

Patterns and Changes of Educational Attainment in Korea

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(About 9,100 words)

Abstract

The general empirical regularities that previous research on educational attainment has found can be summarized as follows: First, class differentials in educational attainment have not decreased over time in almost all countries. Only a few countries such as Sweden are exceptional. Second, gender differentials have steadily declined across cohorts since 1970s. Third, the effects of family background are higher in earlier transitions, and then decline in later transitions. This paper looks into the patterns of and changes in class and gender differentials in educational attainment in Korea, and compares them with those of other countries. The findings from Korea are as follows: First, class differentials in the case of men have not decreased despite a rapid expansion of the educational system. However, in the case of women, the effects of father's education on completing four-year university have increased during the past decades. Second, gender differentials in educational attainment have steadily declined in almost all transitions. However, these differentials have decreased unequally across socio-economic backgrounds. Women whose fathers are highly educated played the leading role in this decline. Third, the effects of origin class are not so small in later transitions compared with those in earlier transitions, while the effects of father's education tend to diminish steadily across transitions. First and second findings do not differ from the general facts. However, the third pattern can be found only in a few countries. In the Korean case, the difference in findings may be the result of higher returns gained from having a four-year university education and also by the higher cost of tertiary education compared with other countries.

Introduction

Education is known to one of the most critical factors in determining the occupational status, class locations, and income (Jencks, 1972; Sewell and Hauser, 1975; Featherman and Hauser, 1978). It is also known to enhance the possibility of gaining access to domination, power, and control (Bowles and Gintis, 1976; Bourdieu and Passeron, 1977). However schooling is not attained in a vacuum. Individual's educational attainment depends strongly on the socio-economic position of his or her family in a system of social inequality. Thus schooling is not only a primary means of getting ahead but also a crucial mechanism of passing on the social inequality of the parents' generation to their children's.

The concept, *inequality of educational opportunity*, has various meanings (Coleman, 1968; Hallinan, 1988). However, it indicates usually how much an individual's education is influenced by family's socioeconomic background, not by his/her ability or efforts. In other words, it means *the differences in level of educational attainment according to social background* (Boudon, 1974). It is almost self-evident why class differentials in educational attainment have attracted much concern. It is not only because this kind of educational inequality is a dimension of stratification per se, but also because the occupational or income inequality, which can be the result of educational attainment, cannot be easily justified if educational attainment is heavily determined by family background. Thus reducing the inequality of educational attainment is necessary to achieve *meritocracy*.¹

Considering the significance of this, it is not surprising at all that much research has dealt with this subject. Status attainment model and Wisconsin model have examined both how family background and other social and psychological factors impact upon the educational attainment and how much these effects have changed over time or across cohorts (Blau and Duncan, 1967; Sewell and Hauser, 1975). These models regressed the total number of schooling completed on several indicators of family background such as the father's education and father's occupational status, using the ordinary least squares (OLS) method. However, Mare (1980, 1981) demonstrated a methodological deficiency in these models. OLS estimates can be expressed as a function of both transition probabilities and the effects of social origins on transition odds. He showed also that where educational system expands, OLS estimates tend to decline across cohorts even if the association between background factors and educational transitions is not changed.² It is, therefore, inappropriate to assess any changes of educational inequality with these estimates when an educational system expands rapidly.

Mare proposed a new analysis method, *sequential logistic regression*, which measures the

¹ However, see Goldthorpe(1996b) for problems with this concept, *meritocracy*, and its related logic.

² In other words, OLS estimates cannot be structural coefficients, because they are not *unmixed*,

effects of background factors on educational transition probabilities. The advantages of this method are as follows: First, it can make it possible to compare the background effects on schooling by separating these effects from the influences of various contingent factors such as educational expansion and group differences in the proportions of various categories of schooling (Mare, 1980, 1981). Second, such a model, which assumes that educational career is a sequence of irreversible discrete steps, can expand upon the theoretical explanations of educational inequality by regarding the accumulation of formal schooling as the result of an individual's or parent's choices (Gambetta, 1987: 5-6).³

At any rate, Mare's proposal has attracted great attention and spawned considerable empirical research in Hungary (Simkus and Andorka, 1982), the Philippines (Smith and Cheung, 1986), the USA, some European countries, Japan, and Taiwan (Shavit and Blossfeld, 1993). Although such investigations in various countries and at time periods have produced different results to some extent, several consistencies were found: First, class differentials in educational attainment in almost all countries have been stable or fluctuated rather than declined despite the expansion of educational system and the various educational reforms aimed at removing the barriers impeding the schooling of lower classes. These differentials have decreased over time only in a few exceptional cases such as Sweden.⁴ Second, contrasted against class differentials, gender differentials in educational attainment have declined consistently since 1970s. Third, there is a tendency that the effects of family background decline across transitions. The family effects are higher in early transitions, and then decline in later transitions (Blossfeld and Shavit, 1993; Shavit and Blossfeld, 1996; Breen and Goldthorpe, 1997).

There have been many studies on educational inequality in Korea. Most studies, however, focused their attention either on the highest year of schooling or merely on the transition from upper secondary education and tertiary education (Kim, 1975; Yu, 1980, Kang, 1988; Cha, 1992; Kim and Kim, 1999; Chang, 2002; Phang and Kim, 2002). Studies focusing on the change in the background effects on educational transitions over time have been very rare and have only begun to appear very recently. These investigations have reported somewhat different

invariant, and autonomous (Duncan, 1975; 151; Mare, 1993).

³ However, several criticisms have been raised on this model. First, in its original form this model cannot take into account the qualitatively different and alternative pathways in each educational level (Breen and Jonsson, 2000; Lucas, 2001). Second, among other things, sequential logistic model cannot, as in all non-experimental analysis, eliminate the confounding effects of omitted variables such as the real wealth of a family, academic achievement, and the individuals' educational aspirations (Mare, 1993).

⁴ Some research has found that class differentials in educational attainment have also decreased in the Netherlands (De Graaf and Ganzeboom, 1993), Germany (Jonsson et al., 1996), England (Jonsson and Mills, 1993), and Italy (Shavit and Westerbeeck, 1998). However, research results on these countries have not been consistent with those on Sweden.

results. Kim (1993) and Chang (2001) found that class differentials in educational attainment have been either temporally stable or fluctuated during the past decades. Park (2002) reported that there has been an increase across cohorts in the influence of father's education on the odds of completing a four-year university. In sum, they show that educational inequality has not improved across cohorts in Korea.

There has not been so much empirical research on gender differentials in educational attainment in Korea. Lee (1998) demonstrated that gender differentials in education were the result of discriminatory resource allocation against daughters in the families of large size and of lower socioeconomic status. Kim (1993) dealt with the trends of gender differentials. She found that gender differentials have slightly declined during the past decades and have dropped more sharply in the middle class than in the lower classes. As a result, she concluded, class variations of gender differentials have been reduced. The first part of her findings is consistent to general empirical regularity found in other countries, while the second part is not so.

