

Career Preparation of High School Students: An International Study

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Abstract

Career preparation in adolescence is an essential ingredient in the development of human capital. The purpose of this study was to examine and compare factors associated with career preparation of high school students in four countries. Career preparation was measured by two variables, intention to attend a university after graduation from high school and perceived career preparation. Using data collected from 5,310 high school students in China, Japan, South Korea and U.S., results from both bivariate and multivariate analyses showed country similarities and differences in these students' career preparations. Chinese and Korean students were more likely than American and Japanese students to apply to 4-year universities. In terms of perceived career preparation, American students scored the highest, Chinese the second, Korean the third and Japanese the lowest. Across the four countries, frequent conversations with parents about career plans were associated with applying to 4-year universities and perceived career preparation. The results also show unique factors in specific countries that influence adolescents' career preparation. These findings have important implications for policy makers and educators who work with adolescents.

Introduction

A major challenge facing youth is the transition from education to the labor market. Each cohort of adolescents enters a changing labor market characterized by fluctuations in the unemployment rate, new patterns of part-time and informal employment, and a rapidly changing array of skills required for good-paying jobs. Career preparation is important for adolescents to develop their human capital when they are considering their plans after high school graduation.

The purpose of this study was to examine how youth from four countries with different economic and educational opportunities prepare and plan for their occupational careers. Career preparation is a complex task requiring the coordination of information from many sources (Betz, 2001; Skorikov, 2007). It involves an assessment of one's abilities, interests, and goals; an understanding of the labor market; and information about the educational and training requirements for each specific career. In adolescence, this preparation typically takes place in the context of conversations with parents, friends, teachers, and mentors (Lent, Brown & Hackett, 1994; Kenny et al., 2006). By the time students graduate from high school, there is wide variation in the amount of preparation they have made, the active steps they have taken to pursue a career goal, and their confidence about being able to achieve their career aspirations (Stringer, Kerpelman & Skorikov, 2011; Novakovic & Fouad, 2012).

This study examines factors associated with career preparation in four countries: China, Japan, South Korea and the U.S. In each country, a unique array of employment opportunities, patterns of career preparation, and access to post-secondary educational institutions present resources and barriers for the transition from school to work. Since each country relies on its youth to form the next generation of workers, it is important to understand the nature of their career preparation and planning, as well as factors that promote optimal preparation. Strategic career planning is also important for

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these young people's economic well-being. Compared to previous research on career preparation among adolescents, this study contributes to the literature by using two unique measures of career preparation and a large data set that includes data from high school students in four economically and culturally diverse countries. The findings of this study would be informative for policy makers and educators who work with high school students for their career planning. The results also enrich the literature of career planning of adolescents with data from multiple countries.

In the following, we will first provide background information about secondary education in the four countries, and then present the theoretical framework and hypotheses. Then method and results are presented. Finally, we will discuss the results and provide implications of the findings.

Secondary Education in the Four Countries

In the U.S., secondary education generally refers to the last four years of formal education, grade 9 through grade 12, and usually takes place at high school. Each state within the U.S. has authority over the number of years of compulsory education, but public education is offered through grade 12. After graduating from high school, U.S. adolescents are more likely to enter the labor market than are students in the other three countries whether or not they enroll in college (Bureau of Labor Statistics, 2009). This may be due to the great expense of higher education. The cost of college tuition in the U.S. is the highest among the four countries (OECD, 2012). However, the data show that entering college is a typical pathway for U.S. adolescents (see Table 1 for tertiary school enrollment rate). For those high school graduates who do not enter college, the most common fields of employment for those in the 16 to 19 age group are hospitality, food and retail industries, and manufacturing (Bureau of Labor Statistics, 2000). In the U.S., adolescents who have a higher educational level combined with working experiences have a higher employment rate and higher income.

China, South Korea, and Japan have the same secondary education system. After completing 9-years of compulsory education, students in the three countries will take another 3 years to finish secondary education which covers 10th through 12th grade education. This usually takes place at high school or an equivalent educational institution, such as vocational high school.

