

The Pennsylvania State University  
The Graduate School  
Department of Education Policy Studies

**PRESTIGE-ORIENTED VIEW OF COLLEGE ENTRANCE  
AND SHADOW EDUCATION IN SOUTH KOREA:  
FACTORS INFLUENCING PARENT EXPENDITURES ON PRIVATE TUTORING**

A Thesis in  
Educational Leadership  
by  
Soojeong Lee

© 2006 Soojeong Lee

Submitted in Partial Fulfillment  
of the Requirements  
for the Degree of

Doctor of Philosophy

December 2006

The thesis of Soojeong Lee was reviewed and approved\* by the following:

William L. Boyd  
Batschelet Chair Professor of Education  
Chair of Committee

Roger C. Shouse  
Thesis Adviser  
Associate Professor of Education

Jacqueline Stefkovich  
Professor of Education  
Head of the Department of Education Policy Studies

Edgar P. Yoder  
Professor of Agriculture Extension Education

Nona A. Prestine  
Professor of Education  
In Charge of Educational Leadership

\*Signatures are on file in the Graduate School.

## ABSTRACT

The purpose of this study was to examine the causes of the widespread reliance on shadow education in South Korea. This study assessed how and to what extent the use of private tutoring services was influenced by student achievement, school quality, students' views of college entrance, and students' background. Of key importance, the study focused on exploring how students' "prestige-oriented views of college entrance" could be identified as a major factor to explain South Korean students' dramatic use of shadow education.

Prior studies have mostly pointed out the matters related to low-quality formal schooling as the causes of Korean students' growing use of shadow education. Recently, High School Equalization Policy (HSEP) in particular has been mainly criticized for causing students' use of shadow education by lowering school quality. However, there has not been any empirical evidence that low-quality formal schooling influences the boosting of shadow education. It is also still arguable that HSEP lowered school quality and students' achievement. Furthermore, the existing perspective on the cause of shadow education alone does not sufficiently explain why quite a high percentage of students answered in some reports that they used shadow education because of a "feeling of uneasiness."

Concerning the cause of students' reliance on shadow education, this study focused on socio-psychological factors complexly connected with social and cultural characteristics. This study hypothesized that students' and parents' distinctive "prestige-oriented views of college entrance," which might be the core of Koreans'

“education fever,” would be a major contributing factor to their use of shadow education. Based on the perspective from *institutional theories*, this study also hypothesized that students’ use of shadow education would not only be affected by *status competition* but also by the social climate in which shadow education is a taken-for-granted practice throughout the school system.

Data were drawn from the Korean Education and Employment Panel [KEEP] conducted by the Korea Research Institute for Vocational Education and Training in 2004. Four sets of independent variables (i.e., students’ grades, school quality, their prestige-oriented view of college entrance, and family backgrounds) and one dependent variable (i.e., average monthly expenditure on shadow education) were developed from the KEEP data. *Multiple Regression* analysis was used.

Analysis results showed that parent expenditure on shadow education was not accounted for that much either by students’ grades or by school quality. Instead, the most positive influential relationship was found between “prestige-oriented views of college entrance” and parent expenditure on private tutoring.

These findings reflect the impact of the distinctive social and cultural features of Korean society on students’ use of shadow education. The intense importance Korean students place on attending a “prestigious” college or university leads them to invest heavily in shadow education. The results also indirectly imply that shadow education might be so embedded in the culture of South Korean schooling that students’ failure to participate in it might lead to feelings of uneasiness.

This study has significance for first examining the impact of students’ grades and school quality on shadow education expenditure. This study is, most of all,

meaningful as a first attempt to identify a new construct, “prestige-oriented views of college entrance,” as a major factor explaining South Korean students’ excessive reliance on shadow education.

## TABLE OF CONTENTS

List of Tables.....	viii
List of Figures.....	x
Acknowledgments .....	xi
Chapter 1 INTRODUCTION.....	1
Background.....	1
Statement of the Problem.....	4
Purpose of the Study .....	10
Significance of the Study .....	12
Limitations .....	14
Definition of Terms.....	15
Chapter 2 LITERATURE REVIEW.....	16
Shadow Education in South Korea .....	16
<i>Growing Expenditure on Shadow Education</i> .....	16
<i>Policies and Politics Related to Shadow Education Practices in South Korea</i> ..	18
Prior Studies on Shadow Education.....	21
<i>Causes of Shadow Education</i> .....	22
New Approach to the Causes of Students' Reliance on Shadow Education .....	27
<i>Education Fever and Competition for College Entrance</i> .....	27
<i>Prestige-oriented View of College Entrance and Shadow Education</i> .....	28
<i>Social Climate and Shadow Education</i> .....	30
<i>Two Theoretical Perspectives on the Causes of Shadow Education</i> .....	31
Chapter 3 METHODOLOGY.....	33
Conceptual Framework.....	33
Design, Population, and Sample .....	36
Data Collection Procedures.....	40
Data Analysis .....	41
<i>Variables</i> .....	41
<i>Independent Variables</i> .....	41
<i>Dependent Variable</i> .....	44
Analytic Procedures .....	46
Preliminary Analysis.....	47
<i>Factor Analysis for Validity Test of "School Quality" Variables</i> .....	47

<i>Two-sample T-test for Validity Test of Prestige-oriented View of College Entrance</i> .....	49
<i>Regression Assumption Check</i> .....	50
<i>Multiple Regression Equation</i> .....	54
Chapter 4 FINDINGS .....	56
Results of the Analysis.....	57
<i>Descriptive Statistics</i> .....	57
<i>Multiple Regression Analysis</i> .....	62
Interpretation of the Results.....	66
<i>Research Question One</i> .....	66
<i>Research Question Two</i> .....	67
<i>Research Question Three</i> .....	68
<i>Research Question Four</i> .....	69
Chapter 5 CONCLUSIONS AND RECOMMENDATIONS.....	72
Summary of Findings.....	72
Conclusions.....	74
<i>Diagnosis for the Cause of Shadow Education</i> .....	74
Policy Implications .....	76
<i>Disconnect between Policy and Research</i> .....	76
<i>Policy Suggestions</i> .....	77
Recommendations for Future Study .....	79
REFERENCES .....	81
APPENDICES .....	90
APPENDIX A: Survey Questions Selected from tKe EEP Survey Questionnaire.....	91
APPENDIX B: Prestige Ranking of Colleges.....	99
APPENDIX C: Test Results.....	101

## LIST OF TABLES

Table 2.1. Change of Total Amount of Private Tutoring Expenditure .....	18
Table 3.1. Number of Sample Schools by Region (Academic High Schools) .....	38
Table 3.2. Number of Sample Schools by Region (Vocational High Schools).....	38
Table 3.3. Samples and Response by School Type of KEEP .....	39
Table 3.4. Descriptions and Scales of Variables.....	44
Table 3.5. Factor Analysis of School Quality Variables-Total Variance Explained ..	48
Table 3.6. Factor Analysis of School Quality Variables -Component Matrix .....	48
Table 3.7. Two-sample T-test Statistics for Validity Test of Prestige-oriented View of College Entrance .....	50
Table 3.8. Residuals Statistics .....	53
Table 4.1. Expenditure on Shadow Education by Student's Residence Area .....	58
Table 4.2. Expenditure on Shadow Education by School Types (n = 3,853).....	59
Table 4. 3. Expenditure on Shadow Education by Student's Grade (n = 2,700).....	60
Table 4.4. Means, Standard Deviations, Minimum, and Maximum for Factors Used in the Regression Analysis .....	61
Table 4.5. Multiple Regression Results of Parent Expenditure on Tutoring Regressed on Selected Independent Variables .....	63
Table B.1. 2005 Comprehensive College Ranking by <i>JoongAng Daily</i> .....	100
Table C.1. Alpha Test (Case Processing Summary).....	102
Table C.2. Alpha Test (Reliability Statistics).....	102
Table C.3. Casewise Diagnostics(a).....	102
Table C.4. Independent Samples Test for Validity Test of Prestige-oriented View of College Entrance.....	103



Table C.5. Means, Standard Deviations and Zero-Order Correlations for Factors Used in the Regression Analysis .....	107
Table C.6. Model Summary of Expenditure on Tutoring Regressed on Four Sets of Independent Variables.....	108
Table C.7. Multiple Regression Analysis- ANOVA.....	109
Table C.8. Multiple Regression Analysis- Coefficients .....	110
Table C.9. Multiple Regression Analysis- Collinearity Diagnostics .....	112
Table C.10. Multiple Regression Analysis- Excluded Variables .....	113

**LIST OF FIGURES**

Figure 3.1. Conceptual model of prestige-oriented view of college entrance and shadow education.....	36
Figure C.1. Distribution of response variable .....	104
Figure C.2. Transformed response variable .....	104
Figure C.3. Histogram of residual .....	105
Figure C.4. Scatter plots of residual .....	105
Figure C.5 Normal P-P Plot of regression standardized residual .....	106

## ACKNOWLEDGEMENTS

I wish to express my gratitude to my dissertation committee, Drs. William L. Boyd, Roger C. Shouse, Jacqueline Stefkovich, and Edgar P. Yoder, each of whom guided my work with great attention. I am greatly indebted to Dr. William L. Boyd, my committee chair and academic adviser, for his guidance, support, and thoughtful consideration throughout my doctoral study. I wish to give special thanks to my thesis adviser, Dr. Roger C. Shouse, who guided this work with insightful suggestions and warm encouragement. My indebtedness is extended to Dr. Jacqueline Stefkovich, for her substantive comment on this work and support for my doctoral study. For his earnest guidance about the methodology and his kind consideration, I wish to display my sincere appreciation to Dr. Edgar P. Yoder. I also wish to thank the faculty and fellow students of Graduate Programs in the Department of Education Policy Studies at the Pennsylvania State University. Special thanks go to Ms. Becky Contestabile of the Educational Leadership program, for her great advice and support with professional management. I would also like to express my gratitude to the following professors at Seoul National University: Drs. Chung-il Yun, Chong Jae Lee, Dong-Seop Jin, Seong Ik Park, and Ki-Seok Kim, each of whom guided and encouraged my academic life.

A great number of people have helped me through this process. I am deeply grateful to Moon-taeg Kim and his wife, Tae-ja Kim, for their sincere encouragement and support in my times of distress. I also wish to thank my fellow Korean students in the Educational Leadership program: Dr. June-hee Lim, Dr. Deok-Ho Jang, Dong Ho

Lee, Woo Sam Jang, Jinsu Kim, and Jeik Cho, and Dr. Sanghoon Bae in the Workforce Education and Development program, for their advice and encouragement.

For his professional advice and help throughout my work, I wish to thank my friend, Dr. Hyunjin Kim. I am indebted to Yong-sang Lee and his family for their hearty prayers and thoughtful support. For similar reasons, I wish to thank the pastor of my hometown church, Taeyul O and his family. I would also like to thank my sincere friends in South Korea, Young-kwang Korean Presbyterian Church and Calvary Baptist Church in State College, who have prayed for my completion of this work.

I am extremely grateful to my brothers and sisters, Duk-gee Lee and his wife, Gyung-ae Jung; Hong-gee Lee and his wife, Soon-haeng Song; Ki-seok Lee and his wife, Hyun-gyung Kang; and Mee-jung Lee and her husband, Jin-yong An. Without their steady support, this work would not have been completed.

I dedicate this dissertation to my parents, Gye-woon Lee and Sang-rae Hwang, who have shown me the example of integrity and love throughout their lives. Their constant love and belief in me made it possible for me to continuously study and complete this work.

Finally, I wish to thank God for leading me through all of this work.

## Chapter 1

### INTRODUCTION

#### Background

Students' reliance on private tutoring services is one of the most important issues in the current South Korean K-12 education system. A large percentage of primary and secondary school students, as South Korea's empirical studies have annually reported, have used diverse types of private tutoring services (e.g., individual or group tutoring, instruction from the for-profit institutions like *Hakwon*, self-study sheets including practice exam sheets, and after-class lessons within schools). According to studies, Korean parents have spent huge amounts of money on these services for their children. In 2003, 72.6% of total students (83.1 % of primary school students, 75.3 % of middle school students, and 56.4 % of academic high school students) were using private tutoring services in South Korea (Choi, Kim, Yoo, Kim, & Lee, 2003). One report of the Korea Institute for Health and Social Affairs (2005) indicated that Korean families with two schoolchildren, on average, spent about 22% of their income on their children's private tutoring services in 2005 (Song et al., 2006). Discussions on the problems and countermeasures related to this phenomenon, therefore, are in progress in the South Korean education world.

To describe these private tutoring activities, some scholars (Bray, 1999; LeTendre, 1994; Stevenson and Baker, 1992; Tsukada, 1991) have used the term *shadow education*, which is defined as "educational activities that occur outside formal schooling and are designed to enhance the student's formal school career"

(Stevenson and Baker, 1992, p.1639). This study also uses the term *shadow education* to describe all types of private tutoring activities occurring outside formal schooling. This term, as revealed in the word *shadow education*, connotes the image of those outside-school educational activities paralleling the features of formal schooling as the following:

Shadow education conveys the image of outside-school learning activities that parallel such features of formal schooling as mastering a curriculum, examinations, and earning grades for learning and skills used by schools to grant students further educational opportunities. ... These activities are set up to specifically *shadow* the requirements of the public school that the child attends. (Baker & LeTendre, 2005, p.56)

Korean students' dramatic use of after-school tutoring as mentioned above has been pointed out as causing several problems such as parents' heavy burdens related to the expenses of their children's private tutoring activities, inequalities in academic competition, and students' low engagement in classroom teaching. Consequently, the Korean government has implemented a lot of policy measures to reduce students' use of private tutoring services. The government even temporarily banned private tutoring practices in the 1980s. In spite of many policy measures, however, families' expenditures on shadow education have continued to increase over time and thus, the South Korean government has been under great political pressure to solve the

problem of extreme development of private tutoring (Choi, & Kim, 2003; Lee, 2002; Lee, 2003).

In order to solve the problems related to the development of shadow education, most of all, it will be critical to identify the causes for their use of shadow education prior to formulating policy measures to reduce those practices.

### **Statement of the Problem**

There has scarcely been any study analyzing the causes of the development of shadow education in South Korea with empirical evidence; most prior studies have explored the reality and policy implications of shadow education. With respect to the causes of Korean students' widespread reliance on shadow education, the factors pointed out in prior studies can be largely summarized as four factors which include low-quality formal schooling, students' wanting to improve their low school grades and understanding, family SES, and competition for college entrance opportunities (Choi et al., 2003; Kim, 1991; Koh, 1998; Lee, 2003; Yun, 1997).

Firstly, Low-quality formal schooling has been most generally pointed out as the direct cause of the development of shadow education in South Korea. Recently, High School Equalization Policy (HSEP) in particular, in relation to low-quality formal schooling, has been also criticized for causing students' dependence on shadow education by leading to their dissatisfaction with the quality of schooling (Kim, Lee, M., Lee, Y., & Lee, J., 2003; Kim, G., Kim, D., Seo, & Lee, 2003; Lee & Hong, 2001; The HANKYOREH, 2005 Feb 20). Such an argument, however, is countered by a few empirical studies showing that the HSEP is not related to a lowering of student achievement (Kim, H., 2004a; Kim, K., 2004, Kim, K. et al., 2004, 2005; Sung, 2004, 2005). In addition, there has scarcely been any empirical evidence that low-quality formal schooling influences the boosting of shadow education. There have only been studies reporting the relationship between students' and parents' schooling dissatisfaction and their purchase of shadow education (Chun



et al., 2003; Kim, 2004a; Kim, 2004b). Therefore, further studies of the relationship between school quality and shadow education are needed.

Secondly, as a more probable reason for students' use of shadow education, students' wanting to supplement their low school grades or low understanding has been mentioned in relation to preparation for the national college entrance exam (Baker & LeTendre, 2005; Kim, 1999; Lee & Kim, 2005; Sang, 2005). Contrary to this argument, however, some studies (Choi et al., 2003; Won, 2001) reported that low-grades students did not use more shadow education than those with higher grades. In those studies, instead, it was found that students with higher grades tended to use more shadow education than those with lower grades. Since those studies have some limitations, such as the problem of limited sample size and the indirect measurement of students' grades, this matter needs to be more examined.

Thirdly, regarding SES- related factors such as family income and parent's education, many studies have reported the impact of those factors on parent expenditure on shadow education: It was mostly reported that high-SES families more expended on shadow education for their children than low-SES families did (Choi et al., 2003; Kim, 2004a; Lee, 2003; Stevenson & Baker, 1992; Yun, 1997).

Fourthly, many educators have indicated that the prosperity of shadow education in South Korea is closely related to "traditionally intense competition among students for college entrance" seen in the South Korean K-12 education system. Some have also mentioned that bitter competition for college entrance reflects what is called Korean's *education fever* or *educational aspiration* (Hyun; 2003; Kim, 1998; Kim, 2004a; Kim et al., 1993; Lee, 2005; Seth, 2002; Weidman &

Park, 2000). Regarding such competition for college entrance, some critics have argued that an insufficient supply of colleges or universities might cause stiff competition for college entrance among students and in turn, their use of shadow education; others have mentioned that the college entrance examination policy might cause such an intense competition among students to obtain admission into colleges or universities. Contrary to those arguments, however, actual educational opportunities for colleges or universities are not limited to South Koreans. Nowadays, almost all high school students can be admitted to all forms of higher education institutes including colleges or universities. With respect to the college entrance examination policy, it has also been reported that, despite many college entrance examination policy reforms to reduce students' use of shadow education, shadow education practices have increased and spread more and more over the country (Kim, 1991; Kim, 2004a; Lee, 2003). This implies that neither the supply matter of higher education institutes nor the college entrance exam policy causes such competition for college entrance among students.

Summing up what has been said above, it turns out that Korean parents' education fever for their children's college entrance is not simply about the quantitative opportunity for higher education, but rather, it is related to Koreans' distinctive "views of college entrance." Such a distinctive view of college entrance, as some educators have mentioned, might be the very same parental desires for their children's admission into a few "prestigious" colleges or universities. In other words, most Koreans tend to believe that academic credentials (especially degrees from a few prestigious universities) have discriminatory power on the opportunity to obtain a

“good” job (Kim, 2003a; Lee, 2005; Weidman & Park, 2000). Accordingly, South Korean parents, as many studies (Hyun, 2003; Kim, 1997; Kim, 2004a; Koh, 1998; Lee, 2005) indicated, might be willing to invest in whatever they believe is helpful to improve school grades for their children’s admission into a few prestigious colleges or universities. In addition, Korean parents might also tend to believe that to prepare their children well for the college entrance exam, it would be of advantage to use shadow education. In view of these facts, South Korean students and parents’ “prestige-oriented views of college entrance,” most of all, might be a major contributing factor to shadow education expenditures. Despite this possibility, however, there has hardly been any research analyzing the relationship between Korean students’ aspiration for admission into a few “prestigious” colleges or universities and their use of shadow education with empirical data. That is why it is necessary to have an empirical examination of how the “prestige-oriented view of college entrance” could affect students’ use of shadow education in South Korea.

Furthermore, the four factors mentioned above alone do not sufficiently explain the contemporary shadow education phenomenon in South Korea, which is different from that of the early stages of mass public education. Those factors, which are mostly drawn from the traditional perspectives based on *functional and competitive* theories, do not acknowledge the other reasons that many students answered as a reason for their use of shadow education in some studies. As an example, some studies (Lee, 1991; Yun, 1997) reported that large percentages of students pointed out the “feeling of uneasiness” they feel in the case of not using shadow education, as a reason for their use of shadow education. Lee’s (1991) study

also indicated that students perceive that more of their peers were using shadow education (i.e., private tutor: 21%, private tutoring institute: 38%) than was actually true (i.e., private tutor: 12%, private tutoring institute: 23%).

