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FACTORS INFLUENCING THE PARTICIPATION OF KOREAN HIGH SCHOOL STUDENTS IN PRIVATE TUTORING ACTIVITIES UNDER THE IMPLEMENTATION OF THE HIGH SCHOOL EQUALIZATION POLICY

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ABSTRACT

The purpose of this study was to identify influential factors affecting the prevalence of private tutoring on the student-level, school-level, and country-level and to examine the effects of policy measures, such as ability-grouping between classes, talent and aptitude class as an after-school program, and the high school equalization policy, to reduce the demand for private tutoring participation in Korean education. In addition, this study analyzed the reason for participating in private tutoring activities among academic high school students.

The data were collected from the Korean Education and Employment Panel (KEEP) conducted by the Korea Research Institute for Vocational Education and Training (KRIVET) –a government sponsored research institute- since the year 2004. Among a total of 6,000 samples which consisted of 2,000 middle schools seniors, 2,000 academic high school seniors, and 2,000 vocational and technical high school seniors during a three-month period from March to August in 2004, only the data of 2,000 academic high school seniors were used for these research questions and hypotheses.

Dependent variables for this proposal are measured by cost and time of private tutoring activities. These include: 1) cost of private tutoring: average monthly costs for participating in at least one type of private tutoring activity; and 2) time spent in private tutoring: average weekly hours spent participating in private tutoring activities for English, Math, Korean Language, Social Science, and Science.

Independent variables have three categories; student-level variables, school-level

variables, and country-level variables. The first set of independent variables is student-level variables, which consist of family background characteristics including mother's level of education, total family income, parents' interest in their children's education, and student perception of their competence in English, Math, Korean Language, Social Science, and Science. The second set of independent variables is school-level variables, which consist of school quality characteristics, including the extent of school satisfaction, school location, and teacher competence, school type (public or private), access to school facilities, the number of students admitted to college or universities, and students' interest in class. The third set of independent variables is country-level variables, which consist of the implementation of the equalization policy, the implementation of ability-grouping between classes, and the percentage of students who participate in talent and aptitude class as an after school program.

The first important finding of this study is that the equalization policy is not an important factor affecting private tutoring participation. The second important finding of this study is that there is no difference in the amount of time used in private tutoring between students who perceive their competence in English, Math, Korean language, Social Science, and Science as low and students who perceive their competence in English, Math, Korean Language, Social Science and Science as high. The third important finding of this study is that the efforts of the Korean government to reduce private tutoring expenditure are partially effective.

Policy implications for research and practice can be derived from the findings of this study. First of all, it is necessary to change perspectives on private tutoring. Policy

makers and researchers have to realize that private tutoring is not a unique practice in Korea; rather it is becoming a world-wide phenomenon. Second, the assertion that the equalization policy should be abolished is not supported in these findings. Third, this study support the previous finding that students from higher socio-economic families spend more money for private tutoring than do students from lower socio-economic families. Fourth, the current educational policy measures to reduce the expenditures of private tutoring among high school students need to be examined.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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Chapter 1

Introduction

Background

Education is increasingly important for both countries and individuals. From a national point of view, it goes without saying that the success of countries rests on the quality of their workforce "in the knowledge-based and globalized societies" (Bray, 1999, p.10). In this respect, each country focuses on enhancing the quality of public education. For example, in America, the government tried to make efforts to enhance the quality of public education after the national report, 'A Nation at Risk (1983),' was published.

From an individual point of view, education is also the best investment for future careers and upward social mobility. In this respect, "as entry into universities and professional careers grows increasingly competitive," parents are "taking a more proactive stance toward their children's education" (Aurini & Davies, 2003, p. 15). For example, more parents seek private tutoring 'as a worthwhile investment' for their children for better educational achievement (Ireson & Rushforth, 2005, p. 1). Accordingly, the growing importance of private tutoring in education shows that "education increasingly dominates the structure of childhood and child rearing (Baker et al, 2001, p. 13)."

In this context, private tutoring has become a worldwide phenomenon, although the extent of private tutoring varies from country to country (Baker et al., 2001; Baker & LeTendre, 2005; Bray, 1999, 2003; Hua, 1996; Kim, 2004). Most notably, Bray (1999) reported that tutoring is extensive not only in East Asian countries such as Japan, Hong

Kong, Singapore, Malaysia, and Taiwan, but also in developing countries from Brazil to Zimbabwe. For example, private tutoring is prevalent among urban dwellers in China because of the "one child per family" policy (Hua, 1996, p. 3). According to Stevenson & Baker (1992), their study showed that "88% of those students with college plans participated in at least one activity during high school, and 60% participated in two or more of these activities (pp.1645-1647)." There are also signs that private tutoring is increasing in English-speaking countries. In Ontario, Canada, tutoring businesses grew by 60% between 1996 and 2000 (Davies, Autini & Quirke, 2002). Also, the recent surveys (Livingstone, Hart, & Davey, 2003), quoted by Aurini and Davies (2003, p. 2), show that "about 24 % of Ontario's parents hired tutors for their school-aged children."

Excessive private tutoring in South Korea

As seen above, private tutoring has become a worldwide phenomenon, although the extent of private tutoring varies from country to country (Baker et al., 2001; Bray, 1999, 2003; Hua, 1996). Private tutoring has been one of the most heated issues in South Korean (hereafter Korea) education. The scale and the cost of private tutoring is very great. In 1998, Korean households spent 2.9% of GDP on private tutoring, and the amount was as large as the total government expenditure on schooling (Kim & Lee, 2001). According to Lee (2003), the total spending on private tutoring by 1998 increased by about 40 times over the amount spent in 1977, reaching 12,628 billion Korean won (about 16.4 billion U.S. dollars), and ratios of this expenditure to the government public budget increased from about 11

percent in 1977 to almost 80 percent in 1998. Also, the Korean Educational Development Institute (2003) showed that 83% of elementary, 75% of middle, and 56% of academic high school students received tutoring. Furthermore, according to the latest survey of the Organization for Economic Cooperation and Development (OECD), Korea's spending on private tutoring was ranked first among all its members (The Korea Times, September 14, 2005).

As another token of excessive private tutoring, "the number of *hakwons* [cram schools] has increased tremendously, from 381 in 1980 to 14,043 in 2000, and the number of students enrolled at cram schools (*hakwons)* has increased from 118,000 in 1980 to 1,388,000 in 2000 (Kim & Lee, 2001, p. 8)." According to Lee (2003), "the number of *Hakwon* instructors has increased from 1,821 in 1972 to 64,445 in 2001; management staff has increased from 710 in 1972 to 20,363 (p. 42)."

As the scale of private tutoring has been growing, the costs and other effects associated with excessive private tutoring have become one of the main problems in Korea's primary and secondary education. More specifically, it caused negative impact on public schooling, gave a heavy financial burden to parents, and worsened the educational inequality according to social economic status of parents (Bray 1999, 2003; Chung, 2002). Further, unlike the supplementary character of private tutoring to public schooling (Bray, 1999), in Korea "there is a tendency to rely more on private tutors than teachers at school; particularly, in order to prepare for the entrance exams (Chung, 2002, p.3)."

To respond to the growing complaints of parents about heavy financial burdens because of private tutoring, politicians have applied political pressure on the educational

authorities (Chung, 2002). For example, in 1998 President Kim Dae-Jung promised in his inauguration address that his government would "free young people from extracurricular activities and relieve parents from the heavy monetary burden of private tutoring (Bray, 2003, p.60)." To reduce the excessive prevalence of private tutoring, the government continued to take varied actions such as prohibiting behavior which directly causes private tutoring by law and administration. For example, the prohibition by law and administration is aimed at teachers who receive additional money from private tutoring, at tutorial institutes which served school pupils, and one-on-one and small-group tutoring at home (Bray, 2003). Nevertheless, these policies have not proven very effective (Bray, 1999, 2003; Chung, 2002). Private tutoring is still a major feature of life across the country in Korea.

Statement of the Problem

Even if private tutoring activities are growing in many countries, and especially in Korea, and increasingly becoming important elements for child rearing, there has been relatively little research done on this phenomenon (Aurini & Davies, 2003; Hua, 1996; Ireson & Rushforth, 2005). On the one hand, this arises from the fact that there is no institutional theory that leads to systematic research, plus the fact that it is very difficult to measure the outcomes of private tutoring (Hua, 1996). On the other hand, urgent policy agendas or issues in public education often seem more important for policy makers and researchers than private tutoring issues (Kwok, 2004 a).

Although little research has been done on behaviors of students who seek private tutoring, what has been done usually focuses on the fragmented relationship between factors like family income, parents' education levels and private tutoring participation, rather than examining the interaction among environmental factors around students such as student-level, school-level, and country-level factors. So, we cannot know exactly which factor is the most influential one affecting private tutoring participation in Korea. Also, this fragmented analysis of factors affecting private tutoring participation can lead to wrong policy measures.

The third problem is that there are few empirical findings about whether the current policy measures to reduce the prevalence of private tutoring activities are effective or not. Because private tutoring has been one of the most heated issues in Korea education, political pressure from politicians and parents to solve this problem has prompted the Ministry of Education of the Korea to take various policy measures (Chung, 2002). The government implemented the high school equalization policy, which assigned middle school graduates to high schools based on the district of residence by lottery in public and private schools with the abolition of high school entrance examination. The major goal of the high school equalization policy is to avoid excessive examination competition and to prevent the practice of private tutoring (Seth, 2002). This policy was implemented in Seoul and Busan in 1974. After 1980, it spread to other large cities of the country because metropolitan cities were required to adopt the policy, despite some researchers' opposition that it would cause excessive private tutoring and lower the quality of education. On the contrary, small cities and rural areas have a choice of whether or not to adopt the policy. In

2003, about 72% of students in Korea reportedly lived in a district subject to the high school equalization policy (Lee, n.d.).

Also, the government encourages policy measures in Korean secondary schools like ability-grouping between classes of such subjects as math and English, which have a wide achievement gap among students and are difficult for teachers to teach to heterogeneous groups within the same class. The major purpose of this measure is tailored to students' ability and achievement levels for reducing private tutoring expenditures through improving the quality of teaching and learning in schools and for complementing problems of the current equalization policy (Kim, Cho, Na, Cha, & Gim, 2004). According to the study of the Ministry of Education & Human Resources and Development (MOEHRD) in 2004, 16.9% of middle schools and 38.5% of high schools implemented the ability grouping between classes across the country (Kim, Cho, Na, Cha, & Gim, 2004).

As another policy measure, talent and aptitude class as an after school program- extracurricular school activities after school for developing students' talent and aptitude under the principle of student payment- was implemented in order to reduce the demand for private tutoring activities by providing students with high quality educational programs inside schools. It includes not only such extracurricular activities as music, art, and sports, but also includes various extra activities related to academic enrichment. These programs are taught by teachers as well as outside school instructors. Originally it focused on non-academic activities for developing students' talent and aptitude instead of providing academic activities; however, it resulted in actually accepting academic activities related to curricular subjects such as Korean language, math, and English (Lim, Jang, & Jeong, 2001).

In 2003, 37.9 % of students in elementary, middle, and high schools participated in talent and aptitude class, and 98.9% of elementary, middle, and high schools offered this program.

But there is little data to examine empirically the effects of policy measures for reducing the demand for private tutoring. In particular, the relationship between excessive private tutoring and the effects of the high school equalization policy is the most controversial issue among policy makers, government officials, and researchers.

Considering the growing importance and prevalence of private tutoring in primary and secondary education in Korea, it is necessary to turn the attention of the policy makers and educational researchers to the private tutoring issues.

Purpose of the study

The purpose of this study is three-fold: First of all, this study will examine the relationship between the equalization policy and the prevalence of private tutoring in Korea. Specifically, this study will compare the extent of private tutoring used by the students from the equalization policy-applied region and by students from the non-equalization policy-applied region in Korea academic high schools.

Second, this study will identify factors affecting the prevalence of private tutoring in Korean education. This study will try to identify important factors that appear to increase or decrease the probability of student participation in private tutoring, and will examine which factors are more influential in terms of family background, school characteristics, and policy measures.