China and South Korea have a more college-oriented educational environment than the U.S. and Japan. In China, high schools are divided into key schools, ordinary schools, and vocational schools. Key high schools gather the highest quality of educational resources in the state. Students in key high schools are expected to enter college after graduation, and the college enrollment rate of these key school graduates is usually higher than 95%; on the other hand, ordinary high school graduates are less likely to get into college due to their failure on the National College Entrance Exam (NCE) that is held annually. Students who wish to enter college are required to take the NCE. Based on the NCE score and students' choice of colleges, students will be enrolled in a college of their choice if their NCE score is higher than the qualifying score of the college. Therefore, if a student's NCE score does not pass the qualifying score of the college of his or her choice, the student will not be accepted by the college. Another reason for blocking high school graduates from entering college is the cost of college. Although China's annual expenditure of higher education is the lowest among the four countries (OECD, 2011), the cost is not affordable for many families in China. Students from key high schools are more likely to enter college after graduation while students from ordinary high schools and vocational high schools are more likely to enter the labor market after graduation. The data show that 70% of the working adolescents are involved in two types of industries: manufacturing and low level service industry such as wholesale and retail trade, community services, transport storage, hotels, and restaurants (International Labor Organization, 2005). Even though vocational high school graduates learn basic vocational skills in school, the education that students receive in vocational high schools typically does not meet the standards of the higher levels of industry jobs (International Labor Organization, 2005).

In South Korea, high school graduates are more likely to pursue higher education than students in the other three countries. The admission process of college is almost the same as China's admission system. Students are required to take the national college entrance exam, which is held annually, and students will be distributed to colleges in terms of their exam scores and choice of colleges. Literature suggested that even vocational high school graduates in South Korea are likely to pursue higher education instead of entering the labor market after graduation due to the economic environment that does not support adolescents with low education and low vocational skill (Chae & Chung, 2005). In addition, college tuition fee in South Korea seems more affordable for families than U.S. and Japan (OECD, 2012). South Korea has the highest tertiary school enrollment rate among the four countries (see Table 1 for tertiary school enrollment rate).

Table 1 Tertiary school enrollment rate

	<i>US</i>	<i>China</i>	<i>Japan</i>	<i>Korea</i>
¹ Population of adolescents (%) ^a	13	15	9	13
² Secondary school enrollment (%)	89.34 ^a	81 ^b	99.9 ^a	90.44 ^a
³ Tertiary school enrollment (% gross) ^c	82.92	22.69	58.03	98.09
⁴ Adult literacy rate (%)	99 ^d	94 ^e	99 ^d	97.9 ^d
⁵ Fertility rate (%) ^f	2.06	1.63	1.34	1.23
⁶ Employment rate (%) ^g	58	71	57	58
⁷ Unemployment rate (%) ^h	8.9	4.1	4.5	3.4
⁸ GNI Per capita (US\$) ^a	48450	4930	45180	20870

Definitions of the indicators:

¹Percentage of youths age 15-19 for the total population.

²Number of children enrolled in secondary school who are of official secondary school age, expressed as a percentage of the total number of children of official secondary school age.

³The total enrollment in tertiary education (ISCED 5 and 6), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving.

⁴Percentage of people age 15 and over can read and write for the total population

⁵Number of children who would be born per woman if she lived to the end of her childbearing years and bore children at each age in accordance with prevailing age-specific fertility rates.

⁶Percentage of a country's population that is employed. Ages 15 and older are generally considered the working-age population.

⁷The share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country.

⁸Gross national income (GNI) is the sum of value added by all resident producers, plus any product taxes not included in the valuation of output, plus net receipts of primary income from abroad. GNI per capita is GNI divided by midyear population.

Sources: ^aThe United Nations Children's Fund (2013). ^bThe World Bank (2011a). ^cEncyclopedia for the Nations (2011). ^dCentral Intelligence Agency (2013). ^eThe World Bank (2010). ^fUnited Nations Population Division (2012).

