Trends and Differentials in School Transitions in Korea and Japan

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I. Introduction

Researchers on educational inequality have paid attention to relationships between family background variables and educational continuation, while controlling for other relevant individual characteristics, such as gender and academic ability. The interests of many researchers have mainly focused on how the relationships vary across age cohorts at each level of school transitions. Especially, researchers have mainly dealt with how these relationships vary across age cohorts within school transitions (Mare, 1993: 351). Previous research on changing patterns of educational continuation has found some empirical regularity for the economically developed countries (Blossfeld and Shavit, 1993)[1]. First, the effects of family backgrounds have not decreased over time. Second, gender differentials have persisted but have continuously decreased across age cohorts. Third, the effects of family background almost vanish at the graduate school level, which reflects historical trends (Mare, 1980; Stolzenberg, 1993). This study examines Korean and Japanese data to see if these empirical regularities hold for the two countries' school transition regimes.

According to both OECD and UNESCO reports (2003)[2], both Korean and Japanese students got the highest mean scores of academic performance in the Program for International Student Assessment (PISA) (Presented in the Appendix, see A-Figure 1). Moreover, the level of relationship between students' family backgrounds and student performance was found to be the lowest despite family backgrounds having been found to be one of the most determining factors influencing students' academic performance (See A-Figure 2). This report therefore praised Korea and Japan as model cases in which high student performance was achieved without much disparity in educational opportunity between social classes.

It is well known that entering prestigious colleges is extremely competitive in both Korea and Japan. In Japan, for example, the competitive process of entering good colleges is well symbolized in the expression, '*Juken jigoku*' (examination hell) (Stevenson and Baker, 1992: 1642). Korea even goes to the extreme in that regard as some high school students commit suicide out of despair over poor school records[3]. Many high school graduates may spend one or more additional years preparing for the college entrance exam in order to be able to enter the college of their choice. In 2003, the number of repeat applicants for universities and junior

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[1] Blossfeld and Shavit (1993) analyze thirteen countries. Thirteen countries are classified three major groups. Western capitalist countries are the United States of America, Germany, United Kingdom, Italy, Switzerland, the Netherlands, and Sweden. Non-western counties are Japan and Taiwan. Western formerly socialist countries are Poland, Hungary, and Czechoslovakia

[2] *Literacy Skills for the World of Tomorrow: Further Results from PISA 2000* (OECD and UNECO, 2003). See OECD website on detail contents (http://www.pisa.oecd.org).

[3] According to an adolescent survey in Korea, 33.2 percent of middle school and high school students have once thought of committing suicide. And the main cause of suicide impulse was stress or depression related to academic performance as 19.8 percent (Choi, 2004).

colleges was 140,552 (19.7 % of total applicants) in Japan[4], and that number for Korea was 184,188 (27.4% of total applicants). Moreover, due to extreme competition, the burgeoning expansion of after-school shadow education (private cram schools, private tutoring, etc) had already emerged as one of the most serious social problem in Korea. In 1980, 14.9% of all students were reportedly involved in shadow education (*Hagwon*), with the percentage having increased to 58.1% as of 2000 (Kim at al, 2001: 40). According to some survey information, many Japanese parents also believe that public school curriculums are not enough for their children to successfully prepare for the college entrance exam, so they tend to send their children to private academies (*juku*) to supplement those shortcomings (Moriguchi and Pfeiffer, 2001).

The results of PISA may indicate that both Korea and Japan had been successful in setting up a high performance educational system that provides students of all classes with relatively equal opportunities and even outcomes. Still, the extreme competition and the expansion of shadow education may indicate that the two countries failed to build up educational environments in which students' aptitudes and interests are best served, and as a result, have turned their educational systems into a 'contested terrain.'

In the following section we describe the similarities and differences between Korea and Japan in their educational systems, along with the history of educational expansion in those countries. Thereafter we will review past research on family background and educational inequality, especially in the context of expanding educational opportunity, and introduce our research questions. Then this paper will present the data and variables to be used along with the analytical models we have adopted in order to analyze the trends and differentials in school transition rates over age cohorts and between social classes. Finally, we present the results of our analyses and discuss their implications.

II. Educational Systems in Korea and Japan

Table 1 describes the educational systems in Korea and Japan. The two countries show similarities in various respects. To begin with, the school grade systems in Korea and Japan are quite similar. This similarity likely originated from the Japanese colonial influence on Korean educational system during 1910-1945[5]. Following World War Two, the occupying Allied

[4] In Japan, national official statistics show application rate for higher education separated into new graduates and repeat applicants, so-called "*Ronin*."

[5] But both countries showed different features on educational trends in the early part of the 20th. Korean education did not grow on the whole in the colonial period. This partly can be explained from that Koreans had experienced discrimination of educational opportunities, and that Japanese colonial government limited the diffusion of education among Koreans. In 1945, the enrollment rate of elementary school in Korea merely was 64 percent of the relevant aged population. When a few Koreans went to middle schools, many Japanese residents in Korea went to middle

Forces reformed the old educational system of the two countries into an American one. It was in this historical context that Korea and Japan were forced to share the single-track '6-3-3-4' school grade system, in which students spent six years receiving primary education, three years of lower secondary education, three years of upper secondary, and four years of tertiary education.

Another similarity between the Korean and Japanese systems lies in how educational provisions are highly standardized in both countries (Ishida, 1998; Kim, 2003; Park, 2003). According to Allmendingers (1989), "standardization" describes the degree to which the quality of education meets the same standard nationwide. Students in Korea and Japan are educated according to standardized curricula without regard to individual ability, through all levels of compulsory education. In addition, the quality of teachers and, school facilities in Japan are quite homogenous throughout the country (Shavit and M ller, 1998: 13). In that regard Korea is similar. Moreover the Korean government has even controlled the number of students.

A third similarity between Korea and Japan lies in the tracking structure. School tracking starts only at the upper secondary educational level, where the curriculum is divided into 'general education' and 'vocational education'. Historically vocational education was socially regarded as less important than general education[6]. General educational courses were mainly focused on preparing students for continuing into college education, while vocational educational courses were geared towards training students for various vocations such as those found in agriculture, commerce, industry, music and art, etc. Additionally, institutes of higher education in Korea and Japan have generally been divided into two categories; junior colleges and universities[7].

A fourth similarity is found in how both Korea and Japan show similar levels of national private expenditures on college education (OECD, 2003). Particularly private expenditures on college education in Korea are estimated to be the highest in the world, standing at about 1.9% of its GDP. In Korea, about 80% of the tertiary educational institutes are private. The cost for attending private colleges is much (1.3 times) higher than for attending public (or national) colleges. In Korea most of the cost is privately financed out of parent's savings or debt. According to the OECD report (OECD, 2003), the same holds for Japan, which shows a very

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schools. In the case of Gyeongseong Imperial University, more than two-thirds of the students were Japanese in 1935. On the other hand, Japanese elementary students attended to junior high schools over 90 percent since 1900, and the years of Japanese compulsory education increased to 6 year from 3 year in 1907.

[6] By the way, Japan introduced comprehensive or integrated courses in 1994. Comprehensive courses feature a combination of academic and vocational education. Korea merely introduced comprehensive courses by way of showing an example. These schools are only five schools located in rural areas and smell or medium-sized cities. Additionally, Japan introduced secondary schools of six year in 1999. These schools combine junior high school and high school. In Korea, 6 years integrated courses were not introduced until recent year.

[7] Additionally, specialized training schools were regarded as on type of postsecondary education since 1975 in Japan.

high proportion of private expenditure on college education (55.1%), although this rate is much lower than in Korea (76.7%) (See A-Figure 3). In Japan, over 70% of universities and more than 90% of junior colleges are private. The cost for attending private colleges is 1.3 (universities) to 2.8 (junior high schools) times higher than for attending public or national colleges/universities.

Table 1. Post War Educational systems in Korea and Japan

	Korea	Japan
Start year	1951 (since the Korean War)	1947 (since the World War II)
School system	6-3-3-4 system, a single track	6-3-3-4 system, a single track
Primary	Elementary Schools (*Chodeunghakgyo*) 6 year, compulsory education since 1959	Elementary schools (*Shogakko*) 6 year, compulsory education since 1907
Secondary	1. Middle Schools (*Junghakgyo*) 3 year, compulsory education since 2002 2. High Schools (*Godeughakgyo*) 3 year, general / vocational courses	1. Junior High Schools (*Chugakko*), 3 year, compulsory education since 1947 2. High Schools (*Kotogakko*) 3 year, general / vocational courses Comprehensive courses since 1994 3. Secondary Schools (*Chuto-kyoikugakko*) 6 year (junior + high) since 1999
Tertiary	1. Junior Colleges (*Jeonmundaehak*) 2-3 year, higher education since 1951 2. Universities (*Daehakgyo*) 4-6 year since 1951 3. University of Education (*Gyoyukdaehak*) 4 year since 1981, 2 years since 1962 4. Industrial Universities (*Saneopdaehak*) higher education since 1982 5. Korea National Open University 4 years since 1991, 5 years since 1981 6. Graduate Schools (*Daehagwon*)	1. Junior Colleges (*Tanki-daigaku*), 2-3 year higher education since 1950 2. Colleges of Technology(*Koto-senmongakko*) 5 year (high school + junior colleges) since 1962 3. Universities of Air (*Hoso-daigaku*) higher education since 1983 4. Universities (*Daigaku*) 4-6 year since 1949 5. Graduate Schools (*Daigakuin*)
Others	Miscellaneous Schools	1. Specialized Training Schools(*Senshu-gakko*) Post secondary Education since 1975 2. Miscellaneous Schools
Standardization	High	High
Stratification	Compulsory stage: Low Upper secondary stage: Low Tertiary stage: High	Compulsory stage: Low Upper secondary stage: High Tertiary stage: High

On the other hand, Korea and Japan differ greatly from one another in terms of their compulsory education policies. In Korea, compulsory education was promulgated much later than in Japan. In Japan, compulsory education was required up to the 9^{th} grade in 1947, and lower secondary education was the minimum official standard for educational participation during the 1950s. In contrast, compulsory education in Korea was applied only up to the elementary educational level and was subsequently raised to the middle school level quite late, in 1985 for rural areas and nationally in 2002. It was a very late decision, because in 1985 the middle school enrollment rate had already reached over 90%. The difference between the two countries could be attributed to different level of economic development, as well as to the lower level of public expenditures on education in Korea, where defense expenditures take up a large proportion of that country’s national budget.

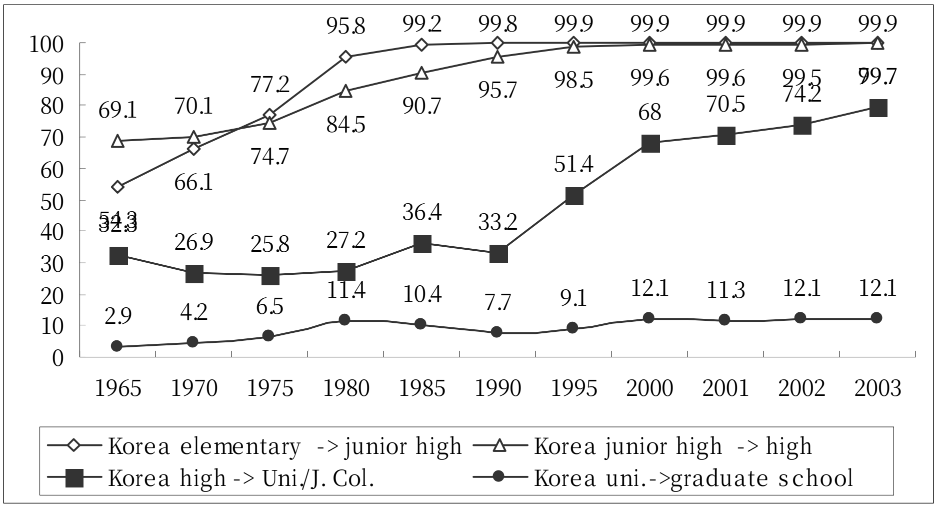
Another difference between the two nations can be found in the fact that high schools are much more stratified in Japan than in Korea, with Japanese upper secondary education being much more stratified in terms of school quality. The Japanese high school admission system has been generally based on the results of entrance exams, although the admission procedures have begun to diversify. While in Japan, entrance to high school is determined based strictly on a highly competitive entrance exam, in Korea the procedure is different between rural provinces and urban cities, the reason being the Korean government’s educational equalization policy that first started to be applied to the urban cities. According to this policy, student admissions in metropolitan high schools were strictly regulated by the Ministry of Education, with students being randomly assigned to the schools in residential areas. The main purpose of this policy was to suppress the overheated competition over better high schools and to eliminate inequalities among the schools. Applicants for general high schools in urban areas were not given the option of selecting their schools, while applicants for general high schools in rural areas, as well as vocational high schools were given the option to choose their schools.

Yet another difference between the two countries is reflected in the different proportions of female students enrolled at the higher education levels (See A-Figure 4, A-Figure 5). Although Korea and Japan show similar trends in the proportion of female university students during the post war period, the number of women in Junior colleges displays a marked difference. Korean junior colleges show that male students constitute almost 60 percent of all students since the 1970s (1970: 2003 = 75.2%: 63.8%), while Japanese junior colleges and colleges of technology are highly gender-segregated (Ishida, 2003; Matsui, 1997). Over 80 percent of junior college students was female during the post war period (1970: 2003 = 82.7%: 88.0%), while over 80 percent of the students enrolled at colleges of technology were male during the same period (1970: 2003 = 98.5%: 82.3%).

III. The Expansion of Education in Korea and Japan

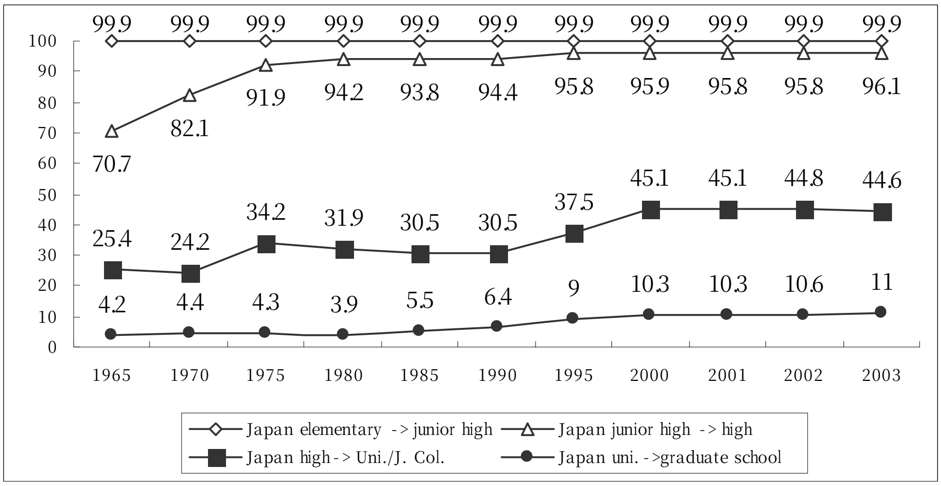
Figure 1 and Figure 2 describes enrollment rates by educational grades in Korea and Japan during the post war period. There are several prominent features in the change of educational expansion in both countries. The first centers around, the fact that the proportion of students entering secondary education has reached almost 100 percent in both countries. Enrollment rates in Korea from 1985 resembled those of Japan in 1975.

