship.

However, when considering the differences among each group of the number of children attending school, it was found that in the public college/university model (9.3%) had more differences in the proportion of total expenditures on education than the private college/university model (7.4%). The number of children attending school affected the proportion of total expenditures on education in the public college/university model and was higher than those of the private college/university model, which 0.178 and 0.129 respectively.

The last group of variables affecting the proportion of expenditures spent on education to total households' expenditures was the social context. The two significant variables in both the public and private college/university models were region and year. The details are as follows:

Region Considering the bivariate correlation coefficient, the Eta value, the model of private and public colleges/universities, had the same pattern in the highest proportion of education expenditures. Households which spent the highest proportion of total expenditures on education were those located in greater Bangkok; while those which spend the lowest proportion were located in the south in private colleges/universities and in the northeast in public colleges/universities.

When considering the partial correlation coefficient, the Beta value, both models had the same pattern. Households which spent the highest proportion were those located in greater Bangkok; while households located in the south spent the lowest proportion. The region affecting the proportion of total expenditures on education in the private college/university model was higher than that of the public college/university model, being .219 and .118 respectively.

Year. The study shows that from the year 1998 to 2002, the adjusted mean proportion of total expenditures on children's education in the private college/university model which had the highest adjusted mean proportion was 0.239 in 2001 and the lowest

was 0.136 the following year. In the public college/university model the highest adjusted mean proportion was 0.157 in 2001 and the lowest adjusted mean proportion was 0.138 the following year. This variables which affected the proportion of total expenditures on education in the private college/university model was higher than that of the public college/university model, being .359 and .242 respectively.

The order of importance of the variables; after controlling the other independent variables, the three most important variables of the model for private colleges/universities, were: the number of children attending school; region; and age of the household head, with Beta values of .417, .179 and .143 respectively. The four most significant variables for the public college/university model were the number of children attending school, year of study, the total expenditures of the household and the age of the household head, with the Beta values being .430, .209, .178 and .178 respectively.

5.4 Discussions

The analysis results of factors influencing the proportion of expenditures on education in relation to the households' total expenses, at all educational levels in private and public schools, found that the household head characteristics, households' characteristics, and the social context corresponded to the literature review in Chapter II as follows:

5.4.1 Household Head Characteristics

This study focused on some of the characteristics of the household head which are: sex, age, education, and work status. The significant variables were age and work status.

1) The age and work status of the household head correlate with the proportion of total expenditures on education in relation to the total expenses in both the private and public schools models. This study's results are in accordance with Bryant's study (1990), which found that the household head, age is an important factor on education, and positively influenced education. That is, an increase in the age of the household head results in increasing expenditures on education, especially where a female is the

household head. Nevertheless, Houston (1995) found a contradiction from this study which revealed that age is a significant variable affecting the proportion of expenditures on education, but in a negative fashion. That is, the proportion of expenditures on education is lower when the age of the household head increased.

Moreover, according to the studies reviewed, the sex of the household head is not mentioned as a significant variable in children's education expenditures, which corresponds to the findings of this study. The result of this study shows that the sex of the household head does not have a correlation to the education expenditures, the relationship is found only in school fees of private schools. This indicates that the proportion of education expenditures to total expenditures does not depend on the sex of the household head. That could be interpreted as, regardless of the sex of the household head, they would support their children's education. However, some studies concentrate on female education, because they think that providing education to females will reflect in direct results to the families; members of the family will be healthy and have a better education. (World Bank, 1995).

2) On the other hand, the results of this study are in line with the studies of Foster, Ghany and Ferguson (1981). The educational level of the household head only correlated with the education expenditures for children in the public schools model. Considering total expenditures (table A.1 in the Appendix), heads of households with a higher education background spend higher proportions of their total expenditures on their children's education than parents with a lower educational level. It is possible that parents having higher education, good jobs and high income, would have more motivation to support their children having an upper level of education deriving from their own experiences. The highly-educated household heads tend to allocate their income to their children's education. Family heads that were well-educated put human development investment as their own priority, so they want to transfer such concepts to their children. This is related to the study of Thienchay Kiranandana (1989: 33-34). It can be assumed that having higher educational levels can predict the ability to earn a high income. This could lead to direct effects on their children's educational prospects. However the study conducted by Jang (1995), did investigations particularly on female households heads, and found that female households heads with any level of education spend a similar proportion on education to total expenditures.

3) Finally, the household head work status did not have a direct relationship to the proportion of expenditures on education in relation to the total expenses of private and public schools but this independent variable was correlated with other levels of education. The results of this study were not in accordance with the theoretical idea of Caldwell (1976b) who stated that if any household is economically ready and having high income, this would bring advantage to the family members in many ways. From earlier studies, it was revealed that the family heads who are private sector employees spend higher expenditures than those in other work sectors, as private company's employees, had higher incomes when compared with other work sectors; they could therefore afford higher expenditures on their children. The study conducted by Jang (1995) which investigated expert groups (sales clerks and technicians) who had the same characteristics of work as private company employees, had more expenditures on education than those who had a different work status. Moreover, the research undertaken by Chiraporn Boonying (1998) found similar findings; that is, fathers working in the private sector had higher expenditures on education than those working in the government sector. On the other hand, the research results concerning the proportion of expenditures on education to the total expenditures and the level of the household income did not depend on the occupation of the head of the household; the proportion would be no different, irrespective of the occupation of the household head.

5.4.2 Households' Characteristics

The group of households' characteristics consisted of five variables: type of household; size of household; total expenditures of the household; total income of household and the number of children attending school. This study found that all variables had an influence over the proportion of expenditures on education in relation to the total expenses. It showed that the variables in these groups are likely to have the highest significance on proportion of expenditures for their children's education to households' total expenditures.

1) Type of household is only related to school fees and charges in private colleges/universities, because school fees and charges in private colleges/universities are very high so there are some differences found in the type of households. If they are

households whose spouses live together and both of them have jobs, they tend to have no problems with spending on educational expenditures, whereas other household types are certainly different. There are few prior researches concerning the type of households. Some argument was found in the study of Jang (1995). It stated that when comparing the educational expenditures of households between female households heads of who are single moms and couples, there were no differences in the proportion of educational expenditures.

2) In an attempt to explain the influence of the size of household to the proportion of educational expenditures, demand for consumption increases according to the increasing number of the household members; similarly in this research, it was found that the expenditures on children's education deviated with the size of the household. In other words, the larger the household, the higher the expenditures on education. Nowadays, households are generally nucleus families. Therefore, the increasing number of family members refers to the number of additional children added. This brings about more items of expenditure, including education. The results of this research correspond with the results of the studies conducted by Foster, Abdel-Ghany and Ferguson (1981) and Houston (1995), which pointed out that size of the household, affected the proportion of expenditures on education and positively resulted in a higher total expenditure for the household. However, there are some arguments, such as those in the study conducted by Jang (1995); claiming that the size of the household is not an important factor to the expenditures on education in the case of households which have a female head and household with married couples living together.

3) There is a positive relationship between total income and total expenditures of households which influence expenditures on children's education in both the private and public schools model. That is, when the household has increased income or expenditures, the household will be able to give more financial support to their children's education. Many studies including those of Abdel-Ghany and Schwen, (1993); Lino, (2002); Jang, (1995); Kusol Sunthornthada, (2001); National Statistics Office (2003); found that parents having high income also have higher expenditures on their children's education. According to Piyavan Skulchareon (2002), it was found that families in the agricultural field of work with low income and expenditures spend the highest proportion on food, education, transportation, and communication expenditures,

respectively. In addition, the number of children attending school has a relationship to all expenditures, except school fees and charges in public vocational schools. This result is due to the low school fees and low charges paid in public vocational schools. According to present day studies, it was found that households have the burden of expenditures which average between 285.17 and 340.17 baht per month. This is not too expensive when compared with miscellaneous expenditures; hence school fees and charges of public vocational schools do not depend on the number of children studying in school like other models. However, there are some arguments in other studies. For example, a work by Houston (1995) revealed that household income does not have any effect on the proportion paid for children's education. The reason might be that this research collected data from only 661 U.S. households during 1990-1991 and the research samples and the USA have a different educational policy than Thailand.