^gThe World Bank (2011b). ^hThe World Bank (2011c).

Unlike the college-oriented educational environment in China and South Korea, in Japan, entering college is a good path way for students who graduate from high school, but may not be the best alternative for every high school graduate. The higher education system in Japan is slightly different from China and South Korea. To enter a college, high school students are required to take the college entrance exam. However, each college holds its own admission exam. Students who wish to enter the college need to register for the exam and pass the minimum qualifying score to be admitted. Entering top universities in Japan is not easy; the acceptance rate for top universities is about 5-7%, and the cost of tuition is great. Therefore, high school graduates are more likely to enter the labor market instead of college after graduating from high school. The school-work system in Japanese high schools offers students assistance in finding job opportunities (Brinton, 2000); moreover, the career counseling and services at school also give students support in identifying their future path. However, Japanese young people have been facing a rising unemployment rate since 1990. Young people with low education level, low professional skill, and little work experience are only eligible for limited job opportunities (Kosugi, 2001).

Theoretical Framework and Hypotheses

The process of career preparation and planning is best conceptualized in a dynamic, ecological systems framework which includes Process, Person, Contexts, and Time (PPCT) (Bronfenbrenner & Morris, 2006). The processes may include reading about careers, childhood pretense about various

work roles, engaging in paid employment, taking classes that emphasize career preparation, using online resources for aptitude assessments and projections about career opportunities, and talking with adults and peers about the world of work. Person variables include gender, age, special talents or abilities, race/ethnicity, or social class factors that impact one's access to resources or the way one is treated by potential mentors or employers. Contexts include family, peer, school, and work environments. Time refers to changes that occur with maturity, the age at which important decisions are reached, and historical changes in the political and economic conditions that impact the labor market.

This study examined career preparation of high school students in China, Japan, South Korea, and the U.S. Educational and economic environments for students in the four countries are diverse. Table 1 presents several key indicators of the four countries researched in this study. The international data of secondary and tertiary school enrollment rates show different educational environments of the four countries. The U.S. and Korea have high and stable enrollment rates in both secondary and tertiary school while China and Japan both have higher secondary school enrollment rates compared to their tertiary school enrollment rates. The international data also reveal that the U.S. has twice the unemployment rate of the other three Asian countries, which illustrates the different economic climates of the four countries. In each of the four countries, recent economic events have altered the employment opportunities and stability of the job market, resulting in new pressures for advanced study and new uncertainties about career paths (Bureau of Labor Statistics, 2013; Guilford, 2013; Nordstokka, 2013; Zhang, 2006). In this context, the study examined the personal, parental, peer, and school environments that contribute to adolescents' ambitions and plans. Based on the above discussion, we propose the following hypotheses:

H1: There are country differences in terms of career preparation among high school students.

H2: Factors associated with career preparation among high school students in four countries are different.

Method

Data

The survey was designed by a team of researchers at the China Youth and Children Research Center, the Japan Youth Research Institute, the Korea National Youth Policy Institute and a Research I state university in the U.S. Data were collected in nationally representative high schools in each country during September-November 2012. In China, Japan, and South Korea, the participating research agency implemented the data collection. They used the multistage random sampling approach; first selected cities, then selected schools in the cities, and then select students in the school. In the U.S., a research company was used for data collection. The American researcher selected representative schools in multi states across the country. All surveys were conducted in classrooms in the four countries. More details about the cities targeted for sample selection can be found in Table 2.

Table 2 Sample Selection

	Japan	US	China	South Korea
Number of schools	18	13	30	18
Location	Aomori Miyagi Yamagata Fukushima Ibaraki Saitama Tokyo Kanagawa Aichi Okayama Fukuoka	Durham, NC Kansas City, KS Agoura Hills, CA Jersey Shore, PA Chicago, IL Liberty, MO Thousand Oaks, CA Indianapolis, IN Idaho Falls, ID DeWitt, NY Eugene, OR Albuquerque, NM Oklahoma City, OK	Beijing Zhengzhou Xian Beihai Dalian Ningbo	Seoul Gyeonggi Inchon Gyeongnam Busan Ulsan Daejeon Chungnam Gyeongbuk Daegu Kwangju Jeonbuk

Among 5,310 students surveyed, 1,767 were from China, 1,224 from Japan, 1,295 from South Korea, and 1,024 from the U.S. The sample size actually used in the analyses was slightly smaller because

observations with missing values in career preparation related variables were excluded in the analyses.

