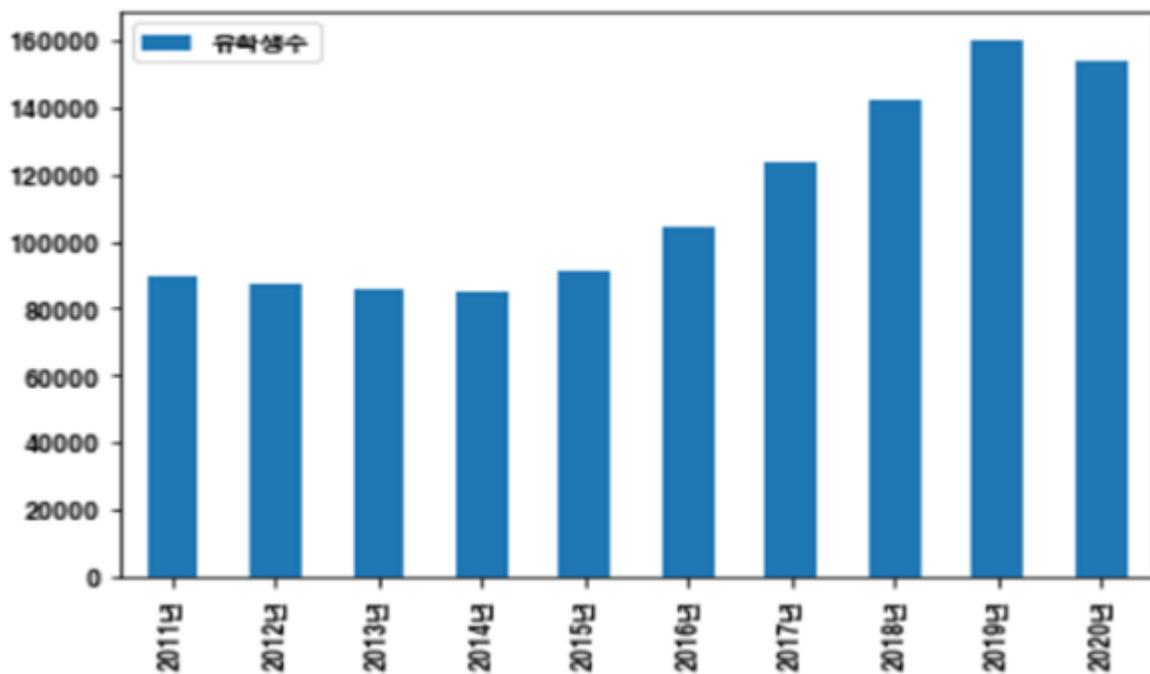


1. Introduction

Even in the unprecedented Corona period, international exchanges in each country have not been delayed. Not only K-pop, which has traditionally been strong but also media such as parasites and squid games have gained worldwide popularity, increasing the number of foreigners entering Korea. In particular, the most sensitive and progressive generation(People in their 20s) shows the most movements, and the simplest thing to feel is the increase in the number of foreign students, which is well shown in the graph below.



Accordingly, domestic universities are also taking measures tailored to this movement. In 2020, during the Corona period, it seems to have slowed down for a while, but overall, it seems to be increasing. This increase in the number of international students naturally increases the need for international dormitories, where our topic can be obtained.

Perhaps the best way to solve these problems is to refer to precedents. Similar problems were encountered in France and Japan, and problems were solved by applying their respective problem-solving methods. France established the CITE International University of Paris by devising accommodation facilities outside each university. Their solution produced good results and was able to attract the largest number of foreign

students in Europe. Japan also performed well. The Tokyo International Exchange Center was established to provide space for foreign students. Their secret to success is simple. It is said that it was designed for 'user convenience'. The size of the room was designed differently according to the needs of each person, and the location was decided in consideration of the surrounding amenities and transportation facilities. Cultural facilities were installed inside so that students could experience the cultural life of the country.

- Then, what is the most problematic thing when building an international students dormitory in Seoul?