4) The number of children attending school is one of the most significant variables in this study. The results of this research correspond with the work done by Tsang (2002) which found that the number of children attending school is the determinant of the attendance in primary education. The study conducted in Thailand by Thienchay Kiranandana (1981) looked at the capital per person and indicated that the number of children is a major influence on expenditures paid for children in the household. This means that the number of children and the expenditures for children will deviate from each other, so, if the household has many children, the children capital for each child would be lower. Considering the expenditures for education for each child, in Table 7 in the Appendix, it can be seen that the analyzed results go in the same direction, with the households who have a large number of children having a lower children capital. If the expenditures on education per person are considered, it can be seen that households with a lot of children will have a lower children's capital for each of their children than the household with fewer children. However, the study conducted in Korea by Yoong Sook Chung and Minja Kim Choe (2001) investigated private tuition fees after school and found that the number of children did not have any statistical significance to these after school private tuition fees.

5.4.3 Social Context

The social context consisted of three variables – region, area and year of study. From this study, it was found that the variables relating to the households' expenditures for education of their children in the household in every category was mainly region, particularly in greater Bangkok.

Households in greater Bangkok generally have higher average income than those in other regions especially in the North and the Northeast. Even the low rate of wages in greater Bangkok is much higher than other regions (The National Statistical Office, 2001a). The wage rate in greater Bangkok is 184 baht per day, whereas the lowest rate in the North is 140 baht per day, and 141-142 baht a day in the Northeast. (Department of Employment, 2005). Furthermore, people in greater Bangkok are usually more updated on news and information as there are more sources of knowledge, including informal educational systems and skills training (such as computer literacy, music, sport etc,) than in any other regions. These could explain why the expenditures on education in Bangkok and satellite cities are higher than in other regions, bringing about the correlation between the region variables and the households' expenditures for children's education. The results of the study are therefore in accordance with most studies, such as the research conducted by Jayatilleke (1993), for instance, which found that the household expenditures in Sri Lanka are different only in rural areas. Similarly, the studies conducted by Horton and Hafstrom (1985) and Abdel-Ghany and Schwen (1993) noted that people who lived in the cities were expected to have a positive influence on the expenditures for education. The research conducted in Thailand by Noppawan Chongwattana and Chutha Manaspaiboon (1986) found that expenditures concerning education of the children in remote areas were five times less than that of children living in the cities. However, some studies showed contradictory results to this research. According to the study of Thienchay Kiranandana (1981), people living in remote areas had higher expenditures on their children's education than those living in or near the city. The reason was that most good educational institutions are situated in big cities. Therefore, rural people who want to have access to high quality education have to spend more than those living in big cities. Obvious expenses are traveling costs (including bus fare for going from rural areas to the city), expenses for accommodations and an increased general

cost of living. In addition, time (1998-2002) affected the proportion of expenditures for education in relation to the total expenses.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the findings of this study and explains how they could be used by the Thai government to make changes in the development of Thai education related to budget allocations made by the government. It also gives suggestions for further research.

The study of households' expenditures on their children's education is principally aimed at investigating the general characteristics of households which have children attending schools regardless of the educational level or the institution. Moreover, this research attempts to understand factors that affect a household's expenditures on their children's education by studying the secondary sources of data which came from the Socio Economic Survey (SES) from 1998 to 2002. The data collection was conducted by the National Statistics Office (NSO) of the Ministry of Information Technology and Communications and can be analyzed to gain insightful conclusions on the entire study.

There are three groups of factors, based on the literature review, that hypothesize concerning the influence of a household's expenditures on their children's education. The first group refers to characteristics of the household head consisting of sex, age, education and work status. The second refers to the type, size, total income, total expenditures and number of children attending schools. The last refers to the social context classified by region, area and year of study.

Data analysis was accomplished through descriptive statistics such as percentage, frequency, mean ($\bar{x}$) and standard deviation (S.D.) in order to depict the characteristics of the sample. Furthermore, Multiple Classification Analysis (MCA) was employed to analyze the factors affecting the households' expenditures on their children's education.

6.1 Conclusions

The research findings are divided into two parts: results of the general characteristics of the households with children attending schools, including money paid for education at each level of all types of institutions, and the results from analyzing the factors affecting the households' expenditures on their children's education.

6.1.1 The Analysis Results of the General Characteristics of Households with Children Attending School and Their Expenditures on Education.

From the analysis of the general characteristics of households head with children attending school, it was found that over 75% of the households were those with male family heads. The average age of the household head was 42.2 years and this was a continuously declining trend. The households head studied at the primary education level in formal schools for less than or equal to 7 years. Most of them were self-employed workers.

In regard to the characteristics of the households with children attending school, it was found that in most of these households the household head was married and living with his spouse. There were four members in the household and in most of these the total income was equivalent to their total expenses, that is, less than or equal to 10,000 baht. More than half of these households were those with only one child attending school.

After considering the situation, we can postulate on the trends of Thai households in the future. It would appear that Thai households will have a tendency to decrease in size, and the number of the household members will range from two to four. They will be two-parent families or families with single parents having children. This will result in a burden with only one parent taking care of the children and it will be a more difficult task, especially when the children are attending school. When taking the working conditions into consideration, the increasing number of household heads who fall into the 'no occupation' category, or those family whose heads are not involved in business-oriented jobs, discourages these households in sufficiently supporting their children's education. At the same time, there are a number of

households whose children did not attend school; as a result, this helps reduce the burden on the household considerably. In the aspect of the sex of the household head, the households with female heads inclined to continually increase, which may be regarded as a good sign since female heads generally take care of, pay attention to and raise their children well. However, they simultaneously have to work outside the home in order to support their children financially. After investigating the income and expenses, we can see that the average income rate of households in Thailand is about 4,000 baht per month higher than the expense rate.

After examining the expenditures on education used to pay for tuition and fees/school fees, it was found that the rate of tuition fees in private educational institutions are higher than those of public educational institutions at every educational level; at the fundamental school level, the tuition fee/school fee of a private school is 3.83 times higher than a public school fee. In real terms, the tuition fee/school fee of a private school is about 3,121.79 baht per person per semester, whereas the tuition fee/school fee of a public school for which the household has to be responsible is about 815.48 baht per person per semester.

Similarly, at the vocational education level, the tuition fee of a private vocational school is 3.47 times higher than that of a public vocational school. The tuition fee of a private vocational school is 6,838.00 baht per person per semester, whereas the tuition fee of a public vocational school is 1,970.08 baht per person per semester.

At the higher education level, the tuition fee of a private college/university is 16,892.78 baht per person per semester while the tuition fee of a public college/university is 5,846.16 baht per person per semester. In other words, the tuition fee of a private college/university is 2.89 times higher than a public college/university.

As for miscellaneous expenses such as textbooks, learning materials, daily expenses, lunches, special lessons, etc., all of these expenses are incurred at each educational level and at each type of educational institution; a fundamental school and a vocational school are slightly different in these expenses. The difference of the miscellaneous expenses between a school, at the fundamental level, and a higher educational institution is about 1,000 baht per month. To illustrate, the average expenditures of a household with children attending a private school is 1,400.97 baht

per month, per person, while the average expenditures of a household with children attending a public school is 1,516.24 baht.

At the vocational education level, it was found that the miscellaneous expenses of households with children attending a private vocational school were 2,559.78 baht per person per month or 127.99 bath a day, whereas the expenses of households with children attending a public vocational school were 2,484.66 baht per person per month or 123.23 baht a day.

In higher education, the difference is more pronounced; the miscellaneous expenses of households with children attending a private college/university were 5,522.79 baht per person per month or 276.14 baht a day compared to 4,517.61 baht per person per month or 225.88 baht a day for those with children attending a public college/university.

After combining the two parts of the expenditures (tuition fees and miscellaneous expenses) to determine the total expenditures on education per month per person, it was found that the households with children attending a private educational institution had higher expenditures than the households with children attending a public educational institution, at each educational level. At the fundamental education level there was a slight but noticeable difference in expenditures; the total expenditures on education in households with children attending a private school were 1,919.20 baht per person per month, while the total expenditures on education of the households with children attending a public school were 1,651.59 baht per month per person. The difference in expenditures was 267.61 baht per month.