Variables

Two variables were used to measure career preparation of adolescents: Plan to attend 4-year universities after high school graduation and perceived career preparation. The original variable of after graduation plans had eight categories. We recoded the variable to two categories, 1 if students reported to “apply for very competitive universities”, “apply for moderately competitive universities”, “apply for less competitive universities” or “study abroad”; 0 if students reported other categories (“applying to a 2 or 3-year colleges,” “apply to technical schools,” “work after high school graduation,” “I have not thought about what to do after high school”). Perceived career preparation is a sum of scores of 5 statements describing career preparation on a scale from 1-4 for each statement. The statements include: “I know my abilities and aptitude,” “I have clear goals for my future,” “I have knowledge about the occupation that I want to have,” “I research and collect information for the options after high school,” and “I am interested in current employment opportunities.” After appropriate recoding, the score ranged from 5 to 20, with a higher score indicating a better career preparation.

Independent variables included four sets: personal, parental, school, and peer factors. Personal factors included gender, perceived grade, life satisfaction and having a part-time job. Parental, school, and peer factors were measured based on information from two questions in the survey. One question asked “with whom do you often discuss your plans about what you will do after graduating from high school?” and the other asked “who influence you most when you think about choosing a career?” For both questions, father, mother, teacher, and friend were listed as the options, which were used to form binary variables in the analyses. One additional school variable was whether the school provided career guidance. One additional parental variable was the frequency of discussing career related topics with parents, which was a sum of scores based on an 8-item, 4-point Likert scale.

Data analyses

A Chi-square test was conducted to assess country differences in after-graduation plans. One way ANOVAs were conducted on the two career preparation variables by countries. Multiple Logit and OLS regressions were conducted to examine factors associated with the two career preparation variables within country subsamples.

Table 3 Chi-square test results: Plan after graduation by country ($X^2=717.5$, $d.f.=21$, $p<.0001$)

	China	Japan	Korea	US	Total
Apply to very competitive universities	35.9%	29.4%	42.0%	28.1%	34.5%
Apply to moderately competitive universities	36.9%	32.8%	38.4%	37.9%	36.5%
Apply to less competitive universities	9.8%	5.6%	1.9%	7.1%	6.4%
Study abroad	4.5%	1.0%	1.9%	2.8%	2.7%
Apply to a 2 or 3-year colleges	3.4%	3.0%	5.6%	13.8%	5.7%
Apply to technical schools	1.6%	11.3%	1.5%	2.2%	3.9%
Work after high school graduation	1.4%	12.5%	2.4%	4.3%	4.8%
I have not thought about what to do after high school	6.5%	4.5%	6.3%	3.7%	5.5%
N	1758	1120	1290	970	5238

Results

Bivariate Results

Table 3 presents Chi-square results of after-graduation plans by countries. Overall, most students in the sample reported “apply for very competitive universities” (34.5%) and “apply for moderately competitive universities” (36.5). 80.1% of the students reported the first four categories

indicating that they planned to apply for 4-year universities (we assume “study abroad” means these students would attend 4-year universities abroad). Country differences were shown in the results. For example, Korean students were most likely to “apply for very competitive universities” while American students were least likely to do so. Korean students were least likely to “apply for less competitive universities” while Chinese students were most likely to do so. Statistics from Table 2 also suggest country differences in the alternative pathways after secondary school. With the large percentage of students in China and Korea applying to competitive universities, relatively few intend to go to technical schools or to work right after high school. However, 3.7%-6.5% in each country say that they have not really thought about their plans for after high school. In Japan, a substantial percentage (23.8%) intend to go to technical school or to work. In the U.S., 13.8% plan to attend a 2- or 3-year college, an alternative that does not appear to be as common in the other three countries. Results from one way ANOVA showed country differences in the two career preparation variables. For percentages of students applying for 4-year universities (Table 4), two sets of countries were statistically different. Chinese and Korean students had higher percentages (87% and 84%, respectively), while Japanese and American students had lower percentages (69% and 76%, respectively).

