

**An Analysis on Factors that Affect Academic Achievement of International
Students**

By

SON, Bomi

Thesis

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

MDP

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Committee in charge:

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Approval as of August, 2019

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Abstract

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By

Bomi Son

As the world becomes globalized, there is an increasing number of the students studying abroad, especially in tertiary education. Many countries have encouraged universities to host more international students since it gives quality education and benefits on future careers to the students, and economic and cultural benefits to the host country, also contributes to promote exchanges and understanding among countries. However, international students face lots of problems as they have to deal with two tasks at the same time: adapting to unfamiliar environment and achieving an academic goal. In this regard, the government and universities in host country need to establish a policy to support international students. To give implications to host countries, this study investigated the factors affecting the academic achievement of international students in the degree program. This study set up the model and conducted a survey to verify the model. The results found that diversity of courses, school system, sharing information of school, local language skills and receptiveness of the local culture affect the academic performance of international students. Policy and managerial implications have been provided based on the research results, also some recommendations for future research.

Key words: International Student, Student Mobility, Studying Abroad, Academic Achievement, Academic Satisfaction, Cultural Adaptation

I. Introduction

Under the influence of globalization, studying abroad has become more common, especially for students in higher education that have become more mobile. It is reported that the number of international students increased from 3,961,200 in 2011 to 4,854,346 in 2016; an increase of 23% in six years (Migration Data Portal, 2018).

Most international students prefer English-speaking countries for their academic destinations. According to the OECD (2018), the U.S. is the most popular destination for international students, followed by England, Australia and Canada, and foreign students studying in these countries mainly come from the Asian region, accounting for 87% of foreign students in Australia, 77% in the United States, 61% in Canada and 52% in the United Kingdom.

While the trend of international student mobility has been ‘East to West’, the trend has become more multidirectional in recent years (Karzunina, West, Moran, & Philippou, 2017). In particular, recent data from the University of Oxford (2017) shows that studying in neighboring countries has become more popular; for example, the rate of the Asian students studying in ASEAN countries increased from 26% to 42% during the nine years. Whereas Asian countries have been a typical country of origin disseminating students worldwide, they are now emerging as an attractive hosting country for academic pursuits.

In the case of Japan, international students studying at Japanese universities remarkably increased – 123,829 in 2008 and 298,980 in 2018 (JASSO, 2019). The Japanese government has launched a program, ‘Global 30’, aimed at developing Japanese universities as global institutions and opening many courses given fully in English (The University of Oxford, 2017). China is also emerging as a host country. A study of Wen and Hu (2018) on foreign students in China acknowledges that the number of international students in China reached 397,635 in 2015 and these students come from more than 200 different countries, with more than half of them - about 57.9% - coming from Asian countries.

In the case of Korea as a part of the global market, there are also increasing numbers of international students. According to the report of the Ministry of Education and the Korean Educational Development Institute (2018), foreign students in degree and non-degree program have increased from 83,842 in 2010 to 142,205 in 2018.

This begs the question: What has contributed to this dramatic increase in the number of foreign students in Korea? Oh (2014) obtained the results that the most important reason foreign students decided to study in Korea was for economic reasons such as scholarship benefits, followed by Korean related majors, academic interest in Korea, and finally, recommendations from friends. In addition, the strategic policy of the Korean government to attract foreign students and the Korean wave seems to have had a considerable impact (Lee, 2018).

A number of countries are trying to attract international students as hosting foreign students has a positive effect on both sides – the hosting country and the student. This study posits the effects of study for a degree abroad as it relates to: i) effect on foreign students; ii) effect on hosting countries; iii) additional effect such as issues on foreign affairs

First, the effects on foreign students include academic experience, cultural experience, social experience, benefits on future careers, etc. Specifically, it provides quality education, and skills and abilities that are difficult for the students to access in their home countries, and also enhances understanding of other countries while helping to improve language skills, mainly English (OECD, 2018). A study of Potts (2015) on the initial career benefits of studying abroad affirms that one of the most significant benefits for students who study abroad is their ability to get their first job - 66% responded that studying abroad had a positive, or even very positive impact on their first employment.

Second, this study proposes the effects on hosting countries. Attracting foreign students benefits a host country in many ways. Alharbi and Smith (2018) mentioned that foreign

students account for a significant proportion of the enrolment and degree completions in higher education, and are economically and culturally beneficial to the hosting country. A study of Ha, Lee, and Shin (2015) on the estimation of economic benefits of international students showed that yearly economic benefits from attracting foreign students in the case of Korea are approximately 712.55 billion won. Also, the study of the IOM Migration Research and Training Centre on the market value of hosting international students showed that net benefit of holding international students in Korea was 78.6 billion won (Kang, Rhee, & Lee, 2012). The results of these studies indicate that hosting international students ultimately benefits the hosting country. Besides economic benefits, hosting foreign students has a positive effect on the destination country. Ro, Lee, and Yoo (2003) stated that domestic students are likely to become interested in the language, culture, arts, society, and economy of other countries through interaction with international students, and thus will have the opportunity to develop a global mind.

Third, this study proposes additional effects of studying abroad. An educational exchange between hosting and sending countries, accompanied by cultural and social exchanges, helps to understand the differences between two countries, ultimately strengthening the relations between nations from the long-term point of view. A study of Ro, Lee, and Yoo (2003) recognized that foreign students will have a deep understanding of the society, economy, and culture of their hosting country; so attracting international students can have a positive impact on securing support for the hosting country. That is, the educational exchange is likely to have 'soft power'. Soft power means the power that makes others desire the same outcomes by co-opting rather than coercing them (Nye, 2004). Atkinson (2010) examined the effect of soft power through the U.S. student exchange program and the empirical evidence showed that the exchange programs for education certainly played an important role in spreading the value of liberalism.

By considering those positive effects above, many countries are encouraging their universities to host foreign students and promoting these opportunities through the national policy (The University of Oxford, 2017). The Korean government also has been trying to host more foreign students through ‘Study Korea Project’ and ‘Study Korea 2020 Project’ (The Ministry of Education, 2014).

However, many international students have faced difficulties in enjoying a successful college life compared to the students of the home country (Wenhua & Zhe, 2013). International students have to deal with two tasks at the same time: adapting to a new environment and acquiring an academic achievement, which is a fundamental goal of studying abroad. If international students do not gain enough academic achievements, they might have negative perceptions of their schools and destination country, not only suffering from their personal loss. In particular, for the international students from developing countries - accounting for 92% of total international students for degrees in the case of Korea (Korean Educational Statistics Service, 2018), the knowledge and experiences they learned during the program can be applied to the development strategy of their home countries. In this regard, international students’ failing to achieve academic success will also have a negative impact on developing countries. Therefore, it is significant to create an environment that helps foreign students achieve their academic goal at the national level.

In this respect, this paper investigates the factors influencing the academic performance of the students studying abroad. The purpose of this study is to provide implications for institutional improvement that can be applied to all domestic universities with foreign students by exploring the factors that affect the academic achievement of international students who study for a degree in other countries.

This study proposes the following research questions:

- i) How do academic factors affect academic satisfaction of international students?

- ii) How do social factors affect social adjustment of international students?
- iii) How do cultural factors affect cultural adaptation of international students?
- iv) How do economic factors affect the economic stability of international students?
- v) How does academic satisfaction, social adjustment, cultural adaptation, and financial stability affect the academic performance of international students?

II. Literature Review

There have been a number of studies on international students studying abroad due to the importance of international students stated on Part I.

According to the previous studies on foreign students, the common difficulties that foreign students face are mainly, i) lack of language proficiency especially in English-speaking countries (Li, Chen, & Duanmu, 2010; Eze & Inegbedion, 2015; Lee, 2014; Martirosyan, Hwang, & Wanjohi, 2015); ii) academic problems such as courses, teaching and assessment methods, unfamiliar academic systems and communications with the school (Tamaoka, Ninomiya, & Nakaya, 2013; Ko & Chung, 2014; Joo, Chung, Lee, & Han, 2011; Kwon, 2017; Habib, Johannesen, & Øgrim, 2014) iii) social problems associated with various kinds of relationships and living environments in the host societies (Min, 2013; Alharbi & Smith, 2018, Lee, 2014); iv) cultural issues such as culture shock in their adaptation process to the local culture (Wang, 2004; Lee, 2014; Murphy-Shigematsu, 2002); v) financial problems based on expensive living expenses or unstable funding resources (Kwon, 2017; Lee, 2017; Banjong, 2015); vi) psychological problems from homesickness or loneliness (Sandhu & Asrabadi, 1994; Alsahafi & Shin, 2017; Banjong, 2015). And Wan, Chapman, and Biggs (1992) acknowledged that the stress the students gain from their academic experiences can negatively impact students' academic achievement, physical and mental health status, satisfaction with the experiences in

cultural exchange, and their attitudes toward the hosting countries. Also, a study of He and Banham (2009) found that the academic grades of domestic counterparts are higher than those of international students in general.

These studies indicate that international students performing at a lower level than domestic students due to various problems ranging from language to financial issues.

2.1 Academic Factors

Academic factors are the factors related to the school and learning environment such as curriculum, courses, school system, and academic supervisor.

