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# THE DETERMINANT OF COLLEGE EDUCATION IN KOREA: AFOCUS ON EACH INDIVIDUAL/ENVIRONMENTAL COMPONENTOVER TIME

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## ABSTRACT

This paper focuses on how students decide their college education. Based on individual and environmental components, this study investigates how the relationship between college choice and relevant factors has changed over time. The results show that the students who want to attend college have a more positive attitude toward school life and tend to more often complete their student duties. In addition, the education level of parents and household income has a significant effect on students' future career path. These findings give some implications as to how policy makers can connect the secondary education with higher education for current students.

**Keywords**: College education, individual characteristics, environmental component, career path.

## INTRODUCTION

Choosing a college is an integral decision to determining students' future in a various way. Diverse resources help students make their choice and guide them as to whether or not specific college options are suitable for them. Individual students have accumulated social and cognitive knowledge from socialization throughout their lifetimes. Among those variables, students' family, teachers, and peer-groups all play an important role in their decision-making. Successful college choices and schooling experiences require networks of individuals and resources that provide information on college preparation and access availability (Allen, Bonous-Hammarth, & Suh, 2003).Students should have accessible pre-collegiate school curricular and a sufficient academic background in order to consider study at a postsecondary institution (Post, 1990; Allen, 1992). The personality of each student also affects his or her college choice along with environmental influences during academic life. Pre-existing characteristics have a significant effect on their perspective academic career (Balsamo, Lauriola, &Saggino, 2012).

The entire process of college choice is complex and involves many different components. While prior studies have explored the role of individual and environmental components in college education, detailed longitudinal analyses capturing the effect of each component arerare. The purpose of this study is to provide a general understanding of students' cognitive growth and

ISSN: 2582-0745

Vol. 1, No. 01; 2018

their interactions with external components, alongside which individual and environmental components affect college choice. Based on longitudinal tracking of students, this study examines how each component correlates with the final college decision and which components explain students' career path over time. The time before beginning colleges a period in which youth have various psychological and physical changes, and investigation of these dynamics for relative components that affect student experiences is helpful to provide diverse policy implications in the future. When it comes time to choose a college, this study provides below research questions that investigate college decision.

1) How do individual characteristics during secondary school affect the decision of college education?

2) How do environmental components influence the decision of college education?

3) How are the characteristics of individual different by their career path?

The individual characteristics are formulated through diverse interactions with teachers, peer-groups, and family members. The students are also affected by environmental factors such as technology, local community, and other relations. The following section providesa theoretical background to explain the variables that may affect individual development. Methodology and results will follow.

**Conceptual framework**

Prior studies have investigated which factors explain students' college choice, and some scholars emphasize the importance of family background on the students' college education. Kim and Byun (2006) show that family background and individual characteristics of the student have a significant impact on their future postsecondary institution. The authors emphasize that more academic preparation allows students to attend college rather than joining the workforce. Academic expectations and self-perceived capability to study combine with diverse components including personal adjustment, stress, and health. Comprehensive academic self-efficacy and optimism are strongly related to individual performance and adjustment in school (Chemers, Hu, & Garcia, 2001). In line with those findings, Choy (2001) concludes that students from disadvantaged family background are less likely to attend school and enroll in courses for college preparation.Stocké (2006) examines the effect of parental class differences based on objective and subjective resources for children's education. His findings show subjective beliefs about children's ability to complete their education and motives to maintain the family background significantly affect the educational decision. Paulsen and John (2002) investigate the effect of financial conditions on college choice. The findings indicate the social class of students can decide their future college type and the persistence of college education in the long run. Different social class and financial background are positively correlated with each other, and those environmental factors influence individual college selection.