This point leads us to some insights from the perspective of *institutional theory* with respect to the causes of the widespread reliance on shadow education in South Korea. From the perspective of institutional theory, students' use of shadow education is not only affected by status competition but also by the climate of the society in which shadow education is already a taken-for-granted practice throughout students' school careers (Baker & LeTendre, 2005; Baker, Motako, LeTendre & Wiseman, 2001; Bray, 1999; Meyer, 1977; Stevenson & Baker, 1992). Based on this view, it could be supposed that neither students' grade nor school quality influences students' use of shadow education as much as it has been generally suggested in prior studies. In other words, students' use of shadow education might not simply be caused by individual competition for better educational opportunity, but it might also be complexly connected with social, economic, and cultural characteristics. Accordingly, through examining how much the two factors (i.e., school quality and student achievement) affect the extent of shadow education practices, it could be possible to indirectly explore the effect of students' feeling of uneasiness due to the social climate on their use of shadow education.

In conclusion, concerning the causes of South Korean students' growing use of shadow education, examining the effects on shadow education of two major factors suggested in the prior studies, related to student achievement and school quality, is necessary. Most of all, it is important to explore the impact on students' use of

shadow education of the factors related to students' *prestige-oriented views of college entrance* and social climate and cultural characteristics. This study, for that reason, explored the effects on Korean students' use of shadow education of the factors such as student achievement, school quality, prestige-oriented view of college entrance, and family SES. Furthermore, through examining to what extent the variable of school quality influences parent expenditure on shadow education and whether students with lower grades use more shadow education than students with higher grades, we could indirectly explore the effects on their use of shadow education for the other factors such as students' feelings of uneasiness or the social climate in which shadow education is already a taken-for-granted practice.

### **Purpose of the Study**

This study is about the causes of the widespread reliance on shadow education in South Korea. This study examines which factors affect South Korean high school students' use of private tutoring services. In particular, it assesses how and to what extent the use of shadow education is influenced by student's grades, school quality, students' view of college entrance, and students' background. Of key importance, this study attempts to identify a new construct, "*prestige-oriented view of college entrance*" as a major factor explaining South Korean students' dramatic use of shadow education. In other words, this study focuses on how and to what extent students' prestige-oriented views of college entrance affect their use of shadow education, as measured by parent expenditure on private tutoring.

First, this study examines how and to what extent student achievement and school quality are related to parent expenditure on shadow education. Although these two factors have been generally pointed out as salient factors influencing South Korean students' use of private tutoring, there has been little research directly examining their impact on the use of shadow education. Second, this study examines the relationship between high school students' prestige-oriented views of college entrance and the extent of their parents' expenditures on shadow education.

Consequently, specific research questions for this study are as follows:

1. Do high school students with lower grades on school records tend to use more shadow education than students with higher grades on school records?

Furthermore, to what extent is high school students' use of shadow education explained by their school grades?

2. Do school quality variables have any effect on high school students' use of shadow education? Furthermore, to what extent is high school students' use of shadow education influenced by their school quality variables?
3. What is the relationship between high school students' prestige-oriented views of college entrance and their use of shadow education?
4. How and to what extent do high school students' background variables such as SES, region, and parents' formal education affect their use of shadow education?
5. Which variables most influence high school students' use of shadow education?

This study hypothesizes that neither high school students' grades nor the quality of formal schooling will much account for the extent of parent expenditure on shadow education. Instead, this study hypothesizes that students' prestige-oriented views of college entrance will primarily affect their use of shadow education, while influenced by family socioeconomic status. The assumption being made here is that the extreme aspiration shared by most South Korean parents and students for admission into a few "prestigious" colleges or universities might be a major contributing factor to shadow education expenditures.

### **Significance of the Study**

The study has significance for first examining, with data from a suitable national survey, the impact on students' use of shadow education due to factors such as students' grades and school quality, which are suggested by educators as the reasons causing the development of shadow education in South Korea. Most of all, this study is especially meaningful as a first attempt to identify a new construct, "prestige-oriented views of college entrance" as a major factor explaining South Korean students' widespread reliance on shadow education.

In educational practices, this study can serve as an important resource for policy making regarding the problem of excessive shadow education phenomenon, by empirically analyzing factors affecting students' use of shadow education. Although prior studies have pointed out some factors that might cause Korean students' growing use of shadow education, there has scarcely been any research that has directly examined the relationship between those factors and students' use of shadow education. According to whichever is the cause of shadow education, the direction of policy could greatly differ. If the major cause of the development of shadow education is the matter of low-quality public schooling, the policy should focus on the improvement of the quality of public schooling. However, if the major causes are other matters related to social and cultural features, policy makers should approach shadow education-related policies more comprehensively with the perspective that Korean students' use of the practice is complexly connected with social, economic, and cultural features, instead of the hasty policy reforms. Therefore, this study is



expected to help policy-makers consider better approaches to solve the problems related to shadow education, by offering a careful diagnosis for the reasons for students' use of shadow education in South Korea.

This shadow education phenomenon has become a type of system that runs parallel to formal schooling and a worldwide trend. In a number of Western nations as well as some Asian countries, these activities are themselves rapidly becoming an institutionalized part of schooling (Baker & LeTendre, 2005; Bray, 1999).

Accordingly, this study has also implications for the direction and other plans of public education in all nations.

In sum, the study is expected to broaden our understanding of why and how South Korean shadow education is prevalent and systematic under the developed formal education system. In addition, the study will offer insight about how to meet theoretical and practical challenges in formal schooling that result from the huge growth of shadow education.

### **Limitations**

First, this study examined the effects on shadow education of a few factors mentioned as the causes of the development of shadow education in South Korea, in order to identify factors influencing Korean high school students' dramatic consumption of shadow education across wide ranges of a national education system. Therefore, there could be some additional factors involved other than the ones this study selects for analysis.

Second, this study has a limit in considering social changes over time as the limitation that a cross-sectional study originally has. In future research of shadow education, consequently, this needs to be supplemented by longitudinal studies considering the policy changes and social changes.

Third, as the indicators used to measure "school quality" are primarily based on teachers' perceptions, this study may need more valid and objective data to measure the quality of schooling.

Fourth, with regards to the analysis method, the multiple regression analysis that this study employed is focused on estimating both the collective and the relative effects of each of predictors on the response variable. For the analysis of interaction effects or hierarchical analysis among variables, accordingly, this is not enough. For those aspects, it could also be recommended to reexamine the hypotheses of this study using an analysis technique such as the HLM analysis model.

### Definition of Terms

*Shadow education.* This is a term used by some scholars to describe “educational activities that occur outside formal schooling and are designed to enhance the student’s formal school career” (Stevenson and Baker, 1992, p.1639). In this study, *shadow education* is used to express the same meaning as the term of *private tutoring*. As shadow education activities, this study includes all typical types of *private tutoring activities* used generally in South Korea, which are individual or group tutoring, instruction from the for-profit institutions like *Hakwon*, self-study sheets including practice exam sheets, internet tutoring, training abroad, and after-class lessons within schools.

*Expenditure on shadow education.* This means parents’ expenses for their children’s shadow education activities. In this study, expenditure on shadow education is used as the meaning of monthly costs of all types of private tutoring services, such as individual or group tutoring, instruction from the for-profit institutions like *Hakwon*, self-study sheets including practice exam sheets, and after-class lessons within schools.

*Prestige-oriented view of college entrance.* This is a concept that this study attempts to identify to describe South Koreans’ tendency to competitively seek admission into just a few high-ranking colleges or universities, by attaching the most value by far to the “prestige ranking” of colleges and universities in choosing colleges.

## Chapter 2

### LITERATURE REVIEW

#### Shadow Education in South Korea

##### *Growing Expenditure on Shadow Education*

The research has reported that the percentages of Korean students' use of shadow education and parent expenditure on shadow education have been increasing annually. For example, it was reported that 72.6% of Korean students used shadow education in 2003; 58.2% of Korean students used it in 2000. When comparing the percentages of Korean students' use of shadow education in 2003 with that of 2000, 14.4% in total percentage of students' use of shadow education was increased during that period. By school level, 83.1% of elementary school students used shadow education in 2003; 70.7% of elementary school students used it in 2000. Accordingly, 12.4% increased in the percentage of elementary school students using shadow education for three years. 75.3% of middle school students used shadow education in 2003; 59.5% of middle school students used it in 2000. Therefore, 15.7% increased in the percentage of middle school students using shadow education. As of high school students, 56.4 % of academic high school students used shadow education in 2003; 46.8% of students used it in 2000. In other words, 9.6% increased in the percentage of academic high school students using shadow education. 19.2 % of vocational high school students also used shadow education in 2003; 17.1% of students used it in

2000. 2.1% increased in the percentage of vocational high school students using shadow education (Choi, Kim, Yoo, Kim, & Lee, 2003; Ministry of Education & Human Resources Development [MOE], 2001).

As regards parent expenditure on shadow education, it was reported that Korean families spent around 13.6 trillion Korean won (approximately U.S. \$ 12 billion) on all forms of private tutoring in 2003. It means that Korean households, on average, spent about 10% of their income on private tutoring services (Choi et al., 2003): One report of the Korea Institute for Health and Social Affairs (2005) indicated that Korean families with two schoolchildren, on average, spent about 22% of their income on their children's private tutoring services in 2005 (Song et al., 2006). The annual changes of total amounts of private tutoring expenditure show us to what extent shadow education practice has been developed in South Korea (see Table 2.1). As seen in Table 2.1, total amounts of private tutoring expenditure in South Korea have continuously increased from 1977 to 1998. Total amounts, only in 2001, a little bit decreased when compared with 1998. This is also accounted for the decrease of the number of total students in 2001 (Choi et al., 2003).

**Table 2.1 Change of Total Amount of Private Tutoring Expenditure**

(Unit: 1,000,000 Korean won, 2001 constant market price)

Year	1977	1982	1985	1990	1994	1998	2001
Total	1,678,064	3,148,615	6,566,291	10,910,943	14,064,888	20,588,250	16,733,509
Elementary School	956,018	1,617,631	3,171,836	6,247,322	6,775,168	12,334,481	9,685,904
Middle School	454,690	970,976	1,961,506	2,634,834	4,705,567	4,777,453	4,140,766
Academic High School	267,356	560,008	1,432,949	2,028,787	2,604,153	3,476,316	2,906,839

Source: Kong et al. (2001).

***Policies and Politics Related to Shadow Education Practices in South Korea***

Major educational reforms and policies of South Korea have been implemented related to the development of shadow education, social climate and some political factors. Shadow education in South Korea began to grow and spread rapidly over the country during the 1960s and 1970s in relation to middle and high school entrance examinations. The process was closely connected with the competition among students for a few prestigious schools as seen in the following history.

Since all middle schools selected their own students through a competitive entrance examination until the late 1960s, rankings among middle schools based on entrance examinations scores were created and a few high-ranking middle schools were produced. Elementary school students, accordingly, competed intensely for admission into high-ranking middle schools and relied on private tutoring.

Elementary school curriculum practices were also primarily aimed at preparation for the middle school entrance exam. Concerning such competition for admission into high-ranking middle schools, the government at that time (i.e., the Park Administration) decided that it caused excessive reliance on private tutoring, created a burden on households due to such reliance, and distorted the curriculum practices of elementary schools. Therefore, in 1969, to relieve the intense competition among elementary school students, the government implemented a policy of “No Entrance Examination System for Middle School Admission,” a middle school equalization policy. Under this policy, the competitive entrance examination was replaced by the random allocation of students through a lottery. As a result, competition in elementary schools was considerably alleviated (Ministry of Education and Human Resources Development [MOE], 2003). Nevertheless, competition among elementary school students was passed on to the next-level school. In other words, the extreme competition among middle school students for entrance into a few high-ranking high schools started to appear; middle school students also used shadow education for that purpose.

As various problems arising from such fierce competition were revealed to be an important social issue, accordingly, the government executed the “High School Equalization Policy” with the purpose of solving those problems stemming from the intensified competition among middle students in 1974 (Kim et al., 1978; MOE, 2003). The result, however, was similar to that of the middle school equalization policy. Competition among middle school students was passed on to high school level.

Therefore, in 1980, to solve the problems caused by the competition among high school students, the government legally banned all shadow education practices. Some have criticized this prohibition of private tutoring activities as a political agenda of the new military coup led by General Jeon, designed to show their willingness to solve the problem of private tutoring expenditure, one of families' largest financial burdens, with the aim of gaining more legitimacy (Lee, 2003). Nevertheless, shadow education practices continuously operated underground. A few years later, consequently, the government allowed some exceptions such as private tutoring by college students and instruction within *Hakwon* (private tutoring institutions). From that time until 2000, shadow education practice was illegal with those exceptions. In 2001, the government withdrew the ban on private tutoring because it was judged to be unconstitutional, that is, against the fundamental human right to education in the Constitutional Court (Kim, 2004; Lee, 2003; Lee and Hong; 2001).

Despite a number of policy changes to reduce competition among students and reduce private tutoring practice, such as “No Entrance Examination System for Middle School Admission” and “High School Equalization Policy (HSEP)” as mentioned above, the intense competition among middle and high school students for entrance into more prestigious schools and private tutoring activities have not been alleviated in South Korea. The current government also seems to recognize the growing private tutoring expenditure as a major problem to be solved. For example, in 2004, the government made the proposal of “2.17 Educational Reform (Feb. 17,



2004),” addressing how to reduce the burden of private tutoring expenditure and to modify the HSEP (Kim & Choi, 2004).

### **Prior Studies on Shadow Education**

Most prior studies of shadow education in South Korea have been conducted to explore the reality and policy implications of shadow education as follows: (1) survey studies of private tutoring expenditure and participation (Choi et al., 2003; Kim et al., 2000; Kong et al., 2001; MOE, 2001; Yun et al., 1997); (2) studies of policy measures for reducing excessive private tutoring activities (Kim, 2001; Kim, 2003); (3) evaluation of shadow education-related policies (Lee, 2002); and (4) theoretical analysis of behaviors related to participating in shadow education (Baek, 1999).

Discussion of shadow education in those prior studies can be classified into two major issues. One is the issue of educational inequality among groups with different socioeconomic backgrounds. As present in a Japan’s case (Stevenson & Baker, 1992), South Korean studies have also indicated that students of high-SES families tend to participate more in shadow education than those of low-SES families (Choi et al., 2003; Kim, 2004a; Lee, 2003; Yun, 1997). Another important issue is the matter of which factors influence the development of shadow education in South Korea. While prior studies have been mostly conducted about the reality of shadow education, studies on the causes of the development of shadow education have been

hardly made. What is worse, most of the few studies are the approach to just theoretical exploration or opinion surveys on the reasons for students' use of shadow education rather than analysis of the relationships among the factors that could affect the development of shadow education with empirical evidence.

### ***Causes of Shadow Education***

As the factors affecting students' use of shadow education in South Korea, the literature has generally suggested the following: (1) low-quality formal schooling and students' and parents' dissatisfaction with public education; (2) students' wanting to improve their low school grades or low understanding of special subjects; (3) reaction to current education policies, such as High School Equalization Policy (HSEP) and the national college entrance system; (4) parents' desires for providing their children with better educational opportunities; (5) socio-cultural factors inducing students' intense competition for entering colleges and universities; and (6) family SES. (Choi, Kim, et al., 2003; Kim, 1991; Koh, 1998; Lee, 2003; Yun, 1997) In fact, the HSEP can be included in the matter of low-quality formal schooling. It is because HSEP, by some critics, is mentioned as the cause of students' reliance on shadow education on account of the fact that HSEP might cause a lowering of student achievement and dissatisfaction with the quality of schooling (Lee & Hong, 2001). Disputes about the national college entrance system or policy in terms of shadow education are also related to the matter of whether the system or policy has increased the competition among students for college entrance or not. Therefore, those causes mentioned above

are largely connected with four factors such as low-quality formal schooling, students' wanting to improve their low school grades and understanding, family SES, and competition related to college entrance opportunities.

*School quality.* Low-quality formal schooling has been most generally pointed out as the cause of the development of shadow education. However, there has scarcely been any empirical study that directly examined the relation between low-quality formal schooling and shadow education. There have been only a few studies examining whether students' and parents' schooling dissatisfaction is related to their use of shadow education. According to the studies, it was only reported that there was some relationship between students' and parents' schooling dissatisfaction and their expenses for shadow education (Chun et al., 2003; Kim, 2004a; Kim, 2004b). For example, Kim's (2004a) study reported that parents' high dissatisfaction with schooling was related to their high expenditures on shadow education. As a solitary study of exploring the impact of school quality on the growth of shadow education in South Korea, Lee's (2003) dissertation intended to find out whether the growing expenditure on private tutoring services is a function of low-quality public schooling. However, his study is not enough to be considered as the direct examination of the influence of school quality on the growing use of shadow education. Because the yearly total educational budget invested in public education from the central government was used as an indicator of the quality of formal schooling in his study, the study may face the criticism that more funding for public education can not be said to represent better quality of education in public schools.

With respect to the impact of low-quality schooling, High School Equalization Policy (HSEP) in particular has been recently criticized for its causing students' dependence on shadow education by leading to their dissatisfaction with the quality of schooling (Lee & Hong, 2001; The HANKYOREH, 2005 Feb 20). Although the HSEP, as mentioned above, was launched with the aim of reducing competition among students and their use of private tutoring services, the HSEP has become a point of dispute as the major cause of students' reliance on shadow education. By the leaders of the economic world, political circles, and the press in particular, HSEP is criticized as if a principal factor of spoiling Korean education. According to critics, HSEP increased students' private tutoring expenditures by reducing the effectiveness of teaching and grouping together students of different learning levels (Kim, G. et al., 2003; Kim, T. et al., 2003). As evidence for this argument, one study of Korea Development Institute (KDI) indicated that the improvement of student achievement was bigger in schools under the HSEP than schools under Non-HSEP (Kim, et al., 2003).

This study, however, is countered by several mistakes in research. In addition, such an argument against HSEP is countered by a few empirical studies (Kim, H., 2004a; Kim, K-S., 2004; Kim, K-S. et al., 2004, 2005; Sung, 2004, 2005). For example, Kim Ki-Seok's (2004) study pointed out the major controversies and problems in argument and mistakes in research method, which are seen in the study of KDI (2003). Sung's (2004) study examined that HSEP was not related to a lowering of student achievement. Kim (2004a) also found that the HSEP variable did not have any statistically significant effect on the extent of parents' schooling

dissatisfaction or on parents' expenditures on private tutoring. Particularly, Kim, K-S. et al.'s (2005) study, contrary to the results of KDI's (2003) study, reported that the improvement of student achievement was bigger in schools under non-HSEP than schools under the HSEP. In other words, it is arguable that HSEP boosted students' use of shadow education by leading to their dissatisfaction with the quality of schooling. Most of all, there has scarcely been any empirical evidence that low-quality formal schooling influences the boosting of shadow education. Therefore, the relationship between school quality and shadow education needs to be further examined.

*Student's grades.* The idea that students might use shadow education to supplement their low school grades or low understanding is a likely supposition. Under this view, it is assumed that students with lower grades would use more shadow education than students with higher grades. Some studies also indicate the effect of Korean students' use of shadow education on the improvement in their school records and their preparation for the national college entrance exam (Kim, 1999; Baker & LeTendre, 2005; Lee & Kim, 2005; Sang, 2005). On the other hand, Won's (2001) study, while empirically examined the relationship between the expenditure on shadow education and students' grades, the only study regarding this matter, reported that students with higher grades used more shadow education than those with lower grades. Even though this study had some limitations (e.g., limited sample size), this matter needs to be further examined.