Not strangely, there is not so much research focusing on family effects across transitions in Korea, because most research has dealt only with the transition from upper secondary education to tertiary education. Chang (2001) reported that the effects of origin class decline across lower transitions and rose considerably once again in the transition from upper secondary education to four-year university, while the effects of father's education diminish steadily across transitions. This finding both contradicts and supports previous findings in other countries.

However, it is difficult to have great confidence on these research results because of their several limitations. Chang (2001) and Park (2002) could not look into the gender differentials due to data limitations and could not exclude the possibility of underestimating the temporal tendency of class differentials, if any, by using small samples.⁵ Kim (1993) drew an inconclusive conclusion on the change of class and gender differentials over time by the mere eyeballing of comparisons. Despite that she utilized sufficiently large body of data, she did not confirm whether the temporal tendency of gender differentials is statistically significant or not.

Trying to overcome the limitations, first, I will look into the patterns and changes of class and gender differentials in educational attainment in Korea. I will also examine how educational inequality in Korea is similar to or different from that of other countries, and lastly, offer some explanations where the empirical facts in Korea deviate from general findings elsewhere.

Theoretical Backgrounds

As mentioned before, class differentials in educational attainment have not decreased despite

⁵ In any statistical procedure, the sample size can strongly influence the results. When a sample size is small, it is easy to fail to notice a weak association among variables, while large a sample size tends to exaggerate any negligible association (Agresti, 1990; 239).

the expansion of educational system and the various educational reforms in almost all countries. As is well known, the theoretical resources available to explain this empirical fact are cultural reproduction theory and rational action theory.

Cultural reproduction theory, or conflict theory, assumes that cultural differences of status groups are the major sources of the class differentials in educational attainment (Collins, 1971; Bowles and Gintis, 1976). Status groups form their own linguistic styles, aesthetical preferences, and styles of interaction, which can be termed as *cultural capital* in that they are related to the securing of social and economic resources. Children of upper classes who equipped themselves with a specific cultural capital tend to have stronger aspiration for continuation of academic career, while children of working class tend to *self-eliminate* their aspirations because of their own value, norm, and taste. In addition, children of upper classes who are exposed to highbrow cultural activities at home are more likely to do well in school. Schools tend to reinforce the cultural attitudes which students of upper class origin bring with them by taking the value of dominant groups for granted and thereby evaluating students on these criteria. For example, teachers do not tend to only show more concern for and provide more help to students from elite groups, but they also tend to evaluate these students' intellectual ability more favorably. It is therefore quite obvious that *pedagogical actions* are more effectively transmitted to the students of upper classes, and that students who have cultural competences of dominant groups get better grades in school (Bourdieu and Passeron, 1977; DiMaggio and Mohr, 1985). It is these strong aspirations and good academic achievement that allow students from upper classes to achieve higher levels of schooling.

Cultural reproduction theory implies in itself stability in the effects of background factors because mastery of the dominant culture always escapes lower classes (Erikson and Jonsson, 1996a). Cultural reproduction theory predicts a change in the realms of secondary education, but not in tertiary education. School does not only defend the privileges of dominant groups, but also legitimizes any existing inequality by providing an opportunity of upward mobility to lower classes. An expansion of at least secondary education is inevitable for providing an opportunity to lower classes. This expansion tends to reduce inequalities of opportunity in secondary education. Thus cultural reproduction theory predicts that class differentials at lower levels of education would be somewhat lessened, while those in higher education would persist across cohorts.

Cultural reproduction theory can explain some of the empirical regularities very well. However, it has several important shortcomings. First, cultural capital has not been clearly specified conceptually or operationally. Cultural capital as an unexplained black box is simply regarded as a primary factor to determine educational attainment (De Graaf, 1986). Second, it cannot explain the fact that as educational system expands, a sizable proportion of youth

originating from lower classes entered into tertiary education, and that, although unusual, class differentials in educational attainment have been reduced in a few countries (Goldthorpe, 1996a).

Rational action theory is clearly contrasted with cultural reproduction theory in its refusal to use the somewhat ambiguous concepts, culture or cultural capital. It is also distinguishable from the latter in that it focuses on the secondary effects of stratification rather than the primary effects which come from differences in academic achievement. According to this theory, aspirations to continue one's educational career or attitudes towards schooling are not that different between classes or social categories. Working class children want to advance their educational careers almost the same as children of upper classes.⁶ What are different among classes or groups are the expected benefits and costs of a given level of education, and the subjective judgment on the chances of completing it successfully. Actors calculate these benefits, costs, and probabilities rationally and choose an educational path, which will bring the highest returns among the feasible alternative sets. Needless to say, these calculations depend on individual's or his (her) family's socioeconomic positions (Boudon, 1974; Goldthorpe, 1996; 2000; Erikson, 1996a; Erikson and Jonsson, 1996a; 1996b; Breen and Goldthorpe, 1997).

However, there is another mechanism to produce class differentials in educational attainment, *relative risk aversion*. Parents of all classes want their children to achieve an occupation or class, which are the same as or better than theirs. In other words, they want to achieve upward mobility or at least avoid downward mobility. Although the efforts to avoid downward mobility are the same in form, the consequences of such endeavors differ substantially among classes. While working class children might be satisfied with either a middle class or working class job, middle class children expect to get at least middle class jobs. Therefore middle class children tend to prefer higher education or more prestigious educational options than working class children, even if other conditions such as academic achievement, family resources, and costs of education are assumed to be the same. In summary, rational action theory suggests that class differentials in educational attainment are upheld both by the relative positions of students in a socially stratified system and by the risk of downward mobility, which is calculated differently on those positions (Boudon, 1974; Goldthorpe, 1996; Breen and Goldthorpe, 1997).

The advantage of this theory lies in its capacity to explain both the persistence of class differentials and the exceptional cases such as Sweden. Class differentials will not disappear so long as relative distances between classes are maintained. They will diminish only if those distances are narrowed through various mechanisms.

⁶ Sullivan (2002) confirmed that the association between social class and students' attitudes to education is not significant once academic achievement is controlled. However, she found also that some attitudes to education are different among social categories such as gender.

Explaining gender differentials and class differentials requires different approaches, because gender differentials in educational attainment are related to family resource allocation, while class differentials reflect only on intergenerational relations. Curiously, however, the theoretical resources available to explain gender differentials in educational attainment are not so rich. Currently, there are only a few general explanations.

Gender differentials in educational attainment are, first, a function of women's participation rate in labor market (Becker, 1981; Shavit and Blossfeld, 1996; Breen and Goldthorpe, 1997). In general, if women's participation rate in labor market is low, women will not invest their resources in education leading to large gender differentials in educational attainment. However it is probable that gender differentials will be also large if opportunities for women to get a desirable job are restricted, even though the women's participation rates in labor market are relatively high. The possibility that women get desirable jobs tends to be higher when and where internal labor market has not fully developed and many jobs are available in the external labor market or service industries (Blossfeld, 1987; Brinton, 1988). In other words, gender differentials decrease when and only when women's participation in the labor market is high and many jobs are available in the external labor market.