ISSN: 2582-0745

Vol. 1, No. 01; 2018

Some studies consider college education in terms of socio-economic perspectives. Educational achievement is a social process which is shaped by socio-cultural contexts of human beings (Allen et al, 2003), and the individual considers future returns under environmental uncertainty, which means a lack of information about educational expenses and expected labor incomes after college (Hogan & Walker, 2007). Students aspire to have a better future, and their perceptions about college choice are aggressively activated during their school life (Cresswell-Yeager, 2012). Their motivations and aspirations to attend college sometimes outweigh potential barriers such as financial constraints and proper academic preparation. Consideration of individual characteristics frequently comes into play at the initial stage of college choice (Hossler, Braxton, &Coopersmith, 1989).Other studies examine how study-related factors explain the students' choice for college education in different ways. Byun and Kim (2010) investigate which components affect stratification of higher education in Korea. The results indicate that parental education and the expectations for their children's performance affect the stratification of higher education. They conclude that the amount of time students spend studying and individual academic achievement areconnected with future admittance into a more selective institution. Lee, Ihm, and Min (2010) analyze the effects of private coaching on academic achievement, and their results show there is no evidence to support the effectiveness of private tutoring for college admission. On the other hand, their results show that elements of the public education system, such as EBS, encourage students to consider pursuing postsecondary education. Compared to prior periods, recent trendsin college choice show more dependence on other information sources such as Internet, specialized guidebooks, and other counselors (Palmer, Hayek, Hossler, Jacob, Cummings, &Kinzie, 2004). But parental involvement as social capital still plays an important role in deciding their children's college choice (Perna& Titus, 2005). Brown and Hackett (1994) emphasize cognitive-person variables that influence their career choice based on the social cognitive career theory. Individual beliefs about their process of career choice are intertwined with cognitive self-efficacy and other's influences (Lent, Brown, & Hackett, 2000).Multiple components including socioeconomic background, gender, and age are involved in the process of career choice (Lent, Brown, & Hackett, 2000). Socioeconomic status is correlated with college qualifications as well as status of college preparation (Cabrera & La Nasa, 2001), and several school-based resources also have an impact on applying for college.

Some scholars emphasize external determinants as important factors incollege decision. Long (2004) suggests that rising tuition prices play a major role in deciding to attend college, particularly affecting low-income students. Using the National Longitudinal Survey of Youth, Montmarquette, Cannings, &Mahseredjian (2002) evaluate how students choose their college major. Their results show that expected returns after graduation are related to college education and major choice. They also found that the impact of expected earnings is significantly different by gender and race. Taber (2001) supports the existence of college premium in terms of future earnings in order to explain the higher returns of college graduates. He explains that higher-ability individuals can attend college to earn more money according to growing social demands for skilled workers. Regarding visible skills, the author acknowledged the importance of unobserved skill in explaining the growing college premium.Raposo and Alves (2007)

ISSN: 2582-0745

Vol. 1, No. 01; 2018

emphasize that students' college choice tends to be differentiated by major, and the relative effect sizes of variables for college choice are also different from each other. The personal and environmental variables that affect students' college choice should be investigated for measuring the college choice mechanism with other social and psychological variables, such as student background, personality and motivation. Institutional financial aid policy also impacts the students' college choice. Redd (2004) shows the financial gaps within the student body affects their college education, and proper supporting policy for low-income student increases attendance of colleges in the long run. Southerland (2006) provides a new model of college choice based on several components such as the personal level, the institutional level, and circumstances. The model considers more comprehensive approaches to measure the components for college choice and interprets shifting students in different ways. In line with theis analysis, Cho et al (2008) examine the influence of a set of psychological, personal, and institutional factors based on first-generation student self-reports. The findings show that academic quality and psychosocial factors are the most influential factorson the student cohort. Various demographic characteristics and socioeconomic factors tend to moderate the influences, and counselors and other personnel are valuable to facilitate students' college choice process. McPherson and Shulenburger (2008) call attention to the role of college cost instudents' college choice. Their findings suggest higher education institutions should manage the proper price level of education and consider the flow from college-provided resources to increase in degree completion in the long run. Interestingly, Mattern and Wyatt (2009) emphasize the distance of student travel for college is strongly associated with academic preparation and demographic characteristics. They highlight the total distance from home can narrow down colleges students want to apply to. In addition, other components such as social media function as informatics entrances for college choice (Johnston, 2010). Institutional factors including program characteristics, cost, location, and campus visit experiences are important criteria in college choice (Sia, 2013).

## METHODOLOGY

The KCYPS is a longitudinal panel study from 2010 to 2016, and it helps trace the transition period of youth development from elementary school to high school. This study focuses on middle school students in 2010 and follows them until their high school graduation in 2016. In order to have consistent tracking, the dataset is merged from 2010 to 2016. The student cohorts are categorized by their career path variables after graduation in 2016, and the segregated groups are categorized by three cohorts: those who attend college after high school, those who enter the workforce, and those who have not decided their career after high school.

The goal of this study is to determine which components affect individual college choices and how this changes over time. This study uses multinomial logistic regression, which is a classification method thatgeneralizes the multiclass program. It is a model for predicting the probabilities of the different students' career choices after high school graduation, given a set of independent variables. The considered variables in the regression model include individual characteristics (school life andIT affordability), environmental components (local community

ISSN: 2582-0745

Vol. 1, No. 01; 2018

and media), and background variables (parental education level and household income). Table 1 shows the general information of the targeted student sample for this analysis.