Third, it will analyze the reasons for using private tutoring. Bray (1999) noted that there is a difference in the goal to use private tutoring between high academic achievers and low academic achievers. High academic achievers receive private tutoring for maintaining their "competitive edge"; however, low academic achievers receive private tutoring because they need "remedial assistance (Bray, 1999, p.42)." Based on this logic, the study will analyze whether an enrichment strategy is more dominant or a remedial strategy is more dominant, drawing upon the comparison of equalization policy-applied schools to non-equalization policy-applied schools.

In order to achieve the objectives of this study, an extensive review of the literature will be conducted. The specific research questions addressed in this study are as follows:

1. Does a relationship exist between the equalization policy and private tutoring participation? Specifically, is there a difference in the extent of private tutoring between high school students from equalization policy-applied areas and those from non-equalization policy-applied areas in Korea, when controlling for mother-education level and family income?
2. Do relationships exist between private tutoring policies, such as ability-grouping between classes and talent and aptitude class as an after school program, and private tutoring participation?
3. Is there a difference in the amount of hours used in private tutoring when examined by students' self-perceptions about their academic performance? In other words, is there a difference in the amount of hours in private tutoring between students with high academic performance who want to maintain their

competitive edge, and students with low academic performance who need remedial assistance when being compared by the equalization policy-applied schools to non-equalization policy-applied schools?

4. What are the most influential factors affecting the private tutoring participation of high school students in Korea when examined by student-level, school-level, and country-level factors?

Significance of the study

This study is significant in terms of theory and practice. From a theoretical point of view, this study will contribute to the limited existing theory in three ways. First, it adds existing theory regarding main factors affecting student participation in private tutoring activities, and regarding which factors are more influential among family, school, and government policy factors. Second, it investigates the relationship between the prevalence of private tutoring activities and the implementation of the high school equalization policy. Third, it identifies the role of private tutoring: whether it is an enrichment strategy or a remedial strategy. Despite the growing importance of private tutoring in child-rearing around the world, relatively little research has been done on the subject.

From the practical point of view, the findings from this study would be helpful for educational policy-makers, government officials, and educational researchers as follows: (1) this study will provide the policy makers, government officials, and researchers with useful information for policy consideration to reduce expenditures on private tutoring

activities by investigating or diagnosing the relationship between the high school equalization policy and the prevalence of private tutoring in Korea; (2) this study may enable the policy makers, government officials, and educational researchers to better understand the impact of the prevalence of private tutoring among students on Korea's education and society; (3) this study may enable the policy makers and government officials to pursue alternative approaches through analyzing the effects of current policy measures to reduce the prevalence of private tutoring among students.

Definition of Terms

The following key terms are defined for purposes of clarity and consistency in this study:

Private tutoring: defined as supplemental outside-school activities in the form of private tutoring by individuals, and self-study exercises, correspondence courses, large-scale cram instructions by for-profit institutes, *Hakwon*, for elementary, middle, and high school students (KEDI, 2003).

Equalization policy: defined as the government policy which abolished the existing competitive high school entrance examination and instead allocated middle school graduates to high schools by lottery within residential areas.

Ability-grouping between classes: defined as the ability-grouping between classes in

math and English classrooms of Korean secondary schools for taking into account the differences among students in ability and individuality.

Talent and aptitude class as an after school program: defined as extracurricular school activities after school for developing students' talent and aptitude under the principle of student payment. It includes academic as well as non-academic activities.

Chapter 2

Review of the Literature

The purpose of this study was to identify influential factors affecting the prevalence of private tutoring and to examine the effects of policy measures, such as ability-grouping between classes, talent and aptitude class as an after-school program, and the high school equalization policy, to reduce the demand for private tutoring participation in Korean education. This chapter reviews the main factors contributing to an excessive use of private tutoring, the effects of the prevalence of private tutoring on Korea's public education and society, and Korean government policies on private tutoring.

Main factors contributing to an excessive prevalence of private tutoring

Many factors may contribute to the prevalence of private tutoring in Korea. Among the influential factors are low quality in school education (Kim, 2004; Kwok, 2004b), the existence of a formal examination for education allocation (Dore, 1976, 1997; Stevenson & Baker, 1992), and peer pressure (Baker et al., 2001; Bray & Kwok, 2003; Hua, 1996; Kwok, 2004a). These factors can be categorized into student-level factors, school-level factors, and country-level factors.

Student-level factors

Student-level factors include family SES factors such as parents' education level,

father's occupation, family income, and the number of siblings at home. The Coleman report (1961), Baker et.al (2001), and Hanushek and Luque(2002) generally concluded that family background was more important than school factors in determining children's educational achievement. In the same vein, researchers noted that family SES level also strongly related to their students' participation in private tutoring activities.

According to Jo and Lee (2005), the higher the parents' education level, the more Korean students participate in the private tutoring. Also, they found that students from higher income families were inclined to have more participation in private tutoring activities than those from low income families. In addition, students with higher achievement have more participation in private tutoring than those with low achievement.

Also, Lee (2003), in his dissertation, found a clear association between overall participation in private tutoring and family SES background. Specifically, he noted that as the level of parents' education, occupational status, and income increase, the participation in private tutoring activities increases. In other words, the SES of the family is significantly and positively related to the investment and time devoted to private tutoring activities. Furthermore, the higher the family income and occupational status, the more students use expensive and individualized types of tutoring as compared to students from families with low income and occupational status.

Second, private tutoring activities can take non-academic rationales for participation (Baker et al., 2001). Peer effects are one factor in the demand for private tutoring (Baker et al., 2001; Bray & Kwok, 2003; Hua, 1996, Kwok, 2004 a). In a Japanese case study, Baker et all.,(2001) showed that adolescents participate in private tutoring activities because their

peers do for socializing and study. In the same vein, their parents also feel much pressure from the anxiety that their children would be left behind if they do not provide their children with private tutoring (Bray & Kwok, 2003). "Under peer group pressure, parents were willing to pay tutoring fees as they also realized that obtaining higher levels of education could help their children climb up the social ladder after graduation (Kwok, 2004b, p. 66)."

Third, the number of children in the family is related to the private tutoring expenditures per child (Tansel & Bircan, 2004; Kim & Lee, 2001). Tansel and Bircan (2004) found that an increase in the number of children negatively affected the private tutoring expenditures in Turkey. For example, households with an average of 2.51 children spend more on private tutoring expenditures than those with an average of 3.17 children. Likewise, according to Kim and Lee (2001), the number of children in the family reduces the spending on private tutoring per child.

Fourth, nuclear family structure is another factor in the demand for private tutoring activities (Kwok, 2004 a). In recent decades, family structure has shifted toward nuclear families that have only 1-2 schooling children per family. So, they can afford to employ tutors because their income is spread over at most two children (Bray & Kwok, 2003).

School-level factors

Some researchers argued that low quality in school education stimulated a demand for private tutoring (Kim, 2004; Kwok, 2004 b). According to Hua (1996, p. 30), "many parents in Egypt have cited poor quality education as a main reason why they send a child

to supplementary classes." Many people believe the quality of public schooling in Korea also has become increasingly mediocre, because student selection, parental choice, and tuition level are controlled by the government under the equalization policy (Kim & Lee, 2002).

Under the equalization policy, teachers tend to use uniform, lecture-oriented, and test-oriented instruction regardless of students' different levels of academic preparation. It is also difficult for teachers to deliver individualized educational service to each student, because students are allocated to a school by a lottery system regardless of their ability under the equalization policy. Without considering their different learning level, students can increasingly experience learning problems (Kwok, 2004 a). Discontent with government schools fosters pressure for school choice (Boyd, 2002). For example, in America parents who are discontent with public schools send their children to charter schools, private schools, or home schooling. But with few alternatives to the public school system in Korea, many parents who are interested in their children's education have to turn to private tutoring.

Another cause of excessive private tutoring is schools' lack of ability to cope with various educational demands. With growing demand for such things as the development of artistic gifts or talents and learning foreign languages, many students and parents think that schools do not provide students with an adequate program. For parents with a proactive stance toward their children's education, the big gap between the demand and public supply inspires them to seek private tutoring (Kim & Lee, 2001). In short, parents rely on private tutoring in order to solve this discontent with public schooling.

Country-level factors

An educational system which uses formal examinations for education allocation can stimulate the demand of private tutoring (Dore, 1976, 1997; Stevenson & Baker, 1992; Kwok, 2004a). This is generally considered the most influential factor promoting excessive private tutoring. According to Stevenson and Baker (1992), "students take extensive [private tutoring] for examinations to get significant advantages in the labor market, and admission to an elite secondary school (p.1640)." Brinton (1988), quoted by Stevenson and Baker (1992, p. 1641), also noted that once admitted to a prestigious university after competitive "sponsored contests," students become "sponsored" because they are actively recruited by prestigious companies and civil service departments.

For example, approximately 56% of the current Korean government's 243 highest positions were filled by alumni from the Seoul National University (Lee, 2003). Also, 38% of the current National Assembly's 299 members were filled by alumni from the Seoul National University (Gang, 2002). In addition, Park (2002, quoted by Lee, 2003, p.35) showed that "45% of the 3,496 chief executive officers (CEOs) of the five largest private firms in Korea were composed of graduates from the top three universities in 2001. In sum, these data show that entry into prestigious universities is closely connected to prestigious occupations and high status attainments (Lee, 2003).

Since the opportunities for entering a prestigious university are very limited, a fierce race for admission to prestigious universities is the result (Kim & Lee, 2001). Therefore, parents proactively provide private tutoring activities for their children in order to gain advantage in the severe competition for prestigious universities.

Educational policies to reduce the demand of private tutoring activities can affect the private tutoring participation. Because the government has been concerned about excessive prevalence of private tutoring activities among students, it has implemented many types of policy measures and programs to reduce the participation of private tutoring activities. These include the implementation of high school equalization, the implementation of ability grouping between classes, and the implementation of talent and aptitude class as an after school program. These policy measures to reduce and regulate the private tutoring activities affect the demand and supply of private tutoring activities. Nevertheless, there is little research about the effects of these measures to reduce private tutoring activities.

The efficiency of private institutes like the cram school (*Hakwon*) can cause a demand for private tutoring in terms of private tutoring producers. Since many students compete for university admission via entrance examinations, private tutoring has become a vast market in many countries (Kwok, 2004 b). The growth of private tutoring may also be seen "in the context of a worldwide shift towards the marketization of education and reduced government control" (Bray, 1999. P. 84). In this context, private institutes efficiently serve parents who are disappointed with public education.

Private institutes such as cram schools are more sensitive to market needs than public schools. They usually make a special effort to find out what students want and then respond to it. They commonly increase their attractiveness by offering the most recent technology and by advertising through leaflets, posters, newspapers, magazines, cinemas, and television (Bray & Kwok, 2003). For example, they show their advertising strategies as follows:

> The tutoring establishments were perceived to be more attractive than mainstream schools. Many of the particularly vibrant centers employed flashy 'idol' tutors, who increased their attractiveness to teenagers by wearing trendy clothes and using vocabulary which appealed to their clients. They stressed their academic credentials by displaying their higher education qualifications in the promotion pamphlets and on the walls of the centers; and they enhanced their reputation for effectiveness by advertising the brilliant examination results of former pupils. In some tutorial classes, students who achieved high grades in open examinations were awarded cash prizes and package holidays in neighboring countries (p. 617).

Also, private institutes provide much more specialized service compared with school teachers (Bray, 1999). In addition, the tutoring centers and individual private tutors usually are readily accessible because of excellent transportation links and geographical location. (Bray & Kwok, 2003; Kwok, 2004 a). Even if tutors do not have an automatic flow of clients, as particular mainstream teachers do, such efforts of private institutes would stimulate use of private tutoring by students.

The influence of social-cultural factors is an additional reason for extensive use of private tutoring. This culture results not only from historical traditional Confucian attitudes, but also from the faith that school education is the only way to upward social mobility (Bray, 1999). Some culturists (e.g. Zeng, 1999) have regarded the influence of Confucian culture as one of the main reasons for excessive private tutoring in East-Asian countries, because this culture emphasizes effort and studying rather than in-born abilities. So, this academic background-oriented cultural trait could be one reason why tutoring has been particularly extensive in East Asia (Zeng, 1999; Bray & Kwok, 2003).