Tamaoka, Ninomiya, and Nakaya (2013) studied on the factors influencing the satisfaction of the international students in Japanese universities through the survey method and identified that 'suitability of curriculum' is a main factor affecting the satisfaction of international students studying in Japan; this is because the curriculum is directly connected to the purpose for which international students come and study in Japan. A study of Ko and Chung (2014) which examined the relationship between quality of class, students' satisfaction, and academic performance of the students in Taiwan found that there was a direct correlation between class quality and students' satisfaction, also between class quality and the students' academic achievement. Joo, Chung, Lee and Han (2011) confirmed that the usefulness of the education contents is correlated with academic performance of the students.

Min (2013) found that foreign students' difficulties in their academic major, coupled with high pressure from professors were the factors impeding their academic adjustment. Also, it was found that the coercive attitude of the professor degrades the effort and motivation for studying, which is necessary for the academic adaptation of foreign students (Kwon, 2017).

Meanwhile, international students are having problems in achieving their academic goals due to the local education systems that are unfamiliar for them. Eze and Inegbedion (2015)

pointed out the academic culture and system of the host country as a significant factor that affects international students' academic performance. In particular, some international students were found to be lacking in their ability to deal with a certain education technology that their local counterparts were familiar with, so they have to struggle with the local technology to maintain their studying (Habib, Johannesen, & Øgrim, 2014). Banjong (2015) also acknowledged that foreign students, especially students from developing countries, are struggling with unaccustomed technologies used at school such as how to use the online bulletin board, download class materials from the website, or do assignments.

In the study of Kang, Kim and Shin (2014), the difficulties faced by many international students were that they did not receive important notifications such as course registration and dormitory arrangement from the administration office. Also, another study reported that it is helpful for the international students that the school communicate better with students about the evaluation methods or the administrative procedures of the university (Wimshurst, Bates, & Wortley, 2006).

2.2 Social Factors

Social factors refer to the factors related to social adjustments such as living environment, social activities, and interpersonal relationships.

A study of Kim and Auh (2015) on international students in Korea found that online or offline meetings with local communities help international students to adapt to the school easily and that may be because international students can have the human resources to provide them with academic help through community meetings and obtain various information about a visiting country. And having good friends is reported to help with supporting international students in psychological ways and improving their adaptation in the local society (Tamaoka, Ninomiya, & Nakaya, 2003). It is also found that various support from professors and fellow

students, especially students from a hosting country, helped to encourage the academic performance of international students (Min, 2013).

In addition, there are some studies on the effect of living environment to student performance. Byun (2009) argues that the students living in a dormitory or a boarding house, or living alone in their own place adapt better to university life than the students commuting to school. On the other hand, according to the study of Turley and Wodtke (2010), the type of residence during college years was found to have no significant effect on 1st-year academic grade for most students (Turley & Wodtke, 2010).

For the impact of extracurricular activity, Correa, et al (2015) reviewed several literatures on the effect of extracurricular activities on academic achievement of the students in higher education, and concluded that student activities outside of school hours generally help to strengthen the ties between students and academic institutions, which leads to greater academic success; however, not all the types of activities affect academic performances positively, but usually major-related activities have improved student performance. Strapp and Farr (2010) also affirmed that joining in major-related extracurricular activities gives satisfaction to the students and contributes to their academic achievements.

2.3 Cultural Factors

Cultural Factors include familiarity of local culture and local language. Li, Chen, and Duanmu (2010) studied the determinants of low performance among international students in the British universities and observed that the lack of English was an important explanatory variable. Martirosyan, Hwang, and Wanjohi (2015) also argued that there was a correlation between English language skills of international students and their GPAs.

Previous studies conducted in Korea also showed that local language skills influence international students' academic adjustment (Lee, 2014; Kim, Jun, & Lee, 1997; Kwon, 2008).

The study of Lee (2014) recognized that the limitation of language skills make it difficult for international students to adapt to the university. According to Kim, Jun, and Lee (1997), level of education, income, Korean language ability, intercultural communication experience, and duration of stay are the significant variables affecting foreigners' adaptation to Korea, but language ability is the most important variable among them. Kwon (2008) also pointed out that local language acquisition substantially affects the academic adjustment of international students.

In addition to language, some cultural factors are shown to affect the international students' academic adjustment. Wang (2004) found that difference in class culture between home country and the U.S. is a stress factor that makes it tough for international students to adapt to school; in particular, for the students from the Asian cultures who were accustomed to the teacher-centered lecture, it is hard to adapt to the American class, where teachers and students share various opinions freely. A study on international students in Korea found that international students have difficulties in adapting to the hierarchical culture that exists in the Korean society, the culture that shares personal things, or the culture that regards age as important in human relation, and these difficulties in cultural adaptation affect the academic adjustment of foreign students (Lee, 2014). And Murphy-Shigematsu (2002) acknowledged that the strong group consciousness of the Japanese people created an exclusiveness for foreign students, which negatively affects their study with Japanese students and relationship with Japanese friends, thus making it difficult for international students to adapt to the host university.

2.4 Economic Factors

Regarding economic factors affecting international students, Kwon (2017) investigated the stress factors that affect academic adjustment of international students in Korea through

survey methods and found that concern about tuition fees or living expenses while studying abroad is one of the factors making foreign students unable to concentrate on their study, thus leading to difficulties in academic adjustment. Lee (2017) observed that international students who are not in a financially stable condition are suffering from coping with the concerns regarding tuition and living expenses. Banjong (2015) also found that financial pressure among international students is related to the poor academic performance.

Beblo and Lauer (2004), however, analyzed the relationship between economic change and educational achievement in Poland and reported the financial resources such as parents' wealth or income were very slightly related to the educational achievement of their children.

Having a job also influences the academic achievement of international students in a negative way. A study of Tamaoka, Ninomiya, and Nakaya (2003) showed that part-time work hurts international students' satisfaction with university life and this might be because the work reduces time to concentrate on their study or research. Li and Grineva (2016) also affirmed that there is a direct correlation between the academic performance of refugee students who work and study simultaneously to support their family, and the amount of time they spent in their full-time works.

2.5 Other Factors

Besides social, academic, cultural and economic factors, some other factors in terms of their personal traits, attitudes or backgrounds are found to affect the foreign students' academic performance. Ren and Hagedorn (2012) suggested some innate characteristics of international students as significant factors; in particular, the region of origin were significantly related to international graduate students' GPA at the master's level as well as gender and age, also the factors - native language, South and Central Asian descent, South and Central American descent, African descent, gender, European descent - presented their correlations with the

academic performance of international students who are in doctoral courses. It was also supported by the study of Wimshurst, Bates and Wortley (2006) that gender affects the academic performance; female students gain better grades than male students.

Meanwhile, Jochems, Snippe, Smid, and Verweij (1996) argued that the academic success depends entirely on the student's ability and effort. Stoyhoff (1997) acknowledged that a student with the motivation and ability to get up-to-date information on the assignment appeared to gain better grades in school. In a study of Li, Chen, and Duanmu (2010), perception of the Chinese students studying abroad on the importance of their academic success to family was found to significantly affect their academic achievement, but in a negative way.

III. Theoretical Foundation

3.1 Environment-Human Relations Theory

3.1.1 Ecological Systems Theory by Bronfenbrenner

Bronfenbrenner is one of the first scholars to apply the existing ecology to human society and developed ecological systems theory (Peppler, 2017). In his book, "*The ecology of Human Development*", Bronfenbrenner observes that human development and adaptation depend on the interrelationship and the process of mutual regulation between human and the environment, in other words, human development is not a phenomenon that occurs only by personal characteristics such as gender and age in a vacuum state, but through the continuous interactions of individual, social and physical environment (Lee & Shin, 2017). The systems that interact with individuals in their development are divided into four - Micro system which refers to the level in which individuals interact directly such as sports activity, Mesosystem which means the system consists of diverse microsystems, Exosystem which can affect

individuals indirectly and Macrosystem that influences the whole society such as values, norms or beliefs (Pepler, 2017). He revised the original theory in 2006, recognizing that environmental systems affect not only individuals, but also the way of interactions with the genetic predisposition such as individual temperament, health, physique, and biological factors - 'Bio-ecological systems theory' (Lee & Shin, 2017).

3.1.2 Life-cycle Model by Erikson

E. H. Erikson developed a human life cycle model with eight psychological stages – i) Basic Trust vs. Basic Mistrust; ii) Autonomy vs. Shame and Doubt; iii) Initiative vs. Guilt; iv) Industry vs. Inferiority; v) Identity vs. Identity Confusion; vi) Intimacy vs. Isolation; vii) Generativity vs. Stagnation, viii) Ego Integrity vs. Despair (Poole & Snarey, 2011).

Humans achieve psychological and social development by going through those eight stages during their entire life and an individual develops his or her personality through certain relationships and interactions with others; thus, what is important in human development is not instinctive characteristics but acquired socio-cultural human relations (Lee & Shin, 2017).

Erikson also defines human development as a process of overcoming a series of crises that come from conflicts between intrinsic desires and environmental experiences; for example, if a baby with a desire for breastfeeding meets an environmental factor that satisfies his desire, the ego of the baby will obtain a stability and trust through that ultimate experience (Park, 2007).