Gender differentials in educational attainment are also related to a family's resource allocation. Resource allocation in a family depends on such factors as real family income, the number of children, and the country's social welfare system (Brinton, 1988). Education, especially tertiary education brings financial burdens. If income is low and there are many children in a family, parents tend to invest their resources intensively on only a few children. Who is usually eligible for this allocation? This depends on the state of social welfare system in a country. If social welfare system is not well developed, then parents will likely to be more dependent on their children after they retire. In this case, parents would likely choose the child or children who can most likely support them later. Considering that the gender-segregated labor market and patriarchic culture is more or less dominant everywhere, it is probable that sons will usually chosen for more education. As family resources are intensively invested on sons, gender differentials will increase.

In general, as industrialization proceeds, women's participation rate in labor market tends to increase and the possibility that women get better jobs tends to be higher. It is also probable that as a family's real income rises, the number of children falls. Social welfare system tends to be gradually established. Under these conditions, gender differentials in educational attainment will decrease, because parents will be less reluctant to invest resources on daughters.⁷ However, it is

⁷ However, despite that women's participation rate in the labor market and their possibility of getting better jobs is still lower than men's, women's average educational level now exceeds that of men. This should be explained by other hypotheses (Mickelson, 1989).

expected that gender differentials will go down unequally among classes. If the possibility of getting desirable jobs becomes high, women of middle class origin tend to have higher aspirations than women from the working class (Breen and Goldthorpe, 1997). In addition, increases in real income will be higher in middle class, and preparations for old age will remain easier for the middle class than the working class, even though the social welfare system may not yet be sufficiently developed. Thus daughters of middle class origin will lead the reduction of gender differentials.

A reduction in gender differentials can have several implications for trends in class differentials. First, a reduction in gender differentials may prevent the class differentials of men from decreasing. The criteria of student selection can be lowered as the educational system expands. However, the increased enrollment of middle class women tends to maintain the rigid selection criteria. This may allow male class differentials to persist across cohorts (Shavit and Blossfeld, 1996). Second, as gender differentials in educational participation and attainment diminish over time, class differentials among women will increase from a level lower than that among men so as to approximate the male level. This is because daughters of middle class are more willing to go to the next level of education than those of working class (Breen and Goldthorpe, 1997).

The most polemical part of empirical regularities already found might be the third fact that the effects of family background are higher in early transitions than later transitions. Mare (1980) suggested the *differential selection hypothesis*. The hypothesis explains this regularity by the reduction of the association between omitted variables and family background, which is caused by the reduction of heterogeneity of family background in later transitions. However, as he later recognized, unobserved variables don't always lower the observed effects of family background in later transitions. The direction that latent heterogeneity distorts the observed effects may be positive or negative (Mare, 1993). This discovery cast doubt on the plausibility of this hypothesis.

Several competing hypotheses have been also suggested. The first is the *life course hypothesis*. This explains the declining effects of family background across transitions by arguing that children become less dependent on their parents socially and economically as they grow up (Müller and Karle, 1993; Blossfeld and Shavit, 1993). The second hypothesis is deducted from rational action theory. According to it, as the risk of downward mobility declines at higher stages of education, so background effects will diminish (Breen and Goldthorpe, 1997).

Recently controversies have been developed over whether this empirical regularity is really a reflection of reality or merely a statistical artifact (Mare, 1993; Cameron and Heckman, 1998; Lucas, 2001). The parameter estimates of sequential logistic regression are unidentified and so the estimates become different when the assumptions on the error terms are changed. If true, it

becomes meaningless to compare the estimates obtained in each transition.⁸ Therefore, it is not productive to explain the empirical regularity with existing hypotheses until it is confirmed as a fact. Rather, it is more useful to examine an opposing hypothesis against the declining effects of family background across transitions, the *effectively maintained inequality hypothesis* (EMI). EMI begins with a discussion on the *maximally maintained inequality hypothesis* (MMI). MMI can explain the declining effects across transitions to some extent, although it developed from efforts to explain the persistence of educational inequality over time. According to MMI, if educational system expands beyond the demand of upper classes, family effects start to decrease. However, it implies in itself that if expansion is not sufficient to meet the demand of upper classes, class differentials in educational attainment will remain as high as before. In other words, the hypothesis predicts that family effects are not so small even in later transitions where expansion is not so great, while those effects become weak in early transitions where the educational system has been already considerably expanded (Raftery and Hout, 1993; Hout et al., 1993).

EMI criticizes the argument of MMI that the educational expansion lowers the family effects. EMI assumes that class competition over educational attainment does not disappear and that upper class parents try to get any advantages in all educational stages. They seek quantitative advantages if quantitative differences are important, and qualitative advantages if quantitative differences are not so significant. If it is more important to step into the better tracks or highly prestigious university than to progress to the next level of the educational ladder itself, class competition will be exacerbated over such a qualitative dimension. This hypothesis emphasizes that family effects will remain strong in the important and decisive transition, irrespective of earlier or later (Lucas, 2001).

Data and variables

This paper used the *Inequality Study* (IS) data, which were collected by Korean Social Science Council in 1990, 1995, and 2000 respectively, and *Korean Labor and Income Panel Study* (KLIPS) data, which was collected by Korean Labor Institute in 1998. These two kinds of data were collected respectively by multi-stage stratification sampling and two-stage cluster systematic sampling method.⁹ Total observations numbered 19,437 (1,974, 1,867, 1,858, 13,738). However, final sample sizes can be varied, because missing cases and the respondents

⁸ It seems that this regularity is not merely an artificial fact. Using a new method introducing time-varying covariates, which is known to be a method that is able to correct the unidentification problem, Aschaffenburg and Maas (1997) showed that parent's education and cultural activities have declining effects on educational attainment across transitions.

⁹ See Seok (1992) and Cha (1997), Phang et al. (2000) on research design and sampling of these data.

under age 25 and above age 65 as of each survey year were excluded. Women composed about 40% of all. Sample sizes will be noted where necessary.

The dependent variables are transitions from lower to higher stage in educational ladder. These are the transition from primary education to lower secondary education (Transition 1; T1), from lower secondary education to upper secondary education (Transition 2; T2), and from upper secondary education to tertiary education (Transition 3; T3). Transition 3 was divided into two parts; one is the transition from upper secondary to junior college (T3-1), and another is the transition from upper secondary to four-year university (T3-2). Respondents who did not graduate from primary education and enrolled students in each school were excluded, and dropouts in each educational level were regarded as graduates of lower level.