Regarding perceived career preparation (Table 5), the score of American students was the highest (15.8 out of 20), that of Japanese students was the lowest (13.2), with Korean and Chinese students in between (13.4 and 13.7, respectively).

Table 4 ANOVA Results: Plan to Attend 4-year Universities by Country

Country	Mean	Std. Deviation	N
China	.8709	.33543	1758
Japan	.6877	.46362	1120
Korea	.8426	.36429	1290
US	.7598	.42743	970
Total	.8007	.39651	5238

Note: Based on one-way ANOVA, $F=60.747$, $p<.0001$. Dunnett’s C test indicates score pairs of all countries are significantly different at significance level of 5% except for the pair of China and Korea and the pair of Japan and US.

Table 5 ANOVA Results: Perceived Career Preparation by Country

Country	Mean	Std. Deviation	N
China	13.6851	2.75981	1753
Japan	13.1741	3.17926	1218
Korea	13.4073	2.85379	1294
US	15.7917	2.88827	984
Total	13.8929	3.05357	5249

Note: Based on one-way ANOVA, $F=179.572$, $p<.0001$. Dunnett’s C test indicates score pairs of all countries are significantly different at significance level of 5% except for the pair of Korea and Japan.

Table 6 Logistic Regression Results on Factors Associated with Plan to Attend 4-year Universities

	China B		Japan B		Korea B		US B	
Male	-.128		.519	***	-.322		-.330	
Perceived grade	.262	***	.117	*	1.026	***	.635	***
Life satisfaction	.057	**	.030		.045		.030	

School offering career guidance	-.018		.213		.382	*	.284	
Having part time job	-.536	**	-.736	***	-.810	***	-.203	
Discussing plan with father	.075		.158		.111		.164	
Discussing plan with mother	-.043		-.356	*	.478	*	.194	
Discussing plan with friend	.461	**	-.313	*	.060		.053	
Discussing plan with teacher	.104		.069		.172		.149	
Influential person - father	-.064		-.005		.034		.480	*
Influential person - mother	.126		-.109		-.307		-.296	
Influential person - friend	-.344	*	.032		-.200		-.254	
Influential person - teacher	-.022		.153		.444		.731	*
Frequency discussing plan with parents	.093	***	.056	***	.057	**	.057	**
Constant	-2.029	***	-1.136	**	-3.148	***	-3.427	***
<i>n</i>	1702		1188		1257		890	
-2 Log Likelihood	1192.845		1391.742		827.192		838.514	
<i>p</i>	<.001		<.001		<.001		<.001	
Quasi R ²	.056		.069		.185		.133	
% predicted	99.8		94.1		97.9		95.6	

Notes. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7 OLS Regression Results on Factors Associated with Perceived Career Preparation

	China		Japan		Korea		US	
	B		B		B		B	
(Constant)	5.481	***	4.802	***	4.966	***	7.436	***
Male	.298	*	-.118		.074		-.117	
Perceived grade	.276	***	.008		.222	***	.025	
Life satisfaction	.101	***	.067	***	.079	***	.143	***
School offering career guidance	.483	***	.363		.435	**	.292	
Having part time job	.400	**	.869	***	-.073		.390	*
Discussing plan with father	.200		-.077		.041		-.183	
Discussing plan with mother	-.568	***	-.377		-.094		-.081	
Discussing plan with friend	.042		.379	*	.023		-.022	
Discussing plan with teacher	-.228		.352	*	-.063		.604	**
Influential person - father	-.390	**	-.042		-.444	**	-.525	*
Influential person - mother	-.120		-.352		-.249		-.050	
Influential person - teacher	-.130		-.206		-.180		.196	
Influential person - friend	-.107		.506	*	-.091		-.192	
Frequency discussing plan with parents	.248	***	.312	***	.282	***	.223	***
<i>n</i>	1699		1187		1260		911	
<i>F</i>	38.098		35.265		33.528		23.992	
<i>p</i>	<.001		<.001		<.001		<.001	
<i>R</i> ²	.240		.269		.274		.272	

Notes. * $p < .05$. ** $p < .01$. *** $p < .001$.