Also, because education is the most potent means for upward social mobility, private tutoring is regarded as a key educational investment (Kwok, 2004 a). For example, the

levels of education of individuals are considered not only an important criterion for judging people, but also a primary factor for entry into social careers or promotion in the workplace. Jung and Lee (2003) showed that 61% of people in Korea think of belong to 'an academic clique' * as the most important factor for social success. Therefore, such Confucian cultural trait and faith stimulates parents to seek private tutoring in Korea.

Nevertheless, such cultural factors seemed to lack empirical support (Kwok, 2004a). Baker et all, (2001) also argued that they did not find any correlations between intensity of tutoring demands and the influence of Confucian culture in their empirical studies.

The effects of the prevalence of private tutoring on Korea's public education and societies

The prevalence of private tutoring has both a positive and negative impact on public education and its society. Some researchers mainly highlight the negative impact of private tutoring on public education and society (Bray, 2003; Kwok, 2004b; Hussein, 1987). For example, Bray (2003) focused on the adverse effects of private tutoring upon mainstream schooling, the society and economy. In the following, the positive and negative impact of the prevalence of private tutoring on public education and society in Korea is reviewed.

* Being a graduate of a prestigious school or college

Educational dimension

When private tutoring helps students to succeed in mainstream classes, its impact can be positive (Bray, 2003). Baker et al., (2001) noted that relatively strong students can use private tutoring as an enrichment strategy that helps them get more out of their classes. On the other hand, relatively weak students can use it as a remedial strategy enabling them to maintain an acceptable level in their classes. For example, De Silva (1994, p.5; quoted by Bray, 2003, p.29) has observed that private tutoring can be helpful for students according to their needs:

> Sometimes large gaps in students' learning are created due to a number of factors such as student and teacher absence, frequent closure of school, ineffective teaching and negligence on the part of the teacher. It is not every school that boasts a full complement of specialist teachers in crucial areas like mathematics, science and English. Immature, inexperienced or unqualified teachers handling theses subjects may not be able to lead the students to a proper understanding of the sections taught. Effective private tuition may help overcome these gaps or deficiencies in students' learning and build their confidence enabling them to compete with others and experience a happy and pleasant life.

Private tutoring also has negative effects on mainstream classes. First of all, private tutoring can negatively affect "the dynamics of teaching and learning" in school classes (Bray, 1999, p. 51). When some students receive private tutoring, teachers may be confronted by greater disparities within their classrooms. In particular, the students do not pay adequate attention to lessons in school because they have already covered the topics through private tutoring. Furthermore, there is a tendency to rely more on private tutors than teachers at school to prepare for the entrance exams (Chung, 2002). Therefore, this can not only cause students to lose interest in classes, but also teachers to lose the desire for

teaching (Kim & Lee, 2001).

Secondly, private tutoring can obstruct students' holistic growth (Kim et al, 2001). In order to develop physically and emotionally, students need to play with friends and to have various experiences. A continuous learning process from morning until evening during weekdays and on the weekend can cause fatigue in pupils and limit their opportunities for playing and activities needed for their stage of development (Bray, 1999). In sum, when students spend most of their time in school and cram schools, their holistic growth is hampered.

Thirdly, a decline in self-directed learning ability and creativity is also an important problem that private tutoring causes. Indiscrete repetitive training of private tutoring methods can cause children to lose the will to learn. According to PISA 2000, the interest in reading and math of Korean students is ranked 19th among 20 OECD countries (OECD, 2001). It is more important to focus on the development of self-directed learning ability and creative thinking ability in the 21st century, rather than simply acquiring knowledge through the private tutoring method.

Social - economic dimension

Private tutoring can have a positive effect by providing income and employment for tutors (Bray, 2003). For example, university students can use tutoring for funding their tuition which would be otherwise difficult to obtain. Actually, the Korean government did not prohibit tutoring by university students for this reason, while it prohibited full-time tutoring jobs to general people.

Nevertheless, private tutoring has many social and economic problems. First of all, the increase of private tutoring can worsen the inequality of educational opportunity, due to social and economic background (Bray, 1999). Children in higher socio-economic groups generally receive more private tutoring than do children in lower socio-economic groups (Hua, 1996; Setvenson & Baker, 1992). Lee and Hong (2001) also noted that the children of wealthy families can enter elite universities through their advantage of access to expensive private tutoring. Likewise, Kim et al. (2004) argued that educational inequality has been worsened because of the proliferation of private tutoring, based on their analysis of the distribution of students over the last 30 years who entered the college of Social Sciences in Seoul National University, one of the most prestigious universities in Korea. Regarding their findings, Lee (2004) argued that students from higher socioeconomic backgrounds have been able to enter Seoul National University through the help of expensive private tutoring, whereas, opportunities for students from lower socioeconomic backgrounds have shrunk because of their lack of financial access to high quality private tutoring and low quality education in the regular school system. Of the types of private tutoring, children in rich families can access more tailored tutoring types like “one on one” or small- group tutoring, whereas children in poor families only have access to “mass-produced forms of tutoring” (Bray, 1999. p.63).

Another problem is that excessive reliance on private tutoring places an enormous financial burden on families. There is research indicating that the annual average private tutoring expenditures of high income families are three times more than those of low income families (Korea Education Development Institute, 2003). Also, the survey on the

family background of freshman of Seoul National University, which is the most prestigious university in Korea, indicated that 52.8% of the students of the year 2001 had parents whose occupation was management or professional, and that 71.1% of the students of the year 2004 had parents whose education level was higher than college graduate (Seoul National University, 2002, 2004). This difference of parents' social and economic background causes social inequality and obstructs social mobility through private tutoring (Korean Educational Development Institute, 2003).

Korean government policies on private tutoring

As seen above, excessive private tutoring has a negative impact on public education and society in Korea. The political pressure from politicians and parents to solve these problems of private tutoring has prompted the Ministry of Education to take various policy measures (Chung, 2002). Bray (1999) identified six basic policy approaches concerning private tutoring: a laissez-faire approach, monitoring, regulation and control, encouragement, a mixed approach, and prohibition. Of these six approaches, the Korean government and provincial offices of education mainly focus on regulation and control, and prohibition strategies for solving overheated private tutoring. The government policy responses on the prevalence of private tutoring focus especially on three strategies, the implementation of the equalization policy, banning and regulating private tutoring, and improving the quality of public schooling.

Implementing the equalization policy

One of the characteristics of Korean educational development is the rapid expansion of primary education (Paik et al, 1998). Primary school enrollment increased from 1.37 million in 1945 to 4.94 million in 1965. The number of teachers increased from 20,000 in 1945 to 79,000 in 1965 (Kim & Lee, 2002). Such a rapid growth of primary education inevitably resulted in overcrowded classrooms, oversized schools, a shortage of qualified teachers and educational facilities, and excessive competition in the college entrance examination (Ministry of Education & Human Resources Development, 2004). Also, the expansion of elementary schools created a strong surge in the demand for secondary education in the 1960s (Kim & Lee, 2002). With the increase of demand for secondary education, the competition for entrance into middle schools so intensified that private tutoring soared to an extreme level. Such fierce competition caused several problems, such as heavy stress from preparing for the entrance exam, financial burden on family, *gukyukbyeong* (sixth grade disease) and *illyubyung* (the disease obsessed with getting into a prestigious school) (Kim & Lee, 2001).

In 1968, the government determined to abolish the entrance examination for middle schools, and instead introduced a system of student allocation in which primary school graduates were assigned to middle schools by lottery. A key to this plan was to avoid excessive competition for entrance into the prestigious middle schools. With the abolition of the middle school entrance exam and the creation of the high school equalization policy, the full weight of examination pressure was directed at the college entrance examination (Seth, 2002).

As the competition for entrance into high schools became severe, the high school equalization policy went into effect in 1973 and was implemented in Seoul and Busan in 1974. The government abolished the existing competitive high school entrance examination and implemented a new measure which allocated middle school graduates to high schools by the School District Joint Preliminary High School Examination and the lottery (Paik et al, 1998). The major goal of the school equalization policy was "to avoid excessive examination competition, to end an emerging tendency of making middle school education center around preparation for the high school entrance exam, to prevent the practice of private tutoring, and to eliminate the disparities in instruction in high schools, and to promote the equality of educational opportunity (Seth, 2002, p.156)." Under the equalization policy, high school students were allocated to schools based on their district of residence. To attain these purposes, the government implemented the rotation of teachers at public schools to remove the gap in the quality of instruction from school to school.

After the government implemented this policy, much controversy followed. In the 1980s, the equalization policy faced complaints that the educational conditions between schools varied greatly, and it had to be modified for ensuring national competitiveness. Also, in the 1990s, some parents of non-equalized areas and "special purpose schools," like foreign language schools and science schools, complained that their children were relatively disadvantaged compared to the students of equalized areas because the weight of high school records are more important in college entrance examinations.

Furthermore, the equalization policy caused heated debates regarding whether it is the main reason for excessive private tutoring. Those who support the abolition of the

equalization policy maintain that the equalization policy is the main cause of excessive private tutoring (Kim & Lee, 2002; Lee, 2004; Kim et al, 2004, Lee & Hong, 2001). For example, Kim and Lee (2002) argued that students from non-equalized areas spent less on private tutoring than students from equalized areas. Since the schools provide a low quality of education for students under the equalization policy, parents and students with a higher demand for quality education have no choice but to seek private tutoring (Lee, 2004).

However, those who support the equalization policy assert that the relationship between the equalization policy and private tutoring is not clear (Chun, 2003; Shin, 2004). Chun (2003) asserted that the increase in average income other than the equalization policy can be a factor that increases private tutoring, because it makes more money available for private tutoring. Also, supporters of the policy, like the Korea Teacher's Union, argued that private tutoring has been caused largely by the difficult nature of the College Scholastic Ability Test (*suhak neungnyeok siheom*) (Shin, 2004). Finally, their debates over this issue remain controversial because both parties have failed to provide persuasive and objective evidence to support their assertions.

Banning, controlling, and regulating private tutoring

Another strategy of the government involves more direct measures such as banning, controlling, and regulating private tutoring activities by law and administration. In 1980, the Korean government initiated an educational reform (the 7.30 reform) which banned private tutoring. The prohibition was aimed at teachers who received additional money from private tutoring, at tutorial institutes which served school pupils, and one-on-one and

small-group tutoring at home (Bray, 2003). However, because such a ban was difficult to enforce, the increase of private tutoring has continued. Even after the failure of the ban on the private tutoring in 1980, as seen in Table 2.1, the government and local education offices relaxed the ban by stages, but still regulated and controlled private tutoring activities (Bray, 2003; Kim & Lee, 2001).

In 1990, however, private tutoring again was allowed to high school students, and then in 2000 the policy that banned private tutoring turned out to be contradictory to the constitutional law, which made private tutoring legally acceptable (Kim, 2004). As private tutoring is legally allowed to students, the government and local education offices have turned to indirect measures that render private tutoring activities unnecessary by improving the quality of public education rather than banning, regulating, or controlling the private tutoring activities.

Improving the quality of public education

Some researchers regarded the wide prevalence of private tutoring as a failure of educational policies (e.g., Kim & Lee, 2001). The Korean Teacher's Union (KTU) also has continuously argued that mediocre school education caused the growth of private tutoring by "hasty school expansion policies led by the government" (Lee, 2003, p. 47).

In this respect, the Ministry of Education has taken action to strengthen the quality of public schooling. For example, the Ministry of Education took various measures to reduce class size, to improve school environment, and to attract qualified teachers (Chung, 2002).

Table 2.1. Policy Changes on Private Tutoring Activities after the Prohibition

Year	Major Policy Changes on Private Tutoring
1980	All private tutoring activities prohibited
1984	Low achievers in high schools (the bottom 20 percent) were allowed to take remedial instruction within formal schools by formal school teachers
1988	After-class lessons within schools by school teachers were officially allowed to all students with a fee charge even though it was the minimum
1989	Private tutoring for elementary and secondary school students was permitted only by undergraduate college students in order for making a living, not for professional business
1991	Hakwon instruction was allowed for all students during the winter vacation periods
1996	Graduate school students were permitted to give private tutoring on the same basis as undergraduate college students
2000	The supreme Court declared the ban on private tutoring unconstitutional

Source: The Ministry of Education and Human Resources Development in Korea, 2002; quoted by Lee, 2003, p.45.