Figure 1. Trends in enrollment rates to upper education in Korea, 1965-2003



Source: Korean Educational Development Institute, 2003. *Statistical Yearbook of Education*.

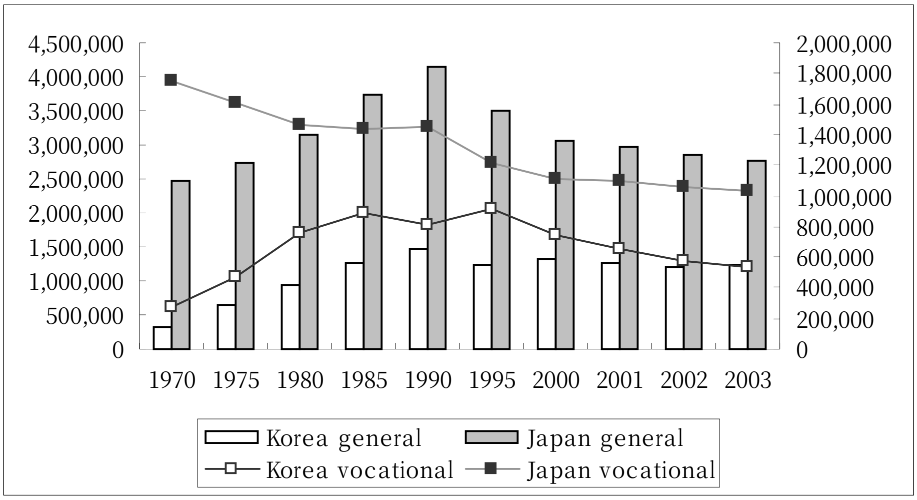
Figure 2. Trends in enrollment rates to upper education in Japan, 1965-2003



Source: Japanese Ministry of Education, Culture, Sports, Science and Technology, 2004. *Japan's Education at a Glance*.

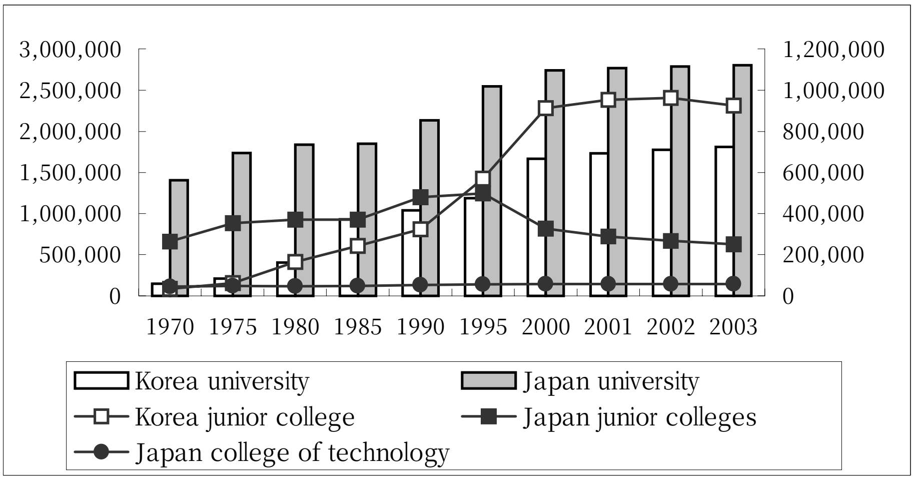
Second, enrollment rates to institutions of higher education in Korea show a higher proportion than those of Japan. The proportion of those entering junior colleges and universities has increased by almost half from 1965 (25.4%) to 2003 (44.6%) in Japan. But that of Korea has increased from 32.3 percent to 79.9 percent during the same period. Almost 80 percent of Korean high school graduates went to attend institutions of higher education in 2003, while the Japanese case merely shows a 44.6 percent in 2003. Expansion of higher education in Korea is an exceptional case among other countries. For example, Korea shows the highest change ratio among OECD countries; the percentage of the population that has attained tertiary education of the age group 25 to 34 is 4.5 times higher than that of the age group 55 to 64 (See A-Figure 6). Although Japan also shows the third highest change ratio among OECD countries, Korea's change ratio is 1.5 times higher than that of Japan.

Figure 3. Trends in the number of high school students by educational track in Korea and Japan



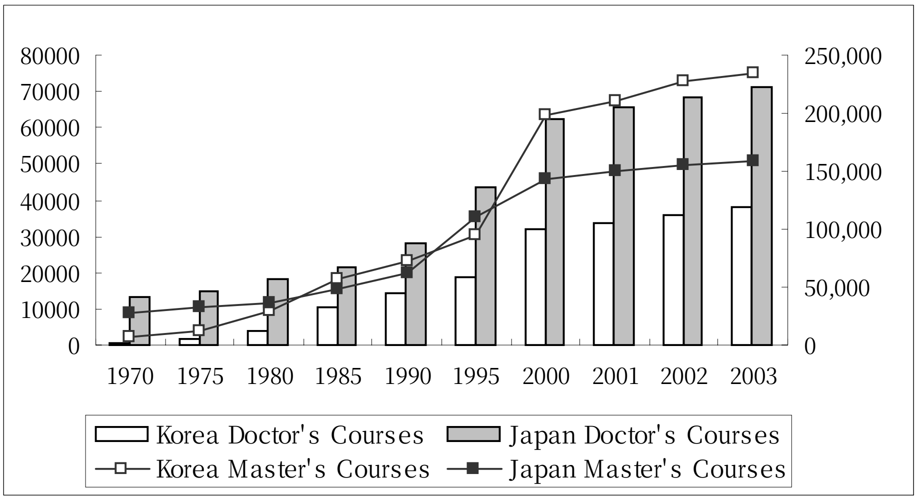
Source: See Figure 1 and Figure 2

Figure 4. Trends in the number of university / junior college students in Korea and Japan



Source: See Figure 1 and Figure 2

Figure 5. Trends in the number of graduate school students in Korea and Japan



Source: See Figure 1 and Figure 2

Figure 3 shows trends in the number of high school students by educational track in Korea and Japan. Even if we consider the decreasing numbers of young people, vocational high school students have decreased steadily in the post war period in Korea and Japan. Especially, Japanese high school students in vocational courses decreased from 1,754,538 persons in 1970 to 1,033,063 persons in 2003. Until the 1980s in Korea, many affluent middle school students were attracted to vocational high schools, because these schools were formally required as the answer to rapid industrialization's demand for manpower, and students in vocational schools were eligible to receive such financial support as various scholarships. But, after the 1990s, the vocational high schools came to a crisis point in that they lost their reason for exist. Although vocational schools were founded to provide technical semi-skilled workers, vocational schools recently have offered little contribution to the development of technical manpower in Korea.

Figure 4 shows trends in the number of universities and junior colleges students in Korea and Japan. Both countries show a similar increasing pattern in the number of university students. However, the trend in the number of Korean junior colleges students shows a very different pattern from that of Japan. Surprisingly, the number of junior colleges students in Korea increased almost 28 times from 33,483 in 1970 to 925,963 in 2003, while that of Japan decreased from 263,219 to 250,062 in the same period. In real terms, the expansion of higher education in Korea can be explained by the rapid expansion of the number of Junior college students. According to the OECD report (OECD, 2003), the percentage of the population that attained Type-B tertiary education in the 25 to 34 age group was a 19.2 times higher than that of the 55 to 64 age group in Korea, while that of Japan's shows a 4.6 times rises in the same case. On the other hand, those possessing Type–A tertiary education does not show very different results in either country (Korea: Japan = 3.08: 2.41). In the case of Japan, the diverse needs of specialized technical education have been solved through specialized training colleges, which play a unique role in post secondary education in Japan. Although they are not considered as formal pathway in the school ladder system in Japan, they have developed steadily as lifelong learning institutes since 1975. The number of students in specialized training colleges increased almost 6 times from 131,492 in 1976 to 786,091 in 2003.

Figure 5 describes the trends in the number of graduate school students in both countries. The total number of master's course students in Korea has increased 38 times from 6,122 in 1970 to 234,358 in 2003. By contrast, that of Japan's has increased 6 times, from 27,714 to 159,481, during the same period. The number of students enrolled in graduate school per 1,000 persons in Korea is already twice as large as that in Japan in 2000. This can be explained by the higher educational expectation level in Korea. According to Nakamura, at al (2002: 76-77), up to 20% of Korean senior high school students want to go to graduate school, while this number stands at just 9.7% of male and 4.8% of female Japanese.

IV. Research Questions

This study addresses the following three questions. *First, we examine whether or not parental effects decline across age cohorts in Korea and Japan*. Previous research on Korea and Japan has been consistent in this empirical regularity. Chang (2000) insisted that the effects of social origins have not decreased across age cohorts despite a rapid expansion of education in Korea. Park (2001) also stated that the impact of social origins on educational transitions has not decreased over this period in Korea, though there is some evidence of narrowing gaps between persons who grew up in metropolitan area and others. In the case of Japan, Treiman and Yamaguchi (1993) showed that disparities between different social origins have remained constant over time. They also found no difference between the old and postwar systems in this empirical regularity. According to Ishida (2003), the influence of parental education at higher education levels was substantial and persistent across cohorts in Japan. But there is less research about the changing patterns in terms of educational tracking or pathways (Lucas, 2001). Karen (2002) insisted that analysis of educational stratification needs to include the uniqueness of the educational system itself. Breen and Jonsson (2000) explained that the degree to which transition probabilities change from one level of education to another may be influenced by the particular educational pathways by which students arrived at the point of choice. Among other countries, the distribution of alternative pathways[8] throughout upper secondary education

[8] Pathways through upper secondary education can distinguish into three types (OECD, 2000: 58-59). First, general education pathways mean that these have as their principal purpose the preparation of students for entry to tertiary education. Secondly, school-based vocational pathways mean that these have as their principal goal the provision of an upper secondary level occupational qualification for entry to labor market. Finally,

displays large differences among countries (See Figure A-7). Participation in the general education pathway is highest in Canada (94%), United States (88%), and Japan (74%). They account for some three quarters of all students in these countries. Otherwise, participation in school-based vocational pathways is greatest in the Hungary, Sweden, and Italy where they account for over 60 percent of all students. Participation apprenticeships are greatest in Switzerland, Germany, and Denmark, where they account for some 40 percent of students in secondary education. Particularly in Korea and Japan, there is little detailed analysis by educational pathway. Some research merely considered educational tracking at the higher education levels (Chang, 2003, 2004; Ishida, 2003; Park, 2003). Phang and Kim (2003) created an analysis by the path of transition taken at each stage, namely at the secondary (general / vocational) and the tertiary stage (universities / junior colleges) in Korea. They insisted that the overall long-term trend in Korean educational stratification was toward decreasing inequality in the quantity (success) but increasing inequality in the quality (path) of educational continuation among social classes. This study focuses on the effects of background variables on qualitative different pathways of school transitions across age cohorts.

Second, we examine how educational continuation across age cohorts vary by gender in Korea and Japan. Researchers showed that gender disparities in access to education have steadily decreased, although gender inequality has persisted (Chang, 2003, 2004; Ishida, 2003). Chang (2004) showed that gender differentials have steadily decreased in almost all transitions. But these differentials have decreased unequally across socio-economic backgrounds. Ishida (2003) analyzed gender inequality in higher education and found that the extent of gender inequality in the attendance of higher education reduced substantially. The exception to this decreasing trend of gender inequality was found among junior college students, because junior colleges continued to be dominated by females. We are quite interested in the tertiary stage as we continue to try and make more specific claims.

Third, we examine the effects of family backgrounds and gender on transitions from university to graduate school in Korea and Japan. Yet we do not know whether or not these factors have a substantial effect on the likelihood that university graduates will matriculate to graduate school in Korea or Japan. Korea has showed quite a fast expansion of the number of graduate school students. If university credentials lose their value due to the expansion of higher education, post-graduate credentials enter the field of competition of social class. Therefore, in Korea, family backgrounds and gender may have significant effects on transitions from university to graduate school.

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apprenticeship-type pathways mean that students in apprenticeship-type pathways normally spend the majority of their time in the workplace, the minority of their time in school.

V. Methods and Models

Data

We used the 2002 Korean Labor and Income Panel Study (KLIPS) and the 2002 Japanese General Social Survey (JGSS) for this analysis[9]. The KLIPS was conducted by the Korea Labor Institute after 1998 and is a longitudinal survey of 5000 households and their members (aged 15 and over) residing in urban areas. The final number of members amounted to 13,321 in 1998, and the respondents of the fifth wave (2002) numbered 10,557. The sampling method of The KLIPS was a two-stage cluster systematic sampling. The field work of the fifth wave was started in May and finished in October in 2002. The JGSS was conducted by the Institute of Regional Studies, Osaka University of Commerce, and the Institute of Social Science, University of Tokyo. The sample population of the JGSS was men and women 20-89 years of age living in Japan, and the sampling method utilized was a two-stage (regional block and population size) stratified random sampling. There were 2,952 respondents to the completed questionnaire. The field work itself was conducted from October to November in 2002.

The final samples of the KLIPS and the JGSS for this analysis were restricted to the respondents born between 1940 and 1979. The total observations of the KLIPS numbered 4,423, which do not include the missing cases, and those of the JGSS were 1,437. Sample sizes also decline across school transitions, since analytic cases in higher school transitions are the respondents that successfully advance from lower school transitions.

Dependent Variables

The first transition point (T1) is marked by whether the respondents begin studies at high schools or leave school over junior high (middle) schools. At this point, the alternatives (MT1) are starting studies in either general courses or vocational ones. The fourth wave (2001) of the KLIPS offers information about the types of high schools. General high schools include academic high schools[10] with humanities and natural science curriculums, specialized science high schools[11], and foreign language high schools. Vocational schools include academic high schools with vocational classes, agricultural high schools, industrial high schools, commercial

[9] See English web sites of the KLIPS (http://www.kli.re.kr/30_labp_eng/index.asp) and the JGSS (http://jgss.daishodai.ac.jp/english/index.html) on detail information.

[10] The curriculum for the first year of the academic high schools consists of common subjects, while the curriculum for the second and third years includes humanities, natural sciences, vocational training, and other necessary subjects. The category of general high school in this study excludes students of vocational training class of academic high schools.