At the vocational education level, the difference of the expenditures between private and public institutes were 885.51 baht. The total expenditures of the households with children attending a private vocational school were 3,698.53 baht per person per month while the expenditures of the households with children attending a public vocational school were 2,813.02 baht.

At the higher education level, the households with children attending a private college/university were responsible for a total expenditure of 8,338.25 baht per month per person, whereas the households with children attending a public college/university had to pay 5,488.98 baht per month per person. The difference in the expenses was 2,849.27 baht per month per person.

After examining the proportion of expenditures and the total expenses of the households, it was found that the percentage of household expenditures on education and the total expenses at the fundamental school level (that is, the household's expenditures paid for their children's education) ranged from 13.73% to 14.26% of the total household expenditures. In vocational education, the household expenditures paid for their children's education ranged from 23.63% to 27.57%, whereas households with children studying in higher education had to bear an expenditure for their children's education ranging from 33.59% to 34.16%.

It is remarkable that at each educational level, the households with children studying in private educational institutions almost always had more expenses than those with children going to public educational institutions. However, at the fundamental school level, the disparity was not always as clearly evident; the households with children going to a public school had a slightly higher percentage of expenditures than the households with children going to a private school even though the government subsidizes most of the expenses. The reason for this might be that the cost for lunches, private lessons, transportation, learning materials and other things is added to the tuition fee or school fee which is paid at the beginning of the school year and, as a result, the expenditures each month are reduced. Households with children attending a public school do not have to pay for the expenses mentioned, but in reality they pay for these expenses in the name of "financial support for education" or "contributions to the school alumni association". Therefore, the households with children attending a public school had higher monthly expenditures for things such as tuition fees for grammar lessons which the public schools are not able to provide; in such cases, the household had to manage the cost by themselves. Furthermore, the cost of outside grammar lessons is usually more expensive than the cost of those managed by the public schools. The expenditures each month therefore, seems to accumulate. In the end, the expenditures of households with children studying at either a private or public school was not very different in terms of the total expenditure.

As for vocational education, there was a marked distinction in the percentage of expenditures between households whose children go to a private or public educational institution. At the higher educational level, there was a slight difference in

the percentage of household expenditures between the households with children going to a private school and households with children going to a public school, due to the students studying in the private educational institutions having to pay a higher tuition fee. They therefore had to be more economical in paying for other expenses so that they could financially support their studies. Another reason might be that the households themselves do not pay for the tuition fee but depend on monetary loans from the education fund, managed by the government. The tuition fee of the public educational institutions is not very expensive, so households can usually afford it. Accordingly, the percentage of the expenditures of the households whose children were studying in these two types of educational institutions were slightly different, and it can be seen, on the whole, that the household expenditures on their children's education at every level of private educational institutions is higher than that of public educational institutions.

6.1.2 The Analysis Results of Factors Affecting Households' Expenditures on their Children's Education at Each Educational Level.

The method of finding out certain factors affecting households' expenditures on their children's education used in this research was Multiple Classification Analysis (MCA). That is, every independent variable was analyzed. All three items of expenditures were analyzed. The results of the analysis of all three levels of education are as follows:

According to the results of **the analysis at the fundamental school level**, it was found that there are significant factors affecting the proportion of the total expenditures on education in relation to the total household expenditures. **The variables in the characteristics of the household head** were his/her age **The variables of the characteristics of the household** were all the independent variables in this group, they were: type of household, size, total income, total expenditures and the number of children attending school. Additionally, **the variables of the social context** were the regions, area and year of study.

According to the results of **the analysis at the vocational school level**, there were certain factors significantly affecting the proportion of the expenditures on

education compared to the total expenditures at all levels. **The variables of the characteristics of the household head** were age and work status. **The variables of the household characteristics** were its size, total expenditures and the number children attending school and **the variables of the social context** were region, area and year of study.

According to the results of **the analysis at the higher education level**, there were factors significantly affecting the proportion of the expenditures on education to the total expenditures at all levels. **The variables of the characteristics of the household head** were age and work status. **The variables of the household characteristics** were its size, total expenditures and the number of children attending school. Additionally, **the variables of the social context** were the region, area and year of study.

In addition, there were some interesting points to note – the number of variables affecting the school levels was more than the variables affecting the expenditures at each higher education level. The reason might be that the education provided at the school level is the fundamental education, indispensable for a person living in society, and it is compulsory education, which stipulates that everybody has an equal right to have the opportunity to acquire a basic education but, in reality, the environment of the household and society do not motivate a person to learn. Furthermore, there were many more factors affecting the households' expenditures on their children's education than at other levels. Putting the factors groups into order from the highest to the lowest, the variables in the first three groups which affected households' expenditures on their children' education most were the total expenditures of the household, the number of children attending school and the region since these three variables directly affected the expenditures of the households involving their children's education. For example, whether the households could afford the tuition fee for their children depended on the total expenses of the household. If the households had much more spending power, they were able to sufficiently support their children's education. Another important variable was the number of children attending school. That is to say, regardless of the amount of money the households spent on education, what mattered more was the number of children attending school. If the households had no children attending school, they would not have to take on such burdens. Additionally, the location of the

household – the Greater Bangkok area, was another important variable. If the households were located in areas of Bangkok which are academically and technologically advanced with various grammar schools for parents to choose from, the expenditures from the cost of living were distinctively higher than those of other regions. The parents had a lot of expenses to pay, such as for lunches, learning materials and the daily expenses for their children attending school and these expenses were substantially higher than those of households in other regions.

6.2 Recommendations

6.2.1 Utilizing the Study Findings

Results from the study of households' expenditures on their children's education and the factors affecting household spending can be used to create policies to enhance educational systems in both private and public institutions. The following suggestions present the three most important factors that involve the three levels of education.

6.2.1.1 Fundamental Education Level: The first three factors that the government should consider in assisting households with educational expenditures include:

1) Number of children attending school: Findings show that households from the study had at least two children attending both public and/or private schools.

2) Region of residence: Findings from the study show that households in the Northeastern region have the lowest capability to provide for their children's education.

3) Age of the household head: The age group of family heads that required the most financial assistance for their children's education were those under 30 years old, followed by the 31-40 age group, and the increases continued respectively.

6.2.1.2 Vocational Education Level: The first three factors that the government should consider in assisting households with educational expenditures include:

1) Number of children attending school: Findings show that households from the study had at least two children attending both public and/or private schools.

2) Changes in the economy: the proportion of expenditures on education in relation to total expenses changes according to the current economic and social conditions, therefore any government plans to assist and support educational programs should be designed efficiently so that they can effectively reduce parents' spending on their children's education as well as increase the capability of the government in managing scholarships and grants.

3) The government should provide financial assistance for education to households with an income of less than 10,000 baht per month or 120,000 baht per year.

6.2.1.3 Higher Education Level: The first three factors that the government should consider in assisting households with educational expenditures include:

1) Number of children attending school: Findings show that households from the study had at least two children attending both public and/or private schools

2) Year: the proportion of expenditures on education in relation to total expenses changes according to the current economic and social conditions, therefore any government plans to assist and support educational programs should be continually revised. This includes education loan programs where the amount of the loan can be adjusted regularly to reflect the actual expenditures of the students. The amount of the loans should be adjustable, and their regulations flexible to truly cater to the needs of the students.

3) Region of residence: Findings from the study show that households in the Northeastern region have the lowest capability to provide for their children's education.

6.2.2 Further areas of research to be conducted and studied in the future.

1) Conducting qualitative research on family's spending for their children's education to validate or compare with the findings of those obtained from the quantitative research.

2) In further research, factors such as status of the loans and assistance received from the government which helps to reduce current educational expenditures should be added.

3) Education at the fundamental school level classified into sub-levels such as primary/elementary, lower-secondary and upper-secondary tend to have different details of expenditure. As a result, the researcher was not able to analyze the expenditures at the fundamental school level classified by sub-levels since the secondary sources of the data used focused on the vista as a whole, but was not divided into sub-levels.

4) Higher education classified by fields of study such as Social Science, Science and Health Science, generally have different details of expenditures the same as do education at the School level. Consequently, the researcher was not able to analyze the expenditures spent on higher education classified by the fields of study, since there was no classification of academic fields in the secondary sources of the data used.