**Table 1. Descriptive information of targeted student cohort on average (N=2,351)**

| Indicator | Subcategory | N | % | Indicator | Subcategory | N | % |
|---|---|---|---|---|---|---|---|
| Gender | Male | 1176 | 50% | School Location | Seoul/Gyunggi-do | 580 | 24.7% |
| | Female | 1175 | 50% | | Six metropolitan cities | 768 | 32.7% |
| | | | | | Other provinces | 1003 | 42.7% |
| Relationship | Mother | 1838 | 78.2% | Coeducation -Middle school | Male only | 241 | 10.5% |
| | Father | 455 | 19.4% | | Female Only | 287 | 12.6% |
| | Grandparents | 30 | 1.3% | | Coeducation | 1777 | 77.1% |
| | Other relatives | 28 | 1.2% | | | | |
| Housing | Detached house | 482 | 20.6% | Coeducation -High school | Male only | 458 | 22.5% |
| | Apartment | 1385 | 59.1% | | Female Only | 514 | 25.0% |
| | Townhouse | 189 | 8.1% | | Coeducation -coed class | 500 | 22.0% |
| | Multiplex housing | 211 | 9.0% | | | | |
| | Others | 77 | 3.3% | | Coeducation-divided class by gender | 631 | 30.5% |
| Highest degree: Father | Below middle school | 69 | 3.5% | Health condition of parents | Very healthy | 378 | 17.9% |
| | High school | 808 | 41.5% | | Healthy | 1551 | 73.4% |
| | Associate | 202 | 10.4% | | Unhealthy | 167 | 7.9% |
| | Bachelor | 771 | 39.6% | | Very Unhealthy | 17 | 0.8% |
| | Graduate | 96 | 4.9% | | | | |
| Highest degree: Mother | Below middle school | 62 | 3.2% | Life | Very satisfied | 213 | 10.1% |
| | High school | 1071 | 54.2% | | | | |

ISSN: 2582-0745

Vol. 1, No. 01; 2018

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Associate | 221 | 11.2% | satisfaction of parents | Satisfied | 1577 | 74.6% |
| | Bachelor | 585 | 29.6% | | Unsatisfied | 298 | 14.1% |
| | Graduate | 38 | 1.9% | | Very Unsatisfied | 25 | 1.2% |

*Note: Household annual income on average during periods is 4,672 ten-thousand won.

*The information is based on the mean of each indicators during seven consecutive years.

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Generally speaking, the targeted students are distributed equally by gender and school location. However, the most respondents for this survey were mothers,and this should be kept in mind when interpreting the responses. The proportion of coeducation possibility has declined over time, and the educational level of fathers tends to be higher than that of mothers. The parents generally have a healthy physical condition and good life satisfaction, and their income is slightly over the 4,500 ten thousand won, which is similar to the median income of four-person families based on the standard from the2016 Ministry of Health and Welfare.Based on the merged KCYPS survey items, this study interprets the statistical differences by student groups. This paper uses explanatory factor analysis to categorize each item and create scales to represent each factor based on individual/environmental components. Through a simple t-test, the results show how the student groups differ from each other over time. And then,this study uses the multinomial logistic regression below;

$$\ln\left(\frac{P(prog=\text{those who enter the workforce})}{P(prog=\text{those who attend college after high school}}\right) = b_0 + b_1 SLscale_i + b_2 ITAscale_i + b_3 PLCscale_i + b_4 EAscale_i + b_5 Bacgkrounds$$

$$\ln\left(\frac{P(prog=\text{who have not decided their career after high school})}{P(prog=\text{those who attend college after high school}}\right) = b_0 + b_1 SLscale_i + b_2 ITAscale_i + b_3 PLCscale_i + b_4 EAscale_i + b_5 Bacgkrounds$$

The individual characteristics explain each student's intelligence development, social/emotional development, and study-related components. The SL scale expresses how students interact with teachers, classmates, and others during school life the based on 17 survey items, and the ITA scale provides information on how students are familiar with the IT environment based on 15 scales (Appendix A). The environmental components (PLC scale and EA scale) reflect the relationship with others such as extracurricular activities and local engagement. The background variable categorizes the student body by demographics or socioeconomic status, and the multinomial regression provides more detailed information to compare each student cohort with others. In the process of data merging, the insufficient number of response items are omitted to maintain the statistical robustness and describe the general characteristics of three independent variables (individual characteristics, environmental components, and background variables).