Furthermore, the Ministry of Education also expanded free educational broadcasting services to provide enrichment lessons, provided financial support for extracurricular activities in schools after normal class hours, and reformed the national curriculum to relieve the burden of academic learning (Bray, 2003; Chung, 2002). These sequential efforts aim to offer additional services in order to make it unnecessary for parents to seek private tutoring. As the government explained (Ministry of Education, 1996; p. 30):

> Such a measure is aimed at deterring the inequity which results when students from wealthier families seek private tutoring to ensure that they are able to pass the various entrance examinations and do well in school. With the measure proposed, quality tutoring will be available to any student in need [through the school itself] thus lessening the financial burden now imposed on families (quoted by Bray, 2003, p.61).

On another level, the Korean government made efforts to reform the college entrance systems. The governmental strategy aimed to make it unnecessary to prepare for the university entrance examination through private tutoring activities. Under the new entrance system of 2002, the selection criteria were diversified to not only test scores, but also high school records, social services, the individual's aptitude and talent, and social-economic factors (Chung, 2002, Bray, 2003). In the end, the intention of the Ministry of Education is to reduce the impact of examination scores by the various admission criteria for entering the university.

In addition, the government implemented ability-grouping between classes, and talent and aptitude class as an after school program for absorbing the demand of private tutoring from students to school by providing for students' various individual needs. In ability-grouping between classes, it took into account the differences among students in ability and

different needs. Also talent and aptitude class as an after school program can be used as an alternative way to replace private tutoring activities by supporting and improving equality of educational opportunity and can contribute to reducing private tutoring expenditures (Kim, Wang, & Kwon, 2000).

Chapter 3

Methodology

The purpose of this study was to examine influential factors affecting the prevalence of private tutoring in Korean high school students. Specifically, this study was conducted to analyze the relationship between the high school equalization policy and the prevalence of private tutoring in Korea. For this purpose, this study compared the extent of private tutoring between the students from equalization policy-applied areas and the students from non-equalization policy-applied areas in Korean academic high schools. In addition, this study analyzed the extent of the difference in the reasons given for using the private tutoring strategy: whether it is an enrichment strategy or a remedial strategy as revealed by the comparison of equalization policy-applied schools and non-equalization policy-applied schools. Furthermore, this study was conducted to identify the most influential factors among student-level, school-level, and country-level factors.

This chapter provides Hypotheses to guide data analysis, the conceptual framework that directs the main ideas of this investigation, a detailed description of the sample, the procedure used to collect the data, data analyses adopted, and limitations of the study.

Hypotheses

Hypotheses are developed through the review of literature and research questions in Chapter 1. These hypotheses will be tested through the analysis of data.

Hypothesis 1: There is no difference in average monthly cost for participating in private tutoring between students from equalization policy-applied areas and those from non-equalization policy applied areas in Korea.

Hypothesis 2: There is no significant relationship between the implementation of ability-grouping between classes and average monthly cost for participating in private tutoring.

Hypothesis 3: There is no significant relationship between the percentage of students who participate in talent and aptitude class as an after school program and average monthly cost for participating in private tutoring.

Hypothesis 4: There is no difference in the extent of private tutoring used between students with high academic performance and students with low academic performance.

Hypothesis 5: There is no difference in the extent of private tutoring used among student-level, school-level, and country-level factors.

Conceptual Framework

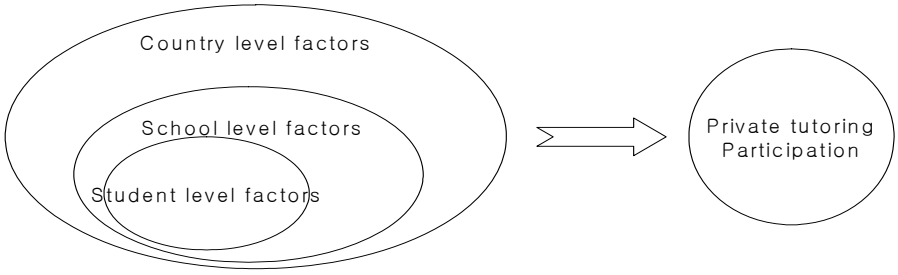
This study is guided by Bronfenbrenner's (1979) ecological model of human development. He emphasized the interconnections of different environments in understanding human development (Nonoyama, 2005). In Bronfenbrenner's model, the human individual is affected by multiple contexts like the immediate environment, social and economic context, and cultural context. The participation of private tutoring in high school students in Korea is affected by three different level factors: student-level factors,

school-level factors, and national policy-level factors. As shown in Figure 1, I modified this model. Drawing on Bronfenbrenner's framework, I will view the interactions among student-level factors, school-level factors, and country-level factors.

To trace the interrelationships among demand determinants for private tutoring, three key conceptual constructs were identified: student-level factors, school-level factors, and country-level factors. Figure 3.1 presents a diagram which consists of three sub-frameworks which may influence the "outcome" variable: student participation in private tutoring in Korea. Each construct has been broken into distinctive components of their own for detailed study. By looking at these three groups of measures drawn from the important "environments" to which these students have been regularly exposed, it can be hypothesized that the dynamics and certain influencing elements are related to the private tutoring activities in Korea. Student-level factors include parents' education level, family income, the number of siblings, and family interest in academic achievement. For example, children in higher socio-economic groups generally receive more private tutoring than do children in lower socio-economic groups (Stevenson & Baker, 1992).

School-level factors include the extent of school satisfaction, school location, teacher ability, and the condition of school environment. For example, low quality in school education can stimulate a demand for private tutoring (Kim, 2004; Kwok, 2004b). Country-level factors include the implementation of high school equalization policy, ability- grouping between classes, and talent and aptitude class as an after school program. These factors are related to government policies which are intended to reduce the private tutoring activity.

Figure 3.1 A conceptual framework for this study.



The Population and Sample

The proposed study will use secondary data analysis. The data were collected from the Korean Education and Employment Panel (KEEP) conducted by the Korea Research Institute for Vocational Education and Training (KRIVET) –a government sponsored research institute- since the year 2004. KEEP is designed to provide useful information in the identification of Korean youths' educational experiences, advancement into schools of higher grades, future careers, and transition into the occupational world (KRIVET, n.d.). A total of 6,000 samples were selected as the target of this survey, consisting of 2,000 middle schools seniors, 2,000 general high school seniors, and 2,000 vocational and technical high school seniors from a three-month period from March to August in 2004.

The sampled students were administered a wide variety of students' personal, family and school-related questionnaires. In addition, assuming the school environment bears considerable influence on the students' education, this data also surveyed households, homeroom teacher, and school administrators with students to collect a wide range of background information on the sampled students (Kang, 2005). The information surveyed includes school characteristics, including location, types of education (public or private), gender (coed or gender-segregated), whether the region is subject to the equalization policy, school satisfaction, size of the school, and size of the class, etc. Also, the survey provides some bare essentials on family characteristics, such as parental education, income, occupation, and age of parents.

From these data, I will restrict my analysis to the academic high school students' sample of 2,000 because only this group can show the difference of the implementation of the equalization policy in comparison with other groups. Also, I will only focus on private tutoring related variables, although the data covered a wide range of variables in almost all the educational elements. The population for this study was 411, 431 students who attend academic high schools in 1,295 schools located in cities and counties across the country, based on the complete study of the Education Statistics Annual Report in 2003, through a stratified cluster sampling procedure to reflect national representative of the group (Krathwohl, 2004). Two hundred and two (202) schools which are located in island or remote areas are excluded. The entire nation was stratified into 15 regions (Jeju Island was excluded). 100 schools were randomly selected based on student ratios of each area. Four classes were randomly extracted from the schools selected. Finally, five students were

chosen randomly as samples among those in the classes selected during the second sampling process, using a systematic sampling method (KRIVET, n.d.).

Data Collection Procedures

After obtaining approval from the school administrators, the surveys were conducted with students and homeroom teachers of schools selected. When the surveys on students and homeroom teachers were successfully finished, students' parents were surveyed at their home. In the process of surveys, some students or parents were replaced with other students or parents because participants did not want to respond to survey. KEEP surveys were conducted using PDA devices instead of using paper and pencil. The PDA survey has advantages, such as effective survey field control, the reduction in the data verification period and the generation of accurate data, the reduction of the period from survey to data completion, and the reductions in the number of required personnel and costs (KRIVET, n.d.). During the survey period, 13,239 samples from a total of 13,421 targeted were gathered, recording a 98.6% success ratio indicating the clear success of the survey.

Variables

Dependent variables for this proposal are measured by cost and time of private tutoring activities. These include: 1) cost of private tutoring: average monthly costs for participating in at least one type of private tutoring activity; and 2) time spent in private tutoring: average weekly hours spent participating in private tutoring activities for English,

Math, Korean Language, Social Science, and Science.

Independent variables have three categories; student-level variables, school-level variables, and country-level variables. The first set of independent variables is student-level variables, which consist of family background characteristics including mother's level of education, total family income, parents' interest in their children's education, and student perception of their competence in English, Math, Korean Language, Social Science, and Science. The second set of independent variables is school-level variables, which consist of school quality characteristics, including the extent of school satisfaction, school location, and teacher competence, school type (public or private), access to school facilities, the number of students admitted to college or universities, and students' interest in class. The third set of independent variables is country-level variables, which consist of the implementation of the equalization policy, the implementation of ability-grouping between classes, and the percentage of students who participate in talent and aptitude class as an after-school program.

Table 3.1. Summary of Independent Variables and Dependent Variables

Research Questions	Independent Variables	Dependent Variables	Statistics
RQ 1 Does a relationship between equalization policy and private tutoring participation exist?	● The implementation of equalization policy ● Family income per month ● Mother's level of education	● Average monthly cost for participating in private tutoring	●T-test ●Regression
RQ 2 Does a relationship between private tutoring policies and private tutoring participation exist when examined by ability-grouping between classes or talent and aptitude class as an after school program?	● The implementation of ability-grouping between classes ● The percentage of students who participate in talent and aptitude class as an after school program	● Average monthly cost for participating in private tutoring	●T-test ●ANOVA
RQ 3 Is there a difference in the amount of hours in private tutoring when examined by students' self-perceptions about their academic performance?	● Students' self-perception of their competence in English, Math, Korean Language, Social Science, and Science	● Total private tutoring time per week for English, Math, Korean Language, Social Science, and Science	●T-test ●ANOVA
RQ 4 What are the influential factors affecting the private tutoring participation of high school students in Korea when examined by student level, school level, and country level factors?	1.Student-level factors ● Parents' education level ● Family income per month ● The number of sibling ● Family interest in academic achievement ● Considering moving to another country for children's education ● Actually moving for education 2.School-level factors ● School satisfaction ● Teacher competence(ability) ● School location ● School type ● The number of students admitted to colleges or universities ● Access to school facilities ● Interest in Class ● Teacher's rating on student performance (%) 3.Country-level factors ● Equalization policy ● Ability-grouping between classes ● Talent and aptitude class as an after-school activities	● Average monthly cost for participating in private tutoring	●Hierarchical (Block) Regression

Analytical Methods

The data were analyzed to identify factors that are likely to increase or decrease the probability of student participation in private tutoring. Means and standard deviations were presented for this purpose.

First, T-test was utilized to examine any relationships between independent variables and dependent variables. For example, analysis was conducted to examine policy measures to reduce participation in private tutoring (i.e. the equalization policy and ability-grouping between classes) and actual private tutoring cost to investigate the effects of policy measures. Also, analysis was conducted to compare the difference of the cost of private tutoring between students from equalization policy-applied schools and non-equalization policy-applied schools controlling for family income and mother's education level.

Second, a series of analyses of variance (ANOVA) and multivariate regression analyses were conducted to determine whether there were any significant differences between the factors affecting the participation in private tutoring.

Third, hierarchal (Block) regression was conducted to examine which variables are more influential among student-level, school-level, and country-level variables.

Limitations

This study should note several limitations. First, it has the possibility of biases. Because the survey data are based entirely on what parents, students, teachers, and administrators report in the questionnaires, when there are less responses regarding their

actual private tutoring activities, the results might be underestimated to some degree. Second, the generalizability of the finding of this study can be a limitation. Because the data of this study was entirely based on high school senior students, it cannot be generalized to middle school students and vocational high school students.