3.2 Institution-Human Theory - New Institutionalism

New Institutionalism refers to the position that considers institution as an independent variable equal to a person or higher than a person by influencing human behavior in explaining all phenomena in society such as politics, economy, and administration; and dynamically

describes causal relationships between institutions and institutions; institutions and individuals, institutions and policies (Yoo, 2012). From the view of the new institutionalism, institutions restrict human behaviors and behaviors of each individual in the institutional context have patterns of regularity; thus, the new institutionalism focuses on the individual actions that take place in the context of institutions, not individualized or underdeveloped individuals (Ha, 2002).

In particular, Sociological Institutionalism in which the power of the institution is highly appreciated, argues that a person in institutions and customs, social norms and legal procedures is not able to freely make decisions, and that individual choices and preferences cannot be properly understood beyond the historical and cultural context of the society (Powell & DiMaggio, 1991). It also emphasizes the adaptability of individuals or organizations to the institutional environment, arguing that individuals or organizations following the socially standardized rules or norms are more likely to survive by gaining justification from the society and securing resources from the environment (Meyer & Rowan, 1977).

3.3 Adaptation Theory

3.3.1 Integration Theory by Tinto

The theory of social and academic integration developed by Tinto is the most applied theory in the field of student retention (Jama, Monnapula-Mapesela, & Beylefeld, 2008). The core idea of the theory is ‘integration,’ and the theory argues that it can be strongly predicted by the extent of academic integration and social integration of a student whether the student continues or abandons his or her studies (Draper, 2008).

According to his theory, the process that individuals are integrated into the university environment can be divided into three stages; i) separation – stepping out of the norm or value shared with the previous group that they belong to, and facing the situation where they need to

accept the norms and values that the current university requires, ii) Transition- forming the expectation that current education will help to make their career goals, coping with the stress on the new environment, iii) Incorporation – a process in which students interact with the educational and social systems of the university, and make the decision to continue or abandon study depending on the degree of integration (Chun & Kim, 2011).

Tinto claims that the decisions of drop out from the school are made by the combination of the characteristics of students and the degree of social, academic, and environmental integration in the educational institution (Connolly, 2016).

3.4 Motivation Theory

3.4.1 Hierarchy of Needs by Maslow

Maslow, a scholar who first theorized various needs of individuals, observed that humans have a common desire and these needs are hierarchized (Kwon, 2014). Maslow divided human needs into five layers; i) The physiological needs as the most basic and low-level needs, ii) The safety needs, iii) The love needs or belonging needs iv) The esteem needs, and for the highest-level, v) The need for self-actualization (Maslow, 1943).

“Needs”, in this theory, means the state of goals that an individual intends to achieve, and the individual's thoughts, interests, and behaviors are determined by unsatisfied needs; in particular, the higher-level needs in the hierarchy do not appear until the lower-level needs are satisfied (Kwon, 2014). Specifically, if the physiological need; for example, hunger, is not satisfied, the organism will live on the desire to get bread and it moves to a higher desire when this chronic hunger is met and he/she is no longer hungry (Maslow, 1943).

3.4.2 Hygiene Factors - Motivation Factors Theory by Herzberg

Herzberg asserts that desire of human beings are dualistic; the desire as an animal to avoid suffering and the desire to promote growth and self-realization (Kang & Lee, 2008). Through empirical study, Herzberg suggested ‘motivators’ which give satisfaction to the organization members, and ‘hygiene factors’ which give dissatisfaction to the members if they are not properly met (Li, 2005). Though meeting hygiene factors does not motivate the organization members to work, a high level of motivation cannot be achieved without the resolution of complaints through the fulfillment of hygiene factors (Kwon, 2014). Hygiene factors include non-work factors such as organization policy and management, job security, working environment, good pay, and personal relationships (Kang & Lee, 2008). Motivators are achievement, recognition or personal growth gained by challenging work (Kwon, 2014)

IV. Hypotheses Development

The hypotheses of this paper are developed based on the observations of the previous studies on international students and related theories. As presented in Figure 1, this study explores four kinds of factors and each factor’s effect on each status of foreign students. Furthermore, the study investigates the relations between four types of statuses and academic performance of international students. Some previous studies discussed in part II recognized individual differences of the students as the factors influencing academic performance of international students (Ren & Hagedorn, 2012; Jochems, 1996). However, this study supposes the effects of those factors – i.e. gender, country of origin, or effort – extremely vary depending on students, and those are not likely to be resolved by policies or institutions. Thus, this study concentrates on the influence of external factors that can be systematically improved, ignoring the endogenic characteristics; so that the results of the study can be reflected in policy

development and institutional improvement.

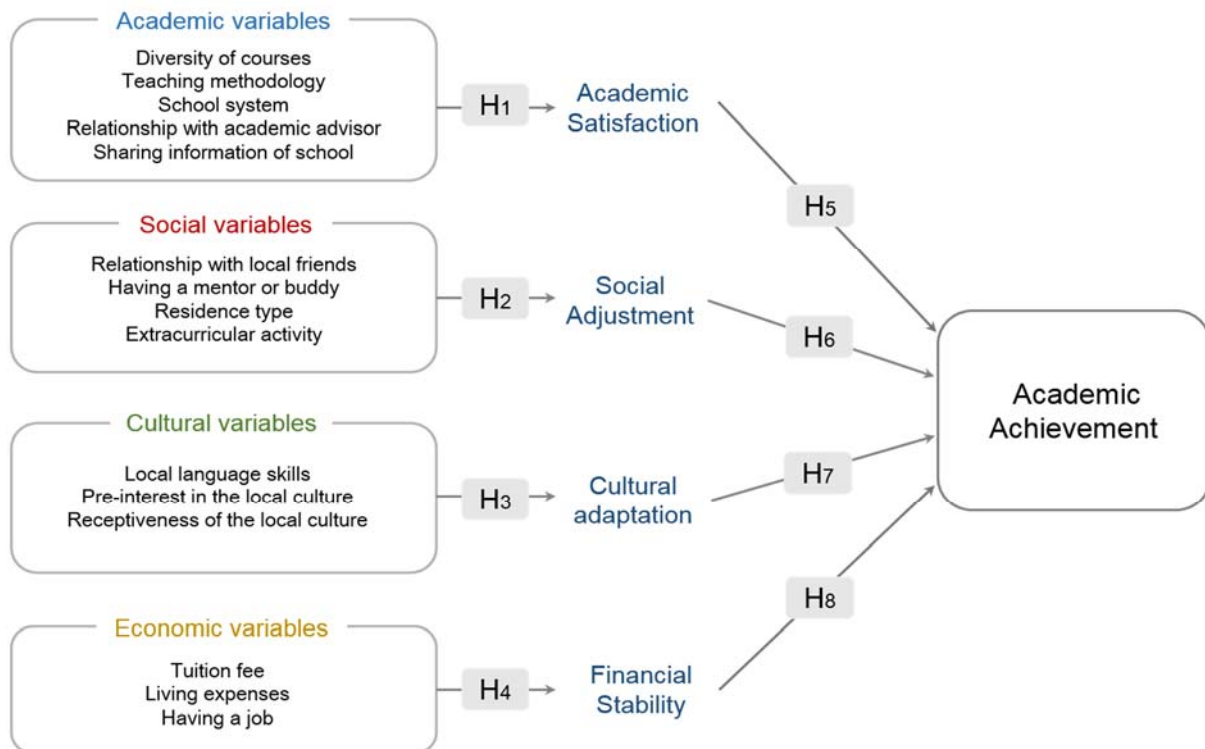


Figure 1. Model of the effects of academic, social, cultural, and economic variables on academic achievement

4.1 Effects of Academic Variables on Academic Satisfaction

Since the academic factors are directly related to students' learning, it is essential to measure the academic satisfaction of the students and the affecting variables. Academic satisfaction refers to “a dynamic process involving the interaction between the student-faculty and teaching-learning environment” (Chen, Farmer, Barber, & Wayman, 2012, p.370). In this study, ‘academic satisfaction’ means satisfaction with the academic environment and system. The relationship between a variety of academic variables and academic satisfaction has been discussed in many studies.

In a study by Chung and Hwang (2004), learning environment, learning contents, and teachers are found to significantly affect student satisfaction. Kang, Kim, and Shin (2014)

indicated that foreign students expected the university would provide many courses available in English, but the courses in English were limited, and even the quality of courses available were not satisfactory. Alshafi and Shin (2017) indicated that foreign students in Australia have difficulties in academic adjustment due to the assessment tools, particularly oral presentations. Kim, Kim and Kang (2007) also mentioned that the Chinese students in Korea had troubles in studying as they were not familiar with the Korean graduate school classes mainly composed of presentations and discussions. For the relationships with academic advisor, the results of Min's (2013) showed that the help of the professors promoted study of international students. Herbert (2006) also supported that the rate of learners' satisfaction is low when the interaction with faculty is infrequent.

A study of Lee (2014) pointed out that the school system such as examination system, announcement, credit completion system is set up for domestic students, which impedes the academic adaptation of foreign students. Dean (2012) also found that foreign students are having difficulty understanding how the school administration system works and it challenges their academic success. Previous studies also indicated the problem of school services for international students. Lord and Dawson (2002) acknowledged that the pre-arrival services for international students such as sharing information about the courses and allocation for accommodation was not timely made. Kang, Kim and Shin (2014) also affirmed that there were many cases where the international students did not receive the information such as course registration or dormitory information because the administrative guidance for foreign students in the university was not well systemized.