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APPENDICES

Appendix A

Percentage of Tuition Fee/School Fee and Miscellaneous Expense of all Level of Education

Appendix B

Household Expenditure Classified by Type of Expenditure and Education Level

Appendix C

Analysis of Factors by Multiple Classification Analysis

Appendix D

Interest Rates during 1998-2008

Table1 A.1 Expenditure on Education per Person per Month for Households with Children Studying at the Fundamental Educational Level from 1998 to 2002*

Types of Expenditure	1998						Different in Expenditure	1999						Different in Expenditure
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	439.96	3.15	26.04	122.54	1.25	8.45	317.42	482.79	3.34	30.72	122.12	1.24	7.52	360.67
Miscellaneous expenses														
Text books	68.00	0.49	4.02	63.52	0.65	4.38	4.48	72.41	0.50	4.61	68.6	0.69	4.23	3.81
Learning materials	51.34	0.37	3.04	43.89	0.45	3.03	7.45	45.74	0.32	2.91	42.89	0.43	2.64	2.85
Private lesson	275.17	1.97	16.28	299.21	3.06	20.63	-24.04	235.71	1.63	15.00	407.75	4.13	25.11	-172.04
Lunch	265.39	1.90	15.71	230.92	2.36	15.92	34.47	244.52	1.69	15.56	311.44	3.15	19.18	-66.92
Daily expenses	348.50	2.50	20.62	365.32	3.74	25.19	-16.82	298.52	2.06	18.99	393.68	3.98	24.25	-95.16
Other expenses	191.79	1.37	11.35	280.96	2.88	19.37	-89.17	103.7	0.72	6.60	110.59	1.12	6.81	-6.89
Contribution to education	58.69	0.42	3.47	43.82	0.45	3.02	14.87	88.37	0.61	5.62	166.58	1.69	10.26	-78.21
Total	1,258.88	9.02	73.96	1,327.64	13.59	91.55	-68.76	1,088.97	7.52	69.28	1,501.53	15.20	92.48	-412.56
Total	1,689.84	12.10	100.00	1,450.18	14.84	100.00	239.66	1,571.76	10.86	100.00	1,623.65	16.43	100.00	-51.89
Household expenditure*		13,964.14			9,771.55				14,471.78			9,881.49		
Standard deviation		10,117.13			8,654.56				11,452.50			8,553.44		

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expendit ure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure .

Table A.1 (Continued)

Types of Expenditure	2000						Different in Expenditure	2001						Different in Expenditure
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	458.98	4.67	25.95	123.97	1.04	8.18	335.01	489.16	4.19	24.27	125.81	1.22	8.91	363.35
Miscellaneous expenses														
Text books	72.28	0.74	4.09	61.67	0.52	4.07	10.61	68.15	0.58	3.38	59.73	0.58	4.23	8.42
Learning materials	52.53	0.53	2.97	43.48	0.36	2.87	9.05	59.31	0.51	2.94	44.07	0.43	3.12	15.24
Private lesson	305.58	3.11	17.28	413.21	3.46	27.27	-107.63	375.44	3.21	18.63	418.66	4.06	29.66	-43.22
Lunch	260.21	2.65	14.71	250.92	2.10	16.56	9.29	275.89	2.36	13.69	190.39	1.84	13.49	85.50
Daily expenses	323.41	3.29	18.29	391.2	3.28	25.82	-67.79	348.29	2.98	17.28	388.71	3.77	27.53	-40.42
Other expenses	214.23	2.18	12.11	123.04	1.03	8.12	91.19	324.75	2.78	16.11	135.49	1.31	9.60	189.26
Contribution to education	81.35	0.83	4.60	107.72	0.90	7.11	-26.37	74.33	0.64	3.69	48.85	0.47	3.46	25.48
Total	1,309.59	13.32	74.05	1,391.24	11.65	91.82	-81.65	1,526.16	13.06	75.73	1,285.90	12.46	91.09	240.26
Total	1,768.57	17.99	100.00	1,515.21	12.69	100.00	253.36	2,015.32	17.25	100.00	1,411.71	13.68	100.00	603.61
Household expenditure*		9,833.37			11,937.94				11,685.74			10,319.42		
Standard deviation		9,433.37			8,674.45				10,237.62			8,919.16		

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure .

Table A.1 (Continued)

Type of Expenditure	2002						Different in Expenditure	Average 5 years	
	Private			Public					
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Private	Public
Tuition Fee	515.37	3.07	29.34	128.45	1.12	8.20	386.92	477.25	124.58
Miscellaneous expenses									
Text books	71.15	0.42	4.05	62.87	0.55	4.02	8.28	70.39	63.28
Learning materials	53.22	0.32	3.03	44.86	0.39	2.86	8.36	51.23	43.84
Private lesson	272.22	1.62	15.50	304.5	2.66	19.45	-32.28	292.82	368.67
Lunch	266.7	1.59	15.18	314.03	2.74	20.05	-47.33	262.54	259.54
Daily expenses	361.77	2.16	20.59	408.36	3.56	26.08	-46.59	336.10	389.45
Other expenses	149.81	0.89	8.53	182.43	1.59	11.65	-32.62	196.86	166.50
Contribution to education	66.36	0.40	3.78	120.37	1.05	7.69	-54.01	73.82	97.47
Total	1,241.23	7.40	70.66	1,437.42	12.53	91.80	196.19	1,284.97	1,388.75
Total	1,756.60	10.47	100.0	1,565.87	13.65	100.00	190.73	1,764.42	1,513.32
Household expenditure*		16,771.87			11,468.86			13,345.38	10,675.85
Standard deviation		15,495.69			10,090.59				

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundam ental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure .

Table A.2 Expenditure on Education per Person per Month for Households with Children Studying at the Vocational Educational from 1998 to 2002

Type of Expenditure	1998						Different in Expenditure	1999						Different in Expenditre
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	983.72	8.02	31.74	285.17	2.50	12.12	698.55	1,110.06	10.04	34.10	340.17	2.94	12.85	769.89
Miscellaneous expenses														
Text books	106.79	0.87	3.45	86.57	0.76	3.68	20.22	100.57	0.91	3.09	90.68	0.78	3.43	9.89
Learning materials	71.17	0.58	2.30	106.25	0.93	4.52	-35.08	63.25	0.57	1.94	93.27	0.81	3.52	-30.02
Private lesson	201.29	1.64	6.49	182.30	1.60	7.75	18.99	250.00	2.26	7.68	200.00	1.73	7.56	50.00
Lunch	961.69	7.84	31.03	929.44	8.14	39.50	32.25	750.00	6.79	23.04	1,116.75	9.64	42.19	-366.75
Daily expenses	670.72	5.47	21.64	623.61	5.46	26.50	47.11	870.15	7.87	26.73	592.64	5.12	22.39	277.51
Other expenses	37.50	0.31	1.21	81.71	0.72	3.47	-44.21	58.00	0.52	1.78	144.00	1.24	5.44	-86.00
Contribution to education	66.83	0.55	2.16	58.06	0.51	2.47	8.77	53.00	0.48	1.63	69.50	0.60	2.63	-16.50
Total	2,115.99	17.26	68.26	2,067.94	18.11	87.88	48.05	2,144.97	19.41	65.90	2,306.84	19.92	87.15	-161.87
Total	3,099.71	25.28	100.00	2,353.11	20.61	100.00	746.60	3,255.03	29.45	100.00	2,647.01	22.86	100.00	608.02
Household expenditure*	12,260.66			11,418.82				11,051.71			11,578.67			
Standard deviation	7,908.25			9,167.05				9,647.51			10,141.70			

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure.