Chapter 4

Findings

The purpose of this study was to examine influential factors affecting the prevalence of private tutoring in Korean high school students and to analyze the reason for participating in private tutoring activities among academic high school students. The study also examined the relationship between policy measure to reduce the prevalence of private tutoring activities and private tutoring expenditure of academic high school students. The policy measures include the high school equalization policy, ability-grouping between classes, and talent and aptitude class as an after school program.

In this chapter, the major findings from the data analysis are presented. This chapter was organized according to the research questions.

Research Question One

Q1. Does a relationship exist between the equalization policy and private tutoring participation? Specifically, is there a difference in the extent of private tutoring expenditures between high school students from equalization policy-applied areas and those from non-equalization policy-applied areas in Korea, when controlling for mother-education level and family income?

Descriptive Statistics

The first research question focused on the relationship between the implementation of the high school equalization policy and private tutoring participation which was measured by private tutoring expenditures of academic high school students. Table 4.1 presents the differences in expenditures of private tutoring in high school students between the equalization policy-applied schools and non equalization policy applied schools. The results show that there is a significant difference between the mean expenditures by the implementation of equalization policy. As shown in Table 4.1, the mean expenditure of private tutoring in students from the equalization policy applied region (M=35.57) is much higher than the mean expenditure of private tutoring in students from the non-equalization policy applied region (M=18.05). It indicates that there is a significant and positive relationship between the implementation of the high school equalization policy and private tutoring expenditure of academic high school students.

Table 4.1 The difference in private tutoring expenditure for the implementation of the equalization policy.

	The implementation of the equalization policy	N	Mean	Std. Deviation	*t*
Private tutoring average monthly expenditure	Yes	1240	35.57	35.529	13.371*
	No	682	18.05	21.839	

* p < .001

Table 4.2 shows the difference in private tutoring expenditures of high school students by the implementation of the equalization policy and family income. While this table shows

Table 4.2 The comparison of private tutoring expenditures by the equalization policy and family income.

The implementation of the equalization policy	Family income per month (Korean Ten Thousand Won= Approximately 9 $)	Mean	Std. Deviation	N
Yes	Less than 1,000,000	**5.20**	6.985	30
	1,000,000-2,000,000	12.23	14.247	144
	2,000,000-3,000,000	**24.20**	21.580	290
	3,000,000-4,000,000	32.22	25.387	325
	4,000,000-5,000,000	**45.36**	35.143	191
	More than 5,000,000	**64.17**	48.785	234
	Total	35.49	35.400	1214
No	Less than 1,000,000	**2.02**	6.263	46
	1,000,000-2,000,000	9.63	10.902	151
	2,000,000-3,000,000	**15.24**	16.595	225
	3,000,000-4,000,000	27.69	27.747	145
	4,000,000-5,000,000	**29.42**	23.969	50
	More than 5,000,000	**29.96**	30.301	53
	Total	17.99	21.864	670
Total	Less than 1,000,000	3.28	6.696	76
	1,000,000-2,000,000	10.90	12.692	295
	2,000,000-3,000,000	20.29	20.040	515
	3,000,000-4,000,000	30.82	26.191	470
	4,000,000-5,000,000	42.05	33.720	241
	More than 5,000,000	57.85	47.777	287
	Total	29.26	32.362	1884

Note: bold mean is significant at the .05 level.

that the mean expenditures of private tutoring in students from the equalization policy applied regions are much higher than the mean expenditures of private tutoring in students from non equalization policy applied regions in the comparison of each family income level, all the differences are not statistically significant. In the comparison of 1,000,000-2,000,000 won (t=-1.756; df=267; p=.080) and 3,000,000-4,000,000 won (t=-.1734; df=255; p=.095) income level comparison, while students from the equalization policy-applied regions spend more money for private tutoring than students from non-equalization policy-applied regions, the differences between the means are not statistically significant. In another income comparison, the differences of the mean expenditures in high income level by the

implementation of the equalization policy are higher than the mean expenditures in low income level by the implementation of the equalization policy. For example, in the comparison of less than 1,000,000won income, students from the equalization policy applied region spent 31,800 won higher than students from non equalization policy applied regions (t=-2.019; df=57; p=.048). By contrast, in 4,000,000-5,000,000 won (t= -3.762; df=110; p=.000) income level and more than 5,000,000 won (t=-6.524; df=121; p=.000) income level, students from the equalization policy-applied region spent 159,400 won and 342,100 won higher than students from non-equalization policy applied regions, respectively.

Overall data indicated that students from equalization policy-applied regions spent much more money for private tutoring activities than students from non equalization policy- applied regions in the comparison of each family income level, except for 1,000,000-2,000,000 won and 3,000,000-4,000,000 won income level. Therefore, there is a significant and positive relationship between the equalization policy and private tutoring expenditures controlling for family income, except for 1,000,000-2,000,000 and 3,000,000-4,000,000 won income level.

Table 4.3 shows the difference in private tutoring expenditures in high school students by the implementation of the equalization policy and mother's education level. While the overall result shows that the mean expenditures of private tutoring in students from the equalization policy-applied regions are higher than the mean expenditures of private tutoring in students from non-equalization policy-applied regions in the same mother's education level, the mean differences are not statistically significant for those who have

earned a Master's Degree and Doctoral Degree.

In another mother's education level comparison, the mean expenditures of private tutoring in high school students from the equalization policy-applied regions are higher than the mean expenditures of private tutoring in high school students from non-equalization policy-applied regions. For example, students from the equalization policy-

Table 4.3 The comparison of private tutoring expenditure by the implementation of the equalization policy and mother's education level

Whether equalization policy-applied school or not in 2004	Mother education	Mean	Std. Deviation	N
Yes	Less than elementary school	**19.23**	27.664	56
	Middle school	**20.58**	20.220	169
	High school	**34.33**	32.517	750
	Community school	**57.19**	46.679	53
	College	**53.51**	44.679	171
	Master degree	71.10	56.084	10
	Doctoral degree	56.67	60.277	3
	Total	35.78	35.647	1212
No	Less than elementary school	**9.28**	13.042	90
	Middle school	**14.51**	18.171	148
	High school	**20.19**	22.708	381
	Community school	**27.15**	26.870	13
	College	**34.52**	30.079	21
	Master degree	45.00	40.415	4
	Doctoral degree	50.00	.	1
	Total	18.21	21.809	658
Total	Less than elementary school	13.10	20.452	146
	Middle school	17.75	19.497	317
	High school	29.57	30.314	1131
	Community school	51.27	44.959	66
	College	51.44	43.667	192
	Master degree	63.64	52.002	14
	Doctoral degree	55.00	49.329	4
	Total	29.60	32.572	1870

Note: bold mean is significant at the .05 level.

applied regions spent 99,500 won higher in the comparison of ‘less than elementary school’ group, 60,700 won higher in the comparison of ‘middle school’ group, 141,400 won higher in the comparison of ‘high school’ group, 300,400 won higher in the comparison of ‘community college’ group, and 189,900 won higher in the comparison of ‘college’ group, than students from non-equalization policy-applied regions respectively. Overall data indicated that students from the equalization policy-applied regions spent much more money for private tutoring activities than students from non-equalization policy-applied regions controlling for mother’s education level except for Master’s Degree and Doctoral Degree. From this finding, there is a significant and positive relationship between the equalization policy and private tutoring expenditures controlling for family income excepting for Master’s Degree and Doctoral Degree in mother’s education level.

Multiple Regression Analysis

As seen in Table 4.4, 27.2% of the variance in students’ private tutoring average monthly expenditure is explained by the independent variables, such as the implementation of the equalization policy, family income and mother’s education level. In this result, the implementation of equalization policy, family income, and mother’s education level were statistically significant predictors for students’ private tutoring expenditures. There was a statistically positive relationship between the implementation of the equalization policy and students average monthly expenditures for private tutoring after controlling for family income and mother’s education level. However, the relationship between the

implementation of the equalization policy and private tutoring expenditures after controlling for family income and mother's education level is not as strong as in the descriptive statistics as seen in Table 4.1 before controlling for family income and mother's education level. Therefore, the result indicates that the implementation of the equalization policy works as a minor factor controlling for family income and mother's education level.

While the results show that family monthly income worked as the main factor that increased the students' private tutoring average monthly expenditures, mother's education level worked as a minor factor that increased students' private tutoring average monthly expenditures. This result is consistent with the descriptive statistics as seen in Table 4.2 and Table 4.3.

Table 4.4. Multivariate Regression Analysis Results for predicting private tutoring expenditures.

	Unstandardized Coefficients		Standardized Coefficients	R square Change	t	R^2
	B	Std. Error	Beta			
(Constant)	15.463	2.708			5.711*	.272
Whether equalization policy-applied school or not in 2004	9.396	1.402	.139	.024	6.700*	
Family average monthly income during past 1 year	.064	.003	.404	.233	18.635*	
D1	6.725	1.572	.099	.009	4.279*	
D2	14.889	2.547	.144	.005	5.846*	

a. Dependent Variable: Student's private tutoring average monthly expenditures for last semester
b. Mother's education level is dummy coded into D1(Lower than middle school/Higher than high school) and D2(Lower than community college/Higher than college).
c. p<.001

Research Question Two

Q2. Do relationships exist between private tutoring policies, such as ability-grouping between classes and talent and aptitude class as an after school program, and private tutoring participation?

The second research question focused on the relationship between private tutoring policies, such as ability-grouping between classes and talent and aptitude class as an after school program, and private tutoring participation, which was measured by private tutoring expenditure of academic high school students. In Table 4.5, 58% of students (1,113) belong to the schools that implement ability-grouping between classes and 42% of students (807) belong to the schools that do not implement ability-grouping between classes. The result shows that there is not a statistically significant difference between the means. In other words, the mean difference (.05) between the two groups is not statistically significant difference. Therefore, there is no relationship between the implementation of ability-grouping between classes and private tutoring expenditures. Hypothesis 2 was not rejected.

Table 4.5 A comparison of the mean for private tutoring expenditure by the implementation of ability-grouping between classes.

	The implementation of ability-grouping between classes	N	Mean	Std. Deviation	*t*	*Sig. (2-tailed)*
Student's private tutoring average monthly expenditure for last semester	Yes	1113	29.52	33.302	.032	.975
	No	807	29.47	31.212		

Table 4.6 reported the percentage of students who participate in talent and aptitude class as an after school program. In this table, 75% of students belong to schools in which more than 60 % of their students participate in talent and aptitude class as an after school program. For example, 48.1% students (878) belong to schools in which more than 90% of students participate in talent and aptitude class as an after school program and 27.2% of students (496) belong to schools in which 60% to 90% of students participate in talent and aptitude class as an after school program.

Table 4.6 The percentage of students who participate in talent and aptitude class as an after school program

The percentage of students	N	Mean	Std. Deviation	Std. Error
Less than 10%	138	28.28	29.396	2.502
10% to 30%	53	44.64	47.029	6.460
30% to 60%	257	37.49	35.736	2.229
60% to 90%	496	30.18	34.246	1.538
More than 90%	878	25.92	27.602	.932
Total	1822	29.43	31.867	.747
Model	Fixed Effects		31.553	.739

F=6.797, df=4, 1817, p<.01

In Table 4.7, ANOVA results show that students from schools in which most of the students participate in talent and aptitude class as an after school program spent less money for private tutoring activities than other students. For example, students from schools in which more than 90% of students participated in talent and aptitude class as an after school program spent less money (187,200 won) for private tutoring activities than students from schools in which 10% to 30% of students participated in talent and aptitude class as an after

Table 4.7 The difference of private tutoring expenditure by the percentage of students who participate in talent and aptitude class as an after school program

(I) The percentage of students who participate in after school activities	(J) The percentage of students who participate in after school activities	Mean Difference (I-J)	Std. Error
Less than 10%	10% to 30%	-16.36	6.928
	30% to 60%	-9.21	3.351
	60% to 90%	-1.90	2.937
	More than 90%	2.36	2.670
10% to 30%	Less than 10%	16.36	6.928
	30% to 60%	7.15	6.834
	60% to 90%	14.46	6.640
	More than 90%	**18.72**	6.527
30% to 60%	Less than 10%	9.21	3.351
	10% to 30%	-7.15	6.834
	60% to 90%	7.31	2.708
	More than 90%	**11.57**	2.416
60% to 90%	Less than 10%	1.90	2.937
	10% to 30%	-14.46	6.640
	30% to 60%	-7.31	2.708
	More than 90%	4.26	1.798
More than 90%	Less than 10%	-2.36	2.670
	10% to 30%	**-18.72**	6.527
	30% to 60%	**-11.57**	2.416
	60% to 90%	-4.26	1.798

Note: 1. Means defferences are computed by the Dunnett C post hoc analysis technique
2. The bold mean difference is significant at the .05 level.

school program. Also, students from schools in which more than 90% of students participated in talent and aptitude class as an after school program spent less money (115,700 won) for private tutoring activities than students from schools in which 30% to 60% of students participated in talent and aptitude class as an after school program. Conversely, other differences between groups are not statistically significant. Therefore, there is a partially negative relationship between the implementation of talent and aptitude class as an after school program and private tutoring expenditures. In other words, students

from schools in which most of the students participate in talent and aptitude class as an after school program spent less money for private tutoring activities than students from schools in which 10% to 60% of students participate in talent and aptitude class as an after school program. Hypothesis 3 was partially rejected.