ISSN: 2582-0745

Vol. 1, No. 01; 2018

Those who have a job after high school graduation are chosen as the reference category, and separate odds ratios are constructed by all of the independent variables for each category of the dependent variables with the exception of the reference group. corresponding independent variable.

## RESULTS

This analysis chooses a total of 58 items in the multinomial regression. Some of the items are reversely recoded for proper interpretation. The first step is to perform explanatory factor analysis (EFA) to create each scale. Table 2 shows the results of binding items. The factor 1 (SL scale) consists of three components: learning activity, school relation, and relation of friends during school life. The scale presents how students consider school life, and a higher score indicates a positive attitude about daily school programs, members, and the given learning environment. Factor 2 (ETA scale) represents the students' perception of the local community. The levels of local engagement and community atmosphere are measured by 10 KCYPS items. Factor 3 (ITA) is students' IT affordability—familiarity with computers and level of cellphone dependence are the main indicators to measure it. Factor 4 (EA scale) indicates how students participate in extracurricular activities, such as fan clubs, and measures the level of satisfaction with clubs. The detailed survey question can be found in Appendix A.

ISSN: 2582-0745

Vol. 1, No. 01; 2018

Table 2. Construction of each scales

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---|---|---|---|---|
| interest | 0.356 | | | |
| homework | 0.350 | | | |
| content | 0.443 | | | |
| question | 0.393 | | | |
| regulation | 0.580 | | | |
| classmate | 0.448 | | | |
| (…Learning activity 19 items) | ( …) | | | |
| safety | | 0.370 | | |
| partnership | | 0.473 | | |
| live | | 0.339 | | |
| help | | 0.326 | | |
| volunteer | | 0.359 | | |
| (…Community spirit 10 items) | | ( …) | | |
| information | | | 0.401 | |
| messanger | | | 0.382 | |
| homepage | | | 0.510 | |
| time | | | 0.487 | |
| belonging | | | 0.534 | |
| contact | | | 0.488 | |
| (…IT affordability 17 items) | | | ( …) | |
| v_satisfaction | | | | 0.653 |
| c_satisfaction | | | | 0.401 |
| cx_satisfaction | | | | 0.484 |
| (…Extracurricular activity 12 items) | | | | ( …) |

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

Table 3 provides the trend of each scale by three groups: degree seeker, job seeker, and undecided. Compared their counterparts, the degree seekers indicate higher study-related scores based on the SL scale. Group 3(the non-degree/job seeker group) has the lowest SL scale scores, regardless of period. Although each scale does not show statistically different groups, the entire trend of scale scores in group 3 is the lowest regardless of scales. This implies that the degree seekers have maintained higher participation and positive attitude toward their school life and environmental components. Interestingly, the EA scale (extracurricular activity) is lower than the

ISSN: 2582-0745

Vol. 1, No. 01; 2018

median scores (2.5 on average), and this may encourage students to more activelyparticipate in extracurricular activities beyond regular academics.

Table 3. Scale comparisons between student cohorts

| Group 1 (N=1,647)† | Period 1 | Period 2 | Period 3 | Period 4 | Period 5 | Period 6 | Period 7 |
|---|---|---|---|---|---|---|---|
| Study & school life | 2.79 | 2.85 | 2.90 | 2.90 | 2.91 | 2.90 | N/A |
| IT affordability | 2.61 | 2.55 | 2.41 | 2.38 | 2.43 | 2.46 | 2.37 |
| Perception for local community | 2.66 | 2.60 | 2.64 | 2.70 | 2.68 | 2.70 | 2.68 |
| Extracurricular activity | 2.14 | 2.13 | 2.04 | 2.00 | 1.71 | 1.91 | 1.98 |
| Group 2 (N=297) | | | | | | | |
| Study & school life | 2.68 *** | 2.77 *** | 2.78 *** | 2.85 * | 2.86 * | 2.88 | N/A |
| IT affordability | 2.59 | 2.54 | 2.40 | 2.35 | 2.37 * | 2.39 * | 2.36 |
| Perception for local community | 2.58 * | 2.50 ** | 2.58 | 2.65 | 2.64 | 2.66 | 2.58 ** |
| Extracurricular activity | 2.11 | 2.06 | 1.97 | 1.93 | 1.71 | 1.89 | 1.93 |
| Group 3 (N=203) | | | | | | | |
| Study & school life | 2.63 *** | 2.77 *** | 2.72 *** | 2.74 *** | 2.77 *** | 2.70 *** | N/A |
| IT affordability | 2.59 | 2.54 | 2.43 | 2.31 | 2.37 | 2.39 | 2.42 |
| Perception for local community | 2.57 | 2.50 | 2.61 | 2.64 | 2.68 | 2.60 ** | 2.60 * |
| Extracurricular activity | 2.18 | 2.06 | 2.04 | 1.88 | 1.66 | 1.91 | 2.05 |