Table A.2 (Continued)

Type of Expenditure	2000						Different in Expenditure	2001						Different in Expenditure
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	1,051.80	10.14	29.49	308.58	2.83	11.98	743.22	996.54	7.23	26.44	276.98	2.71	11.06	719.56
Miscellaneous expenses														
Text books	116.89	1.13	3.28	90.55	0.83	3.52	26.34	133.20	0.97	3.53	90.41	0.88	3.61	42.79
Learning materials	94.57	0.91	2.65	88.73	0.81	3.45	5.84	125.88	0.91	3.34	84.19	0.82	3.36	41.69
Private lesson	166.50	1.61	4.67	233.33	2.14	9.06	-66.83	86.00	0.62	2.28	266.67	2.61	10.65	-180.67
Lunch	1,179.45	11.37	33.07	997.79	9.15	38.74	181.66	1,608.33	11.66	42.67	878.83	8.59	35.10	729.50
Daily expenses	832.00	8.02	23.33	611.67	5.61	23.75	220.33	793.85	5.76	21.06	630.70	6.16	25.19	163.15
Other expenses	86.32	0.83	2.42	194.37	1.78	7.55	-108.05	0.00	0.00	0.00	244.73	2.39	9.77	-244.73
Contribution to education	39.00	0.38	1.09	50.44	0.46	1.96	-11.44	25.00	0.18	0.66	31.38	0.31	1.25	6.38
Total	2,514.73	24.24	70.51	2,266.88	20.79	88.02	247.85	2,772.26	20.11	73.56	2,226.91	21.76	88.94	545.35
Total	3,566.53	34.38	100.00	2,575.46	23.62	100.00	991.07	3,768.80	27.33	100.00	2,503.89	24.47	100.00	1,264.9
Household expenditure*	10,373.39			10,905.25				13,788.14			10,231.83			
Standard deviation	6,878.35			10,169.59				8,106.74			5,437.58			

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure.

Table A.2 (Continued)

Types of Expenditure	2002						Different in Expenditure	Average 5 years	
	Private			Public					
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Private	Public
Tuition Fee	1,078.94	8.70	32.95	291.82	2.75	10.34	787.12	1,044.21	300.54
Miscellaneous expenses									
Text books	110.66	0.89	3.38	82.18	0.77	2.91	28.48	113.62	88.08
Learning materials	86.45	0.70	2.64	73.56	0.69	2.61	12.89	88.26	89.20
Private lesson	174.43	1.41	5.33	340.55	3.21	12.07	-166.12	175.64	244.57
Lunch	709.40	5.72	21.66	1,156.92	10.90	41.01	-447.52	1,041.77	1,015.95
Daily expenses	798.31	6.44	24.38	646.60	6.09	22.92	151.71	793.01	621.04
Other expenses	293.50	2.37	8.96	133.05	1.25	4.72	160.45	118.83	159.57
Contribution to education	22.75	0.18	0.69	96.40	0.91	3.42	-73.62	41.32	61.16
Total	2,195.50	17.70	67.05	2,529.26	23.83	89.66	-333.76	2,348.69	2,279.57
Total	3,274.44	26.40	100.00	2,821.08	26.58	100.00	453.36	3,392.90	2,580.11
Household expenditure*	12,401.44			10,614.62				11,975.07	10,949.84
Standard deviation	6,455.22			6,744.47					

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure.

Table A.3 Expenditure on Education per Person per Month for Households with Children Studying at the Higher Education Level from 1998 to 2002

Types of Expenditure	1998						Different in Expenditure	1999						Different in Expenditure
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	2,200.40	10.01	29.97	713.75	5.11	15.73	1,486.6	2,785.33	11.08	38.49	940.8	6.29	15.20	1,844.5
Miscellaneous expenses														
Text books	172.00	0.78	2.34	127.99	0.92	2.82	44.0	205.00	0.82	2.83	142.6	0.95	2.30	62.4
Learning materials	120.40	0.55	1.64	120.54	0.86	2.66	-0.14	311.72	1.24	4.31	74.4	0.50	1.20	237.4
Private lesson	667.00	3.03	9.08	316.83	2.27	6.98	350.2	283.50	1.13	3.92	1,780.0	11.91	28.75	-1,496.5
Lunch	1,685.82	7.67	22.96	1,618.28	11.59	35.66	67.5	2,124.14	8.45	29.36	2,237.7	14.97	36.15	-113.6
Daily expenses	1,030.11	4.69	14.03	878.98	6.29	19.37	151.1	1,297.35	5.16	17.93	849.5	5.68	13.72	447.9
Other expenses	1,333.50	6.07	18.16	380.43	2.72	8.38	953.1	0.00	0.00	0.00	106.5	0.71	1.72	-106.5
Contribution to education	133.33	0.61	1.82	381.63	2.73	8.41	-248.3	228.67	0.91	3.16	59.0	0.39	0.95	169.7
Total	5,142.16	23.39	70.03	3,824.68	27.38	84.27	1,317.5	4,450.38	17.71	61.51	5,249.6	35.12	84.80	-799.3
Total	7,342.56	33.40	100.0	4,538.43	32.49	100.0	2,804.1	7,235.71	28.79	100.0	6,190.5	41.42	100.0	1,045.2
Household expenditure*	21,984.81			13,967.45				25,133.07			14,945.97			
Standard deviation	17,647.19			10,441.06				18,350.99			12,177.87			

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure .

Table A.3 (Continued)

Types of Expenditure	2000						Different in Expenditure	2001						Different in Expenditure
	Private			Public				Private			Public			
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Baht	%[1]	%[2]	Baht	%[1]	%[2]	
Tuition Fee	2,571.83	11.53	38.22	930.94	6.30	17.62	1,640.9	2,358.32	12.10	28.26	923.04	6.32	21.07	1,435.28
Miscellaneous expenses														
Text books	192.68	0.86	2.86	145.38	0.98	2.75	47.3	180.36	0.93	2.16	148.15	1.01	3.38	32.21
Learning materials	299.65	1.34	4.45	98.20	0.66	1.86	201.5	287.57	1.48	3.45	122.05	0.84	2.79	165.52
Private lesson	0.00	0.00	0.00	991.12	6.71	18.76	-991.1	0.00	0.00	0.00	202.25	1.38	4.62	-202.25
Lunch	2,096.82	9.40	31.16	1,937.74	13.11	36.67	159.1	2,069.50	10.62	24.80	1,637.77	11.21	37.39	431.73
Daily expenses	1,432.83	6.42	21.29	881.20	5.96	16.68	551.6	1,568.31	8.05	18.79	912.94	6.25	20.84	655.37
Other expenses	0.00	0.00	0.00	238.67	1.62	4.52	-238.7	1,839.00	9.43	22.04	370.83	2.54	8.47	1,468.17
Contribution to education	135.34	0.61	2.01	61.25	0.41	1.16	74.1	42.00	0.22	0.50	63.50	0.43	1.45	-21.50
Total	4,157.32	18.63	61.78	4,353.56	29.46	82.38	-196.2	5,986.74	30.71	71.74	3,457.49	23.67	78.93	2,529.25
Total	6,729.15	30.16	100.0	5,284.50	35.76	100.0	1,444.6	8,345.06	42.81	100.0	4,380.53	29.99	100.0	3,964.53
Household expenditure*	22,313.08			14,776.86				26,265.42			17,458.60			
Standard deviation	11,906.40			7,461.09				13,695.00			10,819.62			

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure.

Table A.3 (Continued)

Types of Expenditure	2002						Different in Expenditure	Average 5 years	
	Private			Public					
	Baht	%[1]	%[2]	Baht	%[1]	%[2]		Private	Public
Tuition Fee	3,005.65	12.45	34.92	955.12	6.03	20.25	2,050.53	2584.31	892.73
Miscellaneous expenses									
Text books	219.34	0.91	2.55	154.19	0.97	3.27	65.15	193.88	143.66
Learning materials	142.57	0.59	1.66	118.49	0.75	2.51	24.08	232.38	106.74
Private lesson	639.00	2.65	7.42	264.54	1.67	5.61	374.49	529.83	710.95
Lunch	2,303.30	9.54	26.76	2,111.08	13.34	44.75	192.22	2055.92	1908.51
Daily expenses	1,320.38	5.47	15.34	855.71	5.41	18.14	464.67	1,329.80	875.67
Other expenses	905.91	3.75	10.53	201.22	1.27	4.27	704.69	1,359.47	259.53
Contribution to education	70.63	0.29	0.82	57.25	0.36	1.21	13.38	203.32	124.53
Total	5,601.13	23.21	65.08	3,762.48	23.77	79.75	1,838.65	5,067.55	4,129.56
Total	8,606.78	35.66	100.00	4,717.60	29.80	100.00	3,889.18	7,651.86	5,022.29
Household expenditure*		24,135.25			20,511.34			23,966.33	16,332.04
Standard deviation		20,927.45			16,951.75				

Note: * is the total expenditure concerning and non-concerning education for the household with at least one child studying at fundamental education level

[1] Percentage of expenditure on education of the household compared with the total household expenditure.