Independent variables are father's education (fe), father's class (fc), gender, and birth cohort. Father's education is classified into 4 categories: primary or less education, lower secondary education, upper secondary education, and tertiary education. Origin class is measured by EGP 5 class scheme; service class (I + II), lower white collar workers (III), self-employers (IV ab), farmers (IV cd + VII b), and manual working class (V + VI + VII a). Men are coded as 0, and women as 1. All respondents were born between 1926 and 1975. Birth cohorts are classified into 4 cohorts: 1926-45, 1946-55, 1956-65, and 1966-75. Note that in order to make cohort size comparable, the oldest cohort covers 20 years while other three are ten-years in duration. The reference categories of father's education, father's class, gender, and birth cohort are primary or less education, manual working class, men, and the youngest cohort born in 1966-75, respectively. A sequentially numbered metric variable (C) was introduced to find linear trends in the effects.

Analysis

As is well known, Korea has experienced a remarkable economic growth during past decades. Gross National Income per capita has increased from only 249 dollars in 1970 to 5,886 in 1990, and 10,823 in 1995, even though financial crisis in 1997 pulled it down to 6,744 dollars in 1998. The proportion of farmers has dramatically dropped from 50.4% to 18.3% during the same period (Korea National Statistical Office, 1995). Along with these changes, educational system has also expanded rapidly. Enrollment in secondary education has increased since late 1960s or early 1970s, while primary education enrollment began increasing as early as 1950s. Tertiary education has rapidly expanded since the early 1990s, even though its tendency of expansion has been triggered since mid 1970s (*see* Figure 1).

----- Figure 1 -----

Now let's look into how the effects of background factors on each transition have been changed in the midst of economic growth and educational expansions. Table 1 represents the

estimated logistic or multinomial logistic regression coefficients of the best-fitted models in each transition. The basic patterns that we can find in Table 1 are as follows: First, coefficients of family background variables are positive and significant in all transitions. The higher the father's education and origin class, the larger the probabilities to do a successful transition. For example, the odds that male respondents whose fathers had completed tertiary education graduate from four-year university successfully are about 4.0 [$\cong \exp(1.389)$] times larger than the odds of those whose father had only primary or less education.¹⁰ The odds that male respondents of service class origin complete four-year university are about 3.9 [$\cong \exp(1.362)$] times higher than that of manual working class origins.

Second, men are in a more advantageous position in almost all transitions than women. The odds that women graduate from four-year university are 2.2 [$\cong 1/\exp(-.795)$] times smaller than that of men. This shows that gender discrimination in educational attainment is not yet negligible in T3-2, even though gender differentials are not so large and significant in T3-1.

Third, birth cohort is also a significant factor that influences educational attainment. The odds that younger cohorts continue education are generally higher than those of older cohorts. The odds that the youngest cohort completes a four-year university are 1.2 [$\cong 1/\exp(-.161)$] times higher than that of the cohort born between 1956 and 1965.

-----Table 1-----

These results are just as expected. However, it was not these patterns but the changes or tendencies that have attracted much more concerns. These changes can be confirmed with the interaction terms between independent variables and the birth cohort, or simply, between independent variables and the sequentially numbered metric variable. Interaction terms between father's education and the metric variable, and between origin class and metric variable are not significant in T1 and T2. So it can be concluded that the effects of background factors have not been changed in lower transitions.

However, the best-fitted model in T3 includes the complicated interaction terms among father's education, gender, and the metric variable. Especially three-way interaction term among these variables is notable. Considering that reference category in gender is men, the effects of father's education on T3-2 have changed at least for women, while the effects of father's education on T3-1 have not been so. Judging from the sign of this three-way interaction term and considering the reference category of birth cohort is the youngest cohort born in 1966-75, the effects of father's education have increased across cohorts in the case of women. However, all of interaction terms between father's education and the metric variable are not significant.

¹⁰ Note that this odds ratio is applicable only to men in the youngest cohort, taking into account that the logistic coefficient for any independent dummy variable in an interactive logistic regression is conditioned to the reference categories of moderator variables (Jaccard, 2001).

Only the interaction terms between father's upper secondary education and the metric variable, and between tertiary education and the metric variable are significant. Putting the interaction between father's education and gender with the interaction between father's education and the metric variable together, the size of the effects of father's tertiary education is 2.571 $[=1.389+1.182]$ for women in the youngest cohort, while this was only 1.092 $[=2.571-(3*.263)]$ in the oldest cohort.¹¹ This means that women have become increasingly susceptible to father's education.¹² In short, it can be said that in the case of women, the inequality of educational opportunity has deteriorated at least in the highest transition, while it has not in the case of men. It also means that the effects of father's education among women have increased from a level lower than those amongst men to a similar or higher level.

The trends of gender differentials in educational attainment are contrasted with those of class differentials. As is seen Figure 2, reconstructed from Table 1, the disparities between genders either have converged toward zero or have been reversed in favor of women in all transitions. Among other things, the trends in T3-2 attract our concerns. The slopes of decline are different depending on the father's education. The tendency of gender disparities to decline in T3-2 is more salient in women whose fathers have tertiary education than in women whose fathers have upper secondary education. In the youngest cohort, gender differentials in T3-2 went so far as to be slightly reversed, even though the trends are applicable only to women whose fathers have tertiary qualifications. This means that the decline in gender differentials in higher education have hitherto been primarily led by women who have highly-educated fathers, and that the main beneficiaries of the expansion of tertiary education have been those women.

----- Figure 2-----

These patterns and trends of class and gender differentials are also somewhat as expected. Peculiar to Korea though is the unexpected behavior of the coefficients across transitions. Figure 3 and 4 reveal the effects of father's education and father's class on each transition respectively in the case of men. It seems that the effects of father's education declined across transitions. Most of the effects are smaller in later transitions than in early transitions. This coincides exactly with the pattern that other empirical research on this field has found. However, the effects of father's class are somewhat deviant from the pattern. The effects of origin class appear to decline at first in successive transitions. However, it becomes strong again in T3-2,

¹¹ For simplicity, only linear trends of each variable were represented in Table 1. Parameter estimates of the interaction terms of independent variables with birth cohort - which is originally an indicator variable - showed that the effects of father's education increased more steeply in the younger cohorts. These results are available upon request.

¹² Women are also more susceptible to origin class than men. Daughters of farmers, in particular, are in a more disadvantageous position. The odds that they complete four-year university are 1.7 $[=1/\exp(-.557)]$ times lower than that of manual working class.

but not in T3-1. As far as service class is concerned, the effects of origin class in T3-2 are larger than those in lower transitions.

----- Figure 3 -----

----- Figure 4 -----

The patterns of effects across transitions in the case of women are clearly different from those of men. As is seen in Figure 5 and 6, the effects of service class and self-employed workers are not much smaller in T3-2 than in T2, even though it is somewhat lower than those in T1. The effects of father's education are more deviant. The effects of father's tertiary education are highest in T3-2, even though the effects of father's lower credentials decrease steadily across transitions.¹³

-----Figure 5-----

-----Figure 6-----

Summarizing, it can be said that some of the background effects didn't decrease across transitions in Korea, irrespective of gender. Korea is an exceptional case in this respect.