*p<.05, **p<.01, ***p<.001 if Group 2 (Job seeker) & 3 (Not decided) are significantly different from Group 1 as measured by independent sample t-test

†'Reference group is Group 1 (Bachelor degree seeker)

Table 4 provides information on how individual and environmental components affect students' career decision over time. Household annual income has a significant overall effect on the students' decision, and the effects are continuous, regardless of the time. While students' gender and father's highest degree generally correlate with the students' decision for future career path during middle school, the relation may not have a significant overall association with the students' career decision over time. To be more specific, a one-unit increase in the SL scale is associated with a 0.98 decrease in the relative log odds of being a job seeker versus a degree seeker (Table 5). But a one-unit increase in the SL scale is associated with a 1.22 decrease in the relative log odds of being a non-degree/job seeker versus a degree seeker. The ratio of the probability of choosing one dependent variable category over the probability of choosing the reference group is referred to as relative risk. Regression coefficients represent the change in log relative risk per unit change in the predictor. In this aspect, the exponential regression coefficients are relative risk ratio. Thus, the relative risk ratio for a one-unit increase in the variable SL scale is 0.37 for being in job seekers versus degree seekers, and the relative risk ratio switching from F_degree 3 (graduate school above) to 1(high school) is 6.94 for being in job seekers versus degree seekers. In other words, the expected risk of staying in the job seeker group is higher for subjects whose fathers are less educated. Interestingly, the expected risk of staying in non-degree/job seeker group is higher for subjects whose mothers are less educated over time. This effect is connected with the later results (Table 7) that support mothers' intervention in students' career path decision. In terms of odds ratio, male middle school students

ISSN: 2582-0745

Vol. 1, No. 01; 2018

indicate that the risk of the outcome falling in the non-degree/job seekers relative to the risk of the outcome falling in the degree seekers increases as the number of the students increase**.**

Table 4. Overall effect of individual/environmental components for future career path (2010-2016)

| Time | Period 1 | | Period 2 | | Period 3 | | Period 4 | | Period 5 | | Period 6 | | Period 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Chi-Square | Sig. | Chi-Square | Sig. | Chi-Square | Sig. | Chi-Square | Sig. | Chi-Square | Sig. | Chi-Square | Sig. | Chi-Square | Sig. |
| Intercept | 0.00 | | 0.00 | | 0.00 | | 0.00 | | 0.00 | | 0.00 | | 0.00 | |
| SL scale | 14.32 | *** | 2.21 | | 13.48 | *** | 3.95 | | 1.38 | | 5.09 | | | |
| ITA scale | 2.49 | | 7.03 | * | 0.45 | | 4.85 | | 2.23 | | 1.95 | | 2.72 | |
| PLC scale | 0.40 | | 0.67 | | 3.55 | | 2.26 | | 3.92 | | 2.04 | | 10.71 | ** |
| EA scale | 4.51 | | 2.10 | | 1.79 | | 1.16 | | 0.68 | | 0.53 | | 3.62 | |
| Household annual income | 7.86 | * | 16.52 | *** | 15.31 | *** | 5.82 | | 14.51 | *** | 16.98 | *** | 10.28 | ** |
| Gender | 18.96 | *** | 10.37 | ** | 9.23 | ** | 7.57 | * | 1.50 | | 0.06 | | 0.07 | |
| H_Degree | 22.96 | *** | 20.95 | *** | 14.66 | ** | 17.37 | ** | 9.28 | | 5.02 | | 17.98 | ** |
| M_Degree | 1.89 | | 2.41 | | 2.43 | | 1.88 | | 3.93 | | 2.88 | | 2.82 | |

*"The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model.