***Family SES.*** In regard to SES- related factors such as family income and parent's formal education, most statistical reports have indicated that high-SES families expend more money purchasing private tutoring services for their children than low-SES families (Choi et al., 2003; Kim, 2004a; Lee, 2003; Stevenson & Baker, 1992; Won, 2001; Yun, 1997). This means that family backgrounds would greatly influence students' use of shadow education.

***Competition for college entrance.*** Most Koreans would agree that the prosperity of shadow education in South Korea is related to the traditionally intense competition among students for college entrance (Hyun; 2003; Kim, 2004a; Lee, 2005). Many studies have indicated that the South Korean K-12 education has been too much aimed at preparation for college entrance and most Korean parents are willing to endure any amount of suffering in order to provide their children with private tutoring for college entrance (Kim, 1998; Weidman & Park, 2000). One survey study of the reasons for students' uses of shadow education indicates that 44.5% of middle and high school students marked the reasons of "for the purpose of just preceding the other students in rank" rather than more reasonable reasons such as "to improve their low school grades or low understanding of special subject" and "to complement low quality of their school education (Kim et al., 1993).

## **New Approach to the Causes of Students' Reliance on Shadow Education**

### ***Education Fever and Competition for College Entrance***

Some scholars have mentioned that the bitter competition for college entrance seen in South Korean K-12 education is related to so-called Koreans' *education fever* or *educational aspiration*. This education fever or educational aspiration, which most Korean families have, has been generally defined as a parental zeal for providing their children with better educational opportunities. According to various scholars, the development of shadow education in South Korea has been driven by the Koreans' education fever or educational zeal (Hyun; 2003; Kim, 1998; Kim, 2004a; Kim et al., 1993; Lee, 2005; Seth, 2002; Weidman & Park, 2000).

With respect to the causes of such competition for college entrance, some critics have argued that an insufficient supply of colleges or universities might be one reason for students' excessive use of shadow education by causing stiff competition for college entrance among students. Others have pointed out that the college entrance examination policy might cause such intense competition among students to obtain admission into colleges or universities. Contrary to those arguments, however, actual educational opportunities for colleges or universities are not limited for South Koreans. In fact, almost all high school students can be admitted to all forms of schools including colleges or universities in contemporary South Korea. As of 2005, the advancement rates of elementary school graduates, middle school graduates, and high school graduates were 99.9%, 99.7%, and 82.1% respectively. Regarding the

college entrance examination policy, it has also been reported that, despite many college entrance examination policy reforms to reduce students' use of shadow education, shadow education practices have spread more and more over the country (Kim, 1991; Kim, 2004a; Lee, 2003). This implies that neither the supply matter of higher education institutes nor the college entrance exam policy causes such competition for college entrance among students. In view of these facts, it turns out that the Korean parents' education fever for their children's college entrance is not simply about the quantitative opportunity for higher education. Instead, it is clear that the competition for college entrance is related to South Koreans' distinctive "views of college entrance."

### ***Prestige-oriented View of College Entrance and Shadow Education***

As mentioned above, Korean parents' education is not to simply seek their children's admission into colleges or universities. Instead, it might be the very extreme desires for admission, shared by most South Koreans, into a few "prestigious" colleges or universities. In other words, the competition for college entrance might be driven by Korean students' seeking admission into colleges, in particular, a few "prestigious" colleges or universities. Some studies also indicate that many South Koreans tend to place excessive importance on entering "high-ranking" universities and even identify this with success in life (Hyun, 2003; KEDI, 2003). The problem is in the fact that the great majority of Koreans competitively seek a degree from a prestigious university (Kim, 2004a). Even vocational high school students, not



just academic high school students, aim to enter academic colleges, as indicated by the advancement rates of academic high school graduates and vocational high school graduates, 88.3% and 67.6% respectively (MOE & KEDI, 2005).

This “prestige-oriented view of college entrance” might result from the academic credential-oriented structure of Korean society. Most Koreans, as some educators have pointed out, believe that academic credentials (especially degrees from a few prestigious universities) have discriminatory power on the opportunity to obtain a “good” job (Kim, 2003a; Lee, 2005; Weidman & Park, 2000). Furthermore, college prestige is mostly determined by meritocratic exam scores in South Korea (Lee, 2003). Evidence also suggests that the differentials in economic and social rewards exist because of the hierarchy of colleges in South Korean society, as in Japan and some other Asian nations (Han, 1990; Kim, 1979; Kim, 1991; Meyer, 1997; Stevenson & Baker 1992; Yun & Song, 1991). In short, this is the major reason why most South Korean parents, as many studies (Hyun, 2003; Kim, 1997; Kim, 2004a; Koh, 1998; Lee, 2005) indicate, are willing to invest in anything they believe to be helpful to improve school grades for their children’s admission into a few prestigious colleges or universities. In addition, Korean students and parents might think that it would be of advantage to use shadow education. In sum, South Korean students’ and parents’ “prestige-oriented views of college entrance,” most of all, might be a major contributing factor to their use of shadow education.

### *Social Climate and Shadow Education*

Another important factor that can be considered as the reason for South Korean students' use of shadow education is the students' "feeling of uneasiness" due to the social climate in which shadow education is a taken-for-granted practice throughout the school system. In other words, students' perception that most students are using shadow education and their psychological fear or anxiety caused by such a perception might make them access shadow education (Lee, 1991). As grounds for this conclusion, Lee's (1991) study suggests that students perceive that more of their peers are using shadow education (i.e., private tutor: 21%, private tutoring institute: 38%) than is actually true (i.e., private tutor: 12%, private tutoring institute: 23%). Yun Chung-il's (1997) study also reports that, as a reason for their use of shadow education, 39.55% of primary school students and 52.1% of middle and high school students pointed out "a feeling of fear in the case of not using shadow education." Consequently, students' use of shadow education might not simply be caused by individual competition for better educational opportunity, but it might also be complexly connected with social, economic, and cultural characteristics. This perspective could be an alternative view to what prior studies were usually based on to explain reasons for students' use of shadow education in South Korea.

### ***Two Theoretical Perspectives on the Causes of Shadow Education***

Explanation of the causes of South Korean students' excessive use of shadow education can be approached from two theoretical perspectives: *status competition theory and institutional theory*. This study is based on both of these theoretical perspectives as possible causes of South Korean students' use of shadow education:

***Perspective of status competition.*** From the perspective of status competition theories, people perceive educational credentials as an important tool for obtaining desired social status. For that reason, parents want to help their children get educational credentials as a way to ensure access to a limited number of high-status social positions (Boudon, 1974; Collins, 1971, 1979; Hurn, 1978). Viewed from this angle, in consequence, students' use of shadow education can be interpreted as the outcome of competition for getting better educational opportunities. In other words, students' use of shadow education is understood in the view of economic rationality or status competition games. Explanations mentioned in the prior South Korean studies are mostly based on the perspective of status competition. For example, views regarding factors such as low-quality formal schooling, students' wanting to improve their low school grades, and intense competition for better college entrance opportunities as major reasons for students' use of shadow education, are included in the perspective of status competition.

A status competition perspective alone, however, does not sufficiently explain the reasons for the development of the contemporary shadow education phenomenon,

which are different from those of the early stages of mass public education. In other words, it does not provide much help in understanding why almost all students, regardless of background or ability, purchase shadow education services.

*Perspective of institutionalization.* Concerning this issue, institutional theory provides some alternative view to the causes of shadow education. Institutional theorists view the formal schooling system as a socially constructed and legitimated institution with ceremonial significance that is chartered to assign school graduates to a series of unique rights, prestige, and social positions (Meyer, 1977). The ever-growing pattern of shadow education is, from the perspective of institutional theory, parallel to the expansion and greater institutionalization of formal schooling over time. In view of this perspective, students' use of shadow education is not only affected by status competition but also by the climate of the society in which shadow education is already a taken-for-granted practice throughout the school over time (Baker & LeTendre, 2005; Baker, Motako, LeTendre & Wiseman, 2001; Bray, 1999; Meyer, 1977; Stevenson & Baker, 1992)

## Chapter 3

### METHODOLOGY

#### Conceptual Framework

The theoretical framework for this study is based on both of the two theoretical perspectives on the causes of South Korean students' use of shadow education: status competition theory and institutional theory. From the perspective of *status competition*, this study views Koreans' distinctive *education fever* as the competition for a limited number of academic credentials to obtain desired positions, particularly, for admission into a few "prestigious" colleges or universities. Korean parents want to invest in shadow education as they believe it can help their children to win in the competition among students for getting those educational credentials (Boudon, 1974; Collins, 1971, 1979; Hurn, 1978). Thus, this study hypothesizes that such intense competition might induce South Korean students to use shadow education and that it might also be influenced by family socioeconomic status which has been proved to mainly affect parent expenditure on shadow education. In particular, this study assumes a new concept, "prestige-oriented views of college entrance," as the major factor to explain South Korean students' use of shadow education.

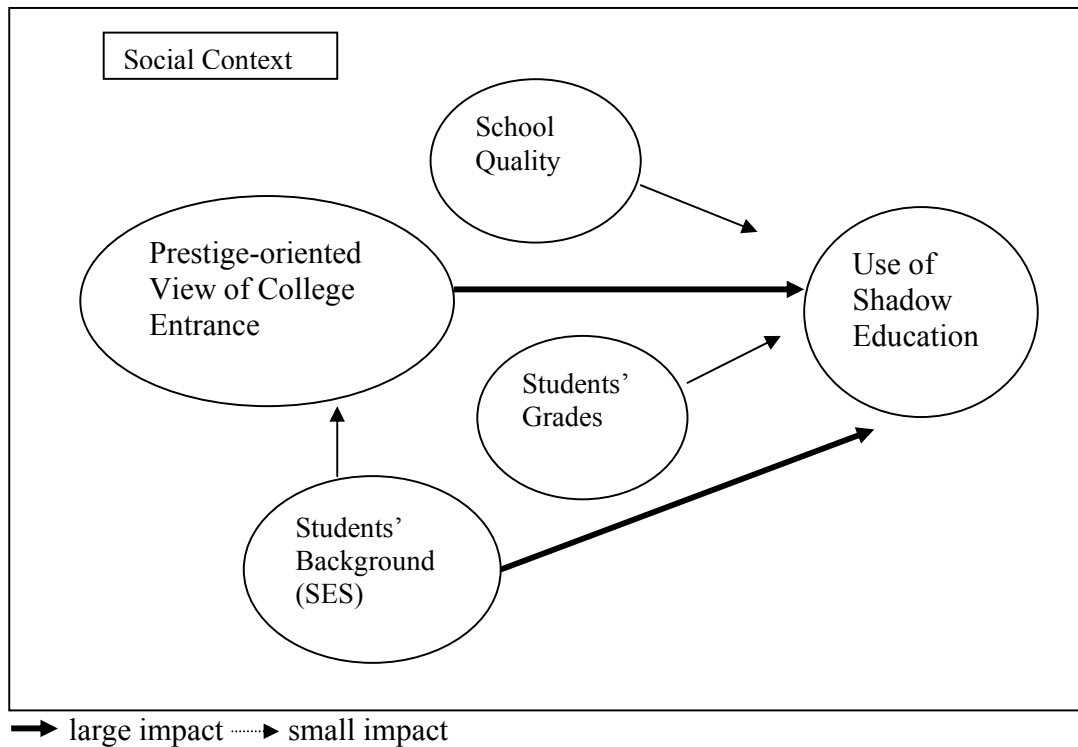
A status competition perspective alone, however, does not sufficiently explain the reasons for the contemporary growth pattern of the shadow education phenomenon in South Korea, which are different from those of the early stages of mass public education. It does not provide much help in understanding why almost all

students, regardless of family background or students' grades, depend on shadow education and why large-scale shadow education has been systematically developed across the whole nation over time. Evidence also indicates that some reasons, which many students mentioned as the reason for their purchase of shadow education services, can not be understood by those traditional perspectives (e.g., functional and competitive theories). Some studies have reported that a large portion of students use shadow education because of a "feeling of uneasiness" without any rational reason (Lee, 1991; Yun, 1997). Furthermore, Lee's (1991) study also indicates that students perceive that more of their peers are using shadow education (i.e., private tutor: 21%, private tutoring institute: 38%) than is actually true (i.e., private tutor: 12%, private tutoring institute: 23%).

Accordingly, my study tackles this issue using some insights from institutional theory. From the perspective of *institutional theory*, students' use of shadow education is not only affected by status competition but also by the climate of the society in which shadow education is already a taken-for-granted practice throughout students' school careers (Baker et al, 2001; Baker & LeTendre, 2005; Bray, 1999; Meyer, 1977; Stevenson & Baker, 1992). Based on this viewpoint, the study supposes that South Korean students' widespread dependence on shadow education can also be caused by students' feeling of uneasiness that they might lose in the competition without shadow education services, in the social context in which shadow education is perceived as a taken-for-granted practice throughout the school system.

In sum, this study hypothesizes that Korean students' purchase of shadow education services mainly rise from their "prestige-oriented views of college entrance," which are influenced by family socioeconomic status. Contemporary patterns of shadow education activities, this study also hypothesizes, would be caused by collective mental states and behaviors complexly connected with social, economic, and cultural characteristics, rather than simply being caused by the matter of student achievement and school quality. The conceptual analysis model for this study draws upon four sets of factors that might affect Korean high school students' use of shadow education (see Figure 3.1).

This study seeks to examine whether and to what extent students' grades and the quality of formal schooling are related to parent expenditure on private tutoring and to explore how students' prestige-oriented views of college entrance affect their use of shadow education, as measured by parent expenditures on private tutoring.



**Figure 3.1 Conceptual model of prestige-oriented view of college entrance and shadow education.**

### Design, Population, and Sample

This study employed a cross-sectional survey design. Data for this study were drawn from the data of Korean Education & Employment Panel [KEEP], a nationally representative baseline survey conducted by the Korea Research Institute for Vocational Education and Training [KRIVET] in 2004. The population of KEEP was middle school seniors, academic high school seniors, and vocational high school seniors across South Korea as of March 2004. This study restricted the subject pool to third-year high school students (twelfth-year students in the U.S.) in South Korea. The data used in this study have a large nationwide cross-sectional feature.



The sampling population is high schools with a second-year student enrollment of thirty-one and above in 2003 over the entire country. The sampled population for this study is 1,295 academic high schools and 631 vocational high schools. For the sampling, a stratified cluster sampling was used. In the first stage, the entire country was stratified into 15 administrative districts (Seoul metropolis, 6 metropolitan cities, 8 municipality provinces) based on geographical regions and size. Then, as first-stage sampling units, 100 academic high schools were proportionally selected from 15 administrative districts, in the ratio of the student enrollment of each district to the student enrollment of the whole country (see Table 3.1). In the case of vocational high schools, all of the vocational high schools were stratified into three types of schools (technical high schools, commercial high schools, and other high schools) by the type of vocational schools over the country. Then, 100 vocational high schools were proportionally selected from three types of schools, in the ratio of the student enrollment of each type of school to the student enrollment of the whole vocational school (see Table 3.2). In the second stage, as second-stage sampling units, four third-year classes were randomly selected from each selected school. In the third stage, five students were randomly selected from each selected class by systematic sampling (sampling interval: 5).

**Table 3.1*****Number of Sample Schools by Region (Academic High Schools)***

(Units: Number, %)

Region	Sampling Units by Region		Rate of Number of Students by Region (%)	Number of Sample School by Region
	Number of Schools	Number of Students		
Seoul	204	94,686	23.01	23
Busan	82	29,755	7.23	7
Daegu	56	24,416	5.93	6
Incheon	49	21,709	5.28	5
Gwangju	45	13,601	3.31	3
Daejeon	38	14,601	3.55	3
Ulsan	25	10,287	2.50	2
Gyeonggi-do	229	80,688	19.61	20
Gwangwon-do	63	11,380	2.77	3
Chungcheongbuk-do	43	11,683	2.83	3
Chungcheongnam-do	70	16,279	3.96	4
Jeollabuk-do	83	16,096	3.91	4
Jeollanam-do	78	14,660	3.56	4
Gyeongsangbuk-do	112	22,958	5.58	6
Gyeongsangnam-do	117	28,677	6.97	7
Whole country	1,295	411,431	100	100

**Table 3.2*****Number of Sample Schools by Region (Vocational High Schools)***

(Units: Number, %)

School Type	Sampling Units by School Type		Rate of Number of Students by School Type (%)	Number of Sample School by School Type
	Number of Schools	Number of Students		
Technical School	202	63,059	40.63	41
Commercial School	194	59,279	38.20	38
The Others	235	32,862	21.17	21

The aimed samples of KEEP consisted of 2,000 middle school students, 2,000 academic high school students and 2,000 vocational high school students, 6,000 members of their families, 1,121 homeroom teachers, and 300 school administrators. The base line survey of KEEP was conducted from March to August in 2004. As 13,239 samples of the total 13,421 target samples were surveyed for this period, the success ratio of survey was 98.6% (see Table 3.3).

**Table 3.3**

*Samples and Response by School Type of KEEP*

(Units: Number, %)

Type of Target Samples	Number of Samples	Responses	Ratios of Success
Student(Middle and High School)	6,000	6,000	100.0
Family (Parents)	6,000	5,827	97.1
School Administrator	300	300	100.0
Class(Homeroom teacher)	1,121 <sup>a)</sup>	1,112	99.2
Total	13,421	13,239	98.6

*Note.* <sup>a)</sup> In the schools with less than four classes, one through three homeroom teachers were also selected.

Sample substitution was conducted in the survey of KEEP. The samples of 372 students, 26 schools, and 4 classes were replaced with other valid samples. Accordingly, the samples for this study using the data of KEEP consisted of 4,000 high school students, 4,000 members of their families, and 800 of their homeroom teachers. Of those samples, the samples of 302 students, 18 schools, and 4 classes were replaced with valid samples.

In KEEP data, cross-sectional weights (i.e., cross-sectional student weights, cross-sectional family weights, cross-sectional school weights, and cross-sectional homeroom teacher weights) were given to each sample of student, family, school, and homeroom teacher respectively. The weights were computed over three stages: an unequal selection probability adjustment, a non-response adjustment, and a post-stratification adjustment. The final weights were calculated by multiplying three weights calculated in each stage of the three stages. Therefore, data for this study were also based on these weighted samples.

### **Data Collection Procedures**

KEEP data were collected from the *Handbook of Educational Statistics* (Ministry of Education & Human Resources Development, 2004) and from surveys of students, their school administrators, homeroom teachers, and parents. The surveys were given to not only students but also to their parents, teachers, and schools from April through August 2004. With approval of the school administrators, the homeroom teachers and students of the classes selected by sampling principles were asked to participate in personal interviews. When the survey of schools and students was successfully completed, the survey using personal interviews with the students' parents was conducted by visiting the families of the students. The samples rejected or the samples ineligible to survey were replaced with other valid samples.

## Data Analysis

### *Variables*

Following the conceptual framework for this study, four sets of independent variables and one dependent variable were developed from the KEEP data.

### *Independent Variables*

***Student achievement.*** The first independent variable was high school students' level of academic achievement, which was measured with students' percentile ranks in the whole school and was reported by homeroom teachers (where 1=minimum and 100=maximum.).

***School quality.*** The second set of independent variables was developed to reflect the quality of students' schools. Three variables, which are teachers' evaluation of their schools' class climate, average level of student achievement compared with those of neighborhood schools, and teachers' teaching ability, were adopted to measure school quality. They were measured individually using single-item rating on a 5-point Likert-type format (where 5 = very good and 1 = very bad). Internal consistency reliability of those three items was confirmed with the value of Chronbach's Alpha (alpha = .685).