Multivariate Results

Logistic regressions were conducted regarding after graduation plans and OLS regressions were conducted regarding perceived career preparation. These regressions were conducted within country samples because bivariate results showed strong country differences for these variables. Regression

results showed factors associated with career preparation were different among students in the four countries. Significance level of 5% was used to report the results.

Applying for 4-year universities (Table 6). Four personal factors showed different effects on after graduation plans among students in the four countries. For example, perceived grade was positively associated with applying to 4-year universities in all countries. Reporting having a part-time job was negatively associated with applying to universities among students in all countries except for the U.S. Life satisfaction was positively associated with applying to universities only among Chinese students. Male Japanese students were more likely to apply to universities.

For parental variables, the frequency of discussing after-graduation plans with parents was positively associated with the probability to apply to universities in all four countries. In addition, only among Korean students, discussing plans with mothers was positively associated with applying to universities, but for Japanese students, the association is negative. Only for American students was reporting father as the influential person in career decisions associated with a greater likelihood of applying to universities.

For school variables, only Korean students who reported their school provides career guidance were more likely to attend a 4-year university. Only for the American students was reporting teachers as influential persons in career decisions associated with a greater likelihood of applying to universities. Friend related variables had mixed results. Among Chinese students, those who reported discussing after-graduation plans with friends were more likely to apply to universities but those who reported friends as influential people in career decisions were less likely to do so. Japanese students who reported discussing after-graduation plans with friends were less likely to apply to universities.

Perceived career preparation (Table 7). Among personal factors, life satisfaction was positively associated with a higher level of perceived career preparation among students in four countries. Students in all countries except for South Korea who reported having a part-time job had a better career preparation. Chinese and Korean students who perceived a higher grade had a better career preparation too. For gender differences, only Chinese male students reported a higher level of career preparation than their female counterparts.

For parental variables, the frequency of discussing career related topics with parents was associated with a higher level of career preparation among students in four countries. However, among Chinese students, those who reported discussing after-graduation plans with mother reported a lower career preparation score. In China, Korea and the U.S., students who reported father was an influential person in career decisions reported a lower level of career preparation.

For school variables, both Chinese and Korean students who reported that schools had career guidance had a higher level of career preparation. Japanese and American students who reported discussing with teachers about after-graduation plans had better career preparation. Friends seemed to have little impact on students' career preparation. Only Japanese students who reported discussing after-graduation plans with friends and considered friends are influential on career decisions had a better career preparation.

Discussion

This study used data collected from high school students in China, Japan, South Korea, and the U.S., to examine personal, parental, school and peer factors associated with career preparation of these students. Career preparation was measured by two variables, the after-graduation plan and perceived career preparation. Results suggest that both the after-graduation plan and perceived career preparation show strong country differences. Chinese and Korean students are more likely than American and Japanese students to plan to apply to 4-year universities. American students scored highest in perceived career preparation while Japanese students scored the lowest. Both country similarities and differences in factors associated with career preparation were found in multivariate analyses. The findings suggest that parents may have a major impact on career preparation of adolescents. Frequent discussions about career related topics with parents are associated with plans after high school and career preparation variables in four countries. Mental health may be another important factor. Adolescents' life satisfaction is positively associated with perceived career preparation in all countries.

Unique country factors were also found in several variables. Only among American students, reporting that father or teacher is an influential person in their career decisions is positively associated with applying to 4-year universities. Only among Japanese students, discussing career plans with teacher or friend and perceiving teacher as the influential person in career decisions are positively associated with perceived career preparation.