[11] Science high schools were established to provide places for the education of students with affluent scientific talent. There are 16 science high schools in Korea, including the Seoul Science High School. Students who have completed two years in a science high school can be admitted to entry at the Korea Advanced Institute for Science and Technology (KAIST).

high schools, fishery and oceanography high schools, comprehensive high schools, and other assorted types of vocational high schools. Although the 2000 and 2001 JGSS do not provide information about types of high schools, the 2002 version of JGSS distinguishes between general educational courses (ordinary courses) and vocational educational courses that include such subjects as industry, commerce, agriculture, home economics, and so on. Meanwhile, the MT1 variable is used as the independent variable.

The second transition point (T2) is marked by whether the respondents start studies at the tertiary education level (over 2-3 year junior colleges/colleges of technology) or not. At this point, the tertiary education entrance as a dependent variable is differentiated between 2-3 year junior colleges (included colleges of technology in Japan) and 4-6 year universities (MT2).

The final transition point (T3) is marked by whether the respondents who completed their undergraduate education got into graduate school or not. Table 2 shows the dependent variables and their percent distributions.

Table 2. Dependent Variables and Their Measurements

Name	Data Sources	Items used with coding
T1	2002 KLIPS	High Schools Entrance 79.9 % (3,536), Leave School 20.1 % (887)
	2002 JGSS	High Schools Entrance 88.5 % (1,272), Leave School 11.5 % (165)
MT1	2001/2002 KLIPS	General 48.8%(2,157), Vocational 31.2% (1,379), Leave 20.1% (887)
	2002 JGSS	General 62.7%(901), Vocational 25.8% (371), Leave 11.5% (165)
T2	2002 KLIPS	Junior Colleges/Universities 40.2 % (1,421), Leave 59.8 % (2,115)
	2002 JGSS	Junior Colleges/Universities 47.9 % (609), Leave 52.1 % (663)
MT2	2002 KLIPS	Universities 26.4%(935), Junior Colleges 13.7%(486), Leave 59.8%(2,115)
	2002 JGSS	Universities 29.2%(371), Junior Colleges 18.7%(238), Leave 52.1 % (663)
T3	2002 KLIPS	Graduate Schools 15.0 % (140), Leave 85.0 % (795)
	2002 JGSS	Graduate Schools 7.8 % (29), Leave 92.2 % (342)

Independent Variables

In this analysis, the main independent variables were family background variables. This analysis focuses on three family background measures: the father’s education, mother’s education, and father’s occupation. The father’s and mother’s educations were measured by the number of years of schooling. In the KLIPS data, parents’ education was measured by the grade of the highest level of school at which they graduated, and additionally the half of schooling years if they dropped out or were not registered. Parents’ education in the JGSS data was measured by years of schooling they attended without regard to whether respondent’s parents graduated from the last school they attended because the JGSS data does not offer this information. On the other hand, the JGSS indicates whether they attended their last school before World War II or after. Schooling years in the old system were clearly different from those in the new one. Therefore parents' education was measured by years of schooling while accounting for whether they attended under the old system or the new one.

The father's occupation was measured by social class category. The KLIPS offers some information about the father's occupation[12] and employment status from when the respondent was 14 years old. Also, The JGSS offers information about the father's occupation[13], firm size, and employment status from when the respondent was about 15 years old. The father's occupation was diverted to units in the six-class version of the EGP schema (Erikson and Goldthorpe, 1992).

(1) I+II Service Class: professionals, administrators and managers; higher-grade technicians, supervisors of non-manual workers

(2) III Routine non-manual workers: routine non-manual employees in administration and commerce; sales personnel; other rank-and-file service workers

(3) IVab Petty bourgeoisie: proprietors and artisans, etc., with and without employees

(4) V+VI Skilled workers: lower-grade technicians; supervisors of manual workers; skilled manual workers

(5) VIIa Non-skilled workers: semi-and unskilled manual workers (not in agriculture, etc.)

(6) IVc+VIIb Farm workers: farmers and smallholders and self-employed workers in primary production; agricultural and other workers in primary production

This study did not treat family income, because the KLIPS do not offer information about family income from when the respondent grew up[14]. Academic ability is also an important variable in the analysis of educational continuation. This is known as a factor mitigating the disparity between family background and educational attainment (Mare, 1980: 296). However the KLIPS merely provides information about the academic ability of young people under 30 years old in the 5th (2002) wave. Also, this information comes from the College Scholastic Ability Test (the CSAT), which only students who completed high school had taken. And finally, the JGSS merely offers information about class scores from when the respondent was in the

[12] The job category of the KLIPS uses 3-digit code of the KSCO (Korea Standard Classification of Occupation). The KSCO code uses the code of the ISCO-88 (International Standard Classification of Occupation) to major group (1-digit) from unit group (4-digit). We converted the ISCO-88 job code to EGP schema using Ganzeboom's conversion tools (http://www.fss.uu.nl/soc/hg/ismf). And we reconverted using other variables because job code cannot classify self-employed and firm size.

[13] The JGSS uses the SSM (social stratification and social mobility) job category. We are grateful to Miwa Satoshi(Tohoku Univ.) for the permission to use his SSM-EGP conversion tools

[14] The KLIPS merely offer household incomes over the last year.

third year of junior high school. For this and the reasons given above, this study does not include academic ability as a variable its analysis.

The community variable indicates the place where the respondent grew up, mostly during the early teens (middle school ages), or as 15 years olds. This variable distinguished the metropolitan areas from non-metropolitan areas[15].

Table 3. Independent Variables and Their Measurements

Name	Data Sources	Items used with coding	Mean (S.D.)
GENDER	2002 KLIPS	Male 51.0 % (2,254), Female 49.0 % (2,169)	
	2002 JGSS	Male 46.6 % (669), Female 53.4 % (768)	
COHORT	2002 KLIPS	1940-1949 12.1% (537), 1950-1959 26.0% (1,151), 1960-1969 34.2% (1,511), 1970-1979 27.7% (1,224)	
	2002 JGSS	1940-1949 30.2% (434), 1950-1959 26.4% (379), 1960-1969 23.8% (342), 1970-1979 19.6% (282)	
LOCAL	1998 -2001 KLIPS	The metropolitan 34.2 % (1,512), Non 65.8% (2,911)	
	2002 JGSS	The metropolitan 14.6 % (210), Non 85.4% (1,227)	
FEDU	1998 -2001 KLIPS	None=0, Elementary=6, Middle School=9, High School=12, College=14, University=16, Master or Doctoral Course=18	6.82(4.56)
	2002 JGSS	The old system: Elementary=6, Higher Elementary=8, Junior/senior high school=11, Vocational=11, Normal=13, University/graduate school=17. The new system: Junior high=9, High-12, Junior Colleges/ Technical = 14, University =16, Graduate school=18	10.5(3.28)
MEDU	2001 KLIPS	See FEDU in the KLIPS	4.29(4.02)
	2002 JGSS	See FEDU in the JGSS	9.91(2.66)
FOCC	1998-2001 KLIPS	Service Class 4.5% (198), Routine non-manual 11.5% (508), Petty 17.3% (764), Skilled 5.0%(219), Non-skilled 11.5% (510), Farm 50.3% (2,224)	
	2002 JGSS	Service Class 15.8 (227), Routine non-manual 19.0% (273), Petty 21.1% (303), Skilled 8.7%(125), Non-skilled 15.2% (218), Farm 20.3% (291)	

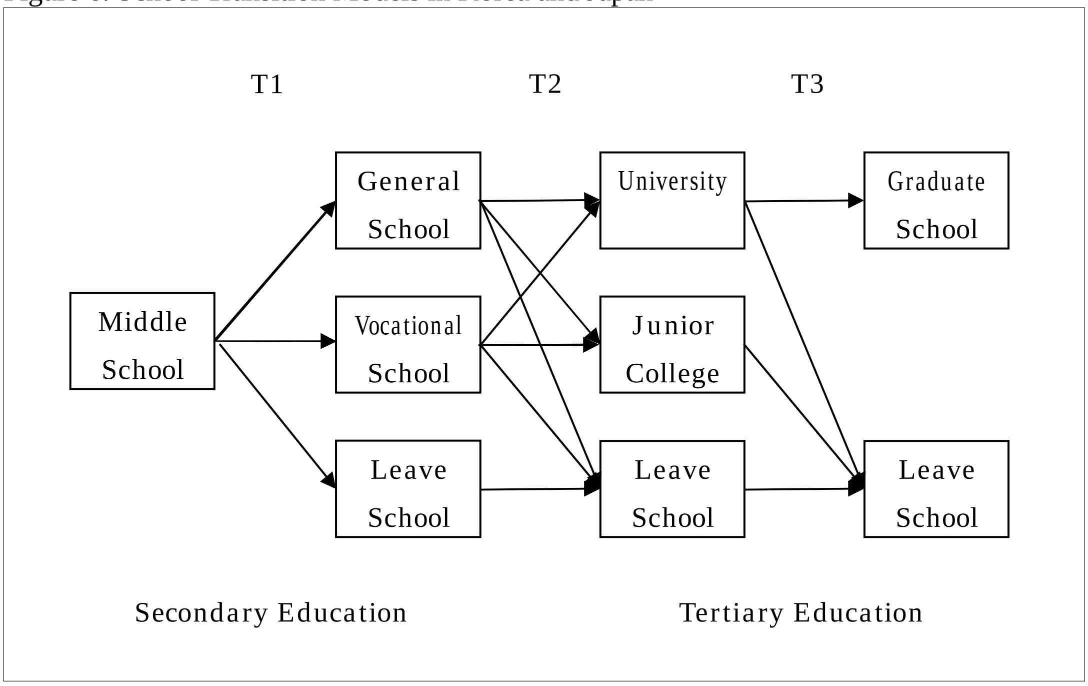
15 The KLIPS sample is an equal probability sample of households from the 7 metropolitan cities and urban areas in 8 provinces (excluding Cheju Ireland). By the way, the JGSS sample includes rural areas. Therefore we cannot say that the KLIPS represent total areas of Korea.

Age cohorts were divided into four ten-year cohorts: 1940-1949, 1950-1959, 1960-1969, and 1970-1979. The oldest cohort respondents were those born in the 1940s and who graduated from high schools in the 1960s. The second cohort respondents were those born in the 1950s and who attended universities or junior colleges in the 1970s. The third cohort respondents were those born in the 1960s, and the fourth cohort respondents were those born in the 1970s, which defined the youngest cohort. Additionally, this variable was converted to a continuous variable (C) as an interaction term for identifying changing patterns that were related to independent variables.

Models

Figure 6 describes education pathways in the educational systems in Korea and Japan. This shows that this study will theorize about three school transitions (T1 (MT1) =>T2 (MT2) =>T3). To estimate the effects of family background on the three school transitions, we will use the Mare model (Mare, 1980, 1981), which employed binary logistic regression to estimate the effects of family background for each school transition. The dependent variables in the Mare model were transitions from lower to higher stages in educational continuation.

Figure 6. School Transition Models in Korea and Japan



As the second stage analysis, we utilized multinomial logit model (MT model) for comparison with results of the traditional binary logit model (Mare model). This focuses on the two steps, upper secondary education (T1) and tertiary education (T2), because the T3 does not have alternative pathways to entry levels of higher education. The MT model focuses on whether or not individuals successfully advanced to alternative pathways after middle school. The MT1 as a dependent variable is differentiated between (1) general high school, (2) vocational high school and (3) leaving school. The MT2 as a dependent variable is constituted as a 3-state transition: (1) entrance to 2-3 year junior colleges, (2) entrance to 4-6 year universities, and (3) leaving school altogether. In model tests, we considered the Beysian Information Coefficient (BIC) and the significance of independent variables.

V. Research Findings

Tables 4 and 5 show descriptive statistics and percentage distributions for family background variables by age cohort in Korea and Japan. According to Table 4, the results of the means in Korea and Japan show that both the father’s and mother’s education variables consistently increased across age cohorts. The means of these variables in Korea show very lower values than those of Japan. Meanwhile, the standard deviations in Korea were slightly higher than in Japan. These facts imply that disparities according to parental education in Korea may be higher than in Japan.

Table 4. Descriptive Statistics for Father’s and Mother’s Education by Age Cohorts in Korea and Japan

(Mean)

	1940-1949	1950-1959	1960-1969	1970-1979
KOREA				
FEDU	4.60(4.47)	5.52(4.61)	6.83(4.35)	9.00(3.83)
MEDU	1.66(3.02)	2.76(3.52)	4.27(3.78)	6.91(3.63)
JAPAN				
FEDU	9.15(3.33)	9.87(3.32)	11.2(2.81)	12.41(3.12)
MEDU	8.43(2.36)	9.44(2.76)	10.6(2.09)	11.98(1.81)

Note: Numbers in brackets are standard deviations.

Table 5 presents percentage distributions for the father’s class and community of origins by age cohort. The similar features in Korea and Japan were that the white colors, especially among routine non-manual workers (III), has consistently increased in size across age cohorts, but the number of farm workers (IVa+IVIIb) has sharply decreased from the oldest cohort to the newest cohort. On the contrary, the distributions of service class (I) in Korea are presently far lower than those in Japan, while the distributions of self-employed workers (IVab) in Korea have increased from 12.7 percent in the oldest cohort to 23.3 percent in the newest cohort, whereas the Japanese show merely a more 0.4% point increase. And the distributions of skilled workers (VII) in Japan are higher than those in Korea, whereas the distributions of non-skilled workers (V+VI) in Japan were lower than those of Korea without regard to age cohorts. These results suggested that occupational and industrial structures in Korea and Japan display different features because of the fact that Korean industrialization began much later than in Japan, and that the transition from agricultural society to industrial society has made rapid progress in Korea after the half of the 20th.

The distribution of the community of social origin variable in Korea is clearly different from that of Japan. In the case of the newest cohort, the percentage of metropolitan area in Korea is 2.0 times higher than that of Japan. But we should point out the fact that the KLIPS sample merely includes urban areas. If this data were to include rural areas, the proportion of metropolitan area would become low. In any case, this result shows that the Korean population has become concentrated in metropolitan areas more quickly than was true for Japan. In reality, Korean metropolitan areas show the dubious honor of having the highest population density in the world with the exception of the city-state of Singapore. The population of Seoul, the capital city of Korea, totaled 10.3 million, which represented almost 22 percent of the entire population.