Discussion and Conclusion

Using logistic and multinomial regression, this paper showed patterns and changes of class and gender differentials in educational attainment. Findings in Korea can be summarized as follows. First, class differentials in educational attainment have not shown any tendencies during the last decades in the case of men. However, some of the effects of background factors - such as father's education - on the transition from upper secondary school to four-year university have steadily increased in the case of women. Second, gender differentials have declined in almost all transitions. This decline has been especially large in higher transitions, and women whose fathers are highly educated have taken the lead in it. Third, the effects of father's education have declined consistently across transitions. However, the effects of origin class became strong once again in the transition from upper secondary school to four-year university after declining across transitions in lower transitions. In the case of women, even the effects of father's education have not declined across transitions.

The finding that class differentials in educational attainment in Korea have persisted over time does not differ from the findings in other countries. Class differentials in educational attainment are due to the mobility strategy each individual or family utilizes from their relative positions in a stratified system. It can be said in other words that *inequality of opportunity*

¹³ However, note that these effects are those in the youngest cohort. The patterns in older cohorts are very similar to that of the male respondents, which resembles empirical regularity found elsewhere. This fact shows that the effects of background factors may remain strong enough even in later transitions if competition over schooling was originally weak but then became greater.

comes from *inequality of conditions* (Goldthorpe, 2000). Therefore, class differentials in educational attainment will diminish only where class-based disparities in living conditions have been significantly reduced. In Sweden, where the inequality of educational opportunity has declined, the living conditions of working class have improved since 1920s when Swedish Social Democrats were first in office. Egalitarian reforms and other policies enhanced the employment stability of the working class and reduced income inequality among classes. It was under these conditions that the inequality of educational opportunity declined (Erikson and Jossion, 1996a).

So far, it has been known that the degree of income inequality in Korea is not high by international standards, and that income inequality has not declined since the early stages of industrialization in Korea (Leipziger et al., 1992). Recent studies based on more refined data and on plausible evidences, however, cast doubt on such tentative conclusions. These research contends that due to limitations in data quality, previous research underestimated the degree of inequality, and that Gini index re-estimated is not only so low by international standards but also has been deteriorated since at least later 1980s (Lee, 1999). In any rate, it is almost certain that income inequality has not improved during the past decades.

We cannot find any evidences for the argument that employment stability has changed for the better. Rapid economic growth driven by strong state and big firms in Korea has been accompanied by the repressive labor policies. The strong state has chosen a ‘disorganize and control’ policy toward workers (Shin, 1999). Large firms have hindered and even prohibited the formation of labor union until 1987, when serious protests by workers for improved wages and labor conditions exploded in the midst of Korea’s democratization (Koo, 2001). It is needless to say that repressive labor policies have hurt the stability of employment. The turnover rate of workers, which can be regarded as an indicator of employment stability, has been as high as 6 to 8 per cent in small firms, 3 to 6% in large firms during 1970s and 1980s, even though unemployment rate, which is another indicator of employment stability, has been maintained at around 4% or below during the same periods (Lee, 1996).¹⁴ Employment stability may have not improved even after 1987, when unionized workers started to have a voice. Confronting strong unions, employers have steadily increased the proportion of temporary workers. The ratio of temporary workers in the economic active population has increased from 25.3% in 1988 to 29% in 1997 (Choi, 1998).

Taking these conditions of income inequality and employment stability into account, it is not surprising that class differentials in educational attainment have not changed across cohorts in

¹⁴ Turnover rates in Korea have been very high compared with those of other East Asian countries. Those have been maintained at about 1% in a month during the past 20 years in Japan, while 3 to 4% by the end of 1980s in Taiwan (Shin, 1999: 48)

the case of men. However, this persistence of inequality may be in part caused by the increases in women's participation rates in education, since simultaneous equalization of gender and class differences in educational attainment are competing processes (Shavit and Blossfeld, 1996).

As mentioned above, gender and class differentials in educational attainment are the results of quite different mechanisms. While class differentials are caused by the inequality of conditions, gender differentials are also dependent on several factors related to both gender-segregated labor market structure and the allocation of family resources.

Women's participation rate in labor market has increased since mid-1980s in Korea, even though is still low compared with those of advanced countries. It was 39% in 1986, 41.5 in 1992, and 49.5 in 1997 (Lee, 1996; Choi, 1998). The possibilities that women can get desirable jobs have also increased during the same period, even though these are also still lower than those of advanced countries. The ratio of women in professional and managerial jobs among the employed women has increased from 5.2% in 1986 to 9.2% in 1992. Including clerical jobs, the figures have changed from 15.1 to 23.7 (Lee, 1996). It may be under these conditions that gender differentials have steadily decreased in all transitions.

Family income may have increased rapidly in Korea, as the increases in GNI per capita indicate. However, it is almost as evident that in absolute terms increases in income may be more salient in the middle class than working class, even if income disparity has not deteriorated.

The number of children borne to women of childbearing age has fallen dramatically from 6.0 in 1960 to 1.6 in 1990. Highly educated married women have fewer children than less educated women. Among married women between 35 and 39 year olds who have graduated from high school or university, on average 2.08 children were borne, while graduates from primary school had 2.76 children in the period 1974-90 (Kwon et al., 1995).

The social security system is not well developed in Korea. Unemployment insurance and a national pension system were not introduced until recently. Considering this circumstance, it is probable that Korean parents want to invest their resources in children who will care for them in their old age. However, highly-educated and middle-class parents tend to be less dependent on their children after they retire, because they can afford to make their own preparations for their future. They are therefore less prone to do gender-based educational investment than lowly educated working class parents.¹⁵ It is probably due to these conditions that highly educated parents have led the reduction of gender differentials in educational attainment.

As was found in the above, an unusual and uncommon pattern is found in Korea; the effects

¹⁵ In a research on gender-discriminatory educational investment in Korea, Lee (1998) found that the discriminatory practice of resource allocation is not observed among families of small size and of high socioeconomic status.

of origin class have not decreased across transitions. In fact, only a few countries such as Switzerland and the USA showed such an exceptional pattern (Blossfeld and Shavit, 1993). Why is this? It can be explained if we don't decide to ignore this empirical regularity by regarding it as merely a statistical artifact. However, the well-known hypotheses such as differential selection hypothesis and life course hypothesis cannot be applied to the exceptional cases of Korea, Switzerland, and the USA, because they were made for simply explaining the regularity.

Buchmann and colleagues (1993) maintain that in Switzerland this pattern is due to the fact that an individual's real choice is made in the transition from secondary to tertiary education because vocational training in secondary education is near universal for young people. It sounds plausible and persuasive, as well as applicable to Korea, where secondary education is universal. However, this kind of explanation seems to be less sophisticated and less flexible than EMI, which argues that the origin effects might become stronger in the important and decisive transitions.