***Prestige-oriented view of college entrance.*** To measure students' prestige-oriented views of college entrance, two variables were developed: 1) *Prestige Ranking of Colleges Desired* (measured by *prestige ranking of the colleges or universities that each student strives for*); 2) *Students' Prestige-Oriented College Choice* (measured by *students' responses to how much importance they place on the prestige of college in choosing their future colleges or universities*).

The variable of "prestige ranking of colleges desired" was recoded with the data of KEEP in which respondent students were asked to indicate the names of the colleges or universities they were striving for. To indicate the prestige rankings of those colleges or universities that students responded to wish to enter, this study used *the 2005 comprehensive college ranking* drawn from *2005 National University Evaluations* comprehensively evaluated by a widely read Korean newspaper, *JoongAng Daily*. To measure the comprehensive college prestige ranking, *JoongAng Daily* uses a method similar to that of *US News and World Report* with four criteria: (1) educational conditions (e.g., ratio of teachers and staff to students, educational expenditure per student, and the number of books in the library); (2) faculty's research performance; (3) socially recognized reputation of college and the extent of graduates' participation in public affairs; and (4) extent of reform and improvement. According to the national university evaluations of *JoongAng Daily*, the top rankings of colleges by comprehensive evaluation have not changed except for small fluctuation since the first year of evaluation, 1994 (Kang, H., et al., 2005). Since the comprehensive prestige rankings of colleges or universities were reported for only the highest 29 schools, this study recoded the prestige rankings of the colleges or

universities that students responded to as follows: 1 through 29 = if colleges or universities belonged to the list of the 29 most prestigious universities (29=the highest, 1= the lowest); and 0=otherwise.

The variable of “students’ prestige-oriented college choice” was developed to measure how much importance students place on the prestige of college in choosing their future colleges or universities. It was recoded with the single-item data of KEEP in which students responded to “What do you consider most when choosing your future colleges or universities?” in this study. As the scale of measurement of the data was categorical, it was dummy coded. If they responded to *prestige of college*, it was recoded 1. If they responded to *the other things*, it was recoded 0.

***Students’ backgrounds.*** The fourth set of independent variables consisted of students’ backgrounds. That set included average monthly family income, mother’s formal education, father’s formal education, and residence area. Residence area was classified into four regions, which can be said to represent the urbanization level of residence area, according to the hierarchy of administrative territory of self-government in South Korea. Those regions are: (1) Rural area with a population of less than approximately 20,000; (2) Town with a population of approximately more than 20,000 ~ less than 40,000; (3) City with a population of approximately more than 40,000 ~ less than 1,000,000; and (4) Metropolitan with a population of over approximately 1,000,000.

### ***Dependent Variable***

***Expenditure on private tutoring.*** As the dependent variable, one outcome variable to reflect the extent of students' use of shadow education was adopted: parents' monthly expenditures on private tutoring (measured by the average amount of monthly expenditure on private tutoring expended for the survey students). In private tutoring, three major forms of private tutoring practices (i.e., individual or group tutoring provided by individual tutors, private instruction provided by a for-profit private institution, and tutoring services of self-study sheets by mail or the Internet) were included. Table 3.4 lists the operational forms of all the variables included in the multiple regression analysis for this study.

**Table 3.4**

### ***Descriptions and Scales of Variables***

---

#### **Independent Variables**

**1. Student's School Grades:** Measured by student's "percentile ranking in the whole school" reflecting student's school grades, where 1=minimum and 100=maximum.

#### **2. School Quality**

**School Evaluation of Class Climate:** Measured by single-item rating reflecting the school's class climate on a 5-point Likert-type format, where 5=strongly good and 1=strongly bad.

**School Evaluation of Student Achievement:** Measured by single-item rating reflecting (reflecting The school's average level of student achievement compared with those of neighborhood schools) on a 5-point Likert-type format, where 5=strongly good and 1=strongly bad.

**School Evaluation of Teacher's Ability:** Measured by single-item rating

---



---

reflecting (teachers' teaching abilities of the school) on a 5-point Likert-type format, where 5=strongly good and 1=strongly bad.

### 3. Student's Backgrounds

**Family Income:** Average monthly income that was described by the survey student's family (Unit: 10,000 won [approximately U.S.10 dollars]).

**Father's Education:** Scored on a 9-point scale, where 1= no school, 2= leaving elementary school before graduation, 3=elementary school, 4= middle school, 5= high school, 6= 2~3-year college, 7= 4-year college, 8= master degree, and 9= doctoral degree.

**Mother's Education:** Scored on a 9-point scale, where 1= no school, 2= leaving elementary school before graduation, 3=elementary school, 4= middle school, 5= high school, 6= 2~3-year college, 7= 4-year college, 8= master degree, and 9= doctoral degree.

**Degree of Urbanization of Residence Area:** Scored on 4-point scale reflecting the urbanization level of residence area, where 1= "Rural" with a population of less than approximately 20,000, 2= "Town" with a population of approximately more than 20,000 ~ less than 40,000, 3= "City" with a population of approximately more than 40,000 ~ less than 1000,000, and 4= "Metropolitan" with a population of over approximately 1000,000.

### 4. Prestige-oriented View of College Entrance

**Ranking of Colleges Desired:** Single item scored on a 29-point scale reflecting the prestige rankings (*2005 comprehensive college ranking* drawn from *2005 National University Evaluations*) of the colleges or universities where students desire to be admitted, where 1 through 29 = if colleges or universities belonged to the list of the top 29 most prestigious universities (29=the highest, 1= the lowest); and 0=otherwise.

**Prestige-oriented College Choice:** Single item scored on a 9-point scale reflecting "what students consider most when choosing the colleges or universities where they desire to be admitted, where 1 = if they responded to *prestige of college*, 2= if they responded to *the other things*."

### Dependent Variable

**Expenditure on Private Tutoring:** Average amount of monthly expenditure on private tutoring spent on the survey students, which was described by the survey student's family (Unit: 10,000 won [approximately U.S.10 dollars]).

---

## Analytic Procedures

*Multiple regression analysis.* Ordinary Least-Squares (OLS) regression was used to estimate both the collective and the relative effects of each of four independent variable sets on high school students' use of shadow education in South Korea: students' grades, school quality, their prestige-oriented views of college entrance, and their family backgrounds. For procedures to select independent variables, the *Hierarchical Regression Model* was employed. For analysis, SPSS 12.01 was used in this study. Multiple regression analysis for this study was done with cases weighted by cross-sectional student weights, as KEEP data used in this study were based on the weighted samples.

In the first stage, this study, as explained above, conducted two analyses in order to test if the indicators and variables used for this study would appropriately reflect two constructs, school quality and prestige-oriented views of college entrance: (1) *Factor Analysis* for validity test of "school quality" variables and (2) *Two-sample T-test* for validity test of "prestige-oriented views of college entrance" variables.

Next, to test some *statistical interaction effects*, the study employed a classic procedure for interaction effect test, commonly known as a *cross-over interaction* (Baron, 1986). According to the logic of this study that the relationship between "students' prestige-oriented view of college entrance" and "parents' expenditure on private tutoring" might be influenced by students' backgrounds, the study tested statistical interaction effects among those variables. Data were also properly prepared

to run multiple regressions in SPSS after basic statistical assumptions for multiple regression analysis were checked.

Lastly, the study went through procedures for selecting independent variables, cumulatively according to some hierarchy specified by the logic of this study. This *hierarchical analysis* was, as it is well known, adopted to estimate the unique partitioning of the total variance in dependent variable accounted for by independent variables. According to the hypotheses and purpose of this study, four sets of independent variables were cumulatively entered in the regression in the order of students' background, students' grades, school quality, and students' prestige-oriented view of college entrance variables.

### **Preliminary Analysis**

#### ***Factor Analysis for Validity Test of "School Quality" Variables***

To test for validity of the construct of "school quality," I conducted a factor analysis to determine if those four variables could be a composite reflecting "school quality." The analysis extracted one component which explained 62.587% of the total variation (see Table 3.5). As the correlation between corresponding components and each variable of teachers' evaluations of class climate, teaching ability, and, student achievement level was .854, .705, and .806 respectively, three teacher's evaluations of their schools showed a high correlation with one component (see Table 3.6). Hence,

three variables were judged to reflect the construct of “school quality.” But, the concept was not employed as one composite variable which could be newly constructed with four variables in the final analysis. Instead, this factor analysis was used as a validity test to see if those variables would reflect the concept of “school quality.”

**Table 3. 5**

***Factor Analysis of School Quality Variables- Total Variance Explained <sup>(a)</sup>***

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.878	62.587	62.587	1.878	62.587	62.587
2	.699	23.302	85.889			
3	.423	14.111	100.000			

*Note:* Extraction Method: Principal Component Analysis.

<sup>(a)</sup>1 components extracted.

**Table 3.6**

***Factor Analysis of School Quality Variables -Component Matrix <sup>(a)</sup>***

	Component
	1
School Evaluation of Class Climate	.854
School Evaluation of Teachers’ Abilities	.705
School Evaluation of Student Achievement Level	.806

*Note:* Extraction Method: Principal Component Analysis.

<sup>(a)</sup>1 components extracted.

***Two-sample T-test for Validity Test of Prestige-oriented View of College Entrance***

As in the case of the variable of “school quality” mentioned above, this study conducted a validity test to determine whether the two variables, “prestige rankings of colleges desired” and “prestige-oriented college choice,” could be a composite reflecting “prestige-oriented view of college entrance.” The variable of “prestige-oriented college choice” is a categorical variable with two possible values (0=*Non-Prestige*, 1=*Prestige*), while the variable of “prestige rankings of colleges desired” is a continuous variable. There is not any general validity test for one categorical variable and one continuous variable. Nevertheless, if based on the idea that validity tests question whether there is a high correlation between the two variables or not, a possible alternative for the validity test could be to test if students who place high priority on the level of prestige in choosing a college spend more money on private tutoring than those who do not. Accordingly, this study conducted a *Two-sample T-test* to determine whether the two variables appropriately measure “prestige-oriented view of college entrance.” As a result of the T-test, p-value from *Leven’s Test for Equality of Variance* was less than pre-determined  $\alpha$  level (usually  $\alpha=0.05$  level) and thus, the assumption of equal variance was rejected (see Appendix C). Therefore, based on the unequal variance assumption, the mean of “prestige ranking of colleges desired” for “prestige-oriented” group (13.4436) was higher than that for the “non prestige-oriented” group (7.6807) and the p-value was 0.000 (see Table 3.7). Consequently, it can be concluded that the students selecting “prestige” as their first priority spent more money on “private tutoring” than those not selecting “prestige”

and that there was a statistically significant relationship between the two variables: “prestige rankings of colleges desired” and “students’ prestige-oriented college choice.” Instead of combining the two variables, however, this study separately put those variables into the regression model. In other words, this Two-sample T-test was just used as a validity test to see if the two variables would appropriately measure the concept of “prestige-oriented view of college entrance.”

**Table 3.7**

***Two-sample T-test Statistics for Validity Test of Prestige-oriented View of College Entrance (n= 329,842)<sup>(a)</sup>***

	Prestige-oriented College Choice(Dummy Variable)	N	Mean	Std. Deviation	Std. Error Mean
Ranking of College Desired	Non Prestige-oriented College Choice	294,566	7.6807	9.89453	.01823
	Prestige-oriented College Choice	35,275	13.4436	10.79026	.05745

*Note.* <sup>(a)</sup> Cases were weighted by the variable Student Weight.

### ***Regression Assumption Check***

***Recoding data.*** One of basic requirements for using multiple regression is that the scale of measurement for independent variables should be interval/ratio.

Accordingly, to change one categorical independent variable (i.e., *prestige-oriented college choice*) into “quasi” interval/ratio variables, this study used a “dummy coding” process. The variable of “prestige-oriented college choice” was measured by

single item scored on a 9-point scale of students' responses to "What do you consider most important when choosing your future colleges or universities?" Hence, if they responded to *prestige of college*, it was recoded 1. If they responded to *the other things*, it was recoded 0.

Since "residence area (i.e., rural, town, city, and metropolitan area)" is classified according to the hierarchy of administrative territory in proportionate to the size of population, it can be said to represent the "degree of urbanization." Therefore, the variable of "residence area" was used in the regression, regarded as an approximate interval/ratio variable in this study.

***Normalization of response variable.*** In multiple (OLS) regression, the dependent variable is assumed to have a normal distribution. Therefore, before we run the regression analysis, we should check whether the distribution of response variable is normal or not. To check whether the distribution of the response variable was normal or not, this study drew upon the histogram of response variable. As the distribution of the response variable was skewed to the left, *logarithm transformation* was applied to normalize the data. Transformed data appeared normally distributed, fitting well with the normality curve and forming the symmetric distribution (see Appendix C).

***Multicollinearity.*** Since multicollinearity, which occurs when some or all of the independent variables are substantially correlated with each other, may make separation of the variables impossible, it should be checked in the multiple regression.

To detect multicollinearity, *Variance Inflation Factors* (VIF) and *Tolerance Value* were used. In any independent variable other than two variables (“ranking of college desired” and “FatherEdu\*Ranking” variables), a high degree of multicollinearity was not detected: the VIFs were not greater than 10 nor were the tolerance values much less than 1. In the two variables (“ranking of college desired” and “FatherEdu\*Ranking” variables), however, the VIFs were greater than 10 and tolerance values are also much less than 1. This means that multicollinearity might be influencing the coefficients. In other words, the standard errors of partial regression coefficients might increase. Nevertheless, as the average of the VIFs was not much greater than 1(5.52), the two variables were used separated (see Appendix C).

***Linearity, normality, and homoscedasticity.*** The assumption of *linearity*, which the relationship between each independent variable and the dependent variable should be linear, was also inspected with *bivariate scatterplot* of the variables. As a consequence, there was no indication of the noticeable pattern that can be regarded as any non-linear pattern.

The matter of *outliers* was also addressed by examining the respective scatterplot. Outliers, which are defined to be atypical infrequent observations, need to be deleted in the regression, because of their profound influence on the value of the correlation coefficient. Therefore, a few extreme values in both the variables of “family income” and “expenditure on private tutoring” were excluded.

This study checked the assumptions of *normality* and *homoscedasticity* through the residual analysis inspecting the distribution of the residual values with



histograms and residual plots for the residuals as well as normal probability plots. As the result of residuals statistics, the residuals had a mean of zero (0) and a standard deviation of 1.0 (see Table 3.8). In other words, these residuals were normally distributed with equal variance. The distribution of residuals formed a bell shape which meant they were normally distributed. Residuals were plotted against predicted values. Residuals were also spread around 0 forming a constant band, which meant the fitted model satisfies constant variance assumption (see Appendix C). Consequently, it was confirmed that the residuals (predicted minus observed values) were normally distributed. It verifies that this data also meet the assumption of homoscedasticity: there should be similar variance in the dependent variable across the value of the predictor variables.

**Table 3.8 Residuals Statistics <sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.1189	5.3620	3.3145	.42386	168364
Residual	-3.02365	1.89102	.00000	.79767	168364
Std. Predicted Value	-2.821	4.831	.000	1.000	168364
Std. Residual	-3.791	2.371	.000	1.000	168364

*Note.* <sup>a</sup>. Dependent Variable: Log\_expenditure

In sum, the statistical tests and graphical evaluations of the sample data above mentioned confirmed that there was not any serious violation in regression assumptions.

### ***Multiple Regression Equation***

***Statistical interaction test.*** As described in the prior section, this study hypothesized that Korean students' "prestige-oriented views of college entrance" might affect their use of shadow education influenced by students' background variables. Therefore, this study tested the interaction between a prestige-oriented view of college entrance and students' background variables. The statistical interaction test results showed that one interaction term, a combination of the variables of "prestige ranking of colleges desired" and "father's education," was a stronger predictor of the dependent variable than the simple direct effects of the independent variables. An interaction variable of "FatherEducation\*Ranking" was, consequently, created for the final multiple regression analysis of this study.

According to the logic of this study, the multiple regression equation was developed as follows:

$$\begin{aligned} \text{Expenditure on Shadow Education}_i = & \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \beta_4(X_4) \\ & + \beta_5(X_5) + \beta_6(X_6) + \beta_7(X_7) + \beta_8(X_8) \\ & + \beta_9(X_9) + \beta_{10}(X_{10}) + \beta_{11}(X_{11}) + \varepsilon_i \end{aligned}$$

Where *Expenditure on Shadow Education* =  $\text{Log}_e$  *Expenditure*,<sup>1</sup>

$\beta_i$  = Coefficients for variables

and  $\varepsilon_i$  = Error terms

$X_1$  = *Monthly Income*

$X_2$  = *Father's Education*

$X_3$  = *Mother's Education,*

$X_4$  = *Region*

$X_5$  = *Student's Grade*

$X_6$  = *School Evaluation of Class Climate*

---

<sup>1</sup>  $\text{Log}_e$  = Natural Log

$X_7 = \text{School Evaluation of Teacher Ability}$   
 $X_8 = \text{School Evaluation of Student Achievement}$   
 $X_9 = \text{Ranking of College Desired}$   
 $X_{10} = \text{Prestige-oriented College Choice}$   
 $X_{11} = \text{FatherEducation} * \text{Ranking}$

## Chapter 4

### FINDINGS

The purpose of this study can be largely summarized as having two purposes. One was to assess whether and to what extent parent expenditure on shadow education could be influenced by student achievement and school quality. The other was to examine the relationship between a new construct, high school students' *prestige-oriented views of college entrance* and their parent expenditures on shadow education, in relation to students' backgrounds. Accordingly, this study developed four sets of independent variables which are assumed to influence South Korean high school students' use of shadow education: student achievement, school quality, *prestige-oriented view of college entrance*, and students' backgrounds. Student achievement was measured by students' grades. School quality was measured by teachers' school evaluations of class climate, student achievement levels compared to other schools, and teachers' abilities. The *prestige-oriented view of college entrance* was measured by both variables of "ranking of colleges desired" and "prestige-oriented college choice." Expenditure on private tutoring was measured by average amount of monthly expenditure on private tutoring expended for the survey students.

This chapter provides the data analysis results and interpretations.

## **Results of the Analysis**

This study conducted multiple regression analysis by employing the hierarchical regression model, to estimate both the collective and the unique variance attributable to each set of independent variables on the response variable. According to the purpose and hypotheses of this study, four sets of independent variables were entered cumulatively in the regression in the order of students' background, school quality, students' grades, and students' prestige-oriented view of college entrance variables.

### ***Descriptive Statistics***

Tables 4.1, 4.2, and 4.3 present the case distribution of parent expenditure on shadow education services by students' residence area, school types, and grades in South Korea in 2003. Those tables describe unweighted data to show the real case numbers and percentages of the total sample of students' purchases of shadow education.

Table 4.1 shows that a large percentage of high school students in South Korea, 64.2% of total high school students, purchased shadow education services in 2003. By region, rural and town students were relatively more inclined to spend less than 200,000 won on shadow education, compared with city and metropolitan students who spent more than 200,000 won. When the number of sample cases by

region is considered, however, there is not much difference by region on expenditure on shadow education.

**Table 4.1**

*Monthly Expenditure on Shadow Education by Student's Residence Area in 2003*  
(*n* = 3,853)

Expenditure on Shadow Education <sup>a)</sup>	Residence Area				Total
	Rural	Town	City	Metropolitan	
No expenditure	237 6.2%	262 6.8%	421 10.9%	458 11.9%	1378 35.8%
More than 10 ~ Less than 20 <sup>b)</sup>	125 3.2%	127 3.3%	344 8.9%	379 9.8%	975 25.3%
More than 20 ~ Less than 40	65 1.7%	84 2.2%	292 7.6%	388 10.1%	829 21.5%
More than 40 ~ Less than 60	19 .5%	14 .4%	116 3.0%	213 5.5%	362 9.4%
More than 60 ~ Less than 80	3 .1%	5 .1%	45 1.2%	76 2.0%	129 3.3%
More than 80 ~ Less than 100	1 .0%	0 .0%	18 .5%	25 .6%	44 1.1%
More than 100	1 .0%	3 .1%	35 .9%	97 2.5%	136 3.5%
Total	451	495	1271	1636	3,853
	11.7%	12.8%	33.0%	42.5%	100.0%

Note: <sup>a)</sup> Expenditure indicates average monthly expenditure on all types of shadow education activities.