Based on the findings of the previous researches, this study selected five academic variables that were found to affect international students – Diversity of courses, teaching methodology, local school system, relationship with an academic advisor, and sharing information - and hypothesized that academic variables are related to the academic satisfaction

of international students.

- H1a. International students' perception on the diversity of courses affects their academic satisfaction.
- H1b. International students' perception on teaching methodology affects their academic satisfaction.
- H1c. International students' perception on the school system affects their academic satisfaction.
- H1d. International students' perception on relationship with academic supervisor affects their academic satisfaction.
- H1e. International students' perception on information sharing of school affects their academic satisfaction.

4.2 Effects of Social Variables on Social Adjustment

In this study, social factor means the factor associated with the international students' adjustment in the host society such as any kinds of relationships with local people and living environment. Academic adjustment is important in adapting to college life, but social adjustment is also a significant factor for students to adapt to college life successfully without drop out (Gerdes & Mallinckrodt, 1994).

Previous studies indicated that a limited relationship with the students in a host county negatively influences adjustment of international students (Min, 2013; Kim, Kim & Kang, 2007; Alshafi & Shin, 2017). In particular, Alshafi and Shin (2017) recognized that it is difficult for foreign students to make local friends because of the differences between them such as food preference, social and religious activities. In a study of Kim, Jun, and Lee (1997) on foreign residents, it was found that the frequency of communication with local people affects positively the level of cultural adaptation and social adjustment of foreigners; thus, implying that the most important thing in the adaptation of foreigners is how often they communicate with local people in daily life.

According to Tinto (1997), joining collaborative learning groups allow students to form a supportive network which contributes to bonding students to the broader school community and school life. The existence of a 'student buddy' system has a decisive effect on strengthening the social presence of the students and team building, and also positively affecting student satisfaction and persistence; specifically, it is reported that the student buddies are helpful for clarifying homework requirements and lessening the feeling of isolation (Motzo, 2016). The study of Ismail and Jui (2014) showed that communications and supports through a mentoring program is significant for the mentee's academic performance.

Turley and Wodtke (2010), through their empirical study, showed that a residence type (on campus dormitory, versus off-campus housing, etc.) mostly had no significant impact on academic performance of first-year in higher education, but in the case of black students, the students living on campus gained much higher academic grades than those who lived off campus with their family. On the other hand, Araujo and Murray (2010) estimated the influences of living in a dormitory on the academic achievement of the college students and found that living on campus substantially improved the students' performances grades.

Regarding the effect of extracurricular activity, Kim (2007) identified that participation in club activities had a buffering effect when lack of understanding in the culture negatively affects academic performance of international students while the study of Shin, Shin, and Jung (2008) showed that extracurricular activity has a negative impact on student's academic grade.

Based on the previous findings, this study posited four variables which are expected to affect social adjustment of international students - relationship with local friends, having a mentor or buddy, residence type, extracurricular activity - and hypothesized the effect of those variables on social adjustment of international students:

- H2a. International students' perception on the relationship with local friends affects their social adjustment.

- H2b. International students' perception on a mentor or buddy affects their social adjustment.
- H2c. International students' perception on residence type affects their social adjustment.
- H2d. International students' perception on extracurricular activity affects their social adjustment.

4.3 Effects of Cultural Variables on Cultural Adaptation

In this study, cultural factors are the factors that are expected to mitigate the impact of cultural differences between the culture of a host country and that of a home country.

First of all, language skills were pointed out as a factor affecting the adaptation of foreigners in host country in many studies. While some researchers saw language skills as academic or social factors (Tamaoka, Ninomiya, and Nakaya, 2003; Lebcir, Wells, & Bond, 2008), this study regards language skills as a cultural factor as language is a reflection of culture (Wierzbicka, 1986). Eze & Inegbedion (2015) investigated the factors that affect the academic achievement of international students in the United Kingdom through a semi-structured interview, and findings revealed that language proficiency was the main barrier causing acculturative stress among international students. Also, Farah and Vuniqi (2012) argue that a command of other languages should be considered as a significant element of multicultural communication competencies in a multiracial organization.

Regarding the cultural interest and adaptation, Kim and Lee (2014) investigated the relations between interest in other countries and multicultural acceptance by classifying the respondents into four groups based on their interest in different cultures and the bias of interest in the U.S.-Southeast Asia, and the results showed that the difference in the acceptance of multiculturalism among the different groups was statistically significant. Also, it was reported by Lee, Ahn, and Lee (2013) that acceptance of multiculturalism rises as the amount of multicultural contents viewed is higher, especially in terms of assertiveness and openness, and

this result implies that people become more receptive to other cultures when they get more interested in and gain more indirect experiences of other cultures via media.

Also, Yim and Lee (2013) studied the cultural adaptation of Japanese residents in Korea and found that the cultural factor caused from Korea-Japan relations also significantly affects acculturation receptive attitudes, not only language ability and length of stay do. And, according to the study of Ailing and Oh (2017), the students in "integration" among the four types of cultural adaptation, who accept the host culture with maintaining their own culture, adapt well to the campus life, whereas the students in "marginalization" which are low in the acceptance of the host culture, and also not maintaining their own culture are likely to have difficulties in adapting to the school life.

These previous researches provide the foundations of hypotheses that cultural variables – local language skills, pre-interest in the local culture, receptiveness of the local culture – are related to the cultural adaptation of international students.

- H3a. International students' perception on local language skills affects their cultural adaptation.
- H3b. International students' pre-interest in the local culture affects their cultural adaptation.
- H3c. International students' receptiveness of the local culture affects their cultural adaptation.

4.4 Effects of Economic Variables on Financial Stability

Carbonell (2013) argues that the cost of tertiary education in the United States has increased rapidly, making the governments and schools shift toward providing loans rather than grants; so, the financial aid package of the students is more composed of debt, thus failing to improve the economic stability. And, Ganem and Manasse (2011) argued that the students receiving a merit-based scholarship are likely to outperform the students who do not receive

and this result implies that scholarship increases the possibility of academic success by making students more motivated.

Besides tuition fee, it was found that a significant number of students in higher education are concerned about the extent of their living expenses and debt related to their degrees, and especially undergraduates are worried more about the living cost than tuition (Universities UK, 2018). Crutchfield and Maguire (2018) also acknowledged that the financial aid package for college students in the U.S. did not fully cover the living expenses of the students, so the students with low income cut the costs for their foods and housing, leading to food insecurity and homelessness of the students. Lee (2017) stated that international students who are privately funded are economically unstable and struggle to balance their study and part-time jobs.

Another study of Kim, Jun, and Lee (1997) investigated the effect of income level on adjustment of foreign residents in Korea and found that the foreigner with higher income was high in the understanding and receptivity of the Korean culture. Cavusoglu, White, James, and Cobanoglu (2016) also identified that income of less than \$ 20,000 was a stressor that negatively impacted academic performance of international students, but the students with income over \$20,000 did not report that financial difficulties impede their academic performances.

Li and Grineva (2016) observed that more than half of the refugee students who immigrated to Canada combine studying and doing full-time job to feed a family and pay their loans from the Canadian government for their early settlement, and it makes the refugee students exhausted to keep a balance between work and study. Another study also pointed out that having a part-time job was a significant factor that gives stress to international students (Kang, Kim & Shin, 2014). In this way, it is reported that the student's combining work and study had a negative effect on their academic performance in most of the previous studies analyzing the relationship between job and academic performance. Most of the previous studies

on the effect of students having a job have analyzed the relationship between job and academic performance, and it is hard to find studies suggesting a positive effect of having a job on student's financial stability. In this regard, it is worth questioning that having a job might have a positive impact on student's financial stability, so making the student focus on their studies without economic concern. Hence, this study tried to investigate the effect of having a job on student's financial status, and consequently on academic performance.

This study selected four variables which were found in the previous studies to affect the financial status of the students, which are tuition fee, living expenses, funding resources and having a job. And this study hypothesized that those economic variables are related to the financial stability of international students:

- H4a. International students' perception on tuition fee affects their financial stability.
- H4b. International students' perception of living expenses affects their financial stability.
- H4c. International students' perception of having a job affects their financial stability.

4.5 Effects on Academic Achievement

According to Ko and Chung (2014), the students' satisfaction with learning is significantly and positively correlated with their academic performance. Müller (2008) also recognized that dissatisfaction led by lack of interactions with faculty, coursework or technology negatively affects learner's persistence for education.

Academic performance is also influenced by social adjustment issues that the international students face. Eze and Inegbedion (2015) observed that most of the international students have issues in adapting to a new environment in a hosting country and those problems negatively affect their academic achievement. Cavusoglu, White, James, and Cobanoglu (2016) also acknowledged that unfamiliar social environments also have a negative impact on the academic success of international students; however, the students who have at least two years

of stay in the host country before beginning the degree program have more probability of academic success since the difficulties such as language barrier or cultural maladjustment disappear within 2 years.

In terms of the relations between cultural adaptation and academic performance, Kim (2007) contended that lack of understanding in the host culture constrains the academic achievement of international students. It was also observed that the great gap in the culture between the home country and the host country had a significant impact on the behavior and academic achievement of international students (Eze & Inegbedion, 2015).