Research Question Three

> *Q3. Is there a difference in the amount of hours used in private tutoring when examined by students' self-perceptions about their academic performance? In other words, is there a difference in the amount of hours of private tutoring between students with high academic performance who want to maintain their competitive edge, and students with low academic performance who need remedial assistance, when comparing the equalization policy-applied schools to non-equalization policy-applied schools?*

The third research question focused on the relationship between the amount of hours used in private tutoring and students' self-perception of their academic performance for identifying the reasons for using private tutoring. This question concerned whether an enrichment strategy is more dominant or a remedial strategy is more dominant in English, Math, Korean Language, Social Science and Science, drawing upon the comparison of the equalization policy-applied schools to non-equalization policy-applied schools.

Total private tutoring time by self-perception on their competence in English

Using descriptive statistics, Table 4.8 reported private tutoring time by the implementation of the equalization policy plus students' self-perception on their competence in English. Students (4.29) from non equalization policy applied schools seemed to spend more time for private tutoring in English than students (4.09) from the equalization policy-applied schools. One exception is that students (3.94) from the equalization policy-applied schools who perceive their academic achievement to be 'excellent' in English seemed to spend more time than students (3.00) from non-equalization policy-applied schools who perceive their academic achievement to be 'excellent' in English.

Table 4.8 Total English private tutoring time by the implementation of the equalization policy plus self-perception on their competence in English

Whether equalization policy-applied school or not in 2004	Competence in English	Mean	Std. Deviation	N
Yes	Very poor	3.93	1.813	42
	Poor	4.25	2.222	154
	Average	4.03	1.906	267
	Good	4.10	1.919	125
	Excellent	3.94	1.289	16
	Total	4.09	1.972	604
No	Very poor	4.00	1.732	13
	Poor	4.55	2.757	75
	Average	4.17	2.315	75
	Good	4.25	1.506	28
	Excellent	3.00	2.000	4
	Total	4.29	2.362	195

Table 4.9 focused on the relationship between the implementation of the equalization

policy and the amount of time used for private tutoring in English. Unlike descriptive statistics in Table 4.8, T-test results show that there is no statistically significant difference in amount of time used for private tutoring in English between students from equalization policy-applied schools and students from non-equalization policy-applied schools. Therefore, there is no relationship between the implementation of the equalization policy and the amount of time used for private tutoring in English.

Table 4.9 Total English private tutoring time by the implementation of the equalization policy

	Whether the equalization policy applied school or not in 2004	N	Mean	Std. Deviation	*t*	*Sig.*
The amount of time used in private tutoring for English	Yes	604	4.09	1.972	−1.084	.279
	No	195	4.29	2.362		

Note: Equal variances are not assumed

In Table 4.10, while descriptive data shows that students who perceive their competence in English to be ‘poor’ spent the most hours (4.35) for private tutoring and students who perceive their competence in English to be ‘excellent’ spent the least hours (3.75), ANOVA results show that there is no statistical difference among students who perceive their competence in math to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. This indicates that there is no difference in private tutoring time for English among students who perceive their competence in English to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. Hypothesis 4 was not rejected in Enlgish. From this

finding, we cannot tell which strategy students use for private tutoring in English between the remedial strategy and the enrichment strategy.

Table 4.10 Total private tutoring time in English by the self-perception of their competence in English

Self-perception on their competence in English		N	Mean	Std. Deviation	F	Sig.
Very poor		55	3.95	1.779	.311	.577
Poor		229	4.35	2.408		
Average		342	4.06	2.001		
Good		153	4.12	1.847		
Excellent		20	3.75	1.446		
Total		799	4.14	2.074		
Model	Fixed Effects			2.074		

Total private tutoring time by self-perception of their competence in Math

Using descriptive statistics, Table 4.11 reported private tutoring time by the implementation of the equalization policy plus self-perception of their competence in Math. This overall result shows that students from non-equalization policy-applied schools spent more time for private tutoring in math than students from equalization policy-applied schools. For example, the mean time (4.69) of private tutoring for math in students from non-equalization policy-applied schools is higher than the mean time (4.65) of private tutoring for math in students from equalization policy-applied schools. However, the difference between students from equalization policy-applied schools and students from non-equalization policy applied schools is not statistically significant in the comparison of the same competence level. For example, while the mean time (5.26) of private tutoring for math in students from non-equalization policy-applied schools who perceive their

competence in math to be ‘very poor’ is higher than the mean time (4.57) of private tutoring for math in students from equalization policy-applied schools who perceive their competence in math to be ‘very poor’, the difference is not statistically significant (t=-1.423; df=67; p=.159).

Table 4.11 The comparison of private tutoring time in math between students from equalization policy-applied schools and students from non-equalization policy-applied schools.

Whether equalization policy-applied school or not in 2004	Competence in Math	Mean	Std. Deviation	N
Yes	Very poor	4.57	2.238	122
	Poor	4.64	2.496	212
	Average	4.93	2.844	255
	Good	4.30	2.007	132
	Excellent	4.00	1.495	18
	Total	4.65	2.493	739
No	Very poor	5.26	2.974	47
	Poor	4.07	1.820	70
	Average	4.76	3.117	82
	Good	4.72	2.831	32
	Excellent	7.00	3.830	4
	Total	4.69	2.757	235
Total	Very poor	4.76	2.474	169
	Poor	4.50	2.357	282
	Average	4.89	2.909	337
	Good	4.38	2.188	164
	Excellent	4.55	2.304	22
	Total	4.66	2.557	974

Note : 1. Dependent Variable: Total Math private tutoring time
2. the mean difference between equalization policy applied schools and non-equalization policy-applied schools in the same competence level is not significant at the .05 level.

In Table 4.12, while descriptive data shows that students who perceive their competence in math to be ‘average’ spent the most hours (4.89) for private tutoring and students who perceive their competence in math to be ‘good’ spent the least hours (4.38),

ANOVA results show that there is no statistical difference among students who perceive their competence in math to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. This indicates that there is no difference in private tutoring time for math among students who perceive their competence in math to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. Hypothesis 4 was not rejected in math. From this finding, we cannot tell which strategy students use for private tutoring in math between the remedial strategy and the enrichment strategy.

Table 4.12 Total private tutoring time in math by the self-perception of their competence in math

Self-perception on their competence in math		N	Mean	Std. Deviation	F	Sig.
Very poor		169	4.76	2.474	.222	.638
Poor		282	4.50	2.357		
Average		337	4.89	2.909		
Good		164	4.38	2.188		
Excellent		22	4.55	2.304		
Total		974	4.66	2.557		
Model	Fixed Effects			2.555		

Total private tutoring time by self-perception of their competence in Korean Language

In descriptive statistics, Table 4.13 shows the total private tutoring time by the implementation of the equalization policy plus self-perception of students’ competence in Korean Language. This overall result displays that the mean time (4.32) of students from non-equalization policy-applied regions is higher than the mean time (4.07) of students from equalization policy-applied regions. However, T-test results show that there is no statistically significant difference between students from equalization policy-applied

regions and students from non-equalization policy-applied regions(See Table 4.14). Therefore, there is no relationship between the implementation of equalization policy and total private tutoring time in Korean language. In other words, the implementation of the equalization policy did not affect the amount of private tutoring time for Korean Language.

Table 4.13 Total Korean Language private tutoring time by the implementation of the equalization policy plus self-perception of students' competence in Korean Language

Whether equalization policy-applied school or not in 2004	Competence in Native Language	Mean	Std. Deviation	N
Yes	Very poor	3.50	1.581	26
	Poor	4.03	1.992	129
	Average	4.14	2.191	236
	Good	4.10	1.924	78
	Excellent	4.20	1.474	15
	Total	4.07	2.047	484
No	Very poor	4.22	2.949	9
	Poor	4.43	3.028	23
	Average	4.30	2.446	53
	Good	4.67	2.497	18
	Excellent	2.00	.000	3
	Total	4.32	2.595	106

Table 4.14 Total Korean Language private tutoring time by the implementation of the equalization policy

	Whether the equalization policy applied school or not in 2004	N	Mean	Std. Deviation	*t*	*Sig.*
The amount of time used in private tutoring for Korean Language	Yes	484	4.07	2.047	-.932	.353
	No	106	4.32	2.595		

Note: Equal variances are not assumed

Table 4.15 shows total Korean language private tutoring time by the self-perception of

students' competence in Korean Language. The result displays that students who perceive their Korean Language competence to be 'very poor' spent the least time (3.69) for private tutoring activites. Also students who perceive their competence in Korean Language to be 'good' spent the most hours (4.21) for private tutoring activites. However, ANOVA results show that there is no significant difference between students who perceive their competence in Korean language to be 'very poor' ,'poor', 'average', 'good', and 'excellent'. This indicates that there is no difference in private tutoring time for Korean language among students who perceive their competence in Korean language to be 'very poor', 'poor', 'average', 'good', and 'excellent'. Hypothesis 4 was not rejected in Korean language. From this finding, we cannot tell which strategy students use for private tutoring in Korean language between the remedial strategy and the enrichment strategy.

Table 4.15 Total Korean Language private tutoring time by the self-perception of students' competence in Korean Language

		N	Mean	Std. Deviation	F	Sig
Very poor		35	3.69	1.997	.103	.749
Poor		152	4.09	2.173		
Average		289	4.17	2.236		
Good		96	4.21	2.041		
Excellent		18	3.83	1.581		
Total		590	4.12	2.155		
Model	Fixed Effects			2.159		

Total private tutoring time by self-perception of students' competence in Social science

Table 4.16 shows the total private tutoring time by the implementation of the equalization policy plus students' self-perception of their competence in Social science.

Using descriptive statistics, the overall results show that students from non-equalization policy-applied regions (3.75) spent more time for private tutoring in Social science than students (3.69) from equalization policy-applied regions. In equalization policy applied regions, the mean time for private tutoring in ‘very poor’ students is lowest (2.67) and the mean time for private tutoring in ‘excellent’ students is highest (4,93). In non-equalization policy-applied regions, the mean time for private tutoring in ‘excellent’ students is lowest (3.29) and the mean time for private tutoring in ‘poor’ students is highest (5,67). However, in Table 4.17, T-test results show that there is no statistically significant difference between students from non-equalization policy-applied schools and students

Table 4.16 Total Social science private tutoring time by the implementation of the equalization policy plus self-perception of their competence in Social science

Whether equalization policy-applied school or not in 2004	Competence in Social Science	Mean	Std. Deviation	N
Yes	Very poor	2.67	.577	3
	Poor	3.00	1.041	25
	Average	4.04	2.360	78
	Good	3.34	1.623	70
	Excellent	4.93	3.100	14
	Total	3.69	2.079	190
No	Very poor	1.00	.000	2
	Poor	5.67	3.215	3
	Average	3.88	1.965	17
	Good	3.82	3.371	11
	Excellent	3.29	1.496	7
	Total	3.75	2.468	40
Total	Very poor	2.00	1.000	5
	Poor	3.29	1.560	28
	Average	4.01	2.285	95
	Good	3.41	1.929	81
	Excellent	4.38	2.747	21
	Total	3.70	2.146	230

from equalization policy-applied schools. Therefore, there is no relationship between the equalization policy and self-conception of their competence in Social Science.