<sup>b)</sup> Expenditure Unit: 10,000 won (Approximately 10 dollars).

In the distribution of parent expenditure on shadow education services by school types, Table 4.2 shows that a higher percentage of academic high school students (78.7%) spent money on shadow education, compared with vocational high

school students (49.9%). However, the percentage of vocational high school students purchasing shadow education services is also considerably high. The percentage of students who spent less than 200,000 won on shadow education is larger in vocational high school students (14.9%) than in academic high school students (10.4%). In view of the fact that shadow education services in South Korea are mostly provided with the intention of helping to improve students' school achievement for college entrance, this indirectly implies that vocational high school students' attentions, not just academic high school students' ones, are focused on preparation for entering college.

**Table 4.2**

*Expenditure on Shadow Education by School Types (n = 3,853)*

Expenditure on Shadow Education <sup>a)</sup>	School Types		Total	
	Vocational High School	Academic High School		
No expenditure	971 25.2%	407 10.6%	1378 35.8%	
More than 10 ~ Less than 19 <sup>b)</sup>	574 14.9%	401 10.4%	975 25.3%	
More than 20 ~ Less than 39	290 7.5%	539 14.0%	829 21.5%	
More than 40 ~ Less than 59	71 1.8%	291 7.6%	362 9.4%	
More than 60 ~ Less than 79	22 .6%	107 2.8%	129 3.3%	
More than 80 ~ Less than 99	2 .1%	42 1.1%	44 1.1%	
More than 100	9 .2%	127 3.3%	136 3.5%	
Total	Number of Cases	1939	1914	3,853
	% of Total	50.3%	49.7%	100.0%

*Note:* <sup>a)</sup> Expenditure indicates average monthly expenditure on all types of shadow education activities.

<sup>b)</sup> Expenditure Unit: 10,000 won (Approximately 10 dollars).

As seen in Table 4.3, one of the salient features of the distribution of parent expenditure on shadow education services is that a large percentage of students with high grades also spent money on shadow education services. Table 4.3 shows 70.9% of the top 25% group students used shadow education. In the pattern of expenditure on shadow education by amount of cost, there is not much difference between the high-grade group students and low-grade group students.

**Table 4. 3**

*Expenditure on Shadow Education by Student's Grade (n = 2,700)*

Expenditure on Shadow Education <sup>a)</sup>	Grade (Percentile Ranking in The Whole School)				Total
	The Top 25%	The Top 26%~50%	The Top 51%~75%	The Low 25%	
No expenditure	193 7.1%	272 10.1%	236 8.7%	195 7.2%	896 33.2%
More than 10 ~ less than 19 <sup>b)</sup>	181 6.7%	231 8.6%	162 6.0%	129 4.8%	703 26.7%
More than 20 ~ less than 39	148 5.5%	189 7.0%	168 6.2%	99 3.7%	604 22.4%
More than 40 ~ less than 59	82 3.0%	60 2.2%	64 2.4%	50 1.9%	256 9.5%
More than 60 ~ less than 79	27 1.0%	27 1.1%	33 .9%	17 .8%	104 3.9%
More than 80 ~ less than 99	5 2%	7 3%	11 4%	8 3%	31 1.1%
More than 100	28 1.0%	31 1.1%	25 .9%	22 .8%	106 3.9%
Total	Number of Cases 664	817	699	520	2700
	% of Total 24.6%	30.3%	25.9%	19.3%	100.0%

Note: <sup>a)</sup> Expenditure indicates average monthly expenditure on all types of shadow education activities.

<sup>b)</sup> Expenditure Unit: 10,000 won (Approximately 10 dollars).



Table 4.4 shows the means, standard deviations, minimum, and maximum for factors used in the regression analysis. Cases were weighted by student weight in the regression for this study. Results are based on logarithm transformation of the response variable.

**Table 4.4**  
*Means, Standard Deviations, Minimum, and Maximum for Factors Used in the Regression Analysis. (n= 168,364)<sup>(a)</sup>*

Factor	Minimum	Maximum	Mean	SD
Expenditure on Private Tutoring <sup>(b)</sup>	0.00	5.86	3.16	.94
<b><i>Student Background</i></b>				
Family Income	0	1500	297.80	177.48
Father's Education	2	9	5.32	1.26
Mother's Education	2	9	4.88	1.00
Region	1	4	3.34	.81
<b><i>Student Achievement</i></b>				
Students' Grades	.20	100	47.42	26.94
<b><i>School Quality</i></b>				
Class Climate	1	5	3.48	.80
Teachers' Abilities	2	5	3.84	.60
Student Achievement	1	5	3.15	1.02
<b><i>Prestige-oriented View</i></b>				
Ranking of College Desired	0	29	8.30	10.15
Prestige-oriented College Choice (1 = Prestige 1 <sup>st</sup> ; 0 = All other factors)	0	1	-	-

Notes: <sup>(a)</sup> Cases were weighted by student weight.

<sup>(b)</sup> Expenditure Unit: 10,000 won (Approximately 10 dollars).

Logarithm transformation of the response variable (expenditure on private tutoring) was applied.

### ***Multiple Regression Analysis***

***Hierarchical analysis.*** As explained in the prior section, the study adopted *hierarchical analysis* as the method for entering independent variables into the regression equation. This hierarchical analysis, not the same as *Hierarchical Linear Modeling* (HLM), is an analytic strategy where independent variables are entered cumulatively in blocks or clusters according to some specified hierarchy determined by the purpose and logic of the research. This strategy allows the determination of  $R^2$  and the regression coefficients of each independent variable as it is added to the equation. This procedure is useful in estimating the unique partitioning of the total variance in the dependent variable accounted for by each cluster of independent variables.

Following the hypotheses discussed in prior sections, therefore, four sets of independent variables were cumulatively entered in the regression, in order to estimate the unique partitioning of the total variance in parents' shadow education expenditures. In this study, students' background variables were first entered into the regression equation because it was assumed that these variables would account for most of the variation in family expenditure. Next, the three sets of variables representing student achievement, school quality, and prestige-oriented views of college entrance variables were entered into the regression in order to see how much variance in parents' shadow education expenditures was accounted for by each of these three major factors. Table 4.5 indicates the four model summary of expenditure on tutoring regressed on four sets of independent variables.

Table 4.5

*Multiple Regression Results of Parent Expenditure on Tutoring Regressed on Selected Independent Variables (n= 168,364)<sup>(a)</sup>*

Independent Variable	Add School			
	Base Model $\beta$	Add Grades $\beta$	Quality $\beta$	Add Prestige $\beta$
<b><i>Student Background</i></b>				
Income of Family	.315**	.318**	.318**	.297**
Father's Education	.131**	.130**	.131**	.175**
Mother's Education	.060**	.064**	.064**	.063**
Region	.119**	.122**	.120**	.098**
<b><i>Student Achievement</i></b>				
Students' Grades	-	.067**	.066**	.097**
<b><i>School Quality</i></b>				
Class Climate	-	-	-.024**	-.029**
Teachers' Abilities	-	-	.029**	.026**
Student Achievement	-	-	.018**	.008*
<b><i>Prestige-oriented View</i></b>				
Ranking of College Desired	-	-	-	.407**
Prestige-oriented College Choice (1 = Prestige 1 <sup>st</sup> ; 0 = All other factors)	-	-	-	.022**
FatherEducation*Ranking	-	-	-	-.309**
<b>R Square</b>	.201**	.205**	.207**	.224**

Notes: <sup>(a)</sup> Cases were weighted by student weight.

Logarithm transformation of the response variable (expenditure on private tutoring) was applied.

\*\*  $p \leq .01$

\*  $p \leq .05$

As seen in Table 4.5, the four models were significant ( $p \leq .01$ ). The amount of variances explained by each of the models was also found to be fairly good, as each value of  $R^2$  of the four models was 20.1%, 20.5%, 20.7%, and 22.4% respectively.

When additional independent variables were added into the regression equation, Beta coefficients (i.e., standardized regression coefficient) for some variables were changed. For example, Beta values for each of “students’ background” variable increased a bit with the “student achievement” variable added in the regression. However, Beta coefficients for both “students’ background” and “student achievement” variable were scarcely changed with the “school quality variables” added in the regression. Contrary to these results, when the “prestige-oriented view of college entrance” variables were added in the regression, Beta values for “students’ background,” “student achievement,” and “school quality” variables were considerably changed. In particular, the result showed that Beta coefficients for both “family income” and “student achievement” considerably decreased (see Table 4.5). This result implies that “prestige-oriented view of college entrance” variables, compared with the other variables, are more related to the other predictor variables. It also implies that the impact of “prestige-oriented view of college entrance” variables on the response variable is relatively larger than the other predictors.

With regards to the relative effect of each independent variable on parents’ shadow expenditures, the values of *R Square* in the table show that “students’ background” variables explain one-fifth of the variation (i.e., 20.1%) in parent expenditure on shadow education. They also indicate that “prestige-oriented view of college entrance” variables (added in fourth model), compared with “student achievement” and “school quality” variable sets (added in second and third model

respectively), explain more variation (i.e., about 2%) in parent expenditure on shadow education. In determining the relative importance of independent variables in multiple regression analysis, the value of R square change can be used. According to this result, it can be concluded that “prestige-oriented view of college entrance” variables are relatively more important than “student achievement” and “school quality” variables in explaining influences of those variables on parent expenditure on shadow education.

We can also see the rank order of importance of the predictor variables through the Beta coefficients in the multiple regression model. Hence, through the values of Beta for each variable as seen in Table 4.5, this study could examine each type of hypothesis, by estimating the relative effects of each predictor on parent expenditure on shadow education. Table 4.5 indicates that all the independent variables are significant at least a 0.05 level in predicting the value of parent expenditure. More concrete interpretation of the results is presented according to the research questions and hypotheses of the study as follows.

## Interpretation of the Results

### *Research Question One*

*Do high school students with lower grades tend to use more shadow education than students with higher grades? And, to what extent are high school students' uses of shadow education explained by their grades?*

**Impact of student achievement.** Concerning the effect of students' grades on parent expenditure on shadow education, this study hypothesized that students' grades would not account for much variation in the extent of parent expenditure.

The regression test showed that a student's grade variable had a positive significant effect on parent expenditure on tutoring ( $p \leq .01$ ). Therefore, it can be said that high school students with lower grades tend to use more shadow education than students with higher grades. However, as seen in Table 4.5, Beta value for student grades variable was relatively small (.10), when compared with the values for the other variables such as "prestige ranking of college desired," "family income," and "father's education" (each Beta value is .41, .30, and .18 respectively). This means that high school students with one unit-lower grades spent just 0.1 unit-more money on shadow education than students with higher grades, when the units for other independent variables remain same. (The units are standard deviations of each variable.) In addition, based on the changes in R Square, "students' grades" variables explained relatively less variation (i.e., 0.4%) in parent expenditure on shadow education than the other predictor variables (each  $R^2$

change value of “students’ background,” “school quality,” and, “prestige-oriented view of college entrance” is 20.1%, 0.1%, and : 1.7% respectively). Consequently, it was concluded that students’ grades would not influence students’ use of shadow education much and the findings supported the hypothesis of this study.

### ***Research Question Two***

*Do school quality variables have any effect on high school students’ use of shadow education? And, to what extent high are school students’ uses of shadow education influenced by their school quality variables?*

***Impact of school quality.*** This study hypothesized that school quality variables, compared with the other predictor variables, would not account for much in the extent of parent expenditure on shadow education.

The results showed that school quality variables had some significant impacts on parent expenditure in the regression model ( $p \leq .01$ ). However, Table 4.5 presents that each variable reflecting school quality does not affect the response variable in the same direction. The variable of school evaluation of class climate has a negative effect (Beta value:  $-.029$ ) on the dependent variable, contrary to school evaluation of student achievement (Beta value:  $.026$ ) and teachers’ abilities (Beta value:  $.008$ ). Accordingly, we can not conclude that low school quality causes the increase of parent expenditure on shadow education. Beta values for school quality variables are also lower than other predictors in the regression. In addition, based on the changes in R Square, school quality

variables explain relatively the least variation (i.e., 0.1%) in parent expenditure compared with the other predictor variables (each  $R^2$  change value of “students’ background,” “students’ grades,” and, “prestige-oriented view of college entrance” is 20.1%, 0.4%, and : 1.7% respectively). In sum, it is clear that school quality variables do not influence parent expenditure on shadow education that much.

### ***Research Question Three***

*What is the relationship between high school students’ prestige-oriented views of college entrance and their use of shadow education?*

***Impact of prestige-oriented view of college entrance.*** This study hypothesized that students’ “prestige-oriented views of college entrance” would primarily affect their use of shadow education.

As the result of regression analysis, the most influential relationship was found between students’ prestige-oriented views of college entrance and parent expenditure on private tutoring. As seen in Table 4.5, the Beta value (.407) for the variable of “prestige ranking of college desired” was the largest of all predictors (significant, when  $p \leq .01$ ). This means that the effect of the variable on parent expenditure is the relatively most significant of all predictor variables. The variable of “prestige-oriented college choice” also showed its significant positive impact on parent expenditure on shadow education (Beta: .022.). This means that students who selected “prestige of college” as the first priority in choosing their future colleges spent more money on shadow education than those who selected all other



factors. The results of R square change in the models also show, as described above, that “prestige-oriented view of college entrance” variables explain relatively more variation (i.e., 1.7%) in parent expenditure on shadow education, compared with “students’ grades (0.4%),” and “school quality (0.1%)” variables.

In view of these results, it can be concluded that students’ prestige-oriented views of college entrance, most of all, might be a major contributing factor to their use of shadow education.

#### ***Research Question Four***

*How and to what extent do high school students’ background variables such as SES, region, and parents’ formal education affect their use of shadow education?*

***Impact of student’s backgrounds.*** With regard to this question, the study hypothesized that students’ background variables would considerably account for the extent of parent expenditures on shadow education and that the background variables would also influence students’ view of college entrance variable.

As indicated in some prior studies (Stevenson & Baker, 1992; Yun, 1997; Choi et al., 2003; Lee, 2003; Kim, 2004a), the result of this study also showed that parent expenditure on shadow education was accounted for much by their background variables, in particular, family income. According to the result, in other words, the higher family income and parent education was and the more the residence area was urbanized, the more amounts of money parents spent on their children’s shadow education activities.

Test results, as described above, showed that “students’ background” variables explained the most variation (i.e., 20.1%) in parent expenditure as compared with the other predictors (each variation of “students’ grades,” “school quality” and, “prestige-oriented view of college entrance” is 0.1%, 0.4%, and 1.7% respectively). Through the Beta values for students’ background variables, it was also found that students’ background variables have more impact on parent expenditure for shadow education than both students’ grades and school quality variables. For example, the Beta value for family income (.297) was much larger than that for students’ grades variable (.097), school evaluations of class climate (-.029), school evaluations of student achievement (.026) and school evaluations of teachers’ abilities (.008). These results support the hypothesis in research question four that parent expenditure on shadow education would be significantly influenced by family socioeconomic status which has been proved to mainly affect it.

*Statistical interaction effect.* The test results also showed some statistical interaction effects between “father’s education” and “prestige ranking of colleges desired” on the response variable. In the regression model where the interaction variable of “FatherEducation\*Ranking” were entered, the value of the R square (.224) was slightly larger than that of the simple direct regression model (.220). Basically, this interaction effect means that the relationship of a “father’s education” (or “prestige ranking of colleges desired”) variable with a shadow education expenditure variable differs across levels of a “prestige ranking of colleges desired” (or “father’s education”) variable. Therefore, it can be said that family background variables have some significant positive effect on parent expenditure with influenced by students’ “prestige-oriented views of college entrance”

variables. In other words, students' "prestige-oriented views of college entrance" variable significantly affects the extent of parent expenditure on shadow education with influenced by family socioeconomic status, especially father's education.

## Chapter 5

### CONCLUSIONS AND RECOMMENDATIONS

#### Summary of Findings

This study assessed how and to what extent the use of shadow education was influenced by students' grades, school quality, *students' views of college entrance*, and students' background. Of vast importance, this study focused on exploring how the students' *prestige-oriented view of college entrance* could be identified as a major factor to explain South Korean students' dramatic use of shadow education.

Based on theory as well as on some preliminary analyses, it was predicted that neither high school students' grades nor the quality of their schools would account much for the extent of their use of shadow education. Instead, it was expected that students' prestige-oriented views of college entrance would be the major factor affecting their decision to use shadow education, influenced by student background features.

The findings supported all the hypotheses of this study as follows.

***Small effect of school quality and students' grades.*** Concerning the effect on the use of shadow education of the two variable sets, "students' grades" and "school quality," variation in parent expenditure on shadow education was not accounted for much either by students' grades or by school quality variables. Although both students' grades and school quality variables proved to have some significant effects on parent expenditure on tutoring, the extent of the effects was relatively small. As described above, the Beta values for the two factors were relatively small compared with those of the other

variables such as “prestige ranking of college desired,” “family income,” and “father’s education.” Based on the changes in R Square, in addition, both the two factors explained relatively less variation in parent expenditure than the other predictor variables (see Table 4.5). Consequently, it could be concluded that neither students’ grades nor school quality influenced students’ use of shadow education much.

***Critical influence of prestige-oriented views of college entrance.*** As predicted, the most influential relationship was found between “prestige-oriented views of college entrance” and “parent expenditure on private tutoring.” The Beta value for “prestige ranking of college desired” was found to be the largest of all predictor variables (Beta: .407,  $p = .000$ ). In addition, it was found that “prestige-oriented view of college entrance” variables explained more variation in parent expenditure compared with “student achievement” and “school quality” variables (i.e., each value of R Square Change for “prestige-oriented view of college entrance,” “student achievement,” and “school quality” is 1.7%, 0.4% and 0.1% respectively).

***Interaction between students’ background and prestige-oriented view of college entrance.*** The impact of students’ background variables on parents’ shadow education expenditure was also confirmed in this study, as it was indicated in some prior studies. In particular, some significant statistical interaction between “prestige ranking of colleges desired” and “father’s education” on parents’ shadow education expenditure was found in this study. Finally, these findings supported the hypothesis that students’ prestige-

oriented views of college entrance, most of all, might be a major contributing factor to their use of shadow education, influenced by student background features.

## Conclusions

### *Diagnosis for the Cause of Shadow Education*

***Critical influence of prestige-oriented view of college entrance: No big influence of students' grades and school quality.*** This study verified two points regarding the factors influencing students' use of shadow education in South Korea. First, the results of this study showed that neither students' grades nor school quality variables, although proved to have some significant positive effects on parent expenditure on tutoring, accounted much for the variation in parent expenditure on shadow education compared with the other predictors. Second, students' prestige-oriented views of college entrance, most of all, proved to critically influence their use of shadow education, influenced by student background features. Consequently, it can be concluded that the growth of shadow education is not a function of low quality public schooling, nor do students with lower grades use more shadow education than students with higher grades. On the other hand, the results indicated the impact of distinctive social and cultural features of Korean society on students' use of shadow education. In particular, this study revealed that the intense importance Korean students placed on attending a "prestigious" college or university influenced their heavy investment in shadow education as a means

of successfully competing with other students for the limited number of academic credentials needed to obtain desired professional positions.