Academic performance was also found to be affected by the economic status of students. A research of Huelsman (2015) indicated that the economic burden lowers the college enrollment rate of the non-wealthy students and high reliance on loan makes students quit their education – leaving the college. And Kwon (2017) affirms that the economic instability of the international students degrades the concentration and intellectual capacity which are essential for academic adaption.

Based on the findings of the previous studies, this study hypothesized that the level of academic satisfaction, social adjustment, cultural adaptation, and financial stability of international students respectively affect academic performance:

- H5 Academic satisfaction level of international students affects their academic achievement
- H6 Social adjustment level of international students affect their academic achievement
- H7 Cultural adaptation level of international students affect their academic achievement
- H8 Financial stability level of international students affect their academic achievement

V. Methodology

This study analyzes the factors that affect the academic achievement of international students in the degree program. And, the perceptions and experiences of international student related to each factor and status mentioned above need to be investigated to find the relations the factors – academic, social, cultural, and economic - and academic achievement. From this regard, this study applied survey method as survey is one of the most effective ways to collect data about the actual experiences or perceptions.

This study conducted an online survey through Qualtrics, the online platform to help create and distribute a questionnaire and collect responses. The survey was carried out in the Republic of Korea in 2019. The previous studies for international students in Korea are mainly limited to Chinese students who account for more than a half – 51,790 out of 86,036 as of 2018 (Korean Educational Statistics Service, 2018), or to a specific major or a university, so those results are hard to be generalized. To overcome the limitations of the previous studies, this study covers various nationalities universities and majors of international students, not restricting the scope of the study to a single university, nationality, or major. In this regards, the survey was distributed to 200 international students attending 23 different universities across South Korea. The questionnaire was distributed to 200 international students via email and SNS, and 133 respondents completed the survey; the response rate is 66.5%.

The questionnaire consisted of 57 questions to ask about experiences and opinions about each variables that were expected to affect the academic grade of international students, and demographic information. The questionnaire was divided into six parts; warm-up questions, academic factors, social factors, cultural factors, economic factors, and demographic questions. The respondents were asked to answer the questions on their status, university, length of study abroad, major, and academic performance in part 1. Part 2 ~5 were comprised of the questions on the perceptions and experiences regarding each factor – Academic, Social, Cultural, and

Economic. The last part of the survey consisted of demographic questions such as gender, age and country of origin.

The survey adopted a 5-point Likert scale in which 1 demonstrates ‘strongly disagree’ and 5 indicates ‘strongly agree’ as other previous studies used for their survey (Banjong, 2015; Martirosyan, Hwang, & Wanjohi, 2015; Li, Chen, & Duanmu, 2010). Regarding the academic performance of the international students, it was measured by GPA in most of the previous studies on the academic performance of the international students (Martirosyan, Hwang, & Wanjohi, 2015; Turley & Wodtke, 2010; Ren & Hagedorn, 2012); however, academic performance in this study was measured by the students’ subjective perceptions with GPA they gained because the targeted academic achievement varies among the students.

VI. Data Analysis

6.1 Demographics

Among 133 respondents, 61.07% are male students and 38.93% are female. Regarding the age distribution of the respondents, 0.76% were under the age of 18, 24.43% were 19-24 years old, 54.96% were 25-29 years old, 14.50% were 30-34 years old, 3.05% were 35-39 years old, and 2.29% of the respondents were more than 40 years old. By region of origin, the students from Asia were 77.10% with the highest number of the respondents, 10.69% were from Sub-Saharan Africa, 4.58% were from Europe, 3.05% from Middle East, North Africa, and Greater Arabia, 2.29% from South America, 0.76% from Central America and the Caribbean, and 1.53% were from others. In terms of marital status, 16.15% of the respondents were married and 83.85% were single.

With regards to degree program of the respondents, 14.29% were in Bachelor’s program,

59.40% were in the Master’s program, and 26.32% were Ph.D candidate. By major, the respondents studying engineering were the most; accounting for 52.27%, 18.18% were studying in Social Science, 9.85% in natural sciences, 3.03% were in humanities, 2.27% were studying languages, 0.76% in arts, and 13.64% of the respondents were in other majors.

Table 1. Table of Survey Demographic Variables

Variable		Percentage
Gender	Male	61.07%
	Female	38.93%
Age	Under 18	0.76%
	19-24	24.43%
	25-29	54.96%
	30-34	14.50%
	35-39	3.05%
	40-	2.29%
Region	Asia	77.10%
	Middle East, North Africa, and Greater Arabia	3.05%
	Sub-Saharan Africa	10.69%
	Europe	4.58%
	Australia and Oceania	0.00%
	North America	0.00%
	Central America and the Caribbean	0.76%
	South America	2.29%
Marital status	Others	1.53%
	Married	16.15%
	Single	83.85%
Degree Program	Bachelor	14.29%
	Master	59.40%
	Ph.D	26.32%
Major	Humanities	3.03%
	Languages	2.27%
	Social Sciences	18.18%
	Natural Sciences	9.85%
	Engineering	52.27%
	Arts	0.76%
	Others	13.64%

Regarding the institutions of the respondents, the respondents are affiliated at 23 different higher institution. 21.05% of the respondents are the students from KDI School of Public Policy, 9.02% of them were enrolled at Sungkyunkwan University, and the respondents from University of Science and Technology (UST) accounts for 8.27%. 7.52% were affiliated at

Chung-Ang University and 6.02% are from KAIST. 48.12% of the respondents are affiliated at 18 other institutions from diverse regions including Seoul, Gyeonggi Province, Chungcheong Province, Jeolla Province, and Gyeongsang Province.

Table 2. Major Educational Institutions of the respondents

Institution	Region	Percentage
KDI School of Public Policy	Sejong	21.05%
Sungkyunkwan University	Seoul	9.02%
UST (University of Science and Technology)	Daejeon	8.27%
Chung-Ang University	Seoul	7.52%
KAIST (Korea Advanced Institute of Science and Technology)	Daejeon	6.02%
Handong Global University	Pohang	5.26%
Kyung Hee University	Suwon	5.26%
Pusan National University	Busan	5.26%
UNIST (Ulsan National Institute of Science and Technology)	Ulsan	5.26%
Chosun University	Kwangju	4.51%
Chungnam National University	Daejeon	4.51%
Seoul National University	Seoul	4.51%
Chonbuk National University	Jeonju	2.26%
Korea University	Seoul	2.26%
Yonsei University	Seoul	2.26%
Hankook University of Foreign Studies	Seoul	1.50%

6.2 Hypotheses Testing

Regression analysis was conducted to test hypotheses of this study. Table 3 shows the Regression analysis results for the effects of the academic variables on academic satisfaction of the international students. The results demonstrate that the model is statistically significant at the .000 level with $F=48.739$ (r-square = .685), indicating the academic variables affects academic satisfaction. Specifically, ‘diversity of courses’, ‘school system’, and ‘sharing information’ of school are found to be significant factors affecting academic satisfaction.

Table 3. Effects of the Academic Variables on Academic Satisfaction

Factor	B (Std. Error)	β	<i>T</i>	<i>Sig. (p)</i>
Diversity of courses	0.161 (0.061)	0.163	2.629	.010**
Teaching methodology	0.056 (0.076)	0.055	0.733	.465
School system	0.375 (0.085)	0.340	4.430	.000***
Relationship with academic advisor	-0.021 (0.064)	-0.022	-0.332	.745
Sharing information of school	0.438 (0.066)	0.465	6.614	.000***
R-squared				.685
R-squared adjusted				.671

Dependent Variable: Academic satisfaction
Standard errors are in parentheses.

* Significant at $p < 0.1$; ** Significant at $p < 0.05$; *** Significant at $p < 0.01$

For the effect of the social variables on social adjustment, the results of the regression analysis are presented in Table 4. The results find the model significant at the .001 level with $F=6.073$ (r-square = .432). This results indicate that the social variables affects social adjustment of the international students. Among the social variables, it was found that ‘relationship with local friends’ and ‘extracurricular activity’ significantly affect the social adjustment level whereas ‘Having a mentor or buddy’ and ‘Residence type’ were found to be not significantly related with social adjustment.

Table 4. Effects of the Social Variables on Social Adjustment

Factor	B (Std. Error)	β	<i>T</i>	<i>Sig. (p)</i>
Relationship with local friends	0.317 (0.149)	0.333	2.127	.041**
Having a mentor or buddy	0.083 (0.140)	0.081	0.593	.557
Residence type	-0.081 (0.149)	-0.077	-0.542	.592

Extracurricular activity	0.407 (0.152)	0.427	2.684	.011**
R-squared				.432
R-squared adjusted				.360

Dependent Variable: Social Adjustment

Standard errors are in parentheses.

* Significant at $p < 0.1$; ** Significant at $p < 0.05$; *** Significant at $p < 0.01$

This study also examined the effect of the cultural variables on cultural adaptation. The regression results on Table 5 indicate that the models were significant at the .000 level with $F = 18.973$ (r-square = .309). Thus, it was found that cultural adaptation is affected by the cultural variables. Specifically, cultural adaptation level is found to be significantly related with ‘local language skills’ and ‘receptiveness of the local culture’.