[2] Percentage of expenditure on education of the household compared with each item of expenditure.

Table B.1 Total Expenditure per Person per Month which the Household Paid for Children's Education from 1998 to 2002

Items Total Expenditure	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	1,689.84	273	1,571.76	1,869	1,768.57	396	2,015.32	1,153	1,756.60	1,760.42
Public school	1,922	1,450.18	691	1,623.65	113	1,515.21	867	1,411.71	1,804	1,565.87	1,513.32
Private vocational school	158	3,095.71	63	3,255.03	352	3,566.53	57	3,768.80	154	3,274.44	3,392.10
Public vocational school	288	2,353.11	112	2,647.01	79	2,575.46	169	2,503.89	398	2,821.08	2,580.11
Private College/University	63	7,342.56	30	7,235.71	383	6,729.15	44	8,345.06	100	8,606.78	7,651.85
Public College/University	246	4,538.43	127	6,190.47	60	5,284.50	191	4,380.53	518	4,717.60	5,022.31

Table B.2 Expenditure per Person per Month which the Household Paid as Tuition Fee/School Fee for Children's Education from 1998 to 2002

Items Tuition Fee	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	439.96	273	482.79	1,869	458.98	396	489.16	1,153	515.37	477.25
Public school	1,922	122.54	691	122.12	113	123.79	867	125.81	1,804	128.45	124.54
Private vocational school	158	983.72	63	1,110.06	352	1,051.80	57	996.54	154	1,078.94	1044.21
Public vocational school	288	285.17	112	340.17	79	308.58	169	276.98	398	291.82	300.54
Private College/University	63	2,200.40	30	2,785.33	383	2,571.83	44	2,358.32	100	3,005.65	2584.31
Public College/University	246	713.75	127	940.84	60	930.94	191	923.04	518	966.12	894.94

Table B.3 Average Expenditure per Person per Month which the Household Paid as Miscellaneous Expenses for Children's Education from 1998 to 2002

Items Miscellaneous	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	1,258.88	273	1,088.97	1,869	1,309.59	396	1,526.16	1,153	1,241.23	1,284.97
Public school	1,922	1,327.64	691	1,501.53	113	1,391.24	867	1,285.90	1,804	1,437.42	1,388.75
Private vocational school	158	2,115.99	63	2,144.97	352	2,514.73	57	2,772.26	154	2,195.50	2,348.69
Public vocational school	288	2,067.94	112	2,306.84	79	2,266.88	169	2,226.91	398	2,529.23	2,279.56
Private College/University	63	5,142.16	30	4,450.38	383	4,157.32	44	5,986.74	100	5,601.13	5,067.55
Public College/University	246	3,827.68	127	5,249.63	60	4,353.56	191	3,457.49	518	3,762.48	4,130.17

Table B.4 Total Expenditure per Person per Month which the Household Paid for Children's Education from 1998 to 2002 by Future Value in the Year 2008

Items Total Expenditure	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	1,945.87	273	1,748.70	1,869	1,919.67	396	2,144.61	1,153	1,837.14	1919.20
Public school	1,922	1,669.90	691	1,806.43	113	1,644.67	867	1,502.28	1,804	1,637.67	1,651.59
Private vocational school	158	3,564.75	63	3,621.46	352	3,871.25	57	4,010.59	154	3,424.58	3,698.53
Public vocational school	288	2,709.64	112	2,944.99	79	2,795.50	169	2,664.53	398	2,950.43	2,813.02
Private College/University	63	8,455.06	30	8,050.26	383	7,304.07	44	8,880.43	100	9,001.42	8,338.25
Public College/University	246	5,226.06	127	6,887.35	60	5,736.00	191	4,661.56	518	4,933.91	5,488.98

Table B.5 Expenditure per Person per Month which the Household Paid as Tuition Fee or School Fee for Children's Education from 1998 to 2002 by Future Value in the Year 2008.

Items Tuition Fee	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	506.62	273	537.14	1,869	498.19	396	520.54	1,153	539.00	520.30
Public school	1,922	141.11	691	135.87	113	134.37	867	133.88	1,804	134.34	135.91
Private vocational school	158	1,132.77	63	1,235.02	352	1,141.66	57	1,060.47	154	1,128.41	1,139.67
Public vocational school	288	328.38	112	378.46	79	334.94	169	294.75	398	305.20	328.35
Private College/University	63	2,533.79	30	3,098.88	383	2,791.56	44	2,509.62	100	3,143.47	2,815.46
Public College/University	246	821.89	127	1,046.75	60	1,010.48	191	982.26	518	1,010.42	974.36

Table B.6 Average Expenditure per Person per Month which the Household Paid as Miscellaneous Expenses for Children's Education from 1998 to 2002 by Future Value in the Year 2008.

Items Miscellaneous	1998		1999		2000		2001		2002		average
	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	Number of person	Amount (Baht)	
Private school	854	1,449.62	273	1,211.56	1,869	1,421.48	396	1,624.07	1,153	1,298.14	1,400.97
Public school	1,922	1,528.80	691	1,670.56	113	1,510.10	867	1,368.40	1,804	1,503.33	1,516.24
Private vocational school	158	2,436.59	63	2,386.44	352	2,729.58	57	2,950.11	154	2,296.17	2,559.78
Public vocational school	288	2,381.26	112	2,566.53	79	2,460.56	169	2,369.78	398	2,645.20	2,484.67
Private College/University	63	5,921.27	30	4,951.38	383	4,512.51	44	6,370.82	100	5,857.95	5,522.79
Public College/University	246	4,407.63	127	5,840.60	60	4,725.52	191	3,679.30	518	3,935.00	4,517.61

Table C.1 Multiple Classification Analysis: the Proportion of Total Household Expenditure on Children's Education (Fundament Level)

Variable/Categories	Private School							Public School						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Gender														
Male	6581	.098	-.002	.070	.099	-.001	.016	8592	.098	-.002	.059	.099	-.001	.014
Female	1618	.110	.010		.103	.002		2544	.107	.007		.102	.002	
Age														
≤30	477	.072	-.029	.165	.081	-.019	.143*	452	.077	-.023	.134	.076	-.024	.178*
31-40	3068	.092	-.009		.091	-.009		3025	.091	-.009		.085	-.015	
41-50	3164	.112	.011		.109	.008		4524	.109	.009		.109	.009	
51-60	982	.104	.004		.109	.009		1585	.100	.000		.110	.009	
61 years and above	508	.101	.001		.105	.005		1161	.095	-.005		.098	-.001	
Education														
No education	245	.107	.007	.078	.096	-.004	.023	423	.094	-.006	.033	.089	-.011	.036*
Elementary	3634	.106	.005		.102	.002		6851	.102	.002		.100	.000	
Lower secondary	995	.098	-.002		.100	-.000		1131	.099	-.001		.099	-.000	
Upper secondary	782	.098	-.002		.099	-.001		646	.098	-.002		.101	.001	
Higher education and above	2543	.094	-.007		.099	-.001		1996	.097	-.003		.102	.002	
Work Status														
Employer	1913	.092	-.005	.099	.094	-.004	.094	2449	.093	-.005	.071	.093	-.005	.069
Own-account worker	2440	.106	.008		.105	.008		3378	.102	.004		.103	.005	
Unpaid family worker	628	.105	.008		.099	.002		1358	.099	.001		.101	.003	
Employee-government	1783	.090	-.007		.089	-.008		1978	.093	-.005		.093	-.005	
Employee-private	224	.087	-.010		.086	-.011		191	.092	-.006		.089	-.009	
No-occupation	1617	.097	-.001		.098	.001		1480	.103	.005		.101	.003	
Type of household														
Head and spouse present	6788	.097	-.003	.091	.098	-.002	.059*	5696	.097	-.003	.082	.098	-.002	.057*
All others	1411	.113	.014		.109	.009		2351	.110	.001		.107	.007	