*Students' "feelings of uneasiness" due to the social climate where shadow education is institutionalized.* The conclusions of this study further strengthens the perspective of institutional theory, from which shadow education might be so embedded in the climate and culture of South Korean schooling that students' failure to participate in it might lead to "feelings of uneasiness" or "social disengagement." This is likely because the growth of shadow education proved not to be a function of low quality public schooling in this study. Moreover, it was verified that students with lower grades did not use more shadow education than students with higher grades. More directly, some prior studies (Lee, 1991; Yun, 1997) reported that large percentages of students, as a reason for their use of shadow education, pointed out the "feeling of uneasiness" they feel in the case of not using shadow education. In other words, these results lead us to some insights that students' use of shadow education is not only affected by status competition but also by their "feelings of uneasiness" due to the climate of the society in which shadow education is already a taken-for-granted practice throughout students' school careers (Baker & LeTendre, 2005; Baker, Motako, LeTendre & Wiseman, 2001; Bray, 1999; Meyer, 1977; Stevenson & Baker, 1992). Further study about this point, accordingly, is needed.

## **Policy Implications**

### ***Disconnect between Policy and Research***

Although there has scarcely been any empirical evidence that low-quality formal schooling influences the boosting of shadow education, the low-quality schooling matter has been most generally pointed out as the causes of the growing students' use of shadow education in South Korea. Particularly, High School Equalization Policy (HSEP) has been recently criticized for its causing students' dependence on shadow education by leading to lowering the quality of schooling, even though it is still arguable that HSEP lowered school quality and students' achievement. By the leaders of the economic world, political circles, and the press, HSEP has been criticized as if a key factor of spoiling Korean education (The HANKYOREH, 2005 Feb 20; Lee & Hong, 2001). Political leaders, therefore, have discussed with the change of HSEP with the aim of improving school quality and reducing parent expenditure on shadow education. Contrary to these recent tendencies, however, this study showed that the growth of shadow education, rather than being a function of low quality public schooling, was the phenomenon driven by the distinctive social and cultural features of Korean society.

This shows, as Boyd (1999) points out, disconnection between educational policy or political issue and educational research in South Korea. As mentioned above, the matter of shadow education has been a major political issue for candidates for public office in South Korea. Therefore, policies regarding shadow education have been the reforms hastily determined by political leaders to show their willingness to solve the



problem of shadow education, rather than based on the results of educational research.

Concerning this disconnection, Boyd (1999) points out as follows:

Education policy is a leading political issue for candidates for public office... Yet, in many countries, there is a "disconnect" between education's status as a policy issue and the regard in which educators and educational researchers are held... the effects of research and policy studies in education are often felt only gradually and in more indirect than direct ways (Boyd, 1999, pp. 227-250).

### ***Policy Suggestions***

According to whichever is the cause of shadow education, matters of low quality of formal schooling or educational policy or other matters related to social and cultural features, the direction of policy could greatly differ. If the major cause of the development of shadow education would be the matter of low-quality public schooling, policy planners could put emphasis on the policy measures for the improvement of the quality of public schooling. However, this study verified that students' use of shadow education was much influenced by neither low-quality public schooling nor students' grades. On the other hand, it was found that students' use of shadow education mainly came from the distinctive Korean students' psychological factors (e.g. students' "prestige-oriented view of college entrance") complexly connected with social and cultural features of Korean society. Accordingly, it can be recommended that policy makers should not lay emphasis on the policies restraining shadow education practices or

the hasty reforms of the existing educational policies. We have seen that those trials resulted in wasting public finances and confusing school practices without any effects. This result was also evident in Japan's case. According to LeTendre (1994), Japan's educational reform of the national examination with the aim of expanding public schooling activities has been stagnated because Japanese students depended on shadow education to perform the tasks needed in the new reform. In view of this, policy makers need to approach shadow education-related policies with more comprehensive and long-term perspectives.

When based on the results of this study, the widespread use of shadow education in South Korea might be a type of trend that can not be restrained in short term. Therefore, policy planners and policy makers need to acknowledge this trend, deal with negative effects of the growing students' use of shadow education, induce shadow education activities to positively influence public schooling, and further try to formulate a long-term plan for shadow education-related problems overall considering social and cultural features of Korean society. Most of all, with respect to the negative impacts of the prosperity of shadow education, in particular, the possibility of "unequal" education, policy makers need to seek various methods to provide for the same-level educational services to groups or individuals who might have unequal educational opportunities. Since this "inequality" matter could be, in fact, the most problematic, it needs to be carefully considered with counterplans such as providing supplementary programs for low-income students who cannot afford to buy shadow education services. In addition, as Baker & LeTendre (2005) mentions, shadow education activities might have some positive impact on public schooling such as giving some influence for instruction and

management of students and curricula and standardizing students' achievement level in class. Policies might be devised so that public schooling can be led to better practices by such influence.

### **Recommendations for Future Study**

First, in the matter of measurement, this study has the limitation of depending on teachers' perceptions for the indicators used to measure "school quality," as mentioned in the prior section. Accordingly, future research needs to be conducted to more properly examine the relationship between school quality and students' use of shadow education, by measuring with more direct and objective indicators that reflect "school quality."

Second, factors other than the ones this study selected for analysis could be utilized in future studies. Therefore, future research could be conducted to explore the relationships between various, more probable factors and shadow education.

Third, this cross-sectional study has limits in considering social changes over time. Consequently, future research of shadow education needs to be conducted by longitudinal studies considering the policy changes and social changes.

Fourth, subsequent research could examine further the theoretical model of this study by qualitative research methods such as in-depth interviews. When the research on the impact of socio-psychological factors (e.g., students' "prestige-oriented view of college entrance" and "feelings of uneasiness") on students' use of shadow education are further conducted through qualitative research including in-depth interviews, the causes of Korean students' reliance on shadow education will be more identified.

Fifth, according to the results of this study, the widespread use of shadow education in South Korea is not likely to be reduced by specific policy reforms in short term. Furthermore, contemporary shadow education activities, as some studies point out, resemble the same organized learning practices as done at public school such as mastering a curriculum, one-on-one-private tutoring and examination preparatory courses. Therefore, the boundaries between public control of education and private educational activities could be loosened more and more (Baker & LeTendre, 2005; Bray, 1999; LeTendre, 1994; Tsukada, 1991). In view of this, we might need to review the function of future public schooling that could be differentiated from shadow education. Future research to newly review the function and role of public schooling could also be meaningful.

Finally, as suggested above in regard to the direction of policy, policy studies exploring countermeasures to compensate for the negative impacts caused by the prosperity of shadow education or use good-quality of shadow education services need to be conducted as future studies. For example, studies about various methods to provide supplementary programs for low-income students who cannot afford to buy shadow education services, such as “Internet and TV private tutoring services (nationally supported, free of charge, private tutoring services through TV or Internet)” and “After-Class Activities (nationally supported private tutoring services given after class within school)” that is presently administered, can be recommended.

## REFERENCES

- Baek, I. (1999). Educational and economical understanding of the behaviors of private tutoring. *The Journal of Educational Studies*, 37(4).
- Baek, I. (2000). *Educational Economics*. Seoul:Hakjisa.
- Baker, D. P. et al. (2001). Worldwide shadow education: Outside-school learning, institutional quality of schooling, and cross-national mathematics achievement. *Educational Evaluation and Policy Analysis*, 23(1), 1-17.
- Baker, D. P.& LeTendre, G.K. (2005). *National Difference, Global similarities: World Culture and the Future of Schooling*, Stanford: California.
- Baron, R. M. & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Boyd, W.L. (1999). Paradoxes of Educational Policy and Productivity. *Educational Policy*, 13( 2), 227-250.
- Boyd, W.L, & Hartman, W.T. (1998). The politics of educational productivity. In W.T. Hartman & W.L. Boyd (Eds.), *Resource allocation and productivity in education*. Westport, CN: Greenwood Press. (First published in D.H. Monk & J. Underwood (Eds.) (1988), *Microlevel school finance*. Cambridge, MA.)
- Boyd, W.L. & Kerchner, C.T. (Eds.) (1988). *The politics of excellence and choice in education*. London: Falmer Press.
- Boyd, W.L., & Plank, D.N. (1994). Educational policy studies: Overview. In T. Husén & N. Postlethwaite (Eds.), *International Encyclopedia of Education*, 2nd edition. Oxford: Pergamon Press.
- Bray, M. (1999). *The Shadow Education System: Private Tutoring and Its Implications for Planners*. Paris: International Institute for Educational Planning, UNESCO.
- Buchmann, C. & B., Dalton. (2002). Interpersonal Influences and educational Aspirations in 12 Countries: The Importance of Institutional Context. *Sociology of Education*, 75(2). 99-122.

- Carmines, E.G., & Zeller, R.A. (1979). Reliability and validity assessment. Applied Social Research Methods Series, Volume 17. Newbury Park, CA: Sage.
- Choi, H. (2006 July 2). More increasing in the rate of advance to prestigious college, More rising in the price of apartment in Seoul. *Yonhapnews*, from <http://www.yonhapnews.co.kr/news/20060702/050100000020060702070141K9.html>
- Choi, S., Kim Y., Yoo H., Kim H., & Lee, H. (2003). *Analyzing the reality and expense of private tutoring in Korea*. Seoul: KEDI.
- Chun, S., et al. (2003), A study of attitudes influencing the level of satisfaction with public education, *The collection of treatises of management education*.30.
- Cohen, J. (1987). *Statistical power analysis for the behavioral science* (Rev. ed.). NJ: Lawrence Erlbaum Assoc.
- Collins, R. (1971). Functional and Conflict Theories of Educational Stratification. *American Sociological Review*, 36(6), 1002-1019.
- Collins, R. (1979). *The Credential Society*. New York: Academic Press.
- Craig, J.E. (1981). The expansion of education. In D.C. Berliner (Ed.), *Review of Research in Education*, 9. American Educational Research Association.
- Darren, G. & Mallory, P. (2001). *SPSS for Windows*. MA: Allyn and Bacon.
- DiMaggio, P. L. & Walter, W. P. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48, 147-160.
- Dore, R. P. (1976). *The diploma disease: Education, qualification and development*. London: George Allen & Unwin Ltd.
- Han, J. (1990). *Sacrifice of Korean Higher Education*. Seoul: Munemsa.
- Hurn, C. J. (1978). *The Limits and Possibilities of Schooling: An Introduction to the Sociology of Education*. Boston: Allyn and Bacon.
- Hyun, J., et al. (2002). *A Study on the Education fever of Korean parents*. Seoul: Korean Educational Development Institutes.

- Jin, D. (2003). *School Consulting- New Approach to Educational Reform*. Seoul: Hakjisa.
- Jin, D. et al., (2000). *A Research on Institution of National School*. Seoul: Ministry of Education of Korea.
- Joo, C. (2000). The Entrance Examination System. In J. C. Weidman & N. Park (Eds.), *Higher Education in Korea* (pp. 89-107). New York: Falmer Press.
- Kang, H., et al. (2005, October 4). 2005 National University Evaluation. *JoongAang Daily*, from [http://article.joins.com/article/article.asp?total\\_id=1693778](http://article.joins.com/article/article.asp?total_id=1693778)
- Kahigan, S. K. (1986). *Statistical Analysis*. New York: Radius Press.
- Krathwohl, D.R. (1998). *Methods of Educational and Social Science Research-An Integrated Approach* (2<sup>nd</sup> ed.). Long Grove, IL: Waveland Press.
- Kim, D. (1998). A Logical Analysis of the Policy Argument Embodied in “The New College Entrance Screening System.” Doctoral dissertation, Seoul: Seoul National University.
- Kim, G. (1999). Social change in Korea: an overview. In Kim, Kyong-Dong (Eds.), *Korean society in transition* (pp. 9-35). Seoul: Institute of Korean Studies, Seoul National University.
- Kim, H. (2003). Analyzing the structure and effect of law and regulation related to college entrance system. *The journal of law of education*, 15(1), 89-114.
- Kim, H. (2004). Analyzing the structure of variables affecting on private tutoring expense. *The journal of educational administration*, 22(1), 27-45.
- Kim, H. & Choi, S. (2004). Analyzing the impact of high school equalization policy on private tutoring expense in Korea. *The journal of Korean education*, 31(1), 365-383.
- Kim, I. (1991). *Educational Aspiration of Koreans*. Seoul: Taehwagkyoyuk.
- Kim, J. (1980). Korean education and the problems of overheated shadow education. *New Education* (1980, 6). Seoul: The KOREA EDUCATION WEEKLY.

- Kim, G., et al. (2003). The Change of College Entrance Examination Policy: Who is admitted into Seoul National University? *Korean Social Sciences* (2003, V.25). Seoul: The Center for Social Sciences at the Seoul National University
- Kim, K. (1991). A Statist Political Economy and High Demand for Education in South Korea. *Education Policy Analysis Archives*, 7(19).
- Kim, K-S. (2004). Let's examine the effect of High School Equalization Policy through empirical analysis study. *KEDI Position Paper* (KP2004-03). Seoul: Korean Educational Development Institute.
- Kim, K-S., et al. (2004). The major controversies and problems of the recent debates on HSEP. *The study note of Korean Educational History*. 23. Seoul: Seoul National University.
- Kim, K-S., et al. (2005), Longitudinal Analysis of the Effect of High School Equalization Policy on Student Achievement. *KEDI Research Report*(PR 2005-3). Seoul: Korean Educational Development Institute.
- Kim, T., et al.(2003). Empirical Analysis of High School Equalization Policy on the Effect of Student Achievement. *CEPRI Research Report*. Seoul: CEPRI at the KDI School of Public Policy and Management.
- Kim, Y.C. (2003). Policy Alternatives for Improving the High School Equalization Policy. *Journal of educational research*. 41(1).
- Kim, Y. (1979). The student demand for Korean higher education. *Korean Education*(in Korean). Seoul: KEDI press.
- Kim, Y. (1999). Recent Developments in Korean School Education. *School Effectiveness and School Improvement*, 10(1). 55-71.
- Kim, Y. et al. (1993). *A Study on the Educational Enthusiasm of Korean People*. Seoul: Korean Educational Development Institutes.
- Kim, Y.B., et al. (2000). *A study of the reality of private tutoring*. Seoul: Korean Educational Development Institutes.



- Kim, Y.C. (1997). Private Tutoring and Private Educational Cost. *Finance and Economics of Education Research*. 6(3). Seoul: The Korean Society for Economics and Finance of Education.
- Kim, Y.C., et al. (2001). *Policy measures for the problems of private tutoring expense*. Seoul: Korean Educational Development Institutes.
- Kim, Y. T., et al. (1978). *Evaluating the high school equalization policy*. Seoul: Korean Educational Development Institute.
- Koh, H. (1998). Policy Measures for the Problems of Private Tutoring Expense and Normalization of Schooling. *The Korean Education Vision 2020*. Seoul: Korean Educational Development Institutes.
- Kong, E., et al. (1994). *A study of analysis on the reality of educational investment and the rate of return to education in Korea*. Seoul: Korean Educational Development Institutes.
- Kong, E., et al. (2001). *A study of the reality of private tutoring expense*. Seoul: Korean Educational Development Institutes.
- Korean Council for University Education (2004). *Comprehensive Guidance of College Entrance System in 2005 School Year*. Seoul: Author.
- Korean Educational Development Institute (2003). *Measurement on the problem of private tutoring in Korea* (No. RM 2003-32-05). Seoul: Author.
- Lee, C. J. (2005). Perspective: Korean Education Fever and Private Tutoring, *KEDI Journal of Educational Policy*, 29(1). Seoul: KEDI.
- Lee, C. J., Choi, S., Kim, H., et al. (2003). *Policy measures for the problems of private tutoring: Improving the quality of public education*. Seoul: Korean Educational Development Institute. (in Korean)
- Lee, J., & Hong, S. (2001). Public Education vs. Private Education: Choice and Equality of Korean Education. [http://cepri.kdischool.ac.kr/kor/data/research/2001\\_1.hwp](http://cepri.kdischool.ac.kr/kor/data/research/2001_1.hwp) (in Korean)

- Lee, K. (2003). *The Best of Intention: Meritocratic Selection to Higher Education and the Development of Shadow Education in Korea*. Doctoral dissertation, Pennsylvania State University.
- Lee, M. (1991). A study on Employment and Education of Youth. *Studies on Korean Youth*. 1(4). 135-152.
- Lee, M. & Larson, R. (2000). The Korean 'Examination Hell': Long Hours of Studying, Distress, and depression. *Journal of Youth and Adolescence*, 29(2). 249-271.
- Lee, S. and Brinton, M.C. (1996). Elite Education and Social Capital: The Case of South Korea. *Sociology of Education*, 69(3). 177- 192.
- LeTendre, G. L. (1994). Distribution Table and Private Tests: The Failure of Middle School Reform in Japan. *International Journal of Educational Reform*, 126-136.
- LeTendre, G.L. (1996). Constructed Aspirations: Decision-Making Processes in Japanese Educational Selection. *Sociology of Education*, 69: 193-216.
- Ministry of Education & Human Resources Development (2001). *A study of the reality of private tutoring expense in 2000*. Seoul, Korea: Author.
- Ministry of Education & Human Resources Development (2003). *Education in Korea*. Seoul: Author.
- Ministry of Education & Human Resources Development (2004). *Handbook of Educational Statistics*. Seoul: Hwasin Press.
- Ministry of Education & Human Resources Development & Korean Educational Development Institute (2003). *Brief Statistics on Korean Education*. Seoul, Korea: Author.
- Ministry of Education & Human Resources Development & Korean Educational Development Institute (2005). *Brief Statistics on Korean Education*. Seoul, Korea: Author.
- Mueller, R. O. (1996). *Basic principles of structural equation modeling: An introduction to LISREL and EQS*. New York: Springer.

- Munro, B. H. (2001). *Statistical methods fro health care research* (4th ed.). Philadelphia: Lippincott.
- OECD. (2002). *Education Policy Analysis*. Paris: Author.
- OECD. (2003). *Education at a Glance: OECD indicators 2003*. Paris: Author.
- OECD. (2004). *Education at a Glance: OECD Indicators 2004*. Paris: Author.
- Ryoo, J. et al. (1995): Changing Rates of Return to Education over Time: A Korean Case Study, *Economics of Education Review*, 12(1). 71- 80.
- Sang, K. (2005). The Effects of Private Tutoring on High School Student's Achievement in Mathematics. Doctoral dissertation, Seoul, Korea: Seoul National University.
- Seth, M. J. (2002). *Education Fever: society, Politics, and the Pursuit of Schooling in South Korea*. Honolulu: University of Hawaii Press.
- Shin, Y., et al. (2006). *check and implication of the possibility of bubble of assets price*. Seoul: Korea Institute of Finance.
- Shouse, R. (1996). Academic Press and Sense of Community: Conflict and Congruence in American High Schools. *Research in Sociology of Education and Socialization*, 11. 173-202.
- Song, K. (1999). Relationship between Development of Private Tutoring and Public Schooling in Korea. *Finance and Economics of Education Research*. 8(2).
- Song, S., et al. (2006, June 8). private tutoring expenditure of the family with 2 school children is 22% of their income. *JoongAng Daily*, from <http://article.joins.com/article/viewaid.asp?aid=2734452>
- Sorenson, C.W. (1997). Success and Education in South Korea. *Comparative Education Review*, 38(1). 10-35.
- Shapiro, J.P. & Stefkovich, J. A.(2005). *Ethical Leadership and Decision Making in Education*. Mahwah. NJ: Lawrence Erlbaum Associates Publishers.
- Stevenson, D. L. & D. P., Baker. (1992). Shadow Education and Allocation in Formal Schooling: Transition to University in Japan. *The American Journal of Sociology*, 97(6). 163-57.