Why did the effects of class origin become strong once again in the transition from high school to four-year university in Korea? It may be, first, because it is the most important transition, where parents and students try to invest as much resources as possible. As is generally true in almost all countries, the economic returns to tertiary education are considerably larger than those of secondary education (Müller and Shavit, 1998). However, these disparities have been much larger in Korea than in other advanced countries, even though there are some signs that these have been reduced in recent years. In other words, it is not so easy for high school graduates or university dropouts as university graduates to get a desirable job in Korea, and therefore the risk of downward mobility is very high for Korea's high school graduates compared with other countries (Chang, 2001). Admitting that individual's efforts to avoid the risk of downward mobility are the basic cause of class differentials in educational attainment, it is highly probable that parents and children in Korea tend to compete strongly over completing four-year university.¹⁶ In fact, parents in Korea have been very competitive about academic achievement and educational paths in high school, which are crucial for entering into the more prestigious four-year universities (OECD, 1998).

Another factor to consider when explaining the exceptional pattern in Korea is the financial aspect of tertiary education. As seen in Figure 7, total expenditure on tertiary education as a proportion of GDP is highest in Korea, which to some extent reflects the educational fever in Korea. However, what is striking is not the total expenditure as a percentage of GDP, but the ratio between public and private expenditure. As of 1998, more than 80% of total expenditure

¹⁶ The educational inequality tends to be higher when and where educational credentials are rewarded more in the labor market (Müller et al., 1989).

on tertiary education has been funded by the private sector in Korea.¹⁷ This is striking when compared with 59% in Japan and 53% in the USA, which place second behind Korea (OECD, 2001). This means that tertiary education has been expanded mainly through increasing the financial burdens of parents. The more substantial the costs of education are, in general, the higher the educational inequality tends to be (Erikson and Jonsson, 1996a). Heavy costs may make the effects of background factors high once again in the last transition in Korea.¹⁸

----- Figure 7 -----

Public subsidies to students and their families in the form of scholarships, grants, and loans are related to the financing of education. In general, the level of public subsidies tends to be higher in countries where the level of private funding of educational institutions is higher. However, here Korea is an exception. Public subsidies are negligible in Korea despite the fact that more than 80% of all expenditures on tertiary education originate from private sources. In Korea, along with Greece, Switzerland, and Turkey, less than 5% of the total public spending on tertiary education goes toward subsidies. Subsidies for tuition payment are as low as 3% and subsidies for expenditure outside educational institutions amount to less than 1% of total public spending on education (OECD, 2001).

Public subsidies can reduce educational inequality if they are properly allocated among classes (Erikson and Jonsson, 1996a), while they can also affect reducing the effects of background factors in later transitions by separating individual's educational decisions from family's socioeconomic position (Blossfeld and Shavit, 1993). Due to negligible subsidies, however, in Korea dependency of students on their parents has not decreased even in the transition to tertiary education. As a result, class differentials are not so small in this transition.

So far, we have examined some possible factors, which may cause the peculiar patterns of background effects across transitions in Korea. However, is this explanation applicable to Switzerland and the USA? A definite answer should be postponed until more comparative analysis can be obtained, which must be undertaken in another project.

Related to this, it is necessary to elaborate on the research concerns. Recently unprecedented experiment is being carried out in Korea. Government has given up the policy to constrain the expansion of tertiary education since 1990s. As of 2002, more than 70% of graduates of upper secondary schools stepped into tertiary schools (Korea National Statistical Office, 2002). It would be higher in near future because the *numerus clausus* of tertiary education, even though not that of four-year university, has already exceeded the total number of high school graduates

¹⁷ Even worse, this ratio has increased since the 1970s (Kong and Paik, 1994)

¹⁸ It can be also guessed from this that the educational inequality in Korea could be more distinct than those of other countries. However, a rapid expansion of tertiary education might lower it, because expansion itself can be another path to achieve equality in educational attainment (Hout and Dohan, 1996).

in 2003. What will happen in class and gender differentials in educational attainment under such circumstances? What will be the patterns of background effects across transitions? These questions cannot be fully answered now, either. However, it is certain that class competition over educational attainment will not completely disappear. It is probable that competition would evolve in other dimensions. For example, the differences between junior college and four-year university could be more strongly emphasized. Or the differences of social prestige among universities could be stressed even more. A follow-up research question will be therefore to confirm whether the effects of family background are much stronger when entering into highly-ranked universities as compared to less prestigious ones.

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Table 1. Logistic and multinomial logistic regression coefficients in each transition

	T1	T2	T3	
			T3-1	T3-2
Father's education				
Lower secondary	1.297***	.672***	.405***	.270**
Upper secondary	1.726***	1.236***	.577***	.849***
Tertiary	2.122***	2.249***	.816***	1.389***
Father's class				
I + II	1.117***	.915**	.801**	1.362***
III	1.244***	1.095***	.496**	.961***
IVab+VIIb	1.053***	.462**	.340*	.662***
IVcd	.110	-.112	-.168	-.052
Gender	-.421*	-.008	-.459	-.795***
Birth cohort				
1956-65	-1.563***	-1.210***	-.200*	-.161*
1946-55	-2.698***	-1.847***	-.757***	-.209*
1926-45	-3.559***	-2.108***	-.601***	-.143
Gender*C	-.347***	-.249***	-	-
Father's education*gender				
Lower secondary*women	-	-	.078	.266
Upper secondary*women	-	-	.465*	.409*
Tertiary*women	-	-	.596	1.182**
Father's class*gender				
I + II *women	-	-.491	-.385	-.363
III*women	-	-.866**	-.092	-.300
IVab+VIIb*women	-	-.244	-.028	-.005
IVcd*women	-	-.495*	-.470	-.557*
Father's education*gender*C				
Lower secondary*women*C	-	-	-.197	-.142
Upper secondary*women*C	-	-	-.306	-.277*
Tertiary*women*C	-	-	-.277	-.493***
Constant	3.941***	2.614***	-1.443***	-1.224***
Pseudo R-squared	.274	.173	.103	
N	11,709	9,851	7,831	

Note 1. Reference categories of father's education, father's class, gender, and birth cohort are respectively primary school graduation, manual working class(V+VI+VIIa), men, and the youngest cohort (born in 1966-75).