*"The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Table 5. Trend of the determinants for career path (2010-2016)

| | | Period 1 | | | Period 2 | | | Period 3 | | | Period 4 | | | Period 5 | | | Period 6 | | | Period 7 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | B | Exp(B) | Sig. | B | Exp(B) | Sig. | B | Exp(B) | Sig. | B | Exp(B) | Sig. | B | Exp(B) | Sig. | B | Exp(B) | Sig. | B | Exp(B) | Sig. |
| Job seeker | Intercept | -0.09 | | | -0.17 | | | 0.24 | | | -2.02 | | | -1.32 | | | -0.29 | | | -9.98 | | |
| | SL scale | -0.98 | 0.37 | ** | -0.08 | 0.93 | | -1.11 | 0.33 | ** | 0.02 | 1.02 | | -0.35 | 0.70 | | -0.25 | 0.78 | | | | |
| | ITA scale | -0.22 | 0.81 | | -0.48 | 0.62 | | -0.16 | 0.85 | | 0.16 | 1.17 | | -0.34 | 0.71 | | -0.38 | 0.68 | | 0.02 | 1.02 | |
| | PLC scale | 0.03 | 1.03 | | -0.19 | 0.83 | | 0.33 | 1.40 | | -0.27 | 0.76 | | 0.43 | 1.53 | | 0.19 | 1.21 | | -1.46 | 0.23 | ** |
| | EA scale | 0.25 | 1.28 | | -0.07 | 0.93 | | 0.12 | 1.13 | | -0.28 | 0.76 | | 0.21 | 1.24 | | 0.19 | 1.21 | | -0.11 | 0.89 | |
| | Household annual income | 0.00 | 1.00 | * | 0.00 | 1.00 | * | 0.00 | 1.00 | ** | 0.00 | 1.00 | * | 0.00 | 1.00 | *** | 0.00 | 1.00 | *** | 0.00 | 1.00 | ** |
| | Gender_male | 0.358 | 1.43 | | 0.33 | 1.40 | | 0.38 | 1.47 | | 0.13 | 1.14 | | 0.13 | 1.14 | | -0.05 | 0.95 | | -0.09 | 0.91 | |
| | Gender_female | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |
| | F_degree=1 | 1.94 | 6.94 | * | 1.72 | 5.57 | * | 2.12 | 8.33 | | 2.01 | 7.46 | | 1.88 | 6.55 | | 1.49 | 4.43 | | 16.18 | | |
| | F_degree=2 | 1.03 | 2.81 | | 0.76 | 2.15 | | 1.57 | 4.81 | | 1.23 | 3.43 | | 1.06 | 2.89 | | 1.07 | 2.91 | | 14.86 | | |
| | F_degree=3 | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |
| | M_degree=1 | -0.44 | 0.64 | | -0.52 | 0.59 | | -1.05 | 0.35 | | -0.15 | 0.86 | | -1.01 | 0.36 | | -0.94 | 0.39 | | -2.50 | 0.08 | |
| | M_degree=2 | -0.62 | 0.54 | | -0.52 | 0.60 | | -1.19 | 0.30 | | -0.37 | 0.69 | | -0.86 | 0.42 | | -1.18 | 0.31 | | -2.42 | 0.09 | |
| | M_degree=3 | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |
| Non-degee/job seeker | Intercept | 0.04 | | | -15.16 | | | -33.69 | | | -15.25 | | | -19.45 | | | -15.84 | | | -30.79 | | |
| | SL scale | -1.22 | 0.30 | * | -0.74 | 0.48 | | -1.02 | 0.36 | * | -1.14 | 0.32 | | -0.69 | 0.50 | | -1.96 | 0.14 | * | | | |
| | ITA scale | -0.51 | 0.60 | | -1.00 | 0.37 | * | -0.16 | 0.85 | | -0.94 | 0.39 | * | -0.46 | 0.63 | | 0.21 | 1.23 | | -1.15 | 0.32 | |
| | PLC scale | 0.21 | 1.24 | | -0.15 | 0.86 | | 0.59 | 1.80 | | 0.59 | 1.81 | | 0.98 | 2.67 | | 1.02 | 2.76 | | -0.84 | 0.43 | |
| | EA scale | 0.53 | 1.70 | | 0.47 | 1.60 | | 0.45 | 1.56 | | -0.08 | 0.92 | | 0.18 | 1.20 | | -0.20 | 0.82 | | 1.04 | 2.82 | |
| | Household annual income | 0.00 | 1.00 | | 0.00 | 1.00 | ** | 0.00 | 1.00 | * | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | |
| | Gender_male | 1.16 | 3.17 | *** | 1.03 | 2.81 | ** | 1.00 | 2.71 | ** | 1.05 | 2.85 | ** | 0.46 | 1.59 | | -0.08 | 0.92 | | 0.04 | 1.04 | |
| | Gender_female | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |
| | F_degree=1 | -0.62 | 0.54 | | 0.14 | 1.15 | | 16.23 | | *** | -0.03 | 0.97 | | 0.77 | 2.17 | | -0.76 | 0.47 | | 15.11 | | |
| | F_degree=2 | -0.55 | 0.58 | | 0.78 | 2.18 | | 16.85 | | | 0.89 | 2.43 | | 0.68 | 1.96 | | -0.06 | 0.94 | | 16.10 | | |
| | F_degree=3 | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |
| | M_degree=1 | 0.66 | 1.93 | | 16.33 | | *** | 15.31 | | *** | 15.70 | | *** | 15.50 | | *** | 16.19 | | *** | 15.05 | | *** |
| | M_degree=2 | 0.34 | 1.40 | | 16.57 | | | 15.42 | | | 15.66 | | | 15.99 | | | 15.99 | | | 14.82 | | |
| | M_degree=3 | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | | 0[b] | | |