- Sung, K.(2005). A Critical Review on the Under-achievement Phenomenon and New Direction of Achievement and Ability. *Journal of Anthropological Studies*. Vol.9.
- Sung, K.(2004). A Hierarchical Linear Modeling on the Effects of High School Equalization Policy on High School Students' Achievement. *Sociology of Education*. 14(3). 87-106.
- Tabachnick, B. G. & Fidell, L.S. (2001). *Using multivariate statistics*. Boston: Allyn & bacon.
- The Commission for Policy measures on Private Tutoring (2000). *A comprehensive report of prevention of overheated private tutoring and substantiality of public education*. Seoul: The Commission for Policy measures on Private Tutoring.
- The HANKYOREH (2005 Feb 20). Bigger Student Improvement in the Schools under High School Equalization Policy. The HANKYOREH, from <http://www.hani.co.kr/section-005006001/2005/02/005006001200502201916038.html>
- Tsukada, M. (1991). *Yobiko Life: A Study of the Legitimation Process of Social Stratification in Japan*. Berkeley: University of California Press.
- Urdu T.C. (2001). *Statistics in plain English*. Mahwah. NJ: Lawrence Erlbaum Associates Publishers. .
- Urwick, J. (2002). Determinants of the private costs of primary and early childhood education: Findings from Plateau state, Nigeria. *International journal of educational development*, 22, 131-144.
- Voght, W.P. (1993). *Dictionary of statistics and methodology: A nontechnical guide for the social science*. Newbury park, CA: Sage.
- Weidman, J. C., & Park, N. (2000). *Higher education in Korea: Tradition and adaptation*. New York: Falmer Press.
- Won, J. (2001). A Study on Social and Economic Effect of Private Education. Doctoral dissertation, Cohen University & Theological Seminary.
- Yun, C. (1997). *A Study on the Reality of Private Tutoring*. Seoul: Institute of Education Study of the Seoul National University.

- Yun, C. & Song, K., (1991). *Educational Policy for the Development of Private Schools* (in Korean). Seoul: Presidential Commission on Educational Reform.
- Yun, C., Song, K., Cho, D., and Kim, B. (2002). *Issues in Korean Education Policy*. Seoul: Education Science Press.
- Yun, C., et al., (2003). *Educational Reform*. Seoul: The Korean Society for the Studies of Educational Administration.
- Yun, C., et al., (2002). *A Research for Countermeasure and Synthetic analysis on the Collapse of Schooling in Korea*. Seoul: Education Research Institute of Seoul National University.
- Yun, J. (2003). *The Study on the Relevancy of High School Equalization Policy*. Seoul: Korean Educational Development Institute.

**APPENDICES**

**APPENDIX A**

**Survey Questions Selected from the KEEP Survey Questionnaire**

## Survey Questions Selected from the KEEP Survey Questionnaire for This Study

### < “Student” Survey Questionnaire of Keep >

(In Korean)

17. 귀하의 보호자는 누구입니까?

- ① 아버지, 어머니(계부, 계모 포함)
- ② 아버지(계부 포함)
- ③ 어머니(계모 포함)
- ④ 할아버지(할머니)
- ⑤ 형(오빠), 누나(언니)
- ⑥ 삼촌(외삼촌), 고모(이모) 등 친인척

(Translated in English)

17. Who is your guardian?

- ① Father, Mother (including Stepfather, Stepmother)
- ② Father (including Stepfather)
- ③ Mother (including Stepmother)
- ④ Grandfather (Grandmother)
- ⑤ Brother , Sister
- ⑥ Uncle (Maternal Uncle), Aunt (Maternal Aunt), and Kith and Kin

(In Korean)

40-5. 진학하려는 대학을 선택하였습니까?

① 예

40-5-1. 진학하려는 대학명을 적어 주십시오.

■ \_\_\_\_\_ → 40-6 번 문항으로

② 아니오 → 43 번 문항으로

(Translated in English)

40-5. Have you chosen the college or university that you wish to be admitted?

① Yes

40-5-1. Please write the name of the college or university that you wish to be admitted. ■

\_\_\_\_\_ → To the question 40-6.

② No → To the question 43.



(In Korean)

40-6. 귀하가 전공 또는 대학을 선택하는데 중요하게 고려하는 요소는 무엇입니까?

1 순위: \_\_\_\_\_ 2 순위: \_\_\_\_\_

- ① 성적
- ② 대학의 명예, 인지도
- ③ 부모의 희망
- ④ 본인의 적성
- ⑤ 취업 전망
- ⑥ 가정 형편
- ⑦ 지리적 여건(통학 편리성)
- ⑧ 대학의 전통과 문화
- ⑨ 대학의 시설 및 학습 여건

(Translated in English)

40-6. What do you consider most in choosing the college or university that you wish to be admitted?

1<sup>st</sup> placing: \_\_\_\_\_ 2<sup>nd</sup> placing: \_\_\_\_\_

- ① School Record in High School
- ② Prestige Ranking of College
- ③ Parents' Preference
- ④ My Aptitude
- ⑤ Job Prospect
- ⑥ Family State
- ⑦ Geographical Convenience
- ⑧ Tradition and Culture of College
- ⑨ Facilities and Learning Condition of College

## &lt; “Family” Survey Questionnaire of Keep &gt;

(In Korean)

2. 귀댁 가족구성원의 이름은 무엇이며, \_\_\_\_\_ 학생과의 관계는 어떻게 됩니까?

 \_\_\_\_\_

## &lt; 학생과의 관계 코드표 &gt;

<b>10</b> 학생의 조부모 01. 학생의 친할아버지 02. 학생의 친할머니 03. 학생의 외할아버지 04. 학생의 외할머니	<b>30</b> 학생의 형제자매 00. 학생 01. 학생의 순위 첫째 형제자매 (둘째=02, 셋째=03, ...) 11. 학생의 손아래 첫째 형제자매 (둘째=12, 셋째=13, ...)  <b>40</b> 학생의 삼촌 01. 학생의 첫째 친삼촌(고모) (둘째=02, 셋째=03, ...) 11. 학생의 첫째 외삼촌(이모) (둘째=12, 셋째=13, ...)
<b>20</b> 학생의 부모 01. 학생의 아버지 02. 학생의 어머니	
<b>50</b> 01. 학생의 사촌 (인원수에 관계없이 동일번호 부여) <b>60</b> 01. 학생의 형제자매의 배우자 (인원수에 관계없이 동일번호 부여)	
<b>70</b> 학생의 삼촌의 배우자 01. 첫째 삼촌(고모)의 배우자 (둘째=02, 셋째=03, ...) 11. 첫째 외삼촌(이모)의 배우자 (둘째=12, 셋째=13, ...)	
<b>80</b> 00. 기타 친인척 (인원수에 관계없이 동일번호 부여)	

(Translated in English)

2. What is the name of family member? \_\_\_\_\_ What is the member's relationship with survey student?

 \_\_\_\_\_

## &lt; Code about Relationship with Survey Student &gt;

<b>10</b> Student's Grandparent	<b>30</b> Student's Brother or Sister
01. Student's Paternal Grandfather	00. Student
02. Student's Paternal Grandmother	01. Student's First Elder Brother or Sister (Second=02, Third=03, ...)
03. Student's Maternal Grandfather	11. Student's First Younger Brother or Sister (Second=12, Third=13, ...)
04. Student's Maternal Grandmother	
	<b>40</b> Student's Uncle
<b>20</b> Student's Parent	01. Student's First Paternal Uncle (First Aunt) (Second=02, Third=03, ...)
01. Student's Father	11. Student's First Maternal Uncle (Aunt) (Second=12, Third=13, ...)
02. Student's Mother	
<b>50</b> 01. Student's Cousin (Give the same number regardless the number of persons)	
<b>60</b> 01. Spouse of Student's Brother or Sister (Give the same number regardless the number of persons)	
<b>70</b> Spouse of Student's Uncle	
01. Spouse of First Uncle (Aunt) (Second=02, Third=03, ...)	
11. Spouse of First Maternal Uncle (Aunt) (Second=12, Third=13, ...)	
<b>80</b> 00. The other Kith and Kin (Give the same number regardless the number of persons)	

(In Korean)

6. 귀댁 가족구성원은 학교를 어디까지 다녔습니까? 혹은 다니고 있습니까?

- |                        |                          |
|------------------------|--------------------------|
| ① 미취학 → 9 번 문항으로       | ② 무학 → 9 번 문항으로          |
| ③ 초등학교 → 7 번 문항으로      | ④ 중학교 → 7 번 문항으로         |
| ⑤ 고등학교 → 6-1 번 문항으로    | ⑥ 2~3 년제 대학 → 6-5 번 문항으로 |
| ⑦ 4 년제 대학 → 6-5 번 문항으로 | ⑧ 대학원(석사) → 6-3 번 문항으로   |
| ⑨ 대학원(박사) → 6-3 번 문항으로 |                          |

(In Korean)(Translated in English)

6. What is the highest educational attainment of your family members? Or, which level of formal schooling are your family members attending?

- |   |   |
|---|---|
| ① No school → To Question 9             | ② Leaving elementary school before graduation → To Question 9 |
| ③ Elementary school → To Question 7     | ④ Middle school → To Question 7                               |
| ⑤ High school → To Question 6-1         | ⑥ 2~3-year college → To Question 6-5                          |
| ⑦ 4-year college → To Question 6-5      | ⑧ Graduation(Master) → To Question 6-3                        |
| ⑨ Graduation (Doctor) → To Question 6-3 |   |

(In Korean)

39. 귀 가구에서 학생의 보호자는 누구입니까?

- ① 아버지, 어머니(계부, 계모 포함)
- ② 아버지(계부 포함)
- ③ 어머니(계모 포함)
- ④ 할아버지(할머니) → 41-3 번 문항으로
- ⑤ 형(오빠), 누나(언니) → 41-3 번 문항으로
- ⑥ 삼촌(외삼촌), 고모(이모) 등 친인척 → 41-3 번 문항으로

(Translated in English)

39. Who is the guardian of survey student in your family?

- ① Father, Mother (including Stepfather, Stepmother)
- ② Father (including Stepfather)
- ③ Mother (including Stepmother)
- ④ Grandfather (Grandmother)
- ⑤ Brother, Sister
- ⑥ Uncle (Maternal Uncle), Aunt (Maternal Aunt), and Kith and Kin

(In Korean)

75. 지난 1 년간 귀택의 월 평균 가구소득은 어느 정도입니까?

■ \_\_\_\_\_ 만원

(Translated in English)

75. How much was average monthly income of your family for last year?

■ \_\_\_\_\_ 만원

(In Korean)

82. 지난 학기(2003 년 9 월 ~ 2004 년 2 월)동안 조사대상 학생에 대해 지출한 월평균 사교육 비용은 얼마입니까?

■ \_\_\_\_\_ 만원

(Translated in English)

82. How much was your average monthly expenditure on private tutoring services for survey student for last semester (September, 2003 through February, 2004)?

< “Homeroom Teacher” Survey Questionnaire of Keep >

(In Korean)

5. 귀학교의 환경에 대한 질문입니다. 각 문항별로 동의하는 정도를 표시해 주십시오.

문항	매우 나쁘다	나쁘다	보통이다	좋은 편이다	매우 좋다
1) 건물 상태	1	2	3	4	5
2) 기자재, 시설	1	2	3	4	5
3) 학교 주변 환경	1	2	3	4	5
4) 학생들의 통학 조건	1	2	3	4	5
5) 학교의 수업분위기	1	2	3	4	5
6) 교사와 학생들간의 관계	1	2	3	4	5
7) 학부모들의 경제적 상태	1	2	3	4	5
8) 교장의 리더십	1	2	3	4	5
9) 교장과 교사들간의 관계	1	2	3	4	5
10) 교사들간의 관계	1	2	3	4	5
11) 교사들의 실력	1	2	3	4	5
12) 주변학교와 비교한 학생들의 성적	1	2	3	4	5

(Translated in English)

5. These are the questions about your school's circumstances. Please, check the extent of agreement in each question.

Questions	Very Bad	Bad	Medium	Good	Very Good
1) Building Condition	1	2	3	4	5
2) Equipment, Facilities	1	2	3	4	5
3) Environment around School	1	2	3	4	5
4) Condition for Students' Attending School	1	2	3	4	5
5) Class Climate in School	1	2	3	4	5
6) Relationship between Teachers and Students	1	2	3	4	5
7) Economic State of Parents	1	2	3	4	5
8) Principal's Leadership	1	2	3	4	5
9) Relationship between Principal and Teachers	1	2	3	4	5
10) Relationship among Teachers	1	2	3	4	5
11) Teachers' Abilities	1	2	3	4	5
12) Average Level of Student Achievement (Compared with Those of Neighborhood Schools)	1	2	3	4	5

(In Korean)

13. ○○○학생의 2학년 2학기에 관한 사항입니다. 조사 대상 학생별로 다음의 사항에 대해 적어 주십시오.

13-2	전교 석차	(            %) or ( 등수:            )/( 전체 인원:            )
------	-------	---

(Translated in English)

13. These are the questions about ○○○ student's second semester in second-year. Please, write the following items regarding survey students.

13-2	Ranking in the Whole School	(            %) or (Ranking:            )/(Number of School Students:            )
------	-----------------------------	--

**APPENDIX B**

**Prestige Ranking of Colleges**

**Table B 1*****2005 Comprehensive College Ranking by JoongAng Daily***

Ranking	Colleges or Universities	Recoded Number
1	Pohang University of Science and Technology	29
2	Korea Advanced Institute of Science and Technology	28
3	Seoul National University	27
4	Yonsei University	26
5	Korea University	25
6	Sungkyunkwan University	24
7	Hanyang University	23
8	Sogang n University	22
9	Ehwa Womans University	21
10	Kyunghee University	20
11	Kyungpook National University	19
11	Inha University	19
11	Chung-Ang University	19
14	Hankuk University of Foreign Studies	16
15	Pusan National University	15
15	Ajou University	15
17	The Catholic University of Korea	13
17	Konkuk University	13
17	Ulsan University	13
17	Hallym University	13
21	Sejong University	9
22	University of Seoul	8
22	Sookmyung Women's University	8
22	Inje University	8
22	Chungnam National University	8
26	Myongji University	4
26	Chonnam National University	4
26	Chungbuk National University	4
29	Kwangwoon University	1
29	Yeungnam University	1
29	Korea University of Technology and Education	1
	The Others	0

Source: Kang, H., et al. (2005, October 4)



**APPENDIX C**

**Test Results**

**Table C.1*****Alpha Test (Case Processing Summary)***

		N	%
Cases	Valid	534295.3900	98.4
	Excluded(a)	8881.26000	1.6
	Total	543176.6500	100.0

Weighted by the variable Student Weight

a Listwise deletion based on all variables in the procedure.

**Table C.2*****Alpha Test (Reliability Statistics)***

Cronbach's Alpha	N of Items
.685	3

**Table C.3*****Casewise Diagnostics(a)***

Case Number	Std. Residual	Log_expenditure	Predicted Value	Residual
4618	-3.876	.00	3.0845	-3.08445
4790	-3.010	1.79	4.1871	-2.39531
5223	-3.011	.69	3.0889	-2.39580
5403	-3.467	.69	3.4519	-2.75877
5469	-3.089	.69	3.1512	-2.45804
5958	-3.107	1.10	3.5711	-2.47254

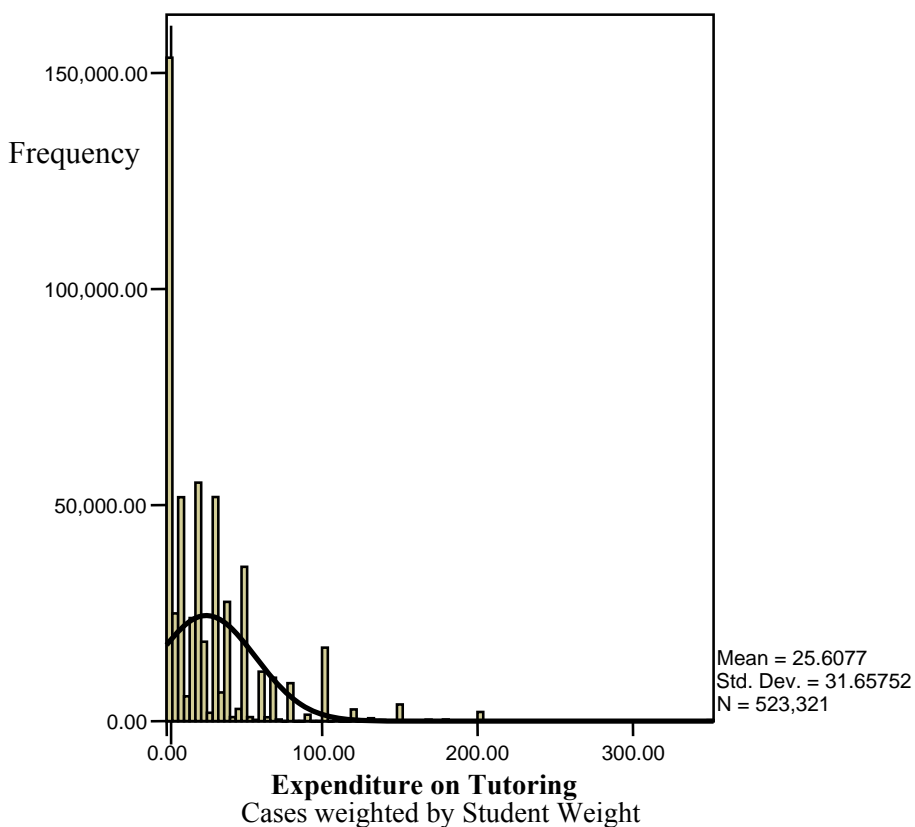
a Dependent Variable: Log\_expenditure

**Table C.4***Independent Samples Test for Validity Test of Prestige-oriented View of College Entrance (n= 329,842)<sup>(a)</sup>*

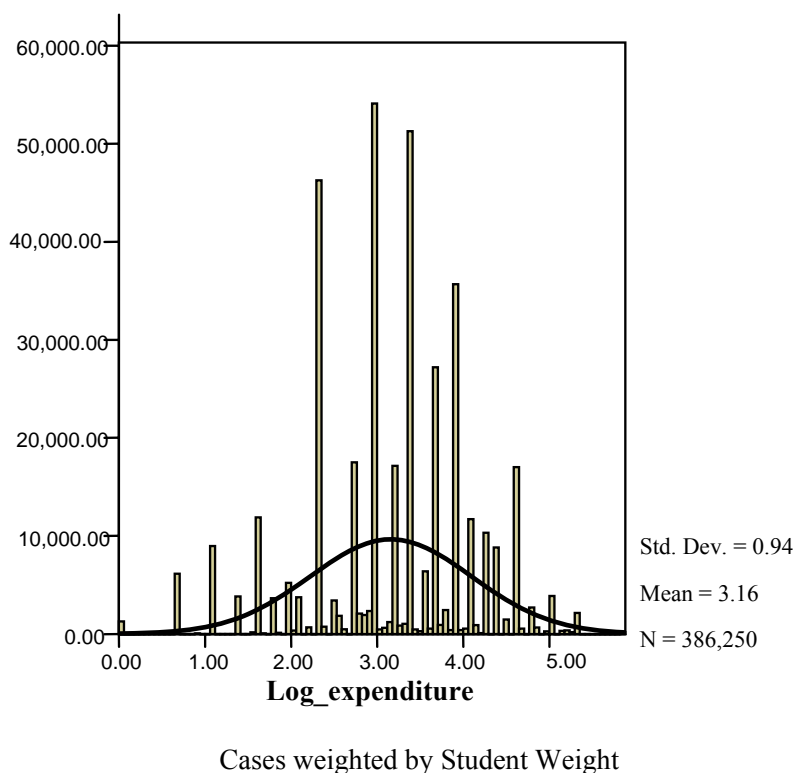
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
<b>(b)</b> Equal variances assumed	2479.202	.000	-102.345	329839	.000	-5.76284	.05631	-5.87321	-5.65248
Equal variances not assumed			-95.611	42684.141	.000	-5.76284	.06027	-5.88098	-5.64471

Note. <sup>(a)</sup> Cases were weighted by the variable Student Weight.