Table 4.17 Total Social science private tutoring time by the implementation of the equalization policy

	Whether equalization policy-applied school or not in 2004	N	Mean	Std. Deviation	Sig. (2-tailed)
Total Social science private tutoring	Yes	190	3.69	2.079	.872
	No	40	3.75	2.468	

* Equal variances assumed. (Levene's test > .05)

In Table 4.18, descriptive data demonstrates that students who perceive their competence in Social science to be 'excellent' spent the most hours (4.38) for private tutoring and students who perceive their competence in Social Science to be 'poor' spent the least hour (2.00). While overall ANOVA results in the Table 4.18 shows that there is statistically significant difference between groups, ANOVA post hoc tests in the Table 4.19 shows that there is no significant difference between students who perceive their competence in Social Science to be 'very poor', 'poor', 'average', 'good', and 'excellent'. So, there is no relationship between students' self-perception of their competence in Social Science and total Social Science private tutoring time. Hypothesis 4 was not rejected in Social Science. From this finding, we cannot tell which strategy academic high school students used for private tutoring as a remedial assistance or for maintaining their competitive edge in Social Science.

Table 4. 18 The comparison of total private tutoring time by the self-perception of their competence in Social Science

Self-perception on their competence in Social science		N	Mean	Std. Deviation	F	Sig.
Very poor		5	2.00	1.000	5.120	.025
Poor		28	3.29	1.560		
Average		95	4.01	2.285		
Good		81	3.41	1.929		
Excellent		21	4.38	2.747		
Total		230	3.70	2.146		
Model	Fixed Effects			2.118		

Table 4. 19 ANOVA post hoc tests results for predicting total Social Science private tutoring time

(I) Competence in Social Science	(J) Competence in Social Science	Mean Difference (I-J)	Std. Error	Sig.
Very poor	Poor	-1.29	1.028	.815
	Average	-2.01	.972	.372
	Good	-1.41	.976	.721
	Excellent	-2.38	1.054	.280
Poor	Very poor	1.29	1.028	.815
	Average	-.72	.455	.639
	Good	-.12	.464	.999
	Excellent	-1.10	.611	.525
Average	Very poor	2.01	.972	.372
	Poor	.72	.455	.639
	Good	.60	.320	.473
	Excellent	-.37	.511	.971
Good	Very poor	1.41	.976	.721
	Poor	.12	.464	.999
	Average	-.60	.320	.473
	Excellent	-.97	.519	.476
Excellent	Very poor	2.38	1.054	.280
	Poor	1.10	.611	.525
	Average	.37	.511	.971
	Good	.97	.519	.476

Total private tutoring time by self-perception of their competence in Science

Table 4.20 shows total private tutoring time by the implementation of equalization

policy plus students' self-perception of competence in Science. In these descriptive statistics, the overall results show that students from equalization policy-applied regions spent more time for private tutoring in Science than students from non-equalization policy-applied regions. For example, the mean time (4.45) of private tutoring in Science of students from equalization policy-applied regions is higher than the mean time (3.72) of Science private tutoring of students from non-equalization policy-applied regions. In equalization policy-applied regions, the mean time for private tutoring in 'very poor' students is lowest (3.00) and the mean time for private tutoring in 'excellent' students is highest (4,76). In non-equalization policy applied region, the mean time for private tutoring in 'very poor' group students is lowest (2.67) and the mean time for private tutoring in 'poor' group is highest (4,11).

Table 4. 20 Total Science private tutoring time by the implementation of equalization policy plus self-perception of their competence in Science

Whether equalization policy-applied school or not in 2004	Competence in Science	Mean	Std. Deviation	N
Yes	Very poor	3.00	1.732	3
	Poor	4.54	2.099	28
	Average	4.36	2.542	105
	Good	4.52	3.048	82
	Excellent	4.76	2.223	17
	Total	4.45	2.646	235
No	Very poor	2.67	.577	3
	Poor	4.11	3.855	9
	Average	3.50	1.794	26
	Good	4.00	2.152	20
	Total	3.72	2.277	58
Total	Very poor	2.83	1.169	6
	Poor	4.43	2.577	37
	Average	4.19	2.431	131
	Good	4.42	2.892	102
	Excellent	4.76	2.223	17
	Total	4.31	2.590	293

Table 4.21 shows total Science private tutoring time by the implementation of the equalization policy. While descriptive statistics shows that students from equalization policy-applied regions spent more time for private tutoring in Science than students from non-equalization policy-applied regions, T-test results show that there is no statistically significant difference between students from non-equalization policy-applied schools and students from equalization policy-applied schools. Therefore, there is no relationship between the equalization policy and students' self-perception of their competence in Science.

Table 4.21 Total Science private tutoring time by the implementation of the equalization policy

	Whether equalization policy-applied school or not in 2004	N	Mean	Std. Deviation	Sig. (2-tailed)
Total Science private tutoring	Yes	235	4.45	2.646	.055
	No	58	3.72	2.277	

* Equal variances assumed. (Levene's test > .05)

In Table 4.22, while descriptive data demonstrates that students who perceive their competence in Science to be 'excellent' spent the most hours (4.76) for private tutoring and students who perceive their competence in Science to be 'very poor' spent the least hours (2.83), ANOVA results show that there is no significant difference between students who perceive their competence in Science to be 'very poor' ,'poor', 'average', 'good', and 'excellent'. So, there is no relationship between self-perception on their competence in Science and total private tutoring time in Science. Hypothesis 4 was not rejected in Science.

From this finding, we cannot tell which strategy academic high school students used for private tutoring as a remedial assistance or as an enrichment strategy in Science.

Table 4.22 The comparison of total private tutoring time by the self-perception of their competence in Science

Self-perception on their competence in Social science		N	Mean	Std. Deviation	F	Sig.
Very poor		6	2.83	1.169	2.349	.126
Poor		37	4.43	2.577		
Average		131	4.19	2.431		
Good		102	4.42	2.892		
Excellent		17	4.76	2.223		
Total		293	4.31	2.590		
Model	Fixed Effects			2.594		

Research Question Four

Q4. What are the most influential factors affecting the private tutoring participation of high school students in Korea when examined by student-level, school-level, and country-level factors?

Table 4.23 shows the results of hierarchical (Block) regression analysis. As seen in Table 4.23, 33.9% of the variance in students' private tutoring average monthly expenditures is explained by independent variables such as student-level variables, school-level variables, and country-level variables. In this result, student-level variables (.290) are much more influential than school-level variables (.039) and country-level variables (.009). Hypothesis 5 was rejected.

In student-level variables, family average monthly income is the most influential

factor. Also, when the mother's education level is higher, the students spent more money for private tutoring. Interestingly, when parents considered moving to another country for their children's education and when parents also had actually moved to another region inside country for their children's better education, their students spent more money for private tutoring than other students. When students had other siblings, they spent less money for private tutoring than other students.

In school level-variables, the number of students admitted to colleges or universities and school location variables are influential factors. When the number of students admitted to colleges or universities was higher, students spent more money for private tutoring than other students. Also, when school was located in Seoul or another metropolitan city, students spent more money for private tutoring than students from other cities or rural areas. Conversely, this finding shows that parent's perception of students' school satisfaction and access to school facilities are rather minor factors instead of influential factors for private tutoring expenditure. This finding also shows that some variables are not statistically significant. Administrators' perception on teacher ability, teachers' ratings on student performance and school type (public or private) are not statistically significant factors.

In country-level variables, the implementation of talent or aptitude class is more influential than other variables. Interestingly, this finding shows that the implementation of the equalization policy and ability-grouping between classes are not statistically significant variables. Notably, the result is not consistent with the findings of the first research question. It indicates that while the implementation of the equalization policy is a minor factor in the first research question, when considering all the student-level, school-level,

Table 4.23 Hierarchical Regression Analysis Results for predicting private tutoring expenditure.

	Model 1		Model 2		Model 3	
Variables	Beta	Sig.	Beta	Sig.	Beta	Sig.
1. Student Level						
Family average monthly income	.359	.000	.332	.000	.326	.000
Mother's education level	.135	.000	.117	.000	.116	.000
Other sibling	−.094	.001	−.089	.003	−.085	.000
Mother's interest in academic achievement	.102	.000	.101	.000	.098	.000
Considering moving to another country for children's education	.117	.000	.095	.000	.093	.000
Actually moving for their children's better education	.100	.000	.084	.000	.079	.001
2. School Level						
Parents' perception of student's school satisfaction			−.065	.005	−.068	.003
Administrators' perception on teacher ability			.014	.565	.033	.182
Public or private			.032	.178	.023	.349
The number of students admitted to colleges or universities in Seoul			.069	.006	.065	.011
School location1			.062	.029	.052	.090
School location2			.091	.000	.044	.181
Access to school facilities			−.050	.028	−.050	.028
Interest in class			−.063	.006	−.067	.003
Teacher's rating on student performance(%)			.029	.209	.028	.226
3. Country Level						
Whether equalization policy-applied school or not in 2004					.068	.074
The implementation of ability-grouping between the class					.010	.666
Student percentage which participate in talent or aptitude class					−.089	.000
Model summary						
F		91.983		8.720		5.974
p		.000		.000		.000
R^2		.290		.330		.339
Adjusted R^2		287		.322		.330
R^2 Change		.290		.039		.009

and country-level variables, the effects of the implementation of the equalization policy is not a significant factor. From this finding, there is no relationship between the equalization policy and private tutoring expenditures. Hypothesis 1 was not rejected. Also, there is no relationship between ability-grouping between classes and private tutoring expenditures.

Chapter 5

Summary, Discussion, Implication, and Recommendations

Chapter one to four presented research problems and research questions, the related literature review, and research methodology. This chapter provides a brief summary of the study, a summary of the major findings, discussion, implications for policy, and recommendations for future study.

Summary of the study

The focus of this study was to examine influential factors affecting the prevalence of private tutoring in Korean high school students on the student-level, school-level, and country-level. In addition, this study analyzed the reason for participating in private tutoring activities among academic high school students and the relationship between policy measure to reduce the prevalence of private tutoring activities and private tutoring expenditure from academic high school students.

To achieve these purposes, the following research questions were posited:

1. Does a relationship exist between the equalization policy and private tutoring participation? Specifically, is there a difference in the extent of private tutoring between high school students from equalization policy-applied areas and those from non-equalization policy-applied areas in Korea, when controlling for mother-education level and family income?

2. Do relationships exist between private tutoring policies, such as ability-grouping between classes and talent and aptitude class as an after school program, and private tutoring participation?
3. Is there a difference in the amount of hours used in private tutoring when examined by students' self-perceptions about their academic performance? In other words, is there a difference in the amount of hours in private tutoring between students with high academic performance who want to maintain their competitive edge, and students with low academic performance who need remedial assistance when being compared by the equalization policy-applied schools to non-equalization policy-applied schools?
4. What are the most influential factors affecting the private tutoring participation of high school students in Korea when examined by student-level, school-level, and country-level factors?

Also, the following hypotheses were tested through the analysis of data.

Hypothesis 1: There is no difference in average monthly cost for participating in private tutoring between students from equalization policy-applied areas and those from non-equalization policy applied areas in Korea.

Hypothesis 2: There is no significant relationship between the implementation of ability-grouping between classes and average monthly cost for participating in private tutoring.

Hypothesis 3: There is no significant relationship between the percentage of students who participate in talent and aptitude class as an after school program and average monthly

cost for participating in private tutoring.

Hypothesis 4: There is no difference in the extent of private tutoring used between students with high academic performance and students with low academic performance.

Hypothesis 5: There is no difference in the extent of private tutoring used among student-level, school-level, and country-level factors.

To address these research questions and hypotheses, the data were collected from the Korean Education and Employment Panel (KEEP) conducted by the Korea Research Institute for Vocational Education and Training (KRIVET) –a government sponsored research institute- since the year 2004. Among a total of 6,000 samples which consisted of 2,000 middle schools seniors, 2,000 academic high school seniors, and 2,000 vocational and technical high school seniors during a three-month period from March to August in 2004, only the data of 2,000 academic high school seniors were used for these research questions and hypotheses.