Note: The reference category is: Group 1(degree seeker). This parameter (b) is set to zero because it is redundant.

ISSN: 2582-0745

Vol. 1, No. 01; 2018

The following results show how students consider their future career path as seniorsin high school. Most survey participants (N=1,647) choose to pursue a college education rather than employment after graduation (80.1%), and less than 15% of the total respondents have considered their job in the market (14.4%) (Table 6). While employability is apriority for attending college for the respondents, the influenceof others, such as family, on students' choice for college education is relatively weak. On the other hand, the job seeker group indicates an active expectation to enter society and a lower expectation of higher education effectiveness. Both groups have high expectationsof their selected training, and they tend to decide their future career path based on their own authority beyond parental control.

Table 6. The reasons to decide the career path after high school

| Perception of bacholar degree seeker *(N=1,647) | | | Perception of job seeker* (N=297) | |
|---|---|---|---|---|
| Rank | Reasons | Mean | Reasons | Mean |
| 1 | To get a job | 3.40 | Want to go into the society early | 3.15 |
| 2 | To learn speicial skills/ability | 3.35 | To learn speicial skills/ability | 2.89 |
| 3 | To enjoy college life | 3.27 | Negative recognition about college education | 2.65 |
| 4 | Social perception of bacholar degree | 3.16 | Don't like to study any more | 2.62 |
| 5 | Hard to get a job with high school degree | 2.97 | Family circumstances | 2.18 |
| 6 | Premature to go into the society | 2.94 | Low academic performance | 2.08 |
| 7 | Parents/family hope | 2.88 | Parents/family hope | 1.98 |
| 8 | All the students go to college | 2.43 | To succeed family business | 1.69 |

*The items are reversely coded (Strongly disagree (1), Disagree (2), Agree (3), Strongly Agree (4) )

In order to select their career paths, students in the survey tend to consult their mother first, and the gap between mother and father is notable (Table 7). The role of the mother is more emotional compared to that of the father, and emotional involvement between students and mother can affect the students' decision. The level of contact with the father is similar to that of teachers. When students consider their job choice, individual talents and aptitudes are more important than macro-level contribution to society. Interestingly, the respondents show deeper consideration of job stability or working condition rather than the possibility of collaboration, which implies the appearance of more segregated individual workers.

ISSN: 2582-0745

Vol. 1, No. 01; 2018

Table 7. Main contacts and determinants for career path

| Contact to discuss career path* | Mean | Rank | Determinants of job choice† | Mean |
|---|---|---|---|---|
| Mother | 3.37 | | To develop talents/aptitudes | 3.48 |
| Father | 2.97 | Top 3 | Good working condition | 3.40 |
| School teacher | 2.86 | | Job stability | 3.35 |
| Siblings | 2.61 | | Colloaborative works with others | 3.13 |
| Private tutor | 1.97 | Bottom 3 | High social reputation | 2.74 |
| Relatives | 1.91 | | To contribute country/society | 2.72 |

*The items are reversely coded (Never contact (1), Rarely contact (2), Contact (3), Frequently contact (4) )

†The items are reversely coded (Marginal (1), Not important (2), Important (3), Very important (4) )

In line with the Table 6, Table 8 shows students choose the specific college/majorbecause of employment opportunity by priority. In other words, the higher possibility of future employment causes them to choose a specific college/major beyond general college education. Societal or parental intervention in their choice is not distinguishable compared to the employment possibility. The general level of college/major satisfaction is above average (2.5) in the degree seeker group.