Table C.1 (Continued)

Variable/Categories	Private School							Public School						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Size of household														
1-2 people	308	.110	.010	.100	.122	.022	.096*	542	.105	.005	.045	.121	.021	.134*
3-4 people	4947	.095	-.006		.103	.003		6491	.097	-.002		.105	.005	
5 people and above	2944	.109	.008		.093	-.007		4014	.103	.003		.089	-.011	
Total income (baht)														
≤10,000	2770	.102	.002	.061	.102	.002	.050*	5098	.104	.004	.060	.103	.003	.047*
10,001-20,000	2510	.104	.003		.103	.003		3203	.099	-.001		.098	-.002	
20,001-30,000	1262	.099	-.001		.099	-.001		1309	.095	-.005		.095	-.005	
30,001-40,000	724	.094	-.006		.094	-.006		680	.095	-.005		.096	-.004	
40,001-50,000	341	.091	-.009		.095	-.006		328	.092	-.008		.096	-.004	
50,000 baht and above	592	.092	-.009		.093	-.007		429	.092	-.008		.098	-.001	
Total expenditure (baht)														
≤10,000	3403	.101	.001	.061	.107	.007	.129*	6011	.103	.003	.079	.109	.009	.178*
10,001-20,000	3179	.102	.001		.100	-.000		3721	.098	-.002		.094	-.006	
20,001-30,000 บาท	986	.101	.001		.093	-.007		826	.099	-.001		.086	-.014	
30,000 baht and above	631	.086	-.014		.075	-.026		489	.078	-.022		.061	-.039	
Number of children attending school														
1 person	3858	.077	-.023	.360	.074	-.027	.417*	4830	.077	-.023	.337	.071	-.029	.430*
2 people	3211	.112	.011		.113	.013		4548	.111	.011		.112	.012	
3 people and above	1130	.147	.047		.154	.054		1669	.138	.038		.150	.050	

Table C.1 (Continued)

Variable/Categories	Private School							Public School						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Region														
Greater Bangkok	1207	.120	.019	.127	.128	.028	.179*	1112	.12	.023	.129	.13	.029	.168*
central	1988	.099	-.000		.101	.000		2575	.095	-.005		.098	-.002	
North	1737	.095	-.005		.096	-.004		2532	.099	-.000		.100	.001	
Northeast	1538	.092	-.009		.089	-.011		2935	.093	-.007		.089	-.011	
South	1729	.101	.000		.094	-.006		1893	.104	.004		.101	.001	
Area														
municipal	5762	.10	.000	.004	.101	.001	.019	6696	.103	.003	.055	.103	.003	.062*
Non-municipal	2437	.099	-.000		.098	-.002		4351	.095	-.005		.095	-.005	
Year														
1998	1593	.105	.007	.123	.105	.008	.122*	3980	.094	-.004	.209	.094	-.004	.209*
1999	476	.105	.008		.105	.008		1360	.101	.003		.101	.003	
2000	3704	.088	-.009		.088	-.009		271	.095	-.005		.094	-.005	
2001	772	.108	.011		.108	.010		1652	.102	.004		.101	.003	
2002	2060	.102	.005		.102	.005		3580	.094	-.004		.093	-.005	
	Coefficient of Determination (R^2) = .206 Coefficient of Correlation (R) = .454 Grand Ratio = .100							Coefficient of Determination (R^2) = .208 Coefficient of Correlation (R) = .457 Grand Ratio = .100						

*p<.05

Table C.2 Multiple Classification Analysis: the Proportion of Total Household Expenditure on Children's Education (Vocational Level)

Variable/Categories	Private Vocational School							Public Vocational School						
	N	Unadjusted		Eta	Adjusted		Beta	N	Unadjusted		Eta	Adjusted		Beta
		Mean	Deviation		Mean	Deviation			Mean	Deviation		Mean	Deviation	
Gender														
Male	1185	.162	-.005	.092	.165	-.002	.031	1598	.142	-.002	.048	.144	.000	.005
Female	422	.181	.014		.171	.005		533	.151	.007		.143	-.001	
Age														
≤30	101	.233	.066	.196	.205	.038	.129*	117	.172	.028	.103	.147	.003	.092*
31-40	217	.159	-.008		.156	-.010		284	.132	-.012		.125	-.019	
41-50	850	.163	-.004		.162	-.005		1095	.146	.002		.148	.004	
51-60	304	.166	-.001		.176	.009		419	.137	-.007		.150	.006	
61 years and above	135	.158	-.009		.166	-.001		216	.145	.001		.148	.004	
Education														
No education	45	.179	.012	.083	.176	.009	.068	64	.150	.006	.021	.140	-.004	.034
Elementary	942	.170	.003		.171	.004		1277	.144	-.000		.144	.000	
Lower secondary	155	.160	-.007		.165	-.002		249	.147	.003		.150	.006	
Upper secondary	131	.145	-.022		.154	-.013		101	.141	-.003		.137	-.007	
Higher education and above	334	.168	.001		.160	-.007		440	.143	-.002		.142	-.002	
Work Status														
Employer	325	.161	.001	.180	.163	.003	.152*	377	.138	-.001	.148	.136	-.003	.148*
Own-account worker	451	.167	.009		.167	.008		692	.146	.007		.148	.009	
Unpaid family worker	140	.189	.029		.174	.014		227	.143	.003		.149	.009	
Employee-government	314	.144	-.016		.143	-.017		424	.119	-.020		.120	-.019	
Employee-private	40	.104	-.055		.106	-.054		56	.138	-.001		.126	-.014	
No-occupation	283	.154	-.005		.163	.003		312	.152	.012		.146	.007	

Table C.2 (Continued)

Variable/Categories	Private Vocational School							Public Vocational School						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Type of household														
Head and spouse present	.1182	.159	-.008	.146	.166	-.001	.020	1564	.140	-.004	.080	.142	-.002	.039
All others	425	.188	.022		.170	.003		567	.155	.011		.149	.005	
Size of household														
1-2 people	132	.201	.039	.137	.197	.030	.146*	173	.153	.009	.054	.163	.019	.091*
3-4 people	868	.166	-.001		.172	.005		1170	.140	-.004		.147	.003	
5 people and above	607	.159	-.008		.153	-.014		788	.148	.004		.136	-.008	
Total income (baht)														
≤10,000	608	.184	.017	.187	.169	.002	.030*	795	.153	.009	.099	.151	.007	.071*
10,001-20,000	547	.166	-.001		.165	-.002		755	.142	-.002		.142	-.002	
20,001-30,000	240	.154	-.013		.165	-.002		280	.139	-.005		.140	-.004	
30,001-40,000	114	.136	-.031		.164	-.003		142	.130	-.014		.133	-.011	
40,001-50,000	42	.141	-.026		.179	.012		65	.125	-.019		.138	-.006	
50,000 baht and above	56	.130	-.037		.167	.000		94	.133	-.011		.133	-.011	
Total expenditure (baht)														
≤10,000	634	.184	.017	.203	.186	.019	.244*	898	.151	.007	.080	.159	.015	.165*
10,001-20,000	719	.164	-.002		.165	-.001		905	.138	-.006		.136	-.008	
20,001-30,000 บาท	170	.132	-.034		.128	-.039		205	.146	.002		.133	-.011	
30,000 baht and above	84	.127	-.040		.110	-.056		123	.135	-.009		.113	-.031	
Number of children attending school														
1 person	702	.147	-.019	.224	.136	-.030	.351*	901	.120	-.024	.267	.115	-.029	.337*
2 people	644	.174	.007		.177	.010		832	.154	.009		.154	.010	
3 people and above	261	.203	.036		.223	.057		398	.178	.034		.189	.045	

Table C.2 (Continued)

