

# Post-Degree Completion Plan of Chinese and Korean Graduate Students in STEM

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## Introduction

The number of international students attending US universities is trending upwards (IIE 2018). In 2018/2019, 1,095,299 international students are enrolled in the US higher education, and they constitute 5.5 percent of total number of enrollments. With rising presence of international students on campus, it is telling that almost half of the international student population is concentrated in STEM fields (IIE Open Doors 2012; Moglen 2017), with 21.4 percent in Engineering, 15.5 percent in Math and Science and 7.1 percent in Physical and Life Sciences.

Equally significant are students who choose to leave the US after completing their degree. This phenomenon raises concerns in relation to the number of international students majoring in STEM fields, as these fields are closely tied to countries' economic innovation and global competitiveness (Han, Stocking, Gebbie, and Appelbaum 2015). Hence, the literature in various areas has studied factors that contribute to students' plans after completing their degrees. Han et al. (2015) stated that professional factors are the most important reason for staying in the US, while family is an important motivator to return to the home country. Hazen and Alberts (2006) emphasized cultural differences as the motivating factor for the migratory decision (Han et al. 2015). Finally, Zweig, Changgui, and Rosen (2004) believed personal prestige and preferential treatment to be crucial factors.

This in-progress article analyzes multiple factors that contribute to international students' migratory decisions. Chinese and Korean students are the focus of the study, as they comprise a preponderance of the international student population (Yan and Berliner 2011). Two questions will be answered: 1. What are the factors contributing to Chinese and Korean STEM graduate students' migratory decision? 2. How do these factors intersect or differ across Chinese and Korean students?

## Method

In this study, in-depth qualitative interviews are used to analyze Chinese and Korean STEM graduate students' migratory decision. Six participants were selected using snowball sampling. They were current graduate students or recent graduates from private universities in upstate New York. They also pursued STEM degrees or wished to search for STEM-related job opportunities in future. Each participant was given a consent form and voluntarily participated in an hour-length interview. The six semi-structured interviews were conducted to understand the nuanced strategies in which these students create, recreate, and navigate their path after graduation. More interviews will be conducted in future. The demographics and majors of the interviewees are presented in Table 1.

Table 1: Demographics of interviewees

Chinese students	Korean students
Tao (Male) <i>Civil engineering (PhD)</i>	Seungyeon (F) <i>Communication (PhD), Media psychology (MA)</i>
Zhang (Male) <i>Environmental science (PhD)</i>	Minjae (M) <i>Architecture (MA)</i>
Xu (Female) <i>Biology (MA)</i>	Young (M) <i>Chiropractic (DC)</i>

### Preliminary findings

#### *Return Decision*

Preliminary findings suggest that all the Chinese interviewees wished to return to China, while the Koreans would have preferred to remain in the US. Tao, a doctoral candidate in civil engineering, expressed that his decision to return was natural by referring to the old Chinese proverb “Falling leaves return to their roots” (落叶归根 – luò yè guī gēn). For Tao, his period in the US is a transitory phase. Zhang, a Ph.D. candidate in environmental science, also expected to return to China. He believed that China has a larger job market, especially for young people who have studied abroad. The thriving economy and the greater number of opportunities available in China could be significant motivators to return. However, Zhang’s decision was not based solely on professional factors, as he stated, “There are more environmental problems in China, so I feel what I have learned can be better used in China [...] I can really help my people there”. For Zhang, the practical application of his skills and degree is as important as portraying himself as a marketable employee on the job market. He desired to make a meaningful contribution to his field as well as to support the development of his home country.

#### *Motivators to Stay in the US*

Both the Chinese and Korean students emphasized freedom as one of advantages of residing in the US. Minjae, a master’s student in architecture, planned to work in US company to eventually obtain a green card or US citizenship. He aimed to remain in the US permanently so that he could ensure work–life balance and a high salary. He hesitated to leave the US due to the unpromising job market and inhumanely long working hours in Korea. Tao also believed that the individualistic culture in the US allows one to enjoy freedom in their own way. The apparent boundary between even close friends in the US is distinct from the collectivistic culture in China, where Tao constantly felt pressured by his family to get married. Questions about marriage from elders or family members were “embarrassing” to Tao, but the promise of greater freedom in the US does not offset the advantages of returning to China.

#### *Third Country as Another Option*

Despite the traditional view of migration as the mobility of people between the host and the home country, Seungyeon considered migration to a third country as another option. She is an expert in the utilization of big data in communication and has recently obtained her Ph.D. degree. During the daunting process of job hunting in US academia, she was offered the job of assistant professor at a prestigious Chinese university. During our first interview, Seungyeon announced that she had received the job offer, and at our follow-up interview, she indicated that she had accepted the offer. She hesitated to leave the US due to the persistent gender discrimination in Korean academia. Most

importantly, the Chinese university provided her with various incentives, including a research laboratory and guaranteed promotion, which differs from the competitive tenure procedure in the US and Korea. The Chinese university also reduced teaching loads and publication requirements to ease her adjustment in China. These incentives and the abundance of capital in Chinese academia attract international students regardless of their nationalities, thus international students are allowed to make diverse migratory choices, not being confined to a single country.

## Discussion

Although the study is still in progress, the findings provide insight into the mechanisms of how both Chinese and Korean students make migratory decisions during the critical period of post-degree completion. The preliminary results suggest that although international students have been perceived as making choices based only on financial opportunity, diverse factors influence their decision. It is also crucial to conceptualize the migratory decision as more than a simple binary decision to return or stay. As shown in one of the interviews, the migratory decision is not confined to sending and receiving countries, but is extended to multiple destinations.

The interviewees were also aware of their legal status and discussed their anxiety and the burden of obtaining a work visa, green card, or US citizenship. Aside from getting a job in competitive US academia, obtaining a visa is a common barrier for international students. The interviewees lamented their non-citizen status and discussed rumors of friends or acquaintances who had encountered visa issues or “spent so much time on paperwork and money to hire lawyers”. They expressed fear of the current political climate, which often delays the naturalization process. Even though they currently hold F-1 student visas, they already expressed exhaustion at the thought of the naturalization processes they would face in the future.

International students confront multiple barriers due to their non-citizen status and legal constraints. However, as Minjae stated, they search for and redefine their own ways to live a “satisfactory and happy life”. Although the homogenization of the international student population precludes an understanding of the dynamic and mobile status of their migratory decisions, this study aims to provide a comparative study of two specific groups and their multifaceted decision-making processes. This paper will contribute to the narrative of international students as active agents who proactively negotiate and seek routes and resources (Gerlach 2015).

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