Table 8. Determinant of college/major choice and the satisfaction for college education

| Determinant of college education* | Mean | | The satisfaction of college education* | Mean |
|---|---|---|---|---|
| Employment opportunity | 3.17 | Campus | College satisfaction | 2.81 |
| Grade | 3.16 | satisfaction | Major satisfaction | 2.93 |
| Interests/aptitude | 3.12 | Level of | Lecture | 2.87 |
| Parents | 2.72 | satisfaction | Faculty | 2.91 |
| Social reputation | 2.64 | in each | Curriculum | 2.82 |
| Teachers | 2.45 | categories | Facility | 2.81 |
| Friends/Family | 2.24 | | Student support | 2.81 |

*The items are reversely coded (Never consider (1), Not consider (2), Consider (3), Deeply consider (4) )

Job seekers after graduation indicates that working environment and job stability are the most important factors in job satisfaction (Table 9). Interestingly, the mean of job stability is higher than the income or development possibility. The result shows the job seekers have more conservative strategies to get a job. Non-degree/job seekers are divided into two groups: preparatory course for college attendance and employment preparation. The first group tends to depend on private tutors (84.7%), which involves high costs,and the second group focuses on vocational training for future employment (80.6%).

ISSN: 2582-0745

Vol. 1, No. 01; 2018

Table 9. Job satisfaction of employees and preparation of non-degree/job seekers for future career path

| Job satisfaction of employees* | Mean | Division | Preparation of non-degree/job seekers for future career path | Response |
|---|---|---|---|---|
| Working environment | 2.98 | Preparatory course | Private tutor | 84.7% |
| Job stability | 2.90 | | Internet lecture | 50.2% |
| Task | 2.85 | | Private educational institute | 41.9% |
| Income | 2.76 | Employment preparation | Vocational training | 80.6% |
| Development possibility | 2.63 | | Preparation of recruitment exam | 65.3% |
| Welfare | 2.60 | | Preparation of cirtificate | 59.7% |

*The items are reversely coded (Very dissatified (1), Not satisfied (2), Satisfied (3), Very satisfied (4) )

Degree seekers have distinguished characteristics over time. Higher participation or positive attitudes for their school life especially allow them to consider additional education, and family income levels differentiate the student cohorts for college education. Both student cohorts, degree seekers and job seekers, have high expectations for the return of their choice based on future employment. In addition, while the autonomous individual considers their future career path aside from family/parental controls, mothers still play a mentor role to decide the students' future career path. The affordability for more stable job choice may be linked with other external components, such as economic conditions. More broad considerations of these results are required. While this analysis provides diverse policy views and interpretations for the determinants of students' college choice, it still has limitations. First of all, the amount of available data for longitudinal analysis during the consecutive seven years (2010-2016) is sparse. To be specific, the survey items for parental intervention, self-efficacy, and friendship are not sufficient. This limitation prevents this analysis from more broad adoptions of related components for structural robustness of the model.

## DISCUSSION

This analysis mainly discusses which components explain the students' college choice over time. Through multiple steps interpreting the survey results, this analysis shows that students' attitudes toward their daily school life and family income explain their college decision. A positive attitude toward school life and financial background has a significant effect on college education over time. A more conservative consideration for future career also exists in the respondents, and it may be interpreted as a result of combinations with other external factors. If the survey items are connected with other variables, such as economics, policy, and social components, a more appropriate interpretation can be made in the future.

This study presents three opportunities for future researchers who are interested in students' choice for college education. The latest2016 KCYPS survey has additional survey variables that are related to college choice and career path. Using new variables helps researchers have a comprehensive understanding about youth growth when considering their future plan. Furthermore, it provides a new longitudinal analysis for student cohorts inthe stage of college choice. College decision is not a discrete process, and it involves the entire stream of individual

ISSN: 2582-0745

Vol. 1, No. 01; 2018

development. Through continuous change of each component that affects college choice, more reliable statistical interpretation would find the relationship between college choice and related factors. Lastly, this study provides policy implications. The results show the relative importance of each component to college choice in each stage of individual growth. Policy makers can consider the effects at each stage for future policy-making and construct other policies that are related to a sustainable career path. In addition, this study provides direction for further research into remaining student cohorts who do not decide their future career path after high school graduation. A more comprehensive approach to understanding the diverse student body is necessary to guide sustainable higher education policy, and it is also directly linked with better individual welfare after graduation.

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Vol. 1, No. 01; 2018

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Vol. 1, No. 01; 2018

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