The findings suggest that the plan to attend a 4-year university and perceived career preparation may be different in the minds of adolescents. Those scoring high in career preparation may not apply for 4-year universities, which is evidenced by the potential effect of the perceived grade. The perceived grade is positively associated with applying for 4-year universities in all countries but it is positively associated with perceived career preparation in only China and Korea. In addition, having a part time job is negatively associated with applying for 4-year universities in all countries but the U.S., while positively associated with perceived career preparation in all countries except for South Korea. A puzzling observation was that frequently discussing plans about after high school with parents was associated with aspirations for college; but viewing fathers as influential in career decisions was associated with lower levels of career preparation in China, Korea and the U.S. These findings suggest that career preparation is a complex process that may be more intimately tied to cultural and societal factors, whereas the decision about going to college has become a more widely endorsed step on the path toward adulthood in all four countries.

Limitations

One limitation of this study is the diverse data collection approaches in the four countries. The data collection approaches are similar in the three Asian countries since the corresponding agencies in these countries are leading youth research centers in their countries and have resources to collect representative samples nationwide. However, the data collection approach used in the U.S. could only be considered as purposive sampling because of resource constraints. The results may not be representative of the national population of American high school students.

Another limitation is the survey did not identify the type of school in each country. For example, in China, students in different types of schools may have different career goals. Students in key high schools may be more willing to plan to attend 4-year universities than those in ordinary high schools who may be more interested in vocational training opportunities. In future research, the information about school type should be collected in the survey.

The third limitation is that the scope of this study only covered four countries. Compared to previous studies with similar topics, this study is broader than those that focus on student information from only one country. However, to better understand career preparations of adolescents in diverse country contexts, data from more countries could be collected and analyzed. These limitations can be considered in future research.

Implications

The findings of this study have implications for policies and education. Although the expectations for students to attend university after high school appear to be operating in all four countries, the aspiration to attend a highly competitive university differs. This raises the question about what students, parents, and teachers perceive to be the importance or value of attending a highly competitive university in their country. What is more, these data highlight the diverse pathways that exist in the four countries after high school. Alternatives such as apprenticeships, work-study opportunities, and technical or 2-year tertiary educational programs are not equally available in all four countries. The value of a part-time job is linked to plans to attend college in the U.S., but not in China, Korea, and Japan. This illustrates the need for those shaping national policy to take a more nuanced approach to career education and preparation. The occupational and employment opportunities for youth as well as the educational and parental values surrounding youth employment differ in the four countries.

Educational policies should pay attention to the needs of adolescents when they make career plans. Post-secondary education is a costly and time consuming commitment. Parents and students need to be able to evaluate the decision to invest in post-secondary education given changing employment opportunities and career paths. Overall, students express only a modest level of career preparation. These findings indicate that many students have a poor understanding of how their decision to go to college is tied to a career plan. Policies should encourage students with different needs to pursue diverse career plans by providing resources to schools and help schools provide a variety of programs to meet these diverse needs. This study provides evidence that school-based career guidance affects students' career preparation in China and South Korea. This is an indication that strengthening career guidance may have value for improving career decision making after high school. The results show limited evidence that teachers have impacts on students' career preparation in Japan and the U.S.; this is an area which should be enhanced.

Educators should consider career planning as a major component in their curriculum. They should use multiple channels including parental education and family involvement to help students prepare career goals based on their competences and interests. The results of this study show that the majority of high school students in these countries are planning to attend 4-year universities. Educators may need to provide practical guidance to help them carefully select universities that best meet their needs and competences. In China and Korea, roughly 6% of students say they have not thought about what to do after high school. Even if their early plans are likely to change, it is important for students leaving secondary school to have an informed vision of possible career paths and an idea about how to achieve their desired occupational goals. Educators in high school may be more innovative in helping students to start thinking about career goals and to achieve them through concrete steps. International exchanges of career education should also be encouraged to provide innovative and effective teaching approaches to help students better prepare for their career goals.

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