Table 5. Percentage Distributions for Father's Class and Community of Origin by Age Cohorts in Korea and Japan

(%)

	1940-1949	1950-1959	1960-1969	1970-1979
KOREA				
CLASS				
I+II	3.7	4.4	4.2	5.2
III	7.3	10.8	10.6	15.1
IVab	12.7	13	17.3	23.3
V+VI	2.4	3.1	4.2	8.7
VII	4.3	7.7	10	20.2
IVa+IVIIb	69.6	60.9	53.8	27.5
LOCAL(1=metro)	24.8	27.7	31.2	48.1
JAPAN				
CLASS				
I+II	13.1	15.3	17.8	18.1
III	14.7	16.9	20.8	26.2
IVab	23	19.5	18.4	23.4
V+VI	4.4	8.7	11.7	11.7
VII	9.9	15.6	20.5	16.3
IVa+IVIIb	34.8	24	10.8	4.3
LOCAL(1=metro)	12.2	15	17.3	14.5

Table 6 shows descriptive school transitions rates by age cohort at selected levels of schooling. The similar features between Korea and Japan were that school transitions rates by age cohort persistently increased across age cohorts, especially in the case of upper secondary education which has expanded more quickly than tertiary education. In upper secondary education, the school transitions rates of Japanese in general courses sharply increased across age cohorts, while those of vocational courses has not increased over time. By the way, the Korean case has shown that those in general courses and vocational courses have simultaneously increased across age cohorts. In tertiary education, Korean junior colleges showed a rapid increase that was contrary to the results of Japan. These results were similar to the trends of national statistics in Korea and Japan.

Table 6. School Transition Rates by Age Cohorts in Korea and Japan

(%)

	1940-1949	1950-1959	1960-1969	1970-1979
KOREA				
T1(MT1)				
Upper Secondary	53.3	63.7	87.4	97.7
General Courses	34.5	39.8	51.8	59.8
Vocational Courses	18.8	23.9	35.7	37.9
Leave School	46.7	36.3	12.6	2.3
T2(MT2)				
Tertiary	29.7	28	37	53.7
University	27.6	20.9	25.4	30.8
Junior Colleges, etc	2.1	7.1	11.7	22.9
Leave School	70.3	72	63	46.3
T3				
Graduate School	11.4	22.2	13.4	14.1
Leave School	88.6	77.8	86.6	85.9
JAPAN				
T1(MT1)				
Upper Secondary	74.4	89.7	96.8	98.6
General Courses	50.9	60.7	70.2	74.5
Vocational Courses	23.5	29	26.6	24.1
Leave School	25.6	10.3	3.2	1.4
T2(MT2)				
Tertiary	35.3	51.2	50.2	55.8
University	26	30	29	32
Junior Colleges, etc	9.3	21.2	21.1	23.7
Leave School	64.7	48.8	49.8	44.2
T3				
Graduate School	7.1	3.9	12.5	7.9
Leave School	92.9	96.1	87.5	91.2

Table 7 and table 8 show coefficients of the independent variables for the preferred model at the secondary educational stages in Korea and Japan. The result of BIC model tests are presented in A-Table 8, A-Table 9, A-Table 10, and A-Table 11. A-Table 1 to A-Table 3 describe the coefficients of baseline models (Model 1) and the coefficients of full interaction models (Model 2) included all interaction terms between age cohorts and independent variables.

Table 7. Coefficients of Independent Variables for Preferred Models in Transition 1 (Korea)

	Binary logit model	Multinomial logit model		
	High school/leave	General/leave	Vocational/leave	General/vocational
FEDU	.202(.034)***	.161(.035)***	.252(.038)***	-092(.028)**
MEDU	.151(.016)***	.173(.016)***	.118(.017)***	.054(.011)***
CLASS				
I+II	.368(.343)	.569(.349)	-.170(.380)	.740(.215)**
III	.547(.208)**	.724(.212)**	.182(.228)	.542(.135)***
IVab	.488(.154)**	.555(.160)**	.390(.167)*	.165(.107)
V+VI	.080(.261)	.147(.269)	-.018(.280)	.164(.168)
VIIa	.016(.171)	.022(.179)	.012(.184)	.010(.120)
GENDER	-2.166(.277)***	-1.723(.289)***	-3.005(.336)***	1.282(.272)***
LOCAL	.325(.117)**	.275(.122)*	.393(.127)**	-.118(.083)
COHORT				
1950-1959	.370(.136)**	.176(.148)	.655(.169)***	-.479(.158)**
1960-1969	1.448(.192)***	1.056(.206)***	1.914(.221)***	-.859(.181)***
1970-1979	2.632(.347)***	2.020(.365)***	3.259(.377)***	-1.239(.254)***
C*FEDU	-.040(.014)**	-.016(.015)	-.067(.015)***	.050(.010)***
C*GENDER	.588(.115)***	.449(.118)***	.859(.130)***	-.410(.086)***
Constant	-.468(.133)***	-.962(.148)***	-1.426(.171)***	.464(.171)**
Pseudo-R^2	.401	.336		
-2LL	3198.217	3108.249		
Chi-square	1294.989	1536.065		
N	4,423	4,423		

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

The primary interest of this study is the question of whether parental effects declined across age cohorts in Korea and Japan. According to the full interaction models, the interaction terms between age cohort and family background variables were mostly insignificant in Korea and Japan, except for the factor of father's education in Korea. These results mean that the effects of family backgrounds have not changed across age cohorts. Table 7 shows that the father's education in Korea has only shown significant change over time.

Table 8 Coefficients of Independent Variables for Preferred Models in Transition 1 (Japan)

	Binary logit model	Multinomial logit model		
	High school/leave	General/leave	Vocational/leave	General/vocational
FEDU	.124(.058)*	.115(.059)**	.068(.063)	.087(.035)*
MEDU	.263(.071)***	.289(.072)***	.213(.076)**	.076(.041)
CLASS				
I+II	.620(.440)	.908(.443)*	-.208(.488)	1.116(.285)***
III	.578(.334)	.749(.342)*	.393(.361)	.356(.221)
IVab	.486(.250)	.621(.263)*	.295(.278)	.326(.201)
V+VI	.166(.368)	.373(.381)	-.089(.403)	.461(.264)
VIIa	.392(.293)	.436(.308)	.389(.314)	.047(.214)
GENDER	-1.184(.422)***	.002(.195)	-.700(.204)**	.702(.131)***
LOCAL	.252(.330)	.396(.338)	-.102(.364)	.498(.206)*
COHORT				
1950-1959	.598(.251)*	.822(.227)***	.990(.239)***	-.167(.179)
1960-1969	.898(.427)*	1.455(.356)***	1.682(.371)***	-.217(.194)
1970-1979	.945(.604)	1.580(.559)**	1.832(.574)**	-.251(.221)
C*GENDER	.583(.245)*	-	-	-
Constant	-2.022(.436)***	-3.400(.454)***	1.819(.476)***	-1.371(.311)***
Pseudo-R^2	.319	.285		
-2LL	772.011	1269.180		
Chi-square	256.395	389.343		
N	1,453	1,453		

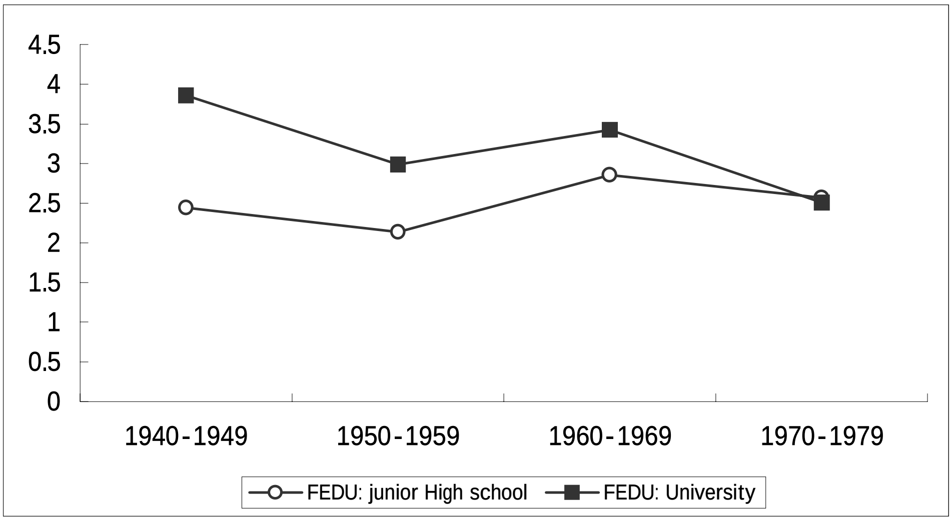
Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

By the way, the father's class displayed different features according to educational pathway in both Korea and Japan, although it did not show significant changes across age cohorts in Table 7 and Table 8. In the case of the odds of attending general courses instead of vocational courses, the disparity of service class origins (I+II) and farmer class origins (IVc+VIIb) are the largest of other pathways in Korea and Japan. This result can be interpreted to mean that differentiation among social class did not manifest itself in terms of the quantity of education attained, but in the quality of placement in selective educational tracks. Although the effect of the community of origin was insignificant to the conditional probability in Japan, its differentiation also manifested itself in the quality in Korea and Japan.

Figure 7 presents the log odds ratios of attending high school instead of leaving school by the father's education variable across age cohorts, while accounting for father's class IVab from the result of binary logit model in Table 7. This result means that the effect of father's education decreased across age cohorts in T1 in Korea. Raftery and Hout (1993: 57) proposed the *Maximally Maintained Inequality* Hypothesis that the diminished inequality of educational opportunity occurs only if the expansion in enrollment cannot be accommodated in any other way. This can be interpreted to mean that social class inequality has declined if the expansion of education in any stage of the educational ladder has reached saturation. Korea has shown the fastest expansion in the world. This result may be interpreted to mean that the effect of cultural capital has at least declined over time for the massive expansion of education at the lower levels of the education ladder in Korea.

Figure 7. Log Odds Ratios of Attending High School Instead of Leaving School by Father's Education across Age Cohorts in Transition 1(Korea)

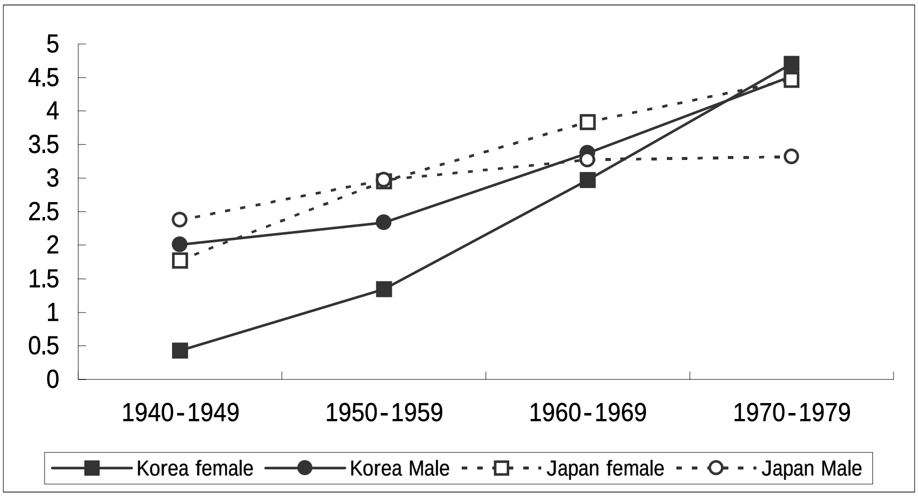


Note: MEDU=4.29, CLASS=IVab, LOCAL=0, GENDER=0. Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.

But the results of the mutinomial logit model in Table 7 poses the possibility of being restricted within narrow interpretation. The effect of the father's education on the likelihood of attending vocational courses has merely decreased across age cohorts, while the effect of the father's education on the conditional probability of attending general courses has not changed across age cohorts (See A-Figure 8). Surprisingly, the effect of the father's education on the likelihood of attending general courses instead of vocational courses has increased over time (See A-Figure 9). According to Lucas (2001), if the expansion of education in any stage of the educational ladder has reached saturation, this means that qualitative differentiation has replaced educational inequalities in terms quantity. Therefore interpretation of these results needs to be adjusted such that the impact of the father's education will have decreased in quantity (attending high school / leaving school) in order to provide for the rapid expansion of education, but also while raising the quality (attending general courses / vocational courses) in Korea.

A second interest of this study is how educational continuation across age cohorts varies by gender in Korea and Japan. Table 7 and Table 8 show that the interaction terms between age cohort and gender display significant positive (+) effects within the binary logit model. These results show that the quantitative disparity of gender has deceased over time in the T1. In the multinomial logit model, Korea shows a significant effect of interaction term between age cohort and gender, while this interaction term is insignificant in the case of Japan. According to the result of Korea, quantitative disparity (high school attendance / leaving school) by gender has decreased over time in Korea, but qualitative inequality (general courses / vocational courses) has diametrically increased across age cohorts in Korea.

Figure 8. Log Odds Ratios of Attending High School Instead of Leaving School by Gender across Age Cohorts in Transition 1(Korea and Japan)



Note: Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.

Figure 8 shows log odds ratios of attending high school instead of leaving school by gender over time, factoring for the father's class IVab in Korea and Japan. To limit discussion to quantitative disparity, we can say that gender inequality has decreased over time at the stage of secondary education in the two countries, even more so in the case of Japan, as gender inequality has vanished since the 1960s. But gender disparity in the quality of educational continuation has increased over time in Korea. And differentiation according to gender also revealed in the quality of placement in the selective educational track in Japan.

Table 9 and Table 10 show the coefficients of independent variables for preferred model at the higher education stages in Korea and Japan. The result of the BIC model tests is presented in the Appendix, A-Table 12 to A-Table 15. A-Table 4 to A-Table 6 describe the coefficients of the baseline models and the coefficients of the full models, including all interaction terms between age cohort and independent variables.