Variable/Categories	Private Vocational School							Public Vocational School						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Region														
Greater Bangkok	242	.187	.019	.119	.203	.037	.180*	251	.189	.043	.190	.199	.055	.247*
central	382	.155	-.012		.158	-.009		562	.139	-.005		.143	-.001	
North	316	.172	.005		.168	.001		430	.138	-.006		.137	-.007	
Northeast	343	.159	-.008		.156	-.011		468	.135	-.009		.129	-.015	
South	324	.170	.003		.161	-.006		420	.141	-.003		.137	-.007	
Area														
municipal	1113	.162	-.005	.078	.163	-.004	.067	1450	.146	.002	.029	.147	.003	.049
Non-municipal	494	.177	.010		.176	.009		681	.140	-.004		.138	-.006	
Year														
1998	338	.183	.023	.341	.181	.022	.334*	342	.132	-.0078	.319	.134	-.006	.323*
1999	101	.191	.032		.190	.030		243	.134	-.006		.134	-.005	
2000	701	.128	-.032		.128	-.031		137	.128	-.016		.129	-.015	
2001	104	.196	.036		.196	.036		302	.141	.002		.142	.002	
2002	309	.184	.025		.185	.025		764	.130	-.009		.129	-.010	
	Coefficient of Determination (R^2) = .204 Coefficient of Correlation (R) = .452 Grand Ratio = 0.1669							Coefficient of Determination (R^2) = .165 Coefficient of Correlation (R) = .406 Grand Ratio = 0.1438						

*p<.05

Table C.3 Multiple Classification Analysis: the Proportion of Total Household Expenditure on Children's Education (College/university Level)

Variable/Categories	Private College/Uuniversity							Public College/University						
	N	Unadjusted		Eta	Adjusted		Beta	N	Unadjusted		Eta	Adjusted		Beta
		Mean	Deviation		Mean	Deviation			Mean	Deviation		Mean	Deviation	
Gender														
Male	632	.176	-.007	.115	.185	.002	.029	1225	.149	-.002	.032	.152	.001	.017
Female	235	.203	.020		.178	-.005		494	.156	.005		.148	-.003	
Age														
≤30	40	.299	.115	.287	.250	.066	.190*	221	.155	.004	.130	.127	-.024	.173*
31-40	71	.135	-.049		.140	-.043		182	.119	-.032		.116	-.035	
41-50	356	.189	.005		.185	.002		641	.161	.010		.160	.009	
51-60	302	.183	-.001		.189	.005		493	.148	-.03		.160	.009	
61 years and above	98	.155	-.028		.166	-.017		182	.149	-.002		.160	.009	
Education														
No education	25	.171	-.012	.068	.172	-.012	.057	43	.151	.000	.075	.143	-.008	.086*
Elementary	367	.188	.004		.189	.006		758	.153	.002		.150	-.001	
Lower secondary	79	.191	.008		.188	.004		168	.157	.006		.152	.001	
Upper secondary	76	.164	-.019		.175	-.009		115	.125	-.026		.124	-.027	
Higher education and above	320	.182	-.001		.179	-.005		635	.152	.001		.158	.007	
Work Status														
Employer	152	.174	.010	.154	.172	.008	.149*	259	.137	-.001	.132	.140	.002	.148*
Own-account worker	227	.187	.023		.188	.025		438	.156	.019		.158	.019	
Unpaid family worker	64	.167	.003		.149	-.015		173	.144	.007		.142	.004	
Employee-government	305	.146	-.018		.152	-.012		615	.125	-.013		.122	-.016	
Employee-private	42	.149	-.015		.143	-.021		53	.142	.004		.135	-.003	
No-occupation	205	.159	-.005		.157	-.007		283	.134	-.004		.139	.001	

Table C.3 (Continued)

Variable/Categories	Private College/University							Public College/University						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Type of household														
Head and spouse present	641	.170	-.013	.212	.175	-.009	.143	1126	.146	-.004	.067	.147	-.004	.065
All others	226	.21	.038		.209	.025		593	.160	.009		.160	.008	
Size of household														
1-2 people	62	.243	.060	.160	.206	.022	.108*	275	.147	-.004	.042	.167	.016	.126*
3-4 people	472	.182	-.007		.190	.015		848	.155	.004		.157	.006	
5 people and above	333	.175	-.009		.170	-.013		596	.147	-.004		.135	-.016	
Total income (baht)														
≤10,000	138	.202	.019	.129	.222	.039	.188*	391	.158	.007	.074	.163	.012	.080
10,001-20,000	216	.190	.006		.188	.005		556	.154	.003		.152	.001	
20,001-30,000	174	.184	.001		.171	-.012		314	.149	-.002		.145	-.006	
30,001-40,000	113	.179	-.004		.182	-.002		182	.153	.002		.149	-.002	
40,001-50,000	77	.186	.002		.171	-.003		104	.133	-.018		.138	-.013	
50,000 baht and above	149	.158	-.026		.157	-.026		172	.139	-.012		.142	-.009	
Total expenditure (baht)														
≤10,000	143	.171	-.012	.112	.169	-.015	.110*	460	.150	-.002	.073	.152	.001	.098*
10,001-20,000	334	.185	.001		.186	.002		770	.156	.005		.156	.005	
20,001-30,000 บาท	190	.203	.019		.201	.018		263	.154	.003		.155	.004	
30,000 baht and above	200	.172	-.012		.173	-.010		226	.134	-.017		.127	-.024	
Number of children attending school														
1 person	420	.158	-.026	.244	.155	-.028	.276*	886	.126	-.025	.290	.122	-.029	.348*
2 people	307	.203	.019		.202	.018		596	.168	.017		.168	.017	
3 people and above	140	.219	.035		.229	.045		237	.201	.050		.215	.064	

Table C.3 (Continued)

Variable/Categories	Private College/University							Public College/University						
	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta	N	Unadjusted Mean	Unadjusted Deviation	Eta	Adjusted Mean	Adjusted Deviation	Beta
Region														
Greater Bangkok	370	.209	.026	.216	.209	.026	.219*	468	.164	.013	.103	.166	.015	.118*
central	141	.171	-.012		.142	-.012		316	.143	-.008		.146	-.005	
North	122	.170	-.014		.172	-.012		303	.157	.006		.157	.006	
Northeast	148	.160	-.024		.159	-.025		425	.142	-.009		.140	-.011	
South	86	.153	-.020		.151	-.033		207	.143	-.008		.138	-.013	
Area														
municipal	659	.186	.003	.048	.183	-.000	.002	1368	.153	.002	.042	.152	.001	.016
Non-municipal	172	.173	-.010		.184	.001		351	.143	-.007		.148	-.003	
Year														
1998	117	.182	.018	.357	.183	.019	.359*	435	.143	.005	.230	.143	.006	.242*
1999	52	.212	.049		.216	.053		176	.141	.003		.141	.003	
2000	600	.136	-.028		.136	-.028		107	.137	-.014		.137	-.014	
2001	73	.239	.075		.239	.075		307	.157	.019		.157	.020	
2002	153	.207	.043		.206	.042		796	.138	.000		.138	-.000	
	Coefficient of Determination (R^2) = .243 Coefficient of Correlation (R) = .492 Grand Ratio = .1834							Coefficient of Determination (R^2) = .152 Coefficient of Correlation (R) = .389 Grand Ratio = .1509						

*p<.05

Table D.1 Average of Interest Rates for the First Five Biggest Bank from 1998 to 2008

Year	Interest rate	Year	Interest rate
1998	4.50	2004	0.75
1999	3.50	2005	0.75
2000	2.50	2006	0.75
2001	2.00	2007	0.75
2002	1.75	2008	0.75
2003	0.75	-	-

BIOGRAPHY

NAME	Kamoltip Arthaud
ACADEMIC BACKGROUND	Bachelor's Degree with a major in Mathematics from Srinakharinwirot Prasarnmitr in 1981 Master's Degree in Applied Statistics at National Institute Development Administration in 1998
PRESENT POSITION	Lecturer, Mathematics at Dhurakij Pundit University
EXPERIENCES	Research project 1. Culture and Customs Influencing Household Economy in 1998 2. Tourist's Behavior in Special Areas: Koh Chang in 1998 3. Learning Styles and Factors Affecting Learning of the Freshment of Dhurakij Pundit University 4. Initial Study for Determination of Development Guideline in Amphoe Sena, Ayudthaya Province. 5. The State of Applying for Jobs of Dhurakij Pundit University Graduates from 1998 to Present