Table 5. Effects of the Cultural Variables on Cultural Adaptation

Factor	B (Std. Error)	β	T	Sig. (p)
Local language skills	0.133 (0.057)	0.173	2.305	.023**
Pre-interest in the local culture	0.070 (0.056)	0.098	1.245	.215
Receptiveness of the local culture	0.493 (0.078)	0.495	6.330	.000***
R-squared				.309
R-squared adjusted				.293

Dependent Variable: Cultural Adaptation

Standard errors are in parentheses.

* Significant at $p < 0.1$; ** Significant at $p < 0.05$; *** Significant at $p < 0.01$

For the effect of the economic variables on financial stability, the results of regression analysis find the models significant at the .028 level with $F=4.085$ (r-square = .467). As shown in Table 6, three variables – tuition fee, living expenses, and having a job – are found to significantly affect the financial stability.

Table 6. Effects of the Economic Variables on Financial Stability

Factor	B (Std. Error)	β	<i>T</i>	<i>Sig. (p)</i>
Tuition fee	-0.445 (0.168)	-0.605	-2.645	.019**
Living expenses	0.369 (0.169)	0.499	2.182	.047**
Having a job	0.547 (0.300)	0.358	1.827	.089*
R-squared				.467
R-squared adjusted				.352

Dependent Variable: Financial Stability

Standard errors are in parentheses.

* Significant at $p < 0.1$; ** Significant at $p < 0.05$; *** Significant at $p < 0.01$

Table 7 shows that the results of the regression analysis of H5, H6, H7, and H8. The results find the models significant at the level of 0.000 with $F=7.510$ (r-square = .193). Based on the findings, H5 and H7 were significantly accepted while H6 and H8 were rejected.

Table 7. Effects on Academic Achievement (H5~H8)

Factor	B (Std. Error)	β	<i>T</i>	<i>Sig. (p)</i>
Academic satisfaction	0.356 (0.087)	0.374	4.067	.000***
Social adjustment	0.121 (0.104)	0.122	1.158	.249
Cultural adaptation	-0.202 (0.117)	-0.173	-1.729	.086*
Financial stability	0.137 (0.092)	0.129	1.486	.140
R-squared				.193
R-squared adjusted				.167

Dependent Variable: Academic Achievement

Standard errors are in parentheses.

* Significant at $p < 0.1$; ** Significant at $p < 0.05$; *** Significant at $p < 0.01$

The results of the hypotheses testing on the effect of academic, social, cultural, and economic variables on academic achievement can be summarized as following.

Table 8. Summary of hypothesis testing results

Hypothesis Tested		Result
H1	Academic Variables	
H1a	International students' perception on the diversity of courses affects their academic satisfaction	Accepted
H1b	International students' perception on teaching methodology affects their academic satisfaction	Rejected
H1c	International students' perception on the school system affects their academic satisfaction	Accepted
H1d	International students' perception on relationship with academic supervisor affects their academic satisfaction	Rejected
H1e	International students' perception on information sharing of school affects their academic satisfaction	Accepted
H2	Social Variables	
H2a	International students' perception on the relationship with local friends affects their social adjustment	Accepted
H2b	International students' perception on a mentor or buddy affects their social adjustment	Rejected
H2c	International students' perception on residence type affects their social adjustment	Rejected
H2d	International students' perception on extracurricular activity affects their social adjustment	Accepted
H3	Cultural Variables	
H3a	International students' perception on local language skills affects their cultural adaptation	Accepted
H3b	International students' pre-interest in the local culture affects their cultural adaptation	Rejected
H3c	International students' receptiveness of the local culture affects their cultural adaptation	Accepted
H4	Economic Variables	
H4a	International students' perception on tuition fee affects their financial stability	Accepted
H4b	International students' perception of living expenses affects their financial stability	Accepted
H4c	International students' perception of having a job affects their financial stability	Accepted
H5	Academic satisfaction level of international students affects their academic achievement	Accepted
H6	Social adjustment level of international students affect their academic achievement	Rejected
H7	Cultural adaptation level of international students affect their academic achievement	Accepted

H8	Financial stability level of international students affect their academic achievement	Rejected
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6.3 Findings

This study gained some robust results on the factors affecting academic achievement of international students in the degree program. Some findings are consistent with the previous studies, but others are different from the previous findings.

First of all, this study found that diversity of courses offered by the educational institutions, school system including attendance and grading system, and the reachability level of school information significantly affect academic satisfaction of the international students. This findings are consistent with the previous studies (Tamaoka, Ninomiya, & Nakaya, 2013; Kang, Kim, & Shin, 2014; Alshafi & Shin, 2017; Lee, 2014; Dean, 2012). On the other hand, teaching methodology and relationship with academic supervisor are found to be rarely affect academic satisfaction of international students. This result is inconsistent with the previous findings (Kim, Kim, & Kang, 2007; Min, 2013; Herbert, 2006).

Regarding teaching methodology, it is probably due to the fact that the preferred teaching method differs from person to person; so, the teaching method of host country may be appropriate for some international students, but it may not for other students. According to the survey results, 32.58% of the respondents prefer ‘lecture by professor’ as a teaching method, 31.82% answered ‘problem solving and case studies’, and 23.48% of the respondents expressed the preference toward ‘active discussion’ methodology. Also, this study found that relationship with academic advisor does not significantly affect academic satisfaction while Herbert (2006) argued that that satisfaction of learners is low when there is infrequent interaction with faculty.

On the social side, relationship with local friends and extracurricular activity are found to be a factor that affect social adjustment of the international students. These results are

consistent with the previous studies (Tamaoka, Ninomiya, & Nakaya, 2013; Kim, Jun, & Lee, 1997; Correa, et al, 2015; Kim, 2007). On the other hand, it was found that ‘having a mentor or buddy’ and ‘residence type’ are not correlated with social adjustment of international students. In the case of ‘having a mentor or buddy’, it seems that it was difficult to measure its effect on social adjustment because about 55% of the respondents did not have the assigned mentor or buddy. For residence type, the result from this study is different from the previous findings (Byun, 2009; Araujo & Murray, 2010) which showed the residence type affects the social adjustment and academic performance of the students. This can be because students usually spend more time in school or outside rather than at home.

In addition, the results presented that ‘local language skills’ and ‘receptiveness of the local culture’ among the cultural variables significantly affect the level of cultural adaptation. These are consistent with the previous studies (Eze & Inegbedion, 2015; Yim & Lee, 2013; Ailing & Oh, 2017). However, pre-interest for host culture was found to have no effect on cultural adaptation of international students. This seems to be because there are some cases that international students who had never been interested in the host culture before became greatly interested in the host culture and adapt to it quickly when they enter into host culture.

In terms of the relationship between economic variables and financial stability, all variables – tuition fee, living expenses, having a job – are found to affect financial stability of international students. These results are consistent with the previous findings (Carbonell, 2013; Crutchfield & Maguire, 2018; Cavusoglu, White, James, & Cobanoglu, 2016).

Finally, this study analyzed whether academic satisfaction, social adjustment, cultural adaptation, and financial stability affect academic achievement of international students. The result showed that academic satisfaction significantly affects academic achievement and the cultural adaptation also contributed to academic achievement of international students. This confirms the findings from the previous studies (Ko & Chung, 2014; Müller, 2008; Kim, 2007;

Eze & Inegbedion, 2015). Interestingly, cultural adaptation and academic performance are negatively correlated; in other words, the academic achievement of international student decreases when the level of cultural adaptation increases. It seems that international students who fully adapt to the local culture tend to spend more time enjoying cultural activities than studying.

This study also hypothesized that social adjustment and financial stability affect the academic achievement of international students. However, the results of the regression analysis between social adjustment and academic performance, and between financial stability and academic performance found no correlations in those relationships. This is inconsistent with the studies that have previously demonstrated effects of social adjustment on academic achievement (Eze & Inegbedion, 2015; Cavusoglu, White, James, & Cobanoglu, 2016), and the studies proved the relationship between financial stability and academic achievement (Huelsenman, 2015; Kwon, 2017).

6.4 Additional Findings

This study also acknowledges some intriguing results besides the main findings.

First, this study found that gender has no significant effect on academic achievement of international students unlike the previous findings (Ren & Hagedorn, 2012; Wimshurst, Bates, & Wortley, 2006). Gender showed no correlations not only with academic achievement, but also with the level of academic satisfaction, social adjustment, cultural adaptation and financial stability.

Also, this study examined a relationship between length of stay and a level of academic satisfaction, social adjustment, cultural adaptation, financial stability, and academic achievement through ANOVA. The result indicates that length of stay affects social adjustment and cultural adaptation of international students. This confirms the results of the previous study

by Cavusoglu, White, James, and Cobanoglu (2016), which argued that the students with at least two years of stay in the host country more likely achieve academic success as the difficulties - language barrier or cultural maladjustment – usually disappear in 2 years. However, the results indicated that academic achievement, academic satisfaction, or financial stability is not affected by a length of stay.

In addition, this study analyzed the degree of academic satisfaction, social adjustment, cultural adaptation, financial stability and academic performance by major and found that there is a difference between academic satisfaction and cultural adaptation level according to major. It is supposed that such difference is caused from the different characteristics of each major – the class materials, teaching method, workload, relationship with classmates and professors.