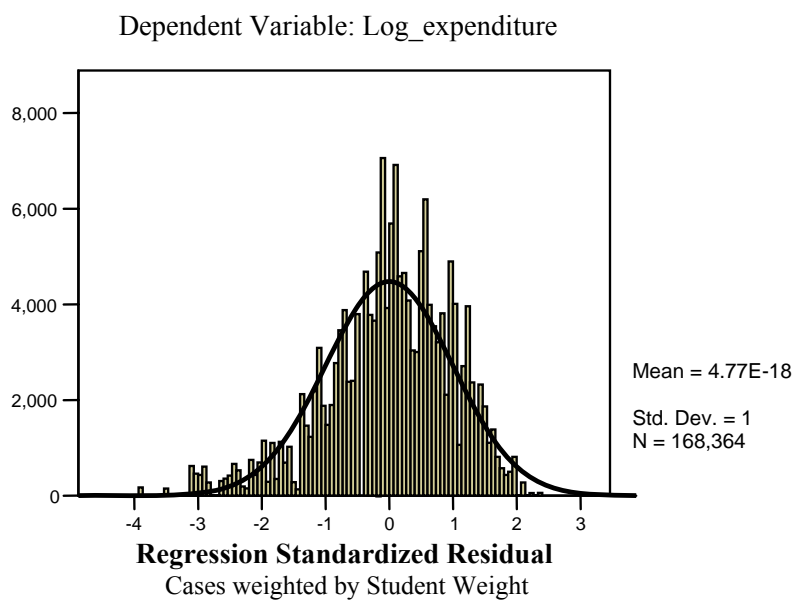
(b). Ranking of College Desired



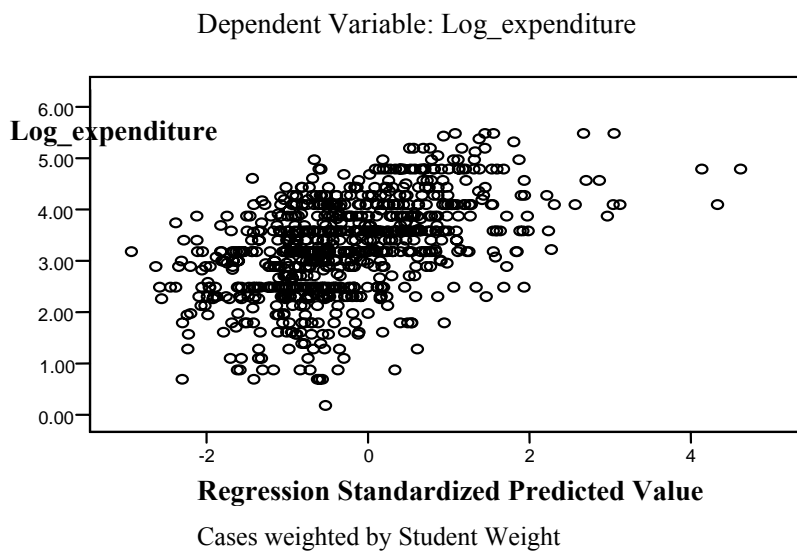
**Figure C.1** Distribution of response variable



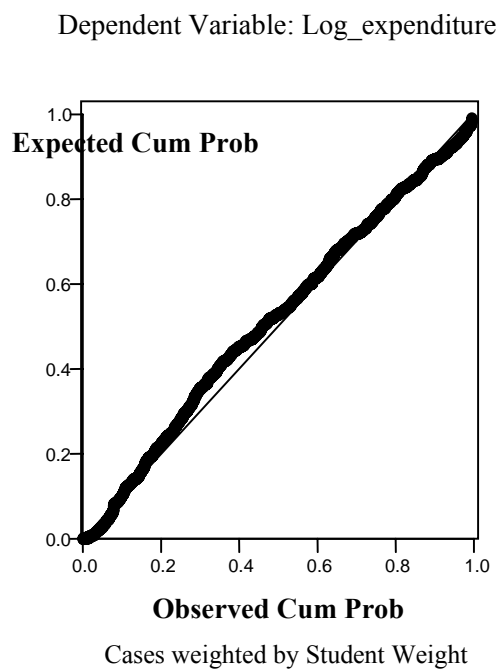
**Figure C.2** Transformed response variable



**Figure C.3** Histogram of residual



**Figure C.4** Scatter plots of residual



**Figure C 5 Normal P-P Plot of regression standardized residual**

**Table C.5**

*Means, Standard Deviations and Zero-Order Correlations for Factors Used in the Regression Analysis. (n= 168,364)<sup>(a)</sup>*

Factor	M	SD	Zero-Order Correlations													
			1	2	3-1	3-2	3-3	4-1	4-2	5-1	5-2	5-3	5-4	5-5		
1.Expenditure <sup>(b)</sup>	3.32	.90	1													
2.Students' Grades	43.90	26.98	-.004*	1												
3-1.School Evaluation (Class Climate)	3.59	.72	.102**	.010**	1											
3-2.School Evaluation (Student Achievement)	3.32	.94	.106**	-.006**	.562**	1										
3-3.School Evaluation (Teachers' Abilities)	3.86	.58	.036**	.036**	.420**	.322**	1									
4-1. Ranking of College Desired	9.70	10.66	.243**	-.254**	.170**	.184**	.078**	1								
4-2. Prestige-oriented (Not prestige=0, Prestige=1)	-----	-----	.064**	-.051**	.039**	.060**	.064**	.175**	1							
5-1. Income of Family	356.93	188.36	.442**	-.051**	.114**	.103**	.038**	.318**	.068**	1						
5-2. Father's Education	5.58	1.23	.304**	-.073**	.142**	.166**	.039**	.277**	.086**	.406**	1					
5-3. Mother's Education	5.12	1.01	.294**	-.090**	.134**	.146**	.021**	.291**	.068**	.428**	.692**	1				
5-4. Urbanization Level	3.35	.75	.177**	-.044**	.087**	.081**	.048**	.205**	.029**	.176**	.188**	.171**	1			
5-5. FatherEdu*Ranking	56.99	66.26	.264**	-.289**	.116**	.147**	.034**	.961**	.193**	.330**	.395**	.347**	.186**	1		

\*p ≤ .05 \*\* p ≤ .01

Notes: <sup>(a)</sup> Cases were weighted by student weight.

<sup>(b)</sup> Expenditure Unit: 10,000 won (Approximately 10 dollars).

Logarithm transformation of the response variable (expenditure on private tutoring) was applied.

**Table C.6**

*Model Summary of Expenditure on Tutoring Regressed on Four Sets of Independent Variables (n= 168364) <sup>(e)</sup>*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.448(a)	.201	.201	.80743	.201	10588.211	4	168358	.000	
2	.453(b)	.205	.205	.80516	.004	950.009	1	168357	.000	
3	.454(c)	.207	.206	.80464	.001	73.932	3	168354	.000	
4	.473(d)	.224	.224	.79574	.017	1263.261	3	168351	.000	.011

*Notes:* Dependent variable: expenditure on tutoring.

a Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education.

b Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level.

c Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level, School Evaluation(Student Achievement), School Evaluation (Class Climate), School Evaluation (Teacher Ability).

d Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level, Prestige-oriented College Choice, Ranking of College, FatherEdu\*Rank

e Dependent Variable: Log\_expenditure

<sup>(e)</sup> Cases were weighted by student weight.



**Table C.7*****Multiple Regression Analysis- ANOVA(e) (n= 168364) <sup>(e)</sup>***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27611.549	4	6902.887	10588.211	.000(a)
	Residual	109759.974	168359	.652		
	Total	137371.522	168363			
2	Regression	28227.427	5	5645.485	8708.317	.000(b)
	Residual	109144.096	168358	.648		
	Total	137371.522	168363			
3	Regression	28371.028	8	3546.378	5477.496	.000(c)
	Residual	109000.494	168355	.647		
	Total	137371.522	168363			
4	Regression	30770.729	11	2797.339	4417.763	.000(d)
	Residual	106600.793	168352	.633		
	Total	137371.522	168363			

Notes: a Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education.

b Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level.

c Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level, School Evaluation(Student Achievement), School Evaluation (Class Climate), School Evaluation(Teacher Ability).

d Predictors: (Constant), Urbanization Level, Mother's Education, Monthly Income, Father's Education, Student Achievement Level, Prestige-oriented College Choice, Ranking of College, FatherEdu\*Rank

e Dependent Variable: Log\_expenditure

<sup>(e)</sup> Cases were weighted by student weight.

**Table C. 8**  
**Multiple Regression Analysis- Coefficients(a) (n= 168364) <sup>(e)</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partia l	Part	Tolerance	VIF
1	(Constant)	1.488	.013		114.236	.000	1.463	1.514					
	Income	.002	.000	.315	131.974	.000	.001	.002	.396	.306	.288	.835	1.197
	Father Education	.096	.002	.131	45.139	.000	.092	.100	.288	.109	.098	.566	1.768
	Mother Education	.054	.003	.060	20.110	.000	.048	.059	.282	.049	.044	.539	1.854
	Urbanization Level	.143	.003	.119	53.994	.000	.138	.149	.185	.130	.118	.973	1.027
2	(Constant)	1.354	.014		98.759	.000	1.327	1.380					
	Income	.002	.000	.318	133.721	.000	.002	.002	.396	.310	.290	.833	1.200
	Father Education	.095	.002	.130	45.157	.000	.091	.100	.288	.109	.098	.566	1.768
	Mother Education	.058	.003	.064	21.715	.000	.053	.063	.282	.053	.047	.538	1.859
	Urbanization Grades	.146	.003	.122	55.150	.000	.141	.151	.185	.133	.120	.972	1.029
3	(Constant)	1.235	.019		65.661	.000	1.198	1.272					
	Income	.002	.000	.318	133.608	.000	.002	.002	.396	.310	.290	.830	1.204
	Father Education	.096	.002	.131	45.273	.000	.092	.100	.288	.110	.098	.564	1.774
	Mother Education	.057	.003	.064	21.513	.000	.052	.063	.282	.052	.047	.534	1.874
	Urbanization	.145	.003	.120	54.552	.000	.140	.150	.185	.132	.118	.967	1.035
	Grades	.002	.000	.066	30.269	.000	.002	.002	.021	.074	.066	.977	1.024
	School_Class climate	-.031	.003	-.024	-8.876	.000	-.037	-.024	.047	-.022	-.019	.627	1.594
	School_teacher ability	.046	.004	.029	12.193	.000	.039	.053	.046	.030	.026	.809	1.236
School_Student achievement	.017	.003	.018	6.664	.000	.012	.022	.056	.016	.014	.668	1.498	

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
4	(Constant)	1.113	.020		55.196	.000	1.073	1.152					
	Income	.001	.000	.297	123.631	.000	.001	.001	.396	.289	.265	.798	1.254
	Father Education	.128	.003	.175	50.487	.000	.123	.133	.288	.122	.108	.381	2.621
	Mother Education	.056	.003	.063	21.259	.000	.051	.061	.282	.052	.046	.531	1.882
	Urbanization	.118	.003	.098	44.058	.000	.112	.123	.185	.107	.095	.936	1.069
	Grades	.003	.000	.097	42.729	.000	.003	.003	.021	.104	.092	.895	1.118
	School_Class	-.036	.003	-.029	-10.530	.000	-.043	-.029	.047	-.026	-.023	.625	1.599
	School_teach	.040	.004	.026	10.709	.000	.033	.047	.046	.026	.023	.805	1.242
	School_StuAchi	.008	.003	.008	2.993	.003	.003	.013	.056	.007	.006	.662	1.511
	Ranking	.035	.001	.407	40.215	.000	.033	.036	.241	.098	.086	.045	22.258
	Prestige-oriented college	.058	.006	.022	9.949	.000	.047	.070	.066	.024	.021	.953	1.049
	FatherEdu*Rank	-.004	.000	-.309	-28.752	.000	-.005	-.004	.264	-.070	-.062	.040	25.116

Notes: a Dependent Variable: Log\_expenditure

<sup>(c)</sup> Cases were weighted by student weight.

**Table C. 9**  
**Multiple Regression Analysis- Collinearity Diagnostics(a)**

Model	Dimension	Eigen value	Condition Index	Variance Proportions												
				Constant	Income	Fa_edu	Mo_edu	Region	Grades	Class climate	Teach_abil	Stud_ach	Ranking	Prestige	FaEdu*Rank	
1	1	4.762	1.000	.00	.01	.00	.00	.00								
	2	.160	5.457	.01	.91	.00	.00	.02								
	3	.046	10.121	.00	.04	.15	.07	.57								
	4	.018	16.222	.69	.01	.44	.02	.34								
	5	.013	18.945	.30	.03	.40	.91	.06								
2	1	5.497	1.000	.00	.01	.00	.00	.00	.01							
	2	.284	4.399	.00	.14	.00	.00	.00	.71							
	3	.142	6.223	.01	.79	.01	.01	.04	.21							
	4	.046	10.879	.00	.04	.15	.06	.58	.00							
	5	.017	17.841	.58	.00	.53	.07	.29	.04							
	6	.013	20.606	.41	.02	.31	.86	.09	.03							
3	1	8.362	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00				
	2	.284	5.425	.00	.14	.00	.00	.00	.71	.00	.00	.00				
	3	.169	7.040	.00	.68	.00	.00	.01	.25	.01	.00	.02				
	4	.069	11.043	.00	.11	.05	.02	.12	.00	.03	.00	.34				
	5	.048	13.233	.00	.05	.17	.07	.43	.00	.00	.01	.02				
	6	.030	16.810	.03	.00	.02	.00	.34	.02	.10	.18	.45				
	7	.017	21.976	.03	.00	.03	.00	.03	.00	.85	.26	.16				
	8	.014	24.299	.00	.01	.73	.79	.00	.00	.00	.04	.00				
	9	.008	31.926	.93	.01	.01	.11	.08	.02	.00	.50	.01				
4	1	9.560	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	1.077	2.980	.00	.00	.00	.00	.00	.02	.00	.00	.00	.01	.17	.01	.01
	3	.770	3.523	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.82	.00	.00
	4	.219	6.603	.00	.17	.00	.00	.00	.73	.00	.00	.00	.01	.00	.00	.00
	5	.168	7.533	.00	.65	.00	.00	.01	.22	.01	.00	.02	.00	.01	.00	.00
	6	.069	11.738	.00	.12	.05	.03	.08	.00	.03	.00	.30	.00	.00	.00	.00
	7	.055	13.193	.00	.03	.07	.03	.32	.00	.00	.01	.06	.04	.00	.00	.03
	8	.030	17.897	.02	.00	.00	.00	.47	.01	.07	.14	.40	.02	.00	.00	.01
	9	.019	22.542	.03	.00	.02	.14	.05	.00	.64	.02	.19	.12	.00	.00	.11
	10	.016	24.685	.00	.01	.09	.44	.00	.00	.24	.36	.02	.07	.00	.00	.07
	11	.011	30.126	.13	.01	.40	.33	.05	.01	.01	.30	.00	.28	.00	.00	.28
	12	.006	39.142	.82	.00	.36	.02	.02	.00	.01	.17	.00	.46	.00	.00	.49

a Dependent Variable: Log\_expenditure

**Table C. 10**  
***Multiple Regression Analysis- Excluded Variables(d)***

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Grades	.067(a)	30.822	.000	.075	.988	1.012	.538
	School_class climate	.004(a)	1.844	.065	.004	.988	1.013	.538
	School_teacher ability	.030(a)	13.536	.000	.033	.994	1.006	.539
	School_student achievement level	.019(a)	8.820	.000	.021	.982	1.019	.536
	Ranking of College	.099(a)	42.818	.000	.104	.878	1.140	.537
	Prestige-oriented college choice	.037(a)	16.750	.000	.041	.990	1.010	.539
	FatherEdu*Rank	.085(a)	34.445	.000	.084	.781	1.281	.537
2	School_class climate	-.003(b)	-1.167	.243	-.003	.978	1.022	.536
	School_teacher ability	.025(b)	11.640	.000	.028	.990	1.010	.538
	School_student achievement level	.014(b)	6.434	.000	.016	.976	1.025	.534
	Ranking of College	.128(b)	53.417	.000	.129	.814	1.229	.537
	Prestige-oriented college choice	.041(b)	18.928	.000	.046	.986	1.015	.538
	FatherEdu*Rank	.114(b)	44.918	.000	.109	.722	1.386	.536
3	Ranking of College	.129(c)	53.365	.000	.129	.798	1.253	.533
	Prestige-oriented college choice	.040(c)	18.313	.000	.045	.979	1.022	.534
	FatherEdu*Rank	.115(c)	44.921	.000	.109	.706	1.416	.533

Notes: a Predictors in the Model: (Constant), Urbanization, Mother Education, Monthly Income, Father Education

b Predictors in the Model: (Constant), Urbanization, Mother Education, Monthly Income, Father Education, Grades

c Predictors in the Model: (Constant), Urbanization, Mother Education, Monthly Income, Father Education, Grades, School\_teacher ability, School\_student achievement level, School\_class climate

d Dependent Variable: Log\_expenditure

## VITA

### Education

- M.A. Educational Administration, Seoul National University, Seoul, South Korea. February. 2002.
- B.A. Education, Seoul National University, Seoul, South Korea. February. 1995.

### Position and Professional Experiences

- Graduate Assistant of the Dept. of Education Policy Studies, the Pennsylvania State University (Fall 2005).
- Research Assistant, National Academy for Educational Administrators, Seoul National University (Sep 2001~June 2002).
- Research Assistant, Solidarity for Re-establishment of Schooling (March 2000~Dec 2000).
- Research Assistant, Education Research Institute, Seoul National University (Sep. 1997~Feb 2000).
- Research Assistant in 'Higher Education Subcommittee' of 'Central Committee on Education' under the Ministry of Education & Human Resources Development of Korea (March 1997~Feb1998)

### Scholarly Works

- Lee, S. & Shouse, R. (2007). Prestige-oriented View of College Entrance and Shadow Education in South Korea. Paper presented (proposal accepted) at the 2007 American Educational Research Association (AERA) Annual Conference, Chicago, IL.
- Lee, S. (2002). A Study on Educational Leadership focused on 'the Growth of the Members in Organization'. Master's thesis, Seoul National University, Seoul, Korea.
- Yun, C., et al., (2002). *A Research for Countermeasure and Synthetic analysis on the Collapse of Schooling in Korea*. Seoul: Education Research Institute of Seoul National University.
- Jin, D. et al., (2000). *A Research on Institution of National School*. Seoul: Ministry of Education of Korea.
- Yun, C., et al., (2000). *A Survey research on Difference of Understanding on Educational Problems among Generations*. Seoul: Solidarity for Re-establishment of Schooling.
- Woo, J. et al., (1998). *A Research on the Functions of Higher Education Institutes by Types*. Seoul: Central Committee on Education of Korea.

### Scholarship and Awards

- 2006-2007 Miriam E. Gray Scholarship in the College of Education, Penn State.
- 2005 Graduate Assistantship, Penn State.
- 2004-5 Graduate School Tuition Grant-in-Aid, Penn State.
- 1998 Fall Scholarship, Seoul National University.
- 1993~1994 Scholarship, Seoul National University.
- 1991~1992 Scholarship, Seoul National University.
- 1990 Admission Fellowship in the College of Education, Seoul National University.