2. C is a sequentially numbered metric variable.

3. * p < .05 ** p < 0.1 *** p < .001

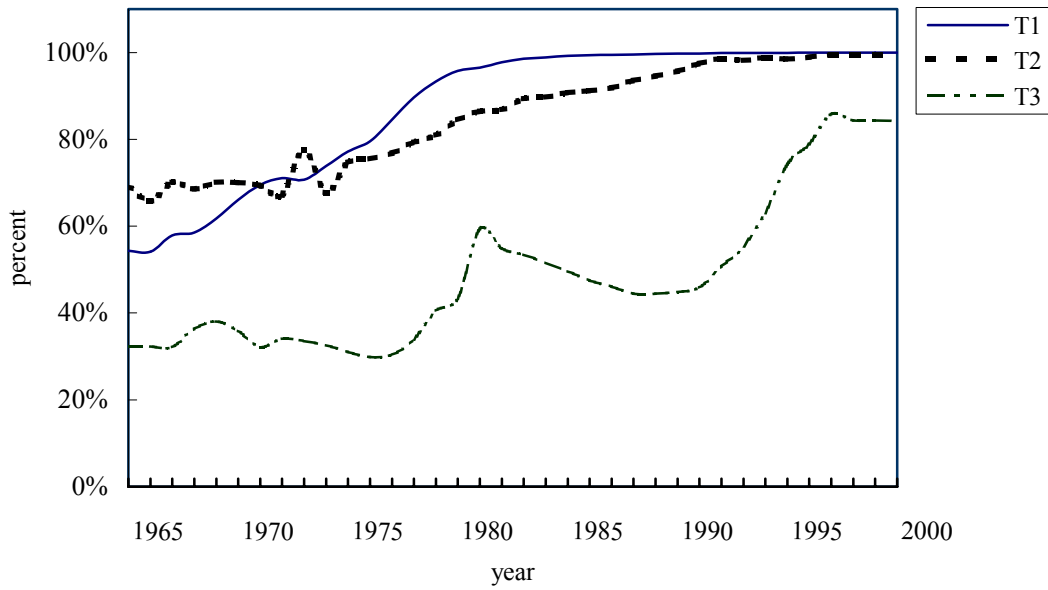


Figure 1. Trends of enrollment ratio in each educational level

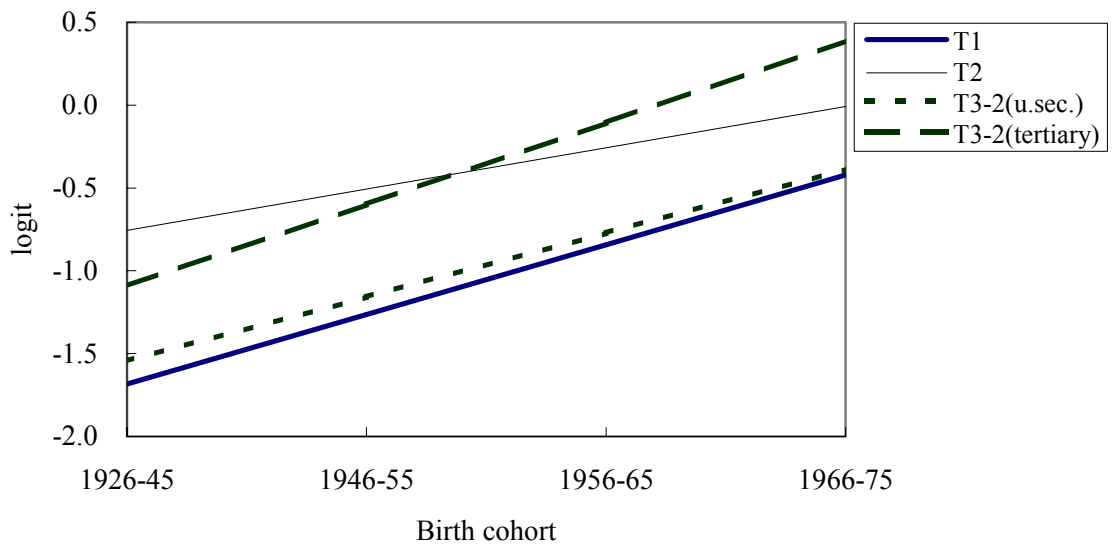


Figure 2. Trends of gender differentials in each educational level

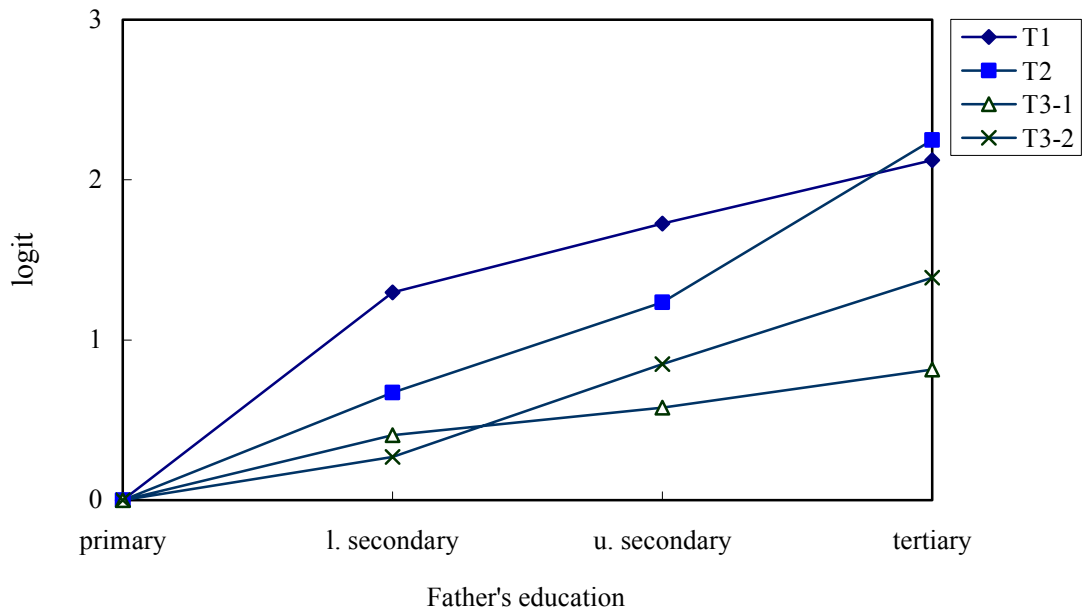


Figure 3. The effects of father's education on each transition(Men)

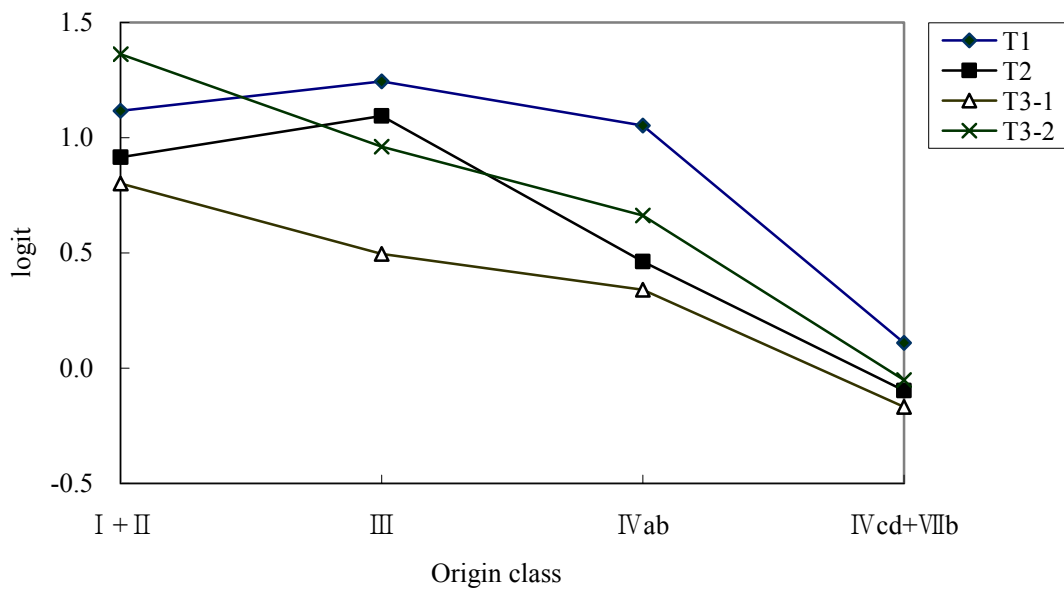


Figure 4. The effects of origin class on each transition(Men)