Further, ANOVA results also showed that there is a difference in the degree of academic satisfaction and financial stability based on the country of origin. It is probable that the disparity in academic satisfaction is led by the difference between the students who come from the countries with similar academic system and culture to those of the host country and the students from the country with totally different academic system from that of the host country. In addition, the difference in financial stability seems to be due to the different funding system or the level of price among the countries of origin.

It was also identified that the level of social adjustment and cultural adaptation are significantly affected by the number of local friends. So, international students would adapt to the host society and host culture more smoothly and quickly as they have more local friends when studying in the host country. This might be because international students who have many local friends are able to get as much help for social and cultural adaptation from their friends.

Lastly, this study found that the level of financial stability is affected by marital status of international students. There is a strong possibility that married students are financially unstable due to more living expense of their dependents.

VII. Conclusion

7.1 Summary

This study investigated the factors affecting the academic achievement of international students in the degree program. As international students are increasing student population in higher education, the academic achievement of international students has become an important topic. Studying abroad should be consistently encouraged since it gives quality education and benefits on future careers to the students, and economic and cultural benefits to the host country, also contributes to promote exchanges and understanding among countries. However, international students have more difficulties in terms of academic, social, cultural, and economic aspect than their counterparts in the host country, so it is required to help those international students at the national level.

In this regard, this study investigated the factors that affect academic achievement of international students in the degree program with survey method and aimed to provide directions to the host organizations and countries based on the results.

For this purpose, this study set up a model on the basis of the results from the previous studies and several theoretical foundations. The model presents how academic, social, cultural, and financial variables affect academic achievement of international students. In the model, each variable affects academic satisfaction, social adjustment, cultural adaptation, and financial stability of international students, and these conditions eventually affect the academic achievement.

In order to verify this model, this study conducted a survey on international students in Korea. Regression analysis on the results of the survey showed that academic satisfaction is affected by diversity of courses, school system, and sharing information of school among the academic variables, and that academic satisfaction affect academic achievement of

international students. Among social variables, relationship with local friends and extracurricular activity were found to be correlated with social adjustment, but it was presented that social adjustment does not affect academic achievement of international students. This study also found that local language skills and receptiveness of the local culture have correlations with cultural adaptation of international students and the level of cultural adaptation influence the academic performance of them. Lastly, for the financial stability, all the economic variables suggested in this study - tuition fee, living expenses, having a job – were found to affect financial stability of international students. However, no correlation between financial stability and academic achievement of international students was found in this research.

To sum it all up, the variables that have an impact on the academic performance of international students are diversity of courses, school system, sharing information of school, local language skills and receptiveness of the local culture.

7.2 Managerial Implication

To achieve academic success is very important for international students in the degree program because that is a primary goal of their studying abroad. In this regard, the educational institutions attracting international students need to formulate a policy to encourage the international students to get an academic achievement. This study proposes some implications to the educational institutions which host international students based on the research results.

First, it is recommended for the universities to diversify the courses in English and improve the quality of them. From the survey result of the study, about 45% of the respondents answered that less than half of the total courses are given in English in their universities. Foreign students who are not proficient in the local language can only take the course in English. If the university do not organize a variety of English courses, international students have

limited choices which they do not want or is not related to their academic goal. And this limitation will have a negative impact on their academic satisfaction, thus lowering academic performance.

The quality of the lecture is important as well. A study of Kang, Kim, and Shin (2014) showed that international students are not satisfied with the quality of lectures, not only the number of the courses in English. Also, the National Institute for International Education surveyed international students who were not satisfied with English-only lectures, and 40% of the respondents answered the lectures tend to be not fully conducted in English (The National Institute for International Education, 2018). It seems that some of the courses supposed to be given in English are not properly prepared or given in both English and the local language. Therefore, it is asked for the educational institutions hosting international students to open more diverse English-given courses for each major and to continuously manage the quality of those courses.

Secondly, it would be helpful to give sufficient orientations on the school system in advance and to produce and distribute a manual for the detailed information. Foreign students who are accustomed to the education system of their home countries are not familiar with the school systems of the host university. In addition, there are many cases where international students make mistakes due to the lack of understanding in the class culture rooted in the host country education.

To address this issue, it needs to hold sufficient orientations about the school system and university culture of the host country before beginning of the semester. It would be also helpful to make and distribute a manual about school systems and campus life including course registration, dormitory application, and evaluation system so that foreign students can refer to it any time. Although some government agencies provide an information brochure on general life in Korea for foreign students, it is also important to provide a manual covering each

university system and environment for international student to smoothly adapt to the campus life.

In addition, it is advisable to develop and offer online courses for local language skills. This study confirms, based on the regression results, that the student's local language skills significantly affects cultural adjustment of international students, thus influencing academic achievement at the end. The survey results show that about 53.44% of the respondents perceive their local language skills poor or very poor. In this respect, it will be helpful to provide a program that helps international students to learn the local language. Most of university language programs are offered after the beginning of the semester, but it is difficult for international students to concentrate on learning new language because they have to take major course and do other extracurricular activities after the beginning of the semester. With this regard, it will be much helpful for international students to acquire a local language if the university provide pre-online courses on the local language before the start of the semester and let the student focus on the major courses during the semester. By doing so, the international students are able to have enough time to learn a local language in advance and more effectively adapt to the local culture at the beginning of the semester.

Finally, it is important to promote exchanges between institution and international students. When an international student faces the unfamiliar environment or problem in the host country, it is the university that the student asks for help. However, if there is not enough communication with the school, international students may have difficulties in adapting to life in host country, not only to pursuing academic achievement. Especially in this case, international students are likely to miss important academic schedules and school events, which will negatively affect their academic satisfaction and academic performance. Therefore, crucial academic events should be informed repeatedly to the students in a variety of ways. It is also important to provide demand-oriented services based on regular satisfaction surveys and

feedback from international students. Holding the meetings or workshops for the international students and the office in charge of international student can be a good way to strengthen the ties and communication between them. In this way, it is necessary to create an environment in which international students can concentrate on their studies by achieving good communication with foreign students, accepting continuous feedback and providing demand-oriented services.

7.3 Policy Implication

As many countries in the world recognize the benefits from hosting international students, they have made a lot of effort to attract the international students. However, the host countries tend to pay attention to the enrollment of the international students, but not much focusing on the management of them after the admission. So, a considerable number of issues regarding the international students have occurred around the world. Specifically, a drop-out rate in the master's program in Germany as of 2014 was 28%, and this rate was found to be significantly higher than that of German master's students which is 15% (Kercher, 2018). In Korea, several problems such as illegal stay also have been raised, which are mostly caused by insufficient management of the host universities with the rapid increase of the international students (Jeong, 2018; U's Line Special Coverage Team, 2019).

It is necessary to grasp the state of affairs and establish a policy to address the issue at the national level as the number of international students and the institutions hosting foreign students are globally increasing. To ensure the academic success of the international students, the government needs to create an environment where the international students can concentrate on their studies. In particular, it is advisable that the government encourage and supervise the universities hosting international students not only to attract foreign students but also to take care of them continuously. For example, the government may establish a policy that all universities hosting a certain number of foreign students should organize an office

dedicated to the management of international students so that they can help the international students at a proper time

Also, although academic achievement is the most fundamental goal for international students in the host country, it is also necessary for the government to concern the social adjustment and financial stability of international students in order to ensure their emotional stability and the quality of life.

Meanwhile, the local governments are able to enhance the communication between foreign students and the local community, and support the international students in practical ways by holding some local events. To be specific, Opening a sports event with international students and local community can be one example of the ways the local government adopt to provide opportunities for disabusing prejudices and barriers of the local community toward foreigners. It can be also helpful for international students in the financial aspect to share clothing and household goods by holding a bazaars.

7.4 Future Research and Limitation

While some robust results were found, this study has a few limitations.

First, the survey results of this study can be hardly generalized since the sample size is small. 133 international students answered the questionnaire. Considering that the number of international students studying for a degree in Korea is 86,036 as of 2018 (Korean Educational Statistics Service, 2018), the sample size of 133 can be regarded as small number. And, there is a gap in the number of the responded students among the institutions. In some institutions, more than 10 students have answered the questionnaire, but only one or two international students participated from other institutions. In the case of one or two students answering the survey, it is hard to accept those opinions as generalized. The result would have been more

accurate if a certain number of respondents from each institution participated in the survey. Thus, the future research can be advised to collect the same number of the survey responses from each university so that the sample can evenly and precisely reflect the population.

Also, this study utilized a quantitative research method to identify the factors influencing academic performance of the international students. Thus, it was only able to know what factors affect the academic achievement of international students, but not able to gain in-depth results such as the reason of the survey responses or how the factors affect the academic achievement. If a qualitative research method such as focus group interview had been also introduced, this study could have found the clear causes of the survey results and provided effective implications. In this regard, it is recommended to implement both quantitative and qualitative methods for the future study to make it possible to acquire both comprehensive and in-depth results.

Lastly, though this study focuses on the factors affecting academic achievement, it is important to support the daily life of international student besides academic life. Even if the academic performance is satisfying, studying abroad would not be a perfectly successful experience if the international student is suffered from their daily life. This issue remains future studies. In future studies, it is suggested to investigate on how social adjustment and financial stability, which were found to have no correlations with academic achievement of international students, affect the daily life and psychological state of international students.