Dependent variables for this proposal measure the cost and time of private tutoring activities. Independent variables had three categories; student-level variables, school-level variables, and country-level variables. For analysis, means and standard deviations, Independent T-test, a series of analyses of variance (ANOVA) and multivariate regression analyses were conducted to address research questions and hypotheses.

Summary of Findings

Research Question One

The first research question concerned the relationship between the implementation of the equalization policy and private tutoring expenditure of academic high school students when controlling for family income and mother's education level. As shown in Table 4.4, this finding shows that the equalization policy, family income and mother's education level are statistically significant variables for predicting private tutoring expenditures (R^2=.272). In Table 4.1, the results show that there is a significant and positive relationship between the implementation of the equalization policy and private tutoring expenditures of academic high school students. For example, the mean expenditure of private tutoring in students from the equalization policy-applied regions (M=35.57) is much higher than the mean expenditure of private tutoring in students from the non-equalization policy-applied regions (M=18.05). However, when controlling for other variables such as family income and mother's education level, the relationship between the equalization policy and private tutoring is low (Beta=.139, R^2=.024). This indicated that the effect of the equalization policy on private tutoring expenditures is minor. Instead, there is a stronger relationship between family income and private tutoring expenditures (Beta=.404, .R^2=.233). The family income variable is a more influential factor than the equalization policy and mother's education level.

Research Question Two

The second research question concerned the relationship between educational policy to reduce the expenditure of private tutoring activities and private tutoring expenditures. The educational policy was measured by ability-grouping between classes and talent and aptitude class as an after-school program. In Table 4.5, T-test results show that ability-grouping between classes is not a statistically significant variable ($t= .032$, $p=.975$). So, there is no relationship between ability-grouping between classes and private tutoring participation. Hypothesis 2 was not rejected. Ability-grouping between classes, the policy measures to reduce private tutoring expenditures seems to have not achieved the original purpose. Instead, as shown in Table 4.6, talent and aptitude class as an after-school program is a statistically significant variable ($F=6.797$, $p<.01$). However, in Table4.7, ANOVA post hoc test results show that there is a partial relationship between talent and aptitude class as an after-school program and private tutoring expenditures. Students from schools in which more than 90% of students participate in talent and aptitude class as an after-school program spent less money than students from schools in which 10% to 60% of students participate in this program. Hypothesis 3 was partially rejected.

Research Question Three

The third research question concerned the relationship between the amount of hours used in private tutoring and self-perception of their academic performance in English, Math, Korean Language, Social Science, and Science, for identifying the reasons for using private

tutoring. The findings show that while students from non-equalization policy-applied schools spent more time for private tutoring in English than students from equalization policy-applied schools in the descriptive data (See Table 4.8), the difference in not statistically significant. Also, ANOVA results show that there is no difference in the amount of time used for private tutoring time among students who perceive their competence in English to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. So, we cannot tell which strategy students use for private tutoring in English between remedial strategy and enrichment strategy.

This finding also shows that while students from non-equalization policy-applied schools spent more time for private tutoring in math than students from equalization policy-applied schools in the descriptive data (see Table 4.11), the difference is not statistically significant. ANOVA results show that there is no difference in the amount of time for private tutoring in math among students who perceive their competence to be ‘very poor’, ‘poor’, ‘average’, ‘good’, and ‘excellent’. So, we cannot tell which strategy students use for private tutoring in math between remedial strategy and enrichment strategy.

Like the case of English and Math, there is no significant difference in the amount of time used for private tutoring in Korean Language, Social Science, and Science between students from equalization policy-applied regions and students from non-equalization policy-applied regions. From this finding, there is no relationship between the implementation of the equalization policy and the amount of time used in private tutoring in Korean Language, Social science, and Science. In addition, there is no statistically significant difference between students who think their competence in Korean Language,

Social Science, and Science is ‘very poor’ ,’poor’, ‘average’, ‘good’, and ‘excellent’. Therefore, there is no relationship between self-perception of their competence in Korean Language, Social Science, and Science, and total private tutoring time in Korean Language, Social Science, and Science. From this finding, we cannot tell which strategy academic high school students used for private tutoring as a remedial assistance or maintaining their competitive edge in Korean language, Social science, and Science.

In summary, in English, Math, Korean Language, Social Science, and Science subjects, we cannot tell which strategy students use for private tutoring activities between remedial strategy and enrichment strategy. Hypothesis 4 was not rejected in English, Math, Korean Language, Social Science, and Science.

Research Question Four

This finding shows that student-level variables are much more influential than school-level variables and country-level variables. Family average monthly income is the most influential factor among student variables. In student-level variables, mother’s education level and parent’s consideration for moving to another country for their children’s better education are also influential variables. Hypothesis 5 was rejected.

In school-level variables, the number of students admitted to colleges or universities and school location are influential variables, while school satisfaction and access to school facilities are minor variables. However, school type, teacher ability, and teacher’s rating on student performance are not statistically significant variables.

In country-level variables, the implementation of talent and aptitude class as an after-school program is more influential factor than other variables. However, there is no relationship between the implementation of the equalization policy and students' private tutoring expenditures. Hypothesis 1 was not rejected. Also, there is no relationship between ability-grouping between classes and students' private tutoring expenditures.

Discussion

The first important finding of this study is that the equalization policy is not an important factor affecting private tutoring participation. In descriptive data, the findings show that the equalization policy is considerable factor for private tutoring expenditures of academic high school students. However, in regression analysis, the results show that the effect is offset when controlling for the effects of other variables such as parents' income, mother's education level, and school location. Also, this finding shows that there is no relationship between the amount of time used for private tutoring in English, Math, Korean Language, Social Science, and Science and the equalization policy.

This finding is not consistent with Kim and Lee (2002). They argued that students from non-equalization policy-applied regions spend less money for private tutoring activities than students from equalization policy-applied regions because of parents and students' higher demand for quality education under the equalization policy. Instead, the findings of this study support Chun (2003). He asserted that family income is rather an important factor for increasing private tutoring activities than the equalization policy. When

considering that the equalization policy-applied schools are located in Seoul and Metropolitan areas rather than other cities and rural areas, the effects of school location and family income variables seems to be included in the effect of the equalization policy. For reducing excessive private tutoring activities, it is suggested that the abolition of the equalization policy is not appropriate policy measure.

The second important finding of this study is that there is no difference in the amount of time used in private tutoring between students who perceive their competence in English, Math, Korean language, Social Science, and Science as low and students who perceive their competence in English, Math, Korean Language, Social Science and Science as high. This finding did not show that the strategy for using private tutoring in English, Math, Korean Language, Social Science, and Science, is for remedial assistance or for enrichment. However, considering excessive private tutoring prevalence among Korean high school students, it may be argued that high school students use private tutoring activities for the purpose of both remedial strategy and enrichment strategy. Likewise, in their findings, Baker et. al (2001) classified that when the relationship between math scores and private tutoring participation are too weak to classify as either remedial or enrichment (statistically non-significant, or very small coefficients), they classified it as mixed strategy.

The third important finding of this study is that the efforts of the Korean government to reduce private tutoring expenditure are partially effective. This finding shows that talent and aptitude class as an after-school program is an effective policy measure to reduce private tutoring expenditures to some extent. However, ability-grouping between classes did not effective for policy measures to reduce private tutoring expenditures. So, the

Korean government should focus on talent and aptitude class as an after-school program rather than ability-grouping class between classes for reducing the prevalence of private tutoring activities among high school students.

Policy implication

Some policy implications for research and practice can be derived from the findings of this study. First of all, it is necessary to change perspectives on private tutoring. Policy makers and researchers have to realize that private tutoring is not a unique practice in Korea; rather it is becoming a world-wide phenomenon. As Bray (1999, 2003) noted above, private tutoring activities are prevalent not only in East Asian countries but also in developing countries. There are also signs that private tutoring is increasing in English-speaking countries. The Korean government's overreaction to private tutoring arises from the fact that private tutoring is the only practice in Korea. In fact, private tutoring, like after-class tutoring by the teacher, is taken for granted as an increasingly normalized part of formal schooling (Lee, 2003). Also, the positive side of private tutoring should not be overlooked. Therefore, it is necessary that public education and outside-school learning like private tutoring activities have to develop a complementary relationship.

Second, the assertion that the equalization policy should be abolished is not supported in these findings. Some researchers have claimed that the equalization policy is the reason why private tutoring activities are prevalent in Korea. They have argued that because the equalization policy lowers the quality of education by mixing students with different levels, parents and students have no choice but to depend on the private tutoring activities outside

schools. However, the findings of this study show that the effect of the equalization policy is very minimal to the prevalence of private tutoring activities. Furthermore, in regression analysis, it does not have a relationship with the expenditures of private tutoring activities. Rather, family income and school location is more influential factors than the equalization policy.

Third, this study support the previous finding that students from higher socio-economic families spend more money for private tutoring than do students from lower socio-economic families. In regression analysis, family income factor is actually the most influential factor among student-level, school-level, and country-level factors. This suggests that the inequality of educational opportunity also can be a problem in outside-school learning. This finding suggests that the government should focus on policy for low socio-economic families to reduce the gap of private tutoring participation between high socio-economic families and low socio-economic families. For example, the government can support low-income family children who participate in talent and aptitude class as an after school program with the assistance of after school costs through government funding.

Fourth, the current educational policy measures to reduce the expenditures of private tutoring among high school students need to be examined. The findings of this study show that the current ability-grouping between classes does not seem to effective for reducing the prevalence of private tutoring. Rather, talent and aptitude class as an after-school program is effective for reducing the expenditures for private tutoring to some extent. From this finding, the policy makers should focus more on talent and aptitude class as an after-school program. Also, the ineffectiveness of the current ability-grouping between classes needs to

be addressed.

Also, the failure of the past private tutoring policy of the government and local educational offices has stemmed from the reliance on symptomatic treatment like banning, regulating, and controlling directly the desire for private tutoring. As noted above, the government strategies for directly regulating the desire for private tutoring have failed. Now we have to turn our attention to the fundamental prescription. When schools provide low quality education for students, they are likely to turn to private tutoring and cram schools to provide what the public schools are lacking. So, improving the quality of public education is the most important step. In addition, we can increase the number of quality schools and the variety of special-purpose high schools, and give school administrations the autonomy to run each school uniquely. As Boyd (2002) noted, providing more choices of programs and schools is the best way to enhance school effectiveness and to maintain the competitive advantage over nonpublic schools.

Finally, sufficient research and systematic data collection on private tutoring is needed. Even if the equalization policy is implemented to reduce excessive private tutoring, some researchers (e.g. Kim & Lee, 2002) have argued that it is the main reason for the prevalence of private tutoring. However, there has been rare objective empirical research to examine the relationship between the prevalence of private tutoring and the equalization policy. Without objective data collection on the phenomenon of excessive private tutoring, it is difficult for the government to take appropriate measures on this issue.

Recommendations for Future Research

Although the findings of this study do not provide a causal relationship between education policy measures and the prevalence of private tutoring, they can explain the influential factors that affect the prevalence of private tutoring. However, because this study mainly focuses on the data about academic high school students, the results of this study can be generalized to only academic high school students. Future study should be extended to elementary school students and middle school students in order to more deeply understand the prevalence of private tutoring across the nation.

Secondly, because this study mainly focused on education policy measures like the equalization policy and influential factors for increasing or decreasing private tutoring activities among high school students, it did not consider potentially important factors like high-stakes testing. Future research could be conducted to examine the relationship between high-stakes testing and participation in private tutoring.

When this study examined the reason for private tutoring participation, it focused on students' self-perception of their academic competence in English, Math, Korean Language, Social Science, and Science. Because it relied on the self-perception of students, the generalizability of the result has limitations. To more deeply investigate the reason for private tutoring, future studies should focus on examining the relationship between the real test scores of students and participation in private tutoring.

While most of the results of this study focused on why students participate in private tutoring, these findings did not provide information about the effect of participation in

private tutoring on academic achievement. Although this issue is important to establish education policy measures to reduce private tutoring, we do not know empirically whether participation in private tutoring actually improves academic achievement or not. It is necessary that future research focus on whether participation in private tutoring improves academic achievement or not.

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