Table 9. Coefficients of Independent Variables for Preferred Models in Transition 2 (Korea)

	Binary logit model	Multinomial logit model		
	Tertiary/leave	University/leave	Junior College/leave	University/Junior Col.
FEDU	.046(.012)***	.058(.014)***	.025(.017)	.034(.018)
MEDU	.100(.013)***	.115(.014)***	.072(.017)***	.043(.019)*
CLASS				
I+II	.820(.206)***	.725(.225)**	.946(.281)**	-.222(.276)
III	.801(.140)***	.625(.158)***	1.125(.189)***	-.499(.199)*
IVab	.420(.118)***	.259(.136)	.708(.162)***	-.449(.179)*
V+VI	.352(.183)	.142(.213)	.676(.234)**	-.534(.258)*
VIIa	.146(.135)	-.019(.159)	.418(.181)*	-.437(.205)*
GENDER	-1.843(.314)***	-1.809(.347)***	-1.526(.524)**	-.283(.562)
LOCAL	.306(.090)**	.410(.102)***	.123(.120)	-.123(.120)
COHORT				
1950-1959	-.378(.179)*	-.812(.192)***	.968(.455)*	-1.781(.470)***
1960-1969	-.234(.204)	-.984(.229)***	1.422(.474)**	-2.406(.497)***
1970-1979	-.139(.259)	-1.288(.311)***	1.869(.530)***	-3.157(.579)***
MT1	.495(.293)	.163(.335)	.159(.507)	.003(.562)
C*MT1	.279(.092)**	.557(.111)***	.192(.148)	.365(.168)*
C*GENDER	.347(.097)***	.274(.109)*	.339(.152)*	-.065(.162)
Constant	-1.983(.213)***	-2.098(.231)***	-4.222(.494)***	2.124(.519)**
Pseudo-R^2	.326	.332		
-2LL	3790.167	3421.029		
Chi-square	974.673	1163.957		
N	3,536	3,536		

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

Table 10. Coefficients of Independent Variables for Preferred Models in Transition 2 (Japan)

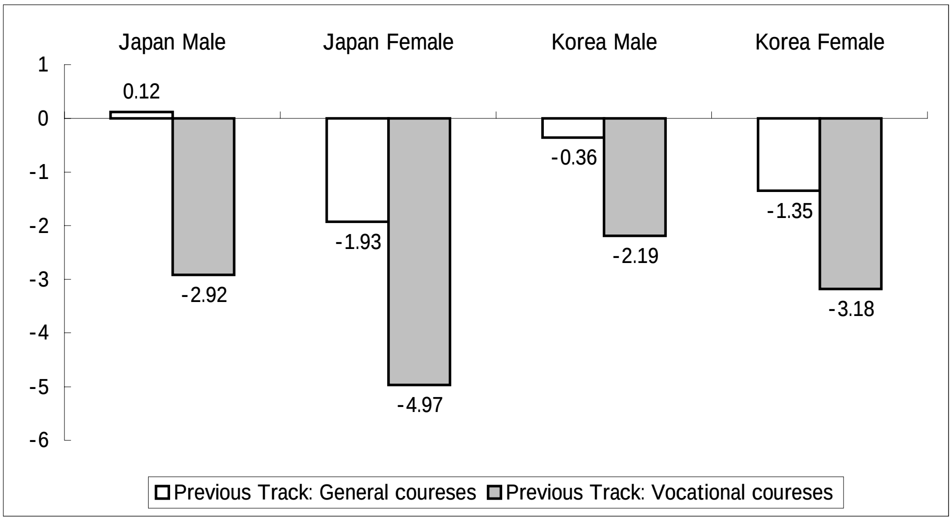
	Binary logit model	Multinomial logit model		
	Tertiary/leave	University/leave	Junior College/leave	University/Junior Col.
FEDU	.137(.034)***	.144(.041)**	.143(.042)**	.001(.046)
MEDU	.175(.043)***	.255(.053)***	.099(.052)	.156(.058)**
CLASS				
I+II	1.212(.285)***	1.289(.346)***	1.194(.375)**	.095(.421)
III	.677(.253)**	.338(.319)	1.027(.338)**	-.688(.405)
IVab	.499(.243)*	.336(.303)	.690(.340)*	-.354(.405)
V+VI	.873(.294)**	.497(.375)	1.264(.379)**	-.767(.458)
VIIa	.166(.261)	-.313(.340)	.663(.352)	-.976(.439)
GENDER	-2.290(.365)***	-3.807(.474)***	-.421(.521)	-3.386(.562)***
LOCAL	.554(.202)**	.892(.236)***	.174(.248)	.718(.251)**
COHORT				
1950-1959	.600(.210)**	.379(.254)***	.912(.292)**	-.533(.321)
1960-1969	-.247(.245)	-.537(.285)	.112(.379)	-.648(.393)
1970-1979	-.747(.301)**	-1.069(.343)**	-.273(.502)	-.795(.507)
MT1	2.121(.180)***	3.036(.267)***	1.241(.214)***	1.795(.312)***
C*GENDER	.518(.130)***	.586(.162)***	.387(.187)*	.199(.203)
Constant	-5.000(.213)***	-6.419(.532)***	-5.875(.494)***	-.544(.663)
Pseudo-R^2	.445	.525		
-2LL	1244.761	1374.598		
Chi-square	516.761	774.579		
N	1,272	1,272		

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05　** :p < .005　***: p < .001

First, we have been interested in whether or not parental effects decline across age cohorts in Korea and Japan. The full models in the Appendix show that all interaction terms between age cohort and family background variables are insignificant in Korea and Japan. These results mean that the effects of family backgrounds have not changed across age cohorts at higher stage of education. Table 9 and Table 10 show basic patterns of differentiation as follows. First, differentiation in the quantity and the quality at the tertiary levels displays features contrary to the T1. In the case of the odds ratio of attending tertiary education attendance instead of leaving school, the impacts of family backgrounds are the largest than those of other pathways in Korea and Japan. This result can be interpreted to mean that differentiation among social class manifests itself in terms of the quantity of education attained at the tertiary levels. Second, family backgrounds have stronger effect on university track (university/leave school) than on junior college track (junior college/leaving school), with the exception of the father's class in the case of Korea. Previous research has shown a similar result (Breen and Jonsson, 2000, Chang, 2004, Ishida, 2003, Phang and Kim, 2003). Breen and Jonsson (2000) explained this result by reasoning that the pathway to university was more difficult than that of junior college, and that differentials of social origins were more consequential to determining success at this level.

Figure 9. Average Log Odds Ratios of Attending University Instead of Leaving School by Previous Educational Track in Transition 2 (Korea and Japan)

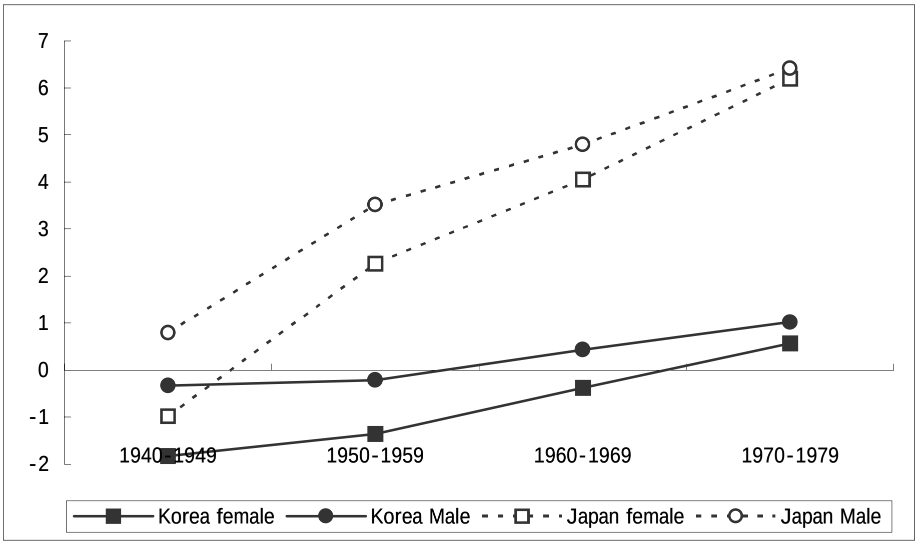


Note: Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.

On the other hand, an individual's previous educational track has a strong effect on school transitions at the tertiary levels in Korea and Japan. Figure 9 shows the estimated average log odds ratios for path dependence by gender at the T2 (tertiary levels). It is clear that different pathways led to different conditional probabilities. Students who followed the vocational track have a very low conditional probability of entering institutions of higher education. Students who followed the vocational track had a very low conditional probability of entering higher education. In Korea, the conditional probability of males entering the university to general high school (-0.36) is 6.08 times larger than that of vocational high school (-2.19). Moreover the same case of Japan displays markedly extreme differentials (general: vocational = 0.12: -2.92). This result gives support to the Breen and Jonsson (2000)'s *path dependence hypothesis*. According to Breen and Jonsson (2000), the effects of family background on transition probabilities vary according to the particular choice, and the probabilities of making a particular choice vary depending on the educational pathway. The case of Korea presents evidence that the effect of previous educational track has increased across age cohorts. This result can be interpreted to mean that track differentials in Korea have been reinforced more than those of Japan, although Japan's are larger than those of Korea. The father's class shows similar features according to educational pathway in Korea and Japan. In the case of the odds ratios of attending junior college instead of leaving school, social class differentials are the largest than those of other pathways in Korea and Japan. This result can be interpreted to mean that the economical capital of the family affects the log odds of attending junior colleges more than those of attending universities. Interestingly, parental education and community of origin affect in log odds of attending universities more than those of attending junior colleges.

Subsequently, Table 9 and Table 10 show that interaction terms between age cohort and gender show significant positive (+) effects in the binary logit model and multinomial logit models. These results mean that gender differential has deceased over time in T2. In an opposite result, the gender variable shows insignificance in log odds of attending junior college instead of leaving school in Japan. This means that female does not have disadvantage than male, because Japanese junior colleges students are mostly females except colleges of technology. Moreover interaction terms between age cohorts and gender shows a significant positive effect, such that females have had reversely advantage more than male for entering junior colleges over time in Japan.

Figure 10. Log Odds Ratios of Attending University/Junior College Instead of Leaving School by Gender across Age Cohorts in Transition 2(Korea and Japan)



Note: Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.

For example, Figure 10 shows the log odds ratios of attending university/junior colleges instead of leaving school by gender over time for the father's class IVab in Korea and Japan. This result shows that gender inequality has decreased over time at the stage of higher education in both countries. On the other hand, both Korea and Japan do not exactly display increasing trends of gender inequality in the quality of placement in the selective educational tracks at the higher education levels.

Table 11. Coefficients of Independent Variables for Preferred Models in Transition 3

	Korea	Japan
FEDU	.011(.029)	.117(.088)
MEDU	.013(.030)	.144(.108)
CLASS		
I+II	.641(.397)	-.284(.878)
III	.180(.330)	-.574(.918)
IVab	.140(.308)	.237(.868)
V+VI	.405(.427)	-.270(1.083)
VIIa	.106(.363)	.516(.934)
GENDER	-1.003(.229)***	-.455(.453)
LOCAL	-.033(.207)	-.409(.466)
COHORT		
1950-1959	.733(.414)	-.817(.690)
1960-1969	.182(.401)	.535(.541)
1970-1979	.385(.417)	-.025(.597)
Constant	-2.150(.390)***	-5.256(1.282)***
Pseudo-R^2	.061	.102
-2LL	756.419	206.080
Chi-square	33.179	17.519
N	935	376

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

We are interested in whether independent variables have a substantial effect on the likelihood that university graduates continue to go to school or not. Table 11 shows the coefficients of dependent variables for preferred models in Transition 3. The results of BIC model tests yielded A-Table 16 and A-Table 17. A-Table 7 describes the coefficients of baseline models and the coefficients of the full models, including all interaction terms between age cohorts and independent variables.

The full models show that all interaction terms between age cohorts and other independents are insignificant. These results mean that the effects of family backgrounds and community of origin, as well as gender, have not changed over time. And Table 11 shows that the effects of these variables are almost insignificant. Gender is only negative (-) and significant in Korea. The log odds ratio of female graduates of university on entering graduate school are about 0.37 times (=exp. [-1.003]) smaller for male graduates. This means that the gender differential has persisted in the transition to graduate school in Korea.

VI. Conclusions

This study analyzes educational continuation in Korea and Japan. Previous research on the changing patterns of educational continuation has found empirical regularities as follows. First, the effects of family backgrounds have not decreased over time. Second, the gender differential has decreased continuously across age cohorts. Third, it almost goes without saying that the effects of family background vanish at the graduate school level historical trends. Using the 2002 *Korea Labor and Income Panel Study* (the KLIPS) and the *2002 Japanese General Social Survey* (the JGSS), this study examines these empirical regularities in Korea and Japan. Dependent variables are school transitions from lower to higher stages of educational continuation. Main independent variables are family backgrounds (father's education, mother's education, and father's class), community of origin, and gender.

First, this study examines whether or not family backgrounds decline across age cohorts in Korea and Japan. As a result, the effects of family backgrounds have not changed across age cohorts with the exception of the father's education at the upper secondary level in Korea. In this exceptional case, the impact of the father's education decreased in the quantity (entry/ leaving) but has increased in the quality (general entry/ vocational entry). This result partly predicts that if the expansion of education at any stage of the educational ladder has reached saturation, qualitative differentiation will be replaced by educational inequalities in the quantity. Also, this study observes that different educational pathways in the school system lead to different conditional probability for the continuation of education.

Second, this study presents how educational continuation across age cohorts varies by gender in Korea and Japan. Gender inequality has decreased over time at the stage of upper secondary education and higher education in two countries, moreover in the case of Japan gender inequality has vanished since the 1960s. But a gender differential in the quality of educational continuation has increased over time at the high schools level in Korea. And the gender differential in Japan also reveals something about the quality of placement in the selective educational tracks at the high school level. In addition, this study observes that variables of family backgrounds, community do not have substantial effects on the likelihood that university graduates go to graduate school or not in Korea and Japan. And finally, this study argues that the gender differential has persisted in the transition to graduate school in Korea.