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Appendix A. Questionnaire

A survey on Factors that Affect Academic Achievement of International Students

Please take 10~15 minutes to help investigating the factors affecting academic performance of international student in the degree program. Participation in this survey must be voluntary and the data collected will also be kept anonymously.

The intents of this work are academic research and policy implication purposes only. Your response to this survey are strictly confidential and will not be revealed to anyone other than the researcher.

Your contribution is very important to provide better and more suitable environment and system to international students in a degree program at universities in Korea.

I would really appreciate for your participation in this survey.

Part 1. General (Warm-up question)

1. Please check your status.

() International students in Korea () Korean students

*If you are a Korean, please stop here.

2. Which university are you studying? _____

3. Which degree program are you in?

() Bachelor () Master () Ph.D () Non-degree program

4. How long have you studied in Korea for higher education?

() Less than a semester (4 months)

() 4 months ~ less than 1 year

() 1 ~ 2 years

() More than 2 years ~ 4 years

() More than 4 years

5. Which field are you studying in Korea?

() Humanities () Languages () Social Sciences

() Natural Sciences () Engineering () Arts

() Others

6. How is your academic performance expectation changing compared to that before you started studying in Korea?

Much Lower

1	2	3	4	5
---	---	---	---	---

 Much Higher

7. Overall, how much do you agree with your academic achievement?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

Part 2. Academic Factors

1. Diversity of courses available

a. How many courses are provided in English in your university/college?

- No course is given in English.
- Few courses are given in English.
- About half are given in English.
- Most of courses are given in English.
- All the courses are given in English.

b. How much do you agree with the diverse courses offered in English in your university/college?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

2. Teaching methodology

a. What kind of teaching method do you prefer? (Please choose only one that reflected at most.)

- Lecture by professor
- Active discussion conducted by instructor
- Presentations by students with the comments of the professor
- Problem solving or case studies
- Others

b. How much do you agree with the teaching method applied to courses in your university/college?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

3. School system

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
How much do you agree with the course registration system in your university/college?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you agree with the attendance system in your university/college?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you agree with the grading system in your university/college?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you agree with the graduation requirement in your university/college?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall, how much do you agree with the academic system in your university/college?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Relationship with academic advisor

a. Do you have a designated academic advisor (professor)?

() Yes () No

b. How much do you agree with the quality of academic advices from the academic advisor?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

5. Sharing information of school

a. How does the school provide important notices regarding academic calendars or events?

() Via school website or the bulletin board in school

() Via email

() Via mobile message (including phone call)

() Others

b. How much do you agree with the reachness level of school announcements to international students?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

6. Overall, how are you satisfied with your academic environment and systems at your university?

Very dissatisfied

1	2	3	4	5
---	---	---	---	---

 Very satisfied

Part. 3. Social Factors

1. Relationship with local friends

a. How many Korean friends do you have?

*'Korean friend' here means the one you can contact personally anytime

- () None
- () 1 ~ 2
- () 3 ~ 5
- () 6 ~ 10
- () more than 10

*If your answer is "None", please skip 1-b question.

b. How often do you hang out with your Korean friends?

- () Never
- () Rarely (less than once a month)
- () Sometimes (2~3 times a month)
- () Often (1~2 times a week)
- () Almost everyday

c. How do you perceive your relationship with your Korean friends?

Very poor

1	2	3	4	5
---	---	---	---	---

 Excellent

2. Having a mentor or buddy

a. Do you have a mentor or buddy who can help you staying in Korea?

- () Yes () No

*If no, please skip 2-b, 2-c questions.

b. How did you meet your mentor or buddy?

- () Through local community services
- () Through school services
- () Through private services (i.e. SNS, social club)
- () Through family or friends
- () Others

c. How much helpful is your mentor or buddy for your adjustment in Korean society?

None at all	1	2	3	4	5	A great deal
-------------	---	---	---	---	---	--------------

3. Residence type

a. What is your residence type in Korea?

- () Dormitory in campus
- () Dormitory off campus
- () Boarding house / Homestay
- () Living alone at own residence (Rent)
- () Others

b. How are you satisfied with your residence?

Very dissatisfied	1	2	3	4	5	Very satisfied
-------------------	---	---	---	---	---	----------------

c. Does your residence type offer chances to interact with local people?

Never	1	2	3	4	5	Always
-------	---	---	---	---	---	--------

4. Extracurricular activity

a. Have you joined extracurricular activities in your school?

- () Yes () No

*If no, please skip 4-b, 4-c, 4-d and 4-e questions.

b. What kind of extracurricular activities have you joined? (Please choose one that you have participated at most)

- | | | |
|----------------------------|---------------------------------|----------------------------------|
| () Sports / Health | () Music / Dance | () Volunteer work / Travel |
| () Religion / Culture | () Reading/Further studies | () Team competition/contest |
| () Students Union | () Others | |

c. How often do you spend doing those activities?

- () Once a week
- () 2 ~3 days a week
- () Weekdays (From Monday to Friday)
- () Weekend
- () Everyday

d. How much do you agree with the contribution of your extracurricular activity to interact with local people?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

e. How much do you agree with the contribution of your extracurricular activity on stress relief?

Not at all

1	2	3	4	5
---	---	---	---	---

 Very much

5. Overall, how do you perceive the extent of your social adjustment in Korea?

Very poor

1	2	3	4	5
---	---	---	---	---

 Excellent

Part 4. Cultural Factors

1. Local language skills

a. What do you think the level of your Korean language skill is?

Very poor

1	2	3	4	5
---	---	---	---	---

 Fluent

b. How long have you studied Korean language?

- () Less than 6 months () 6 months ~ less than a year
- () 1 year ~ 2 years () More than 2 years

2. Pre-interest in the local culture

a. How much were you interested in Korean culture before you come to Korea?

None at all

1	2	3	4	5
---	---	---	---	---

 A great deal

b. What made you decide to study in Korea?

- () Cultural interest (Korean wave)
- () School / Major
- () Family or friends staying in Korea

- () Government Support / Scholarship program
- () Development experience of Korea
- () Others

3. Receptiveness of the local culture

a. How do you perceive the Korean culture?

Very negative

1	2	3	4	5
---	---	---	---	---

 Very positive

b. How much time do you expect for you to adapt to the Korean culture?

(If you think you are completely adapt to Korean culture, please select the time it took.)

- () A week ~ less than a month
- () 1 ~ 3 months
- () 4 ~ 6 months
- () More than 6 months

4. Overall, how do you perceive the extent of your cultural adaptation in Korea?

Very poor

1	2	3	4	5
---	---	---	---	---

 Excellent

Part 5. Economic Factors

1. Tuition fee

a. How much do you agree with your school tuition (before getting scholarship)?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

b. How much % of the tuition is covered by university or government in the form of scholarship?

- () 0 ~ 20%
- () 21 ~ 40%
- () 41 ~ 60%
- () 61 ~ 80%
- () 81 ~ 100%

2. Living expenses

a. How much do you agree with the cost of living (Except tuition fee, travel, and other unnecessary shopping)?

Strongly Disagree

1	2	3	4	5
---	---	---	---	---

 Strongly Agree

b. How much % of the living expense is covered by university or government?

- () 0 ~ 20% () 21 ~ 40% () 41 ~ 60%
- () 61 ~ 80% () 81 ~ 100%

3. Funding resources

a. Are you going to lose some of your scholarship stated above when you do not meet certain requirements?

- () Yes () No

c. Besides the public scholarship stated before, which financial resources do you have for your tuition and living expense?

- () None (The scholarship is enough for my stay in Korea)
- () Support from family
- () Own finances
- () Private scholarship
- () Loan

4. Having a job

a. Do you have a job (Full-time or part-time) in Korea?

- () Yes () No

*If no, please skip 4-b, 4-c, and 4-d questions.

b. What kinds of jobs do you have?

- () On-campus job (i.e. teaching assistant, research assistant)
- () Public sector job
- () Private sector job
- () Freelancer (i.e. tutoring, translation, interpretation)
- () Others

c. How many hours do you work in a day?

- () Less than 10 hours () 11 ~ 20 hours
- () 21 ~ 30 hours () 31 ~ 40 hours
- () More than 40 hours

d. How much do you think your income in Korea relieve your financial burden?

None at all

1	2	3	4	5
---	---	---	---	---

 A great deal

5. Overall, how do you perceive the extent of your financial stability in Korea?

Very unstable

1	2	3	4	5
---	---	---	---	---

 Very stable

Part 6. Demographic Questions

1. Gender : () Male () Female

2. Age :

() ~ 18 years old () 19 ~ 24 () 25 ~ 29
() 30 ~ 34 () 35 ~ 39 () more than 40 years old

3. Which region do you come from?

*The country list in each region available at <https://www.thoughtco.com/official-listing-of-countries-world-region-1435153>

() Asia () Middle East, North Africa, and Greater Arabia
() Sub-Saharan Africa () Europe
() Australia and Oceania () North America
() Central America and the Caribbean () South America () Others

4. Marital status

() Married () Single

The end.

Thank you for your time for the survey!