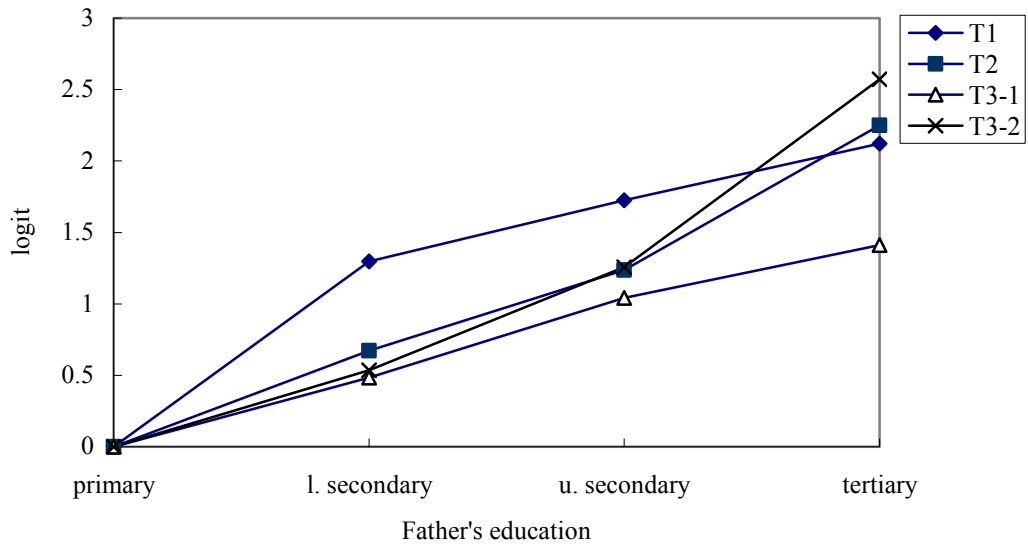


Figure 5. The effects of father's education in each transition(Women)

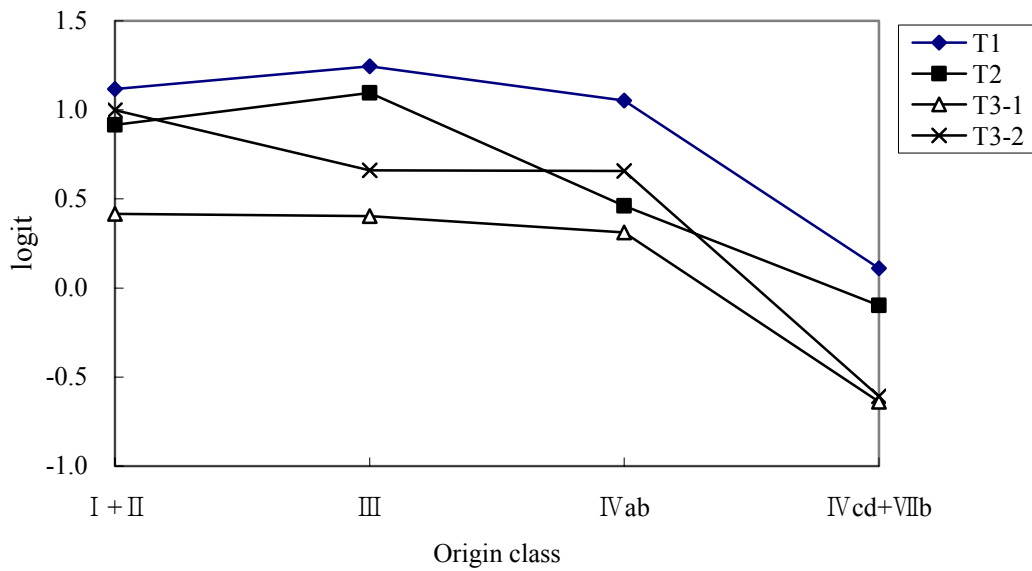


Figure 6. The effects of origin class on each transition(Women)

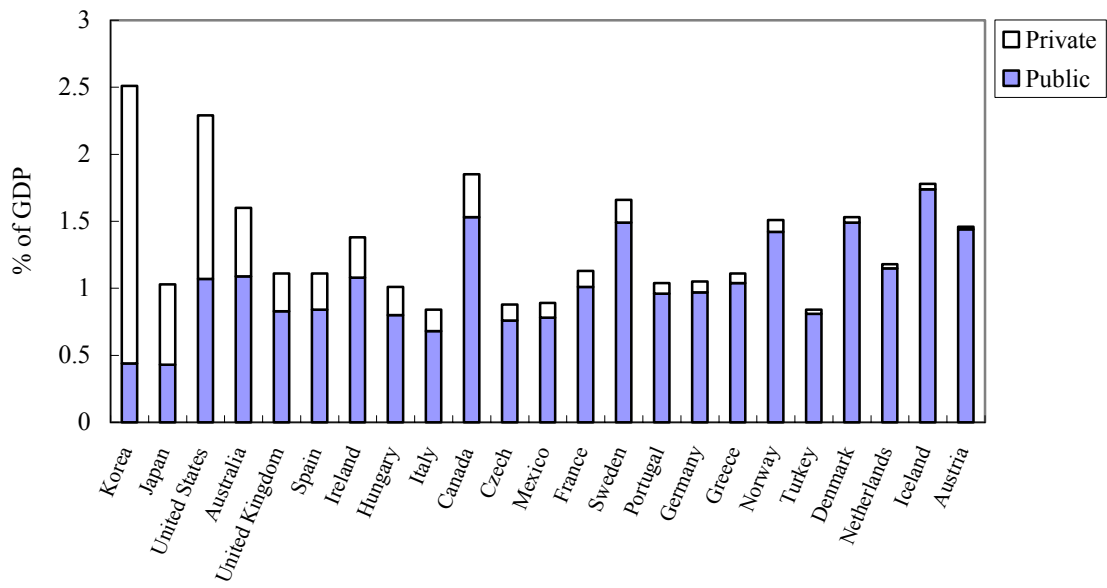


Figure 7. Public and private expenditure on tertiary educational institutions as a percentage of GDP