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The Appendix

A-table 1. Binary Logit Coefficients of Independent Variables in Transition 1

	Korea		Japan	
	Model 1	Model 2	Model 1	Model 2
FEDU	.113(.013)***	.210(.037)***	.130(.058)*	.038(.126)
MEDU	.148(.016)***	.066(.150)	.258(.071)***	.391(.159)*
CLASS				
I+II	.382(.342)	-.791(.963)	.614(.437)	.921(1.033)
III	.555(.206)**	.744(.600)	.592(.332)	1.642(.762)
IVab	.481(.152)**	1.347(.427)**	.493(.250)*	1.490(.600)*
V+VI	.066(.260)	1.323(.761)	.188(.368)	.629(.887)
VIIa	.002(.170)	.058(.543)	.415(.292)	1.061(.720)
GENDER	-.842(.092)***	-2.159(.279)***	-.284(.187)	-1.222(.427)**
LOCAL	.303(.115)**	.631(.325)	.248(.331)	-1.290(.967)
COHORT				
1950-1959	.370(.118)**	.416(.138)**	.908(.214)***	.977(.603)
1960-1969	1.591(.129)***	1.524(.199)***	1.549(.350)***	1.946(1.358)
1970-1979	1.869(.225)***	2.767(.375)***	1.701(.554)**	2.978(2.354)
C*FEDU		-.044(.016)**		.055(.076)
C*MEDU		.038(.019)*		-.077(.089)
C*I+II		.639(.506)		-.235(.646)
C*III		-.098(.262)		-.712(.446)
C*IVab		-.385(.176)*		-.709(.381)
C* V+VI		-.502(.280)		-.383(.480)
C* VIIa		-.027(.210)		-.484(.416)
C*GENDER		.581(.116)***		.608(.248)*
C*LOCAL		-.518(.137)		1.212(.738)
Constant	-.488(.110)***	-.518(.137)***	-2.214(.428)***	-2.229(.738)***
Pseudo-R^2	.393	.405	.312	.329
-2LL	3168.904	3121.920	777.935	763.157
Chi-square	1264.302	1311.286	250.471	265.249
N	4,423	4,423	1,453	1,453

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : $p < .05$ ** :$p < .005$ ***: $p < .001$

A-table 2. Multinomial Logit Coefficients in Transition 1 in Korea

	Model 1		Model 2	
	General Course	Vocational Course	General Course	Vocational Course
FEDU	.135(.013)***	.085(.014)***	.117(.039)***	.252(.043)***
MEDU	.173(.016)***	.113(.017)***	.058(.048)	.065(.052)
CLASS				
I+II	.559(.347)	-.160(.379)	-.577(.971)	-1.311(1.096)
III	.735(.211)**	.181(.226)	.877(.611)	.383(.676)
IVab	.550(.158)**	.390(.164)*	1.331(.444)**	1.323(.484)**
V+VI	.141(.269)	-.037(.279)	1.391(.786)	1.125(.874)
VIIa	.002(.179)	.001(.182)	.243(.565)	-.284(.625)
GENDER	-.830(.098)***	-.854(.101)***	-1.707(.290)***	-3.015(.338)**
LOCAL	.273(.133)*	.366(.124)**	.657(.338)	.593(.371)
COHORT				
1950-1959	.273(.133)*	.501(.147)**	.228(.150)	.690(.171)***
1960-1969	1.394(.142)***	1.842(.154)***	1.127(.214)***	1.976(.227)***
1970-1979	2.596(.234)***	3.224(.242)***	2.110(.395)***	3.373(.405)***
C*FEDU			-.023(.017)	-.067(.017)***
C*MEDU			.058(.048)	.028(.021)
C*I+II			.635(.508)	.632(.535)
C*III			-.082(.265)	-.093(.281)
C*IVab			-.356(.181)*	-.403(.191)*
C* V+VI			-.500(.287)	-.465(.307)
C* VIIa			-.080(.216)	.076(.230)
C*GENDER			.438(.119)***	.858(.131)***
C*LOCAL			-.168(.141)	-.105(.149)
Constant	-1.138(.124)***	-1.244(.135)***	-1.009(.152)***	-1.466(.738)***
Pseudo-R^2	.321		.340	
-2LL	3185.331		3086.053	
Chi-square	1458.983		1558.261	
N	4,423		4,423	

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 3. Multinomial Logit Coefficients in Transition 1 in Japan

	Model 1		Model 2	
	General Course	Vocational Course	General Course	Vocational Course
FEDU	.155(.059)**	.068(.063)	-.008(.130)	.112(.138)
MEDU	.289(.072)***	.213(.076)**	.484(.164)**	.214(.174)
CLASS				
I+II	.908(.443)*	-.208(.488)	1.377(1.057)	-.024(1.167)
III	.749(.342)*	.393(.361)	1.982(.788)*	1.203(.836)
IVab	.621(.263)*	.295(.278)	2.040(.628)**	.516(.677)
V+VI	.373(.381)	-.089(.403)	1.163(.923)	-.224(1.022)
VIIa	.436(.308)	.389(.314)	1.499(.754)*	-.449(.790)
GENDER	-.002(.195)	-.700(.204)**	-.823(.446)	-1.789(.475)***
LOCAL	.396(.338)	-.102(.364)	-1.330(.989)	-1.856(1.054)
COHORT				
1950-1959	.822(.227)***	.990(.239)***	.938(.631)	.962(.639)
1960-1969	1.465(.356)***	1.682(.371)***	1.995(1.402)	1.780(1.426)
1970-1979	1.580(.559)**	1.832(.574)**	3.102(2.420)	2.553(2.469)
C*FEDU			.092(.078)	-.006(.080)
C*MEDU			-.108(.090)	-.019(.094)
C*I+II			-.317(.656)	-.119(.686)
C*III			-.820(.454)	-.552(.468)
C*IVab			-.917(.391)*	-.336(.404)
C* V+VI			-.549(.491)	-.094(.517)
C* VIIa			-.679(.426)	-.204(.437)
C*GENDER			.562(.253)*	.668(.261)*
C*LOCAL			1.272(.749)	1.279(.761)
Constant	-3.400(.454)***	-2.030(.467)***	-3.515(.589)***	-1.924(.618)**
Pseudo-R^2	.285		.307	
-2LL	1269.180		1234.397	
Chi-square	389.343		424.126	
N	1,437		1,437	

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 4. Binary Logit Coefficients of Independent Variables in Transition 2

	Korea		Japan	
	Model 1	Model 2	Model 1	Model 2
FEDU	.047(.012)***	-.008(.039)	.137(.034)***	.050(.079)
MEDU	.101(.012)***	.075(.042)	.166(.043)***	.190(.105)
CLASS				
I+II	.788(.205)***	1.862(.659)***	1.237(.283)***	.801(.691)
III	.784(.139)***	1.451(.455)**	.709(.250)**	.922(.623)
IVab	.420(.117)***	-.400(.407)	.505(.240)*	.428(.579)
V+VI	.344(.181)	-.053(.696)	.878(.292)**	.471(.845)
VIIa	.121(.134)	-1.843(.325)	.208(.259)	-.390(.707)
GENDER	-.786(.083)***	-1.843(.325)***	-.983(.148)***	-2.317(.383)***
LOCAL	.302(.089)**	.794(.302)**	.517(.200)*	.343(.507)
COHORT				
1950-1959	-.151(.168)	-.475(.192)*	.810(.202)***	.300(.446)
1960-1969	.307(.158)	-.438(.250)	.268(.207)	-.918(.861)
1970-1979	.780(.167)***	-.552(.358)	.060(.223)	-1.836(1.367)
MT1	1.336(.086)***	.480(.294)	2.103(.180)***	2.501(.472)***
C*FEDU		.018(.013)		.041(.032)
C*MEDU		.009(.014)		-.007(.043)
C*I+II		-.356(.217)		.197(.284)
C*III		-.219(.150)		-.065(.255)
C*IVab		.268(.130)*		.049(.246)
C* V+VI		.127(.208)		.172(.316)
C* VIIa		.112(.159)		.233(.281)
C*GENDER		.344(.101)**		.523(.137)***
C*LOCAL		-.159(.096)		.080(.188)
C*MT1		.282(.092)**		-.151(.171)
Constant	-2.535(.169)***	-1.786(.250)***	-5.270(.405)***	-4.717(.614)***
Pseudo-R^2	.318	.330	.434	.449
-2LL	3815.102	3773.667	1260.840	1238.504
Chi-square	949.737	991.173	500.233	522.569
N	3,536	3,536	1,272	1,273

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 5. Multinomial Logit Coefficients in Transition 2 in Korea

	Model 1		Model 2	
	University	Junior College	University	Junior College
FEDU	.061(.014)***	.026(.128)	-.016(.042)	-.030(.070)
MEDU	.117(.014)***	.073(.017)***	.090(.045)*	-.031(.075)
CLASS				
I+II	.687(.224)**	.920(.280)**	2.241(.700)**	.536(1.286)
III	.604(.157)***	1.108(.188)***	1.354(.497)**	2.303(.747)**
IVab	.257(.135)	.710(.162)***	-.482(.448)	.266(.723)
V+VI	.124(.212)	.673(.234)**	.066(.778)	.151(1.247)
VIIa	-.051(.158)	.399(.180)*	.068(.576)	-.653(1.011)
GENDER	-1.002(.095)***	-.442(.110)***	-1.812(.362)***	-1.432(.532)**
LOCAL	.404(.101)***	.119(.119)	.985(.326)**	-.117(.544)
COHORT				
1950-1959	-.382(.181)*	1.103(.443)*	-.935(.207)***	.881(.471)
1960-1969	-.036(.169)	1.788(.429)***	-1.219(.281)***	1.117(.525)*
1970-1979	.237(.180)	2.526(.432)***	-1.729(.422)***	1.141(.653)
MT1	1.781(.110)***	.730(.114)***	.131(.337)	.199(.511)
C*FEDU			.026(.015)	.018(.021)
C*MEDU			.009(.015)	.032(.023)
C*I+II			-.524(.235)*	.075(.376)
C*III			-.255(.166)	-.379(.230)
C*IVab			.241(.146)	.148(.216)
C* V+VI			.020(.231)	.152(.349)
C* VIIa			-.021(.177)	.301(.283)
C*GENDER			.271(.113)*	.309(.155)*
C*LOCAL			-.189(.106)	.058(.159)
C*MT1			.564(.112)***	.179(.149)
Constant	-3.015(.188)***	-4.618(.435)***	-1.893(.271)***	-3.845(.551)***
Pseudo-R^2	.323		.339	
-2LL	3458.777		3391.943	
Chi-square	1126.211		1193.044	
N	3,536		3,536	

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 6. Multinomial Logit Coefficients in Transition 2 in Japan

	Model 1		Model 2	
	University	Junior College	University	Junior College
FEDU	.140(.041)**	.144(.042)**	.034(.094)	.108(.104)
MEDU	.244(.052)***	.092(.052)	.218(.125)	.113(.136)
CLASS				
I+II	1.301(.341)***	1.216(.375)**	.894(.827)	.748(1.011)
III	.367(.315)	1.056(.337)**	.346(.771)	1.295(.915)
IVab	.334(.299)	.708(.339)*	.209(.698)	.647(.911)
V+VI	.476(.373)	1.274(.377)**	.152(1.049)	.726(1.165)
VIIa	-.291(.338)	.706(.351)*	-.542(.871)	-.205(1.074)
GENDER	-2.300(.194)***	.562(.204)**	-3.585(.513)***	-.363(.552)
LOCAL	.847(.233)***	.154(.247)	.978(.591)	-.395(.692)
COHORT				
1950-1959	.561(.243)*	1.147(.266)***	-.260(.557)	.735(.592)
1960-1969	-.060(.252)	.612(.270)*	-1.869(1.082)	-.335(.692)
1970-1979	-.287(.269)	.473(.290)	-3.252(1.717)	-1.007(1.789)
MT1	3.000(.264)***	1.227(.214)***	3.263(.639)***	1.201(.619)
C*FEDU			.034(.094)	.017(.041)
C*MEDU			.015(.051)	-.004(.053)
C*I+II			.199(.336)	.214(.425)
C*III			.029(.309)	-.072(.393)
C*IVab			.080(.295)	.046(.394)
C* V+VI			.165(.388)	.221(.456)
C* VIIa			.126(.349)	.334(.433)
C*GENDER			.496(.182)**	.361(.198)
C*LOCAL			-.033(.219)	-.395(.692)
C*MT1			-.110(242)	.022(.220)
Constant	-6.581(.527)***	-6.198(.527)***	-5.694(.789)***	-5.716(.738)***
Pseudo-R^2	.518		.530	
-2LL	1388.822		1365.191	
Chi-square	760.355		783.985	
N	1,272		1,272	

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 7. Binary Logit Coefficients of Independent Variables in Transition 3

	Korea		Japan	
	Model 1	Model 2	Model 1	Model 2
FEDU	.011(.029)	.100(.089)	.117(.088)	.200(.223)
MEDU	.013(.030)	-.015(.096)	.144(.108)	.042(.294)
CLASS				
I+II	.641(.397)	-1.144(1.349)	-.284(.878)	1.681(2.814)
III	.180(.330)	-.646(1.113)	-.574(.918)	1.109(2.917)
IVab	.140(.308)	-.094(1.081)	.237(.868)	.802(2.867)
V+VI	.405(.427)	.087(1.643)	-.270(1.083)	-2.123(5.008)
VIIa	.106(.363)	1.468(1.246)	.516(.934)	3.758(3.037)
GENDER	-1.003(.229)***	-1.232(.926)	-.455(.453)	-.534(1.450)
LOCAL	-.033(.207)	-1.036(.738)**	-.409(.466)	-.350(1.461)
COHORT				
1950-1959	.733(.414)	.739(.437)	-.817(.690)	-.050(1.431)
1960-1969	.182(.401)	.109(.527)	.535(.541)	1.965(2.632)
1970-1979	.385(.417)	.235(.762)	-.025(.597)	1.815(3.992)
C*FEDU		-.030(.030)		-.037(.082)
C*MEDU		.009(.033)		.035(.110)
C*I+II		.615(.435)		-.708(.919)
C*III		.278(.365)		-.594(.948)
C*IVab		.087(.347)		-.225(.927)
C* V+VI		.126(.494)		.479(1.484)
C* VIIa		-.420(.402)		-1.272(1.062)
C*GENDER		.072(.272)		.034(.471)
C*LOCAL		.322(.235)		-.035(.492)
Constant	-2.150(.390)***	-2.060(.491)***	-5.256(1.282)***	-6.124(2.526)***
Pseudo-R^2	.061	.076	.102	.124
-2LL	756.419	748.070	206.080	202.028
Chi-square	33.179	41.528	17.519	21.571
N	935	935	376	376

Note: C is measured as continuous variable of COHORT. Pseudo-R^2 is Nagelkerke R^2.

1) * : p < .05 ** :p < .005 ***: p < .001

A-table 8. BIC Test for Binary Logit Models in Transition 1 in Korea

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	3523.37	9	909.84	4423	834.29
m2: m1+C*Fedu	3164.60	13	1268.60	4423	1159.47
m3: m1+C*Medu	3166.72	13	1266.49	4423	1157.36
m4: m1+C*Class	3156.67	17	1276.54	4423	1133.83
m5: m1+C*Local	3165.63	13	1267.58	4423	1158.45
m6: m1+C*Gender	3146.21	13	1287.00	4423	1177.87
m7: m1+Gender*Fedu	3168.87	13	1264.34	4423	1155.21
m8: m1+Gender*Medu	3161.20	13	1272.00	4423	1162.87
m9: m1+Gender*Class	3158.40	17	1274.80	4423	1132.09
m10: m1+Gender*Local	3168.84	13	1264.37	4423	1155.24
m11: m1+C*Gender+C*Fedu	**3138.22**	**14**	**1294.99**	**4423**	**1177.46**
m12: m1+C*Gender+C*Class	3132.28	18	1300.92	4423	1149.82
m13: m1+C+Gender+C*Medu	3145.34	14	1287.87	4423	1170.34
m14: m1+C+Gender+Gender*Fedu	3146.20	14	1287.00	4423	1169.48
m15: m1+C*Gender+Gender*Medu	3141.97	14	1291.24	4423	1173.71
m16: m1+C*Gender+Gender*Class	3138.71	18	1294.50	4423	1143.40

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 9. BIC Test for Binary Logit Models in Transition 1 in Japan

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	777.94	12	250.47	1453	163.09
m2: m1+C*Fedu	777.82	13	250.59	1453	155.93
m3: m1+C*Medu	777.63	13	250.78	1453	156.12
m4: m1+C*Class	774.36	17	254.05	1453	130.26
m5: m1+C*Local	774.90	13	253.51	1453	158.85
m6: m1+C*Gender	**772.01**	**13**	**256.40**	**1453**	**161.74**
m7: m1+Gender*Fedu	777.06	13	251.34	1453	156.69
m8: m1+Gender*Medu	777.82	13	250.59	1453	155.93
m9: m1+Gender*Class	766.21	17	262.20	1453	138.41
m10: m1+Gender*Local	775.44	13	252.96	1453	158.31
m11: m1+C*Gender+C*Fedu	771.96	14	256.45	1453	154.51
m12: m1+C*Gender+C*Class	768.25	18	260.16	1453	129.09
m13: m1+C+Gender+C*Medu	771.77	14	256.64	1453	154.70
m14: m1+C+Gender+Gender*Fedu	769.62	14	258.79	1453	156.85
m15: m1+C*Gender+Gender*Medu	771.80	14	256.60	1453	154.66
m16: m1+C*Gender+Gender*Class	762.39	18	266.02	1453	134.95

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 10. BIC Test for Multinomial Logit Models in Transition 1 in Korea

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	3185.33	24	1458.98	4423	1257.51
m2: m1+C*Fedu	3158.20	26	1486.12	4423	1267.86
m3: m1+C*Medu	3170.87	26	1473.45	4423	1255.19
m4: m1+C*Class	3166.15	34	1478.16	4423	1192.75
m5: m1+C*Local	3182.01	26	1462.30	4423	1244.04
m6: m1+C*Gender	3142.86	26	1501.45	4423	1283.19
m7: m1+Gender*Fedu	3184.56	26	1459.76	4423	1241.50
m8: m1+Gender*Medu	3171.54	26	1472.77	4423	1254.51
m9: m1+Gender*Class	3164.81	34	1479.51	4423	1194.09
m10: m1+Gender*Local	3182.91	26	1461.41	4423	1243.15
m11: m1+C*Gender+C*Fedu	**3108.25**	**28**	**1536.07**	**4423**	**1301.02**
m12: m1+C*Gender+C*Class	3120.49	36	1523.83	4423	1221.62
m13: m1+C+Gender+C*Medu	3127.64	28	1516.67	4423	1281.62
m14: m1+C+Gender+Gender*Fedu	3142.74	28	1501.58	4423	1266.53
m15: m1+C*Gender+Gender*Medu	3138.17	28	1506.14	4423	1271.09
m16: m1+C*Gender+Gender*Class	3127.35	36	1516.97	4423	1214.76

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 11. BIC Test for Multinomial Logit Models in Transition 1 in Japan

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	**1269.18**	**24**	**389.34**	**1453**	**214.59**
m2: m1+C*Fedu	1262.58	26	395.94	1453	206.62
m3: m1+C*Medu	1268.79	26	389.74	1453	200.42
m4: m1+C*Class	1254.97	34	403.55	1453	155.98
m5: m1+C*Local	1265.90	26	392.62	1453	203.30
m6: m1+C*Gender	1263.10	26	395.43	1453	206.11
m7: m1+Gender*Fedu	1267.42	26	391.10	1453	201.79
m8: m1+Gender*Medu	1268.90	26	389.63	1453	200.31
m9: m1+Gender*Class	1256.96	34	401.57	1453	154.00
m10: m1+Gender*Local	1265.47	26	393.06	1453	203.74
m11: m1+C*Gender+C*Fedu	1256.29	28	402.23	1453	198.36
m12: m1+C*Gender+C*Class	1262.80	28	395.73	1453	191.85
m13: m1+C+Gender+C*Medu	1248.61	36	409.91	1453	147.78
m14: m1+C+Gender+Gender*Fedu	1258.85	28	399.67	1453	195.79
m15: m1+C*Gender+Gender*Medu	1261.43	28	397.10	1453	193.22
m16: m1+C*Gender+Gender*Class	1252.82	36	405.70	1453	143.57

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 12. BIC Test for Binary Logit Models in Transition 2 in Korea

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	4075.40	12	689.44	3536	591.39
m2: m1+MT1	3815.10	13	949.74	3536	843.52
m3: m2+C*Fedu	3812.44	14	952.40	3536	838.01
m4: m2+C*Medu	3813.34	14	951.50	3536	837.11
m5: m2+C*Class	3805.79	18	959.05	3536	811.97
m6: m2+C*Local	3814.58	14	950.26	3536	835.87
m7: m2+C*Gender	3799.20	14	965.64	3536	851.25
m8: m2+C*MT1	3803.23	14	961.61	3536	847.22
m9: m2+Gender*Fedu	3809.29	14	955.55	3536	841.16
m10: m2+Gender*Medu	3805.15	14	959.69	3536	845.30
m11: m2+Gender*Class	3787.50	18	977.34	3536	830.27
m12: m2+Gender*Local	3809.61	14	955.23	3536	840.84
m13: m2+Gender*MT1	3814.55	14	950.29	3536	835.90
m14: m2+C*Gender+Gender*Class	3777.30	19	987.55	3536	832.30
m15: m2+C*Gender+C*MT1	**3790.17**	**15**	**974.67**	**3536**	**852.11**
m16: m2+C*Gender+Gender*Fedu	3795.10	15	969.74	3536	847.18
m17: m2+C*Gender+Gender*Medu	3794.79	15	970.05	3536	847.49

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 13. BIC Test for Binary Logit Models in Transition 2 in Japan

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	1428.74	12	332.34	1272	246.55
m2: m1+MT1	1260.84	13	500.23	1272	407.30
m3: m2+C*Fedu	1256.80	14	504.27	1272	404.20
m4: m2+C*Medu	1259.50	14	501.58	1272	401.50
m5: m2+C*Class	1256.28	18	504.79	1272	376.12
m6: m2+C*Local	1260.44	14	500.63	1272	400.55
m7: m2+C*Gender	**1244.76**	**14**	**516.31**	**1272**	**416.24**
m8: m2+C*MT1	1260.78	14	500.30	1272	400.22
m9: m2+Gender*Fedu	1259.04	14	502.03	1272	401.95
m10: m2+Gender*Medu	1259.96	14	501.12	1272	401.04
m11: m2+Gender*Class	1249.17	18	511.91	1272	383.24
m12: m2+Gender*Local	1260.53	14	500.54	1272	400.47
m13: m2+Gender*MT1	1257.56	14	503.51	1272	403.44
m14: m2+C*Gender+C*Fedu	1242.32	15	518.75	1272	411.52
m15: m2+C*Gender+Gender*MT1	1241.79	15	519.28	1272	412.06

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 14. BIC Test for Multinomial Logit Models in Transition 2 in Korea

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	3778.64	24	806.35	3536	610.25
m2: m1+MT1	3458.78	26	1126.21	3536	913.77
m3: m2+C*Fedu	3454.48	28	1130.51	3536	901.73
m4: m2+C*Medu	3453.62	28	1131.37	3536	902.58
m5: m2+C*Class	3442.64	36	1142.35	3536	848.20
m6: m2+C*Local	3455.09	28	1129.90	3536	901.12
m7: m2+C*Gender	3445.89	28	1139.09	3536	910.31
m8: m2+C*MT1	3430.18	28	1154.81	3536	926.03
m9: m2+Gender*Fedu	3451.32	28	1133.67	3536	904.89
m10: m2+Gender*Medu	3447.37	28	1137.62	3536	908.84
m11: m2+Gender*Class	3431.16	36	1153.83	3536	859.68
m12: m2+Gender*Local	3452.29	28	1132.70	3536	903.92
m13: m2+Gender*MT1	3454.81	28	1130.18	3536	901.40
m14: m2+C*Gender+Gender*Class	3422.87	38	1162.12	3536	851.63
m15: m2+C*Gender+C*MT1	**3421.03**	**30**	**1163.96**	**3536**	**918.83**
m16: m2+C*Gender+Gender*Fedu	3436.54	30	1148.45	3536	903.33
m17: m2+C*Gender+Gender*Medu	3439.98	30	1145.00	3536	899.88

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 15. BIC Test for Multinomial Logit Models in Transition 2 in Japan

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	1590.96	24	558.22	1272	386.66
m2: m1+MT1	1388.82	26	760.36	1272	574.50
m3: m2+C*Fedu	1379.44	28	769.73	1272	569.58
m4: m2+C*Medu	1382.54	28	766.64	1272	566.48
m5: m2+C*Class	1381.12	36	768.06	1272	510.72
m6: m2+C*Local	1387.88	28	761.29	1272	561.14
m7: m2+C*Gender	**1374.60**	**28**	**774.58**	**1272**	**574.43**
m8: m2+C*MT1	1388.59	28	760.59	1272	560.44
m9: m2+Gender*Fedu	1384.02	28	765.16	1272	565.01
m10: m2+Gender*Medu	1384.19	28	764.99	1272	564.84
m11: m2+Gender*Class	1374.34	36	774.84	1272	517.50
m12: m2+Gender*Local	1386.14	28	763.04	1272	562.88
m13: m2+Gender*MT1	1386.77	28	762.40	1272	562.25
m14: m2+C*Gender+C*Fedu	1369.87	30	779.30	1272	564.85
m15: m2+C*Gender+C*Medu	1371.88	30	777.30	1272	562.85

Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 16. BIC Test for Binary Logit Models in Transition 3 in Korea

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	**756.42**	**12**	**33.18**	**935**	**-48.91**
m2: m1+C*Fedu	756.23	13	33.37	935	-55.56
m3: m1+C*Medu	755.48	13	34.12	935	-54.81
m4: m1+C*Class	750.92	17	38.68	935	-77.61
m5: m1+C*Local	754.06	13	35.54	935	-53.39
m6: m1+C*Gender	756.13	13	33.47	935	-55.46
m7: m1+Gender*Fedu	755.50	13	34.10	935	-54.83
m8: m1+Gender*Medu	754.28	13	35.31	935	-53.61
m9: m1+Gender*Class	751.73	17	37.87	935	-78.42
m10: m1+Gender*Local	756.39	13	33.21	935	-55.72

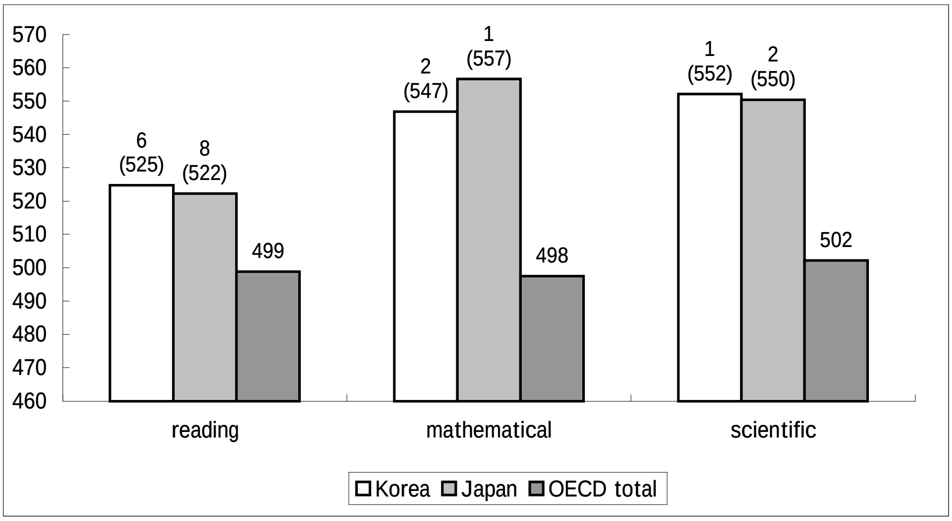
Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-table 17. BIC Test for Binary Logit Models in Transition 3 in Japan

Model	-2LL	d.f.	Chi.	N	BIC
m1: Fedu+Medu+Class+Local+Gender+Cohort	**206.00**	**12**	**17.52**	**376**	**-53.64**
m2: m1+C*Fedu	205.79	13	17.81	376	-59.28
m3: m1+C*Medu	206.08	13	17.52	376	-59.56
m4: m1+C*Class	202.27	17	21.33	376	-79.47
m5: m1+C*Local	205.98	13	17.62	376	-59.47
m6: m1+C*Gender	206.07	13	17.53	376	-59.55
m7: m1+Gender*Fedu	206.06	13	17.54	376	-59.55
m8: m1+Gender*Medu	205.83	13	17.77	376	-59.31
m9: m1+Gender*Class	202.91	17	20.69	376	-80.11
m10: m1+Gender*Local	205.45	13	18.15	376	-58.93

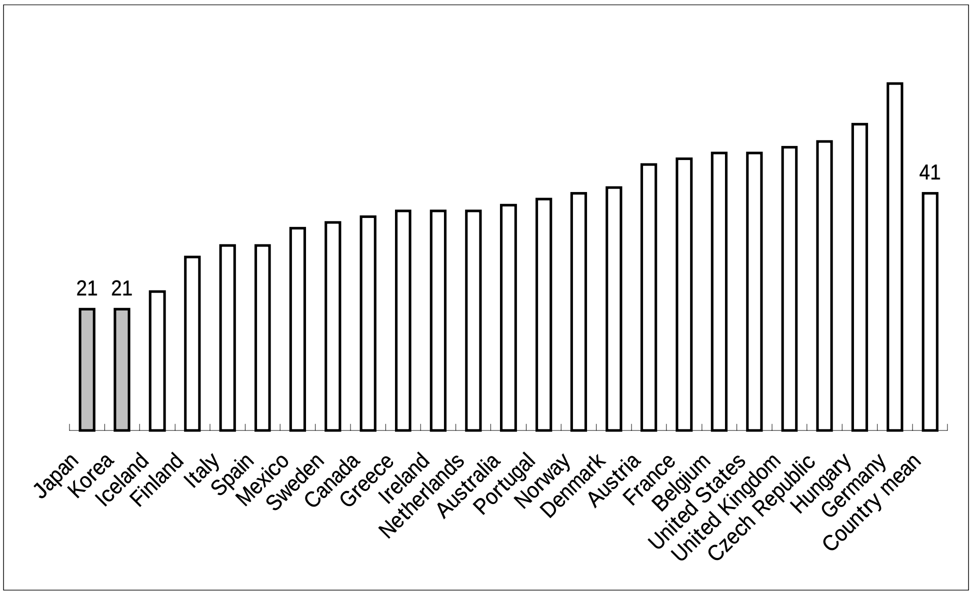
Note: BIC = Model χ^2 – (Model d.f. * LN(Number))

A-Figure 1. Mean performance and International Rank in Reading, Mathematical, and Scientific literacy of 15-year-olds (2000)



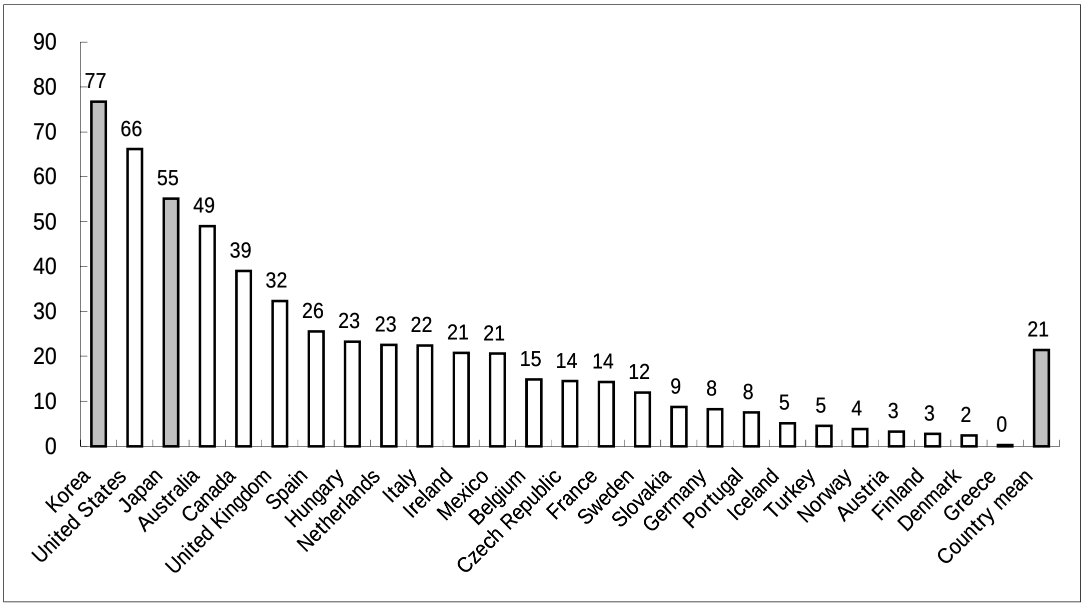
Source: OECD, 2003. *Education at a Glance, OECD Indicators*. Table A5.3, A6.1, and A6.2

A-Figure 2. Relationship between student performance on the combined reading literacy scale and family economic, social and cultural backgrounds (2000)



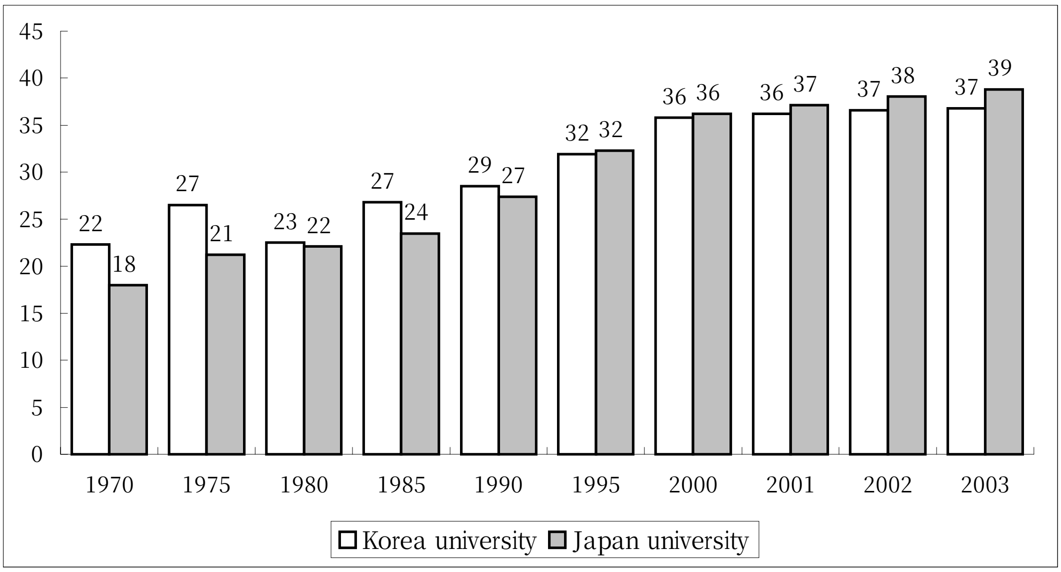
Source: OECD and UNESCO, 2003. *Literacy Skills for the World of Tomorrow: Further Results from PISA 2000*. Table A2.3a.

A-Figure 3. Relative Proportions of Private Expenditure on Tertiary Educational Institutions



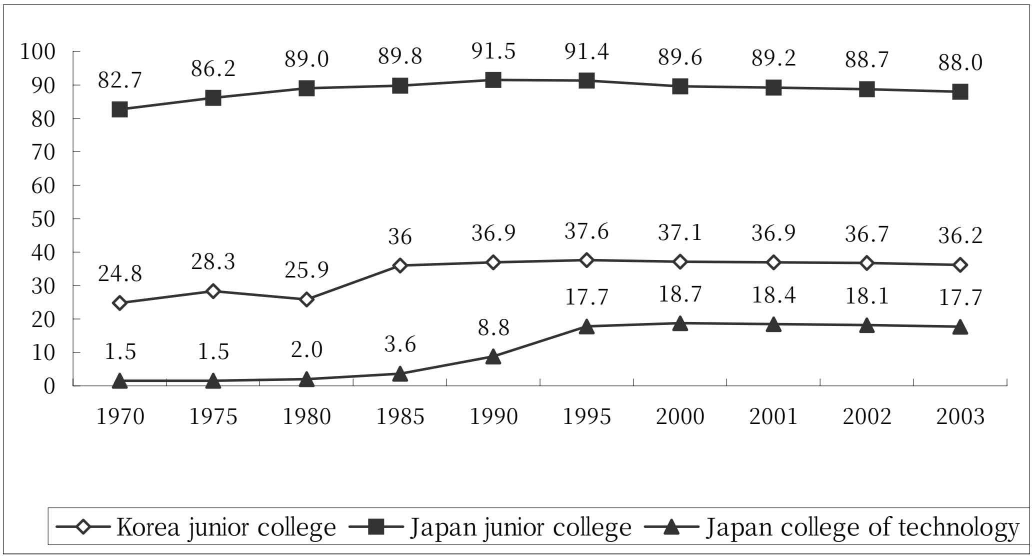
Source: OECD, 2003. *Education at a Glance: OECD Indicators.* See TableB 3.2

A-Figure 4. Percentage of Female Students in Universities, 1970-2003



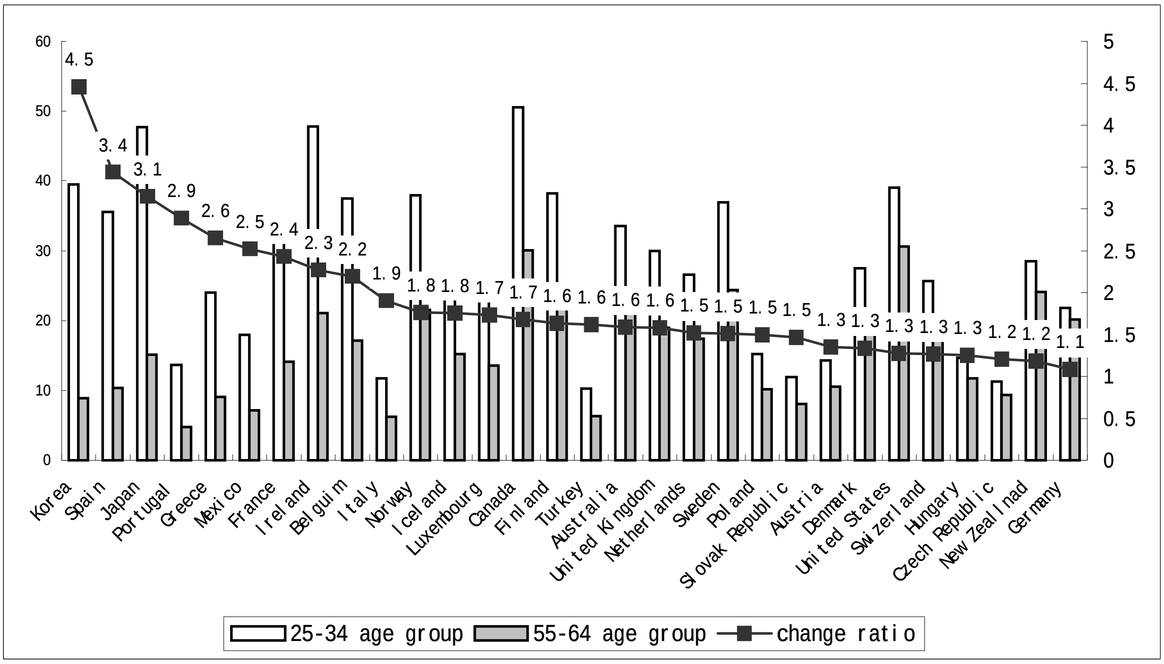
Source: See Figure 1 and Figure 2

A-Figure 5. Percentage of Female Students in Junior Colleges, 1970-2003



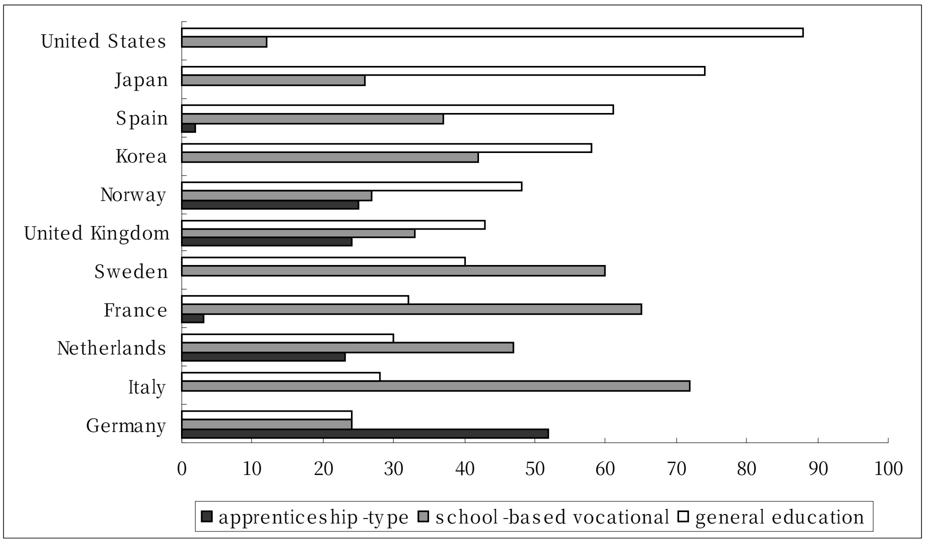
Source: See Figure 1 and Figure 2

A-Figure 6. Percentages of the population that has attained tertiary education (type A+B) and change ratio of percentages between 25-34 age group and 55-64 age group in 2001



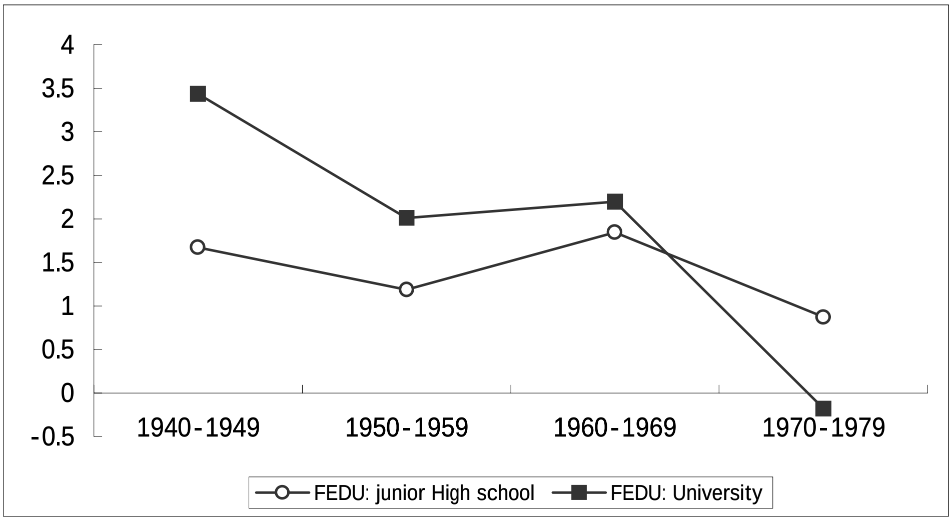
Source: OECD, 2003. *Education at a Glance, OECD Indicators*.Table A2.3

A-Figure 7. Distributions of Upper Secondary Students by Pathways of School Type



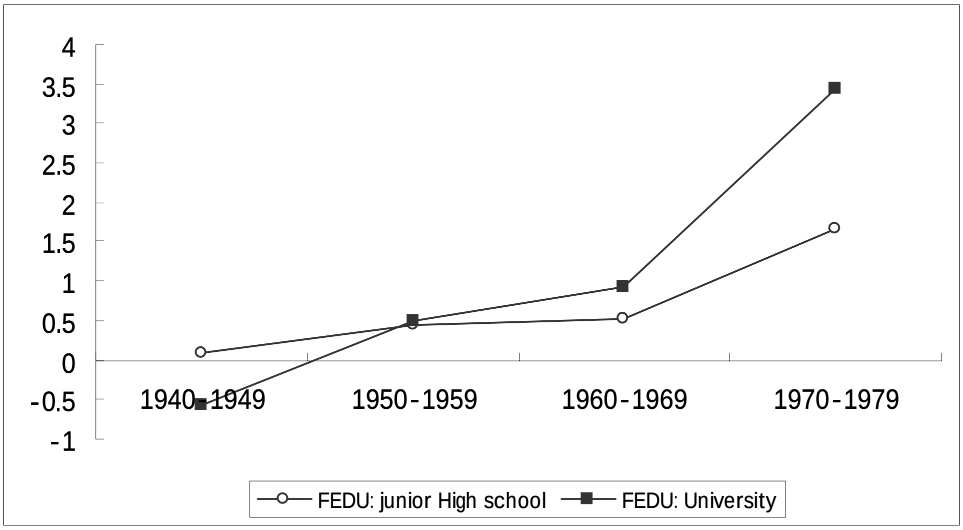
Source: OECD, 2000. *From Initial Education to Working Life: Making Transitions Work.* See Table 2.2

A-Figure 8. Log Odds Ratio of Attending Vocational Courses Instead of Leaving School by Father's Education across Age Cohorts



Note: Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.

A-Figure 9. Log Odds Ratio of Attending General Courses Instead of Vocational Courses by Father's Education across Age Cohorts



Note: Continuous variables are calculated at means, and category variables are calculated at values of the largest proportion in distribution, provided that CLASS is self-employed (IVab) without related to this criterion.