First of all, we can think of the location problem first. In order to quell complaints from people with their own interests, where should the dome be built? It is necessary to take a neutral position on the number of students in the region and decide the most central position, and for this, specific measures and standards should be prepared and decided based on this. In addition, if you build it in such a remote place that you cannot enjoy convenience facilities, let alone cultural life, you will never satisfy foreign students. Since they also have a goal of enjoying the Korean culture, not only academic achievement, we will have to choose a location in consideration of convenience facilities and cultural systems to satisfy them. Next is financial part. In a way, it is the most important part and the basis of the project. A budget is basically required to build a dormitory, and it is important to come up with measures for these budgets. In addition, items such as concerns about the investment ratio of universities and local governments, rent and dormitory amount determination will also occupy a large part of problem solving. The economic part also has a great influence on persuading major audiences. In order to obtain permission for international dormitories and draw up a budget, the mayor of Seoul and the presidents of each university must be persuaded, and a reasonable reason must be prepared for this.

In addition, there will be numerous problems. Building a dormitory is not as easy as one might think. It will take a lot of effort to satisfy vast interests and not to fail manuals executed by persuasion. In this project, we will find various ways to actually embody the contents mentioned, and a simple plan for this will be described below.

2. Literature Reviews

We organized the literatures in the order that we are going to refer to when solving each question.

1- Convincing the presidents of the universities

By bibliography about economic effects of international students, we can persuade presidents of universities and the city of Seoul saying that international students can give them economic benefits. According to '*Ha, Y. Lee J. & Shin K. (2015). Estimating the economic effect of attracting foreign students.*', the economic income from attracting international students reaches about 800 billion won. The university's economic income of attracting one international student is three times of attracting one graduate student.

The article '*Foreign students have increased 61 times in 20 years...filled up the college financial difficulties*' deals with the rate of increase in the number of foreign students and fixed debt rates in domestic universities. Universities in Korea cited easing financial health as the reason for increasing the number of foreign students and presented evidence by comparing this with the increase in the fixed debt ratio. The reason was that the rate of selecting foreign students increased whenever the fixed debt ratio rose, that is, whenever the university's finances deteriorated.

2- Choosing the location

There are many things to take into consideration when choosing the location of the international accommodation campus. We have tried to find the main factors that come into play on that matter with the bibliographic study and EDA parts of the project.

In the research paper INTERNATIONAL STUDENT MOBILITY TOWARDS SOUTH KOREA: Motivations for Choosing South Korea as a Study Abroad Destination (Son, D. (2011). INTERNATIONAL STUDENT MOBILITY TOWARDS SOUTH KOREA: Motivations for Choosing South Korea as a Study Abroad Destination (Master's thesis)), we learnt that two of the most important elements when it comes to attracting foreign students are the South Korean culture and the country's safety. Indeed, it is said the culture's attractivity was developed in majority by South Korean TV dramas, movies, as well as singers, which increased the consideration of the country by students and parents in the matter of choosing a university to study abroad. For the safety aspect, The contribution of university accommodation to international student security (Paltridge, T., Mayson, S., & Schapper, J. (2010). The contribution of university accommodation to international student security. Journal of Higher Education Policy and Management, 32(4), 353-364) explains that students feel safer when living in a university provided accommodation, which also means security is important to them. From that, we conclude that the accommodation must be placed in a safe and culturally rich neighborhood.

Furthermore, in A Study on Housing Affordability of University Students in Seoul (Bae, B. & Nam, J. (2013). A Study on Housing Affordability of University Students in Seoul. *Seoul Studies*, 14(1), 23–38), we also saw that it was harder for students to house themselves than other people in South Korea, but it is also true for foreign students. Therefore, we also determined rent as being a feature to take into consideration, when choosing the accommodation's location.

Moreover, we needed to consider the financial aspect of the project: how the accommodation might be funded. A part of it will come from the district we will choose to build in so it seems like a good criterion to evaluate in order to get the most funding we can. That is why we added district budget magnitude as a feature to consider.

Finally, the proximity with different universities is also important as it will increase the accommodation's popularity by making student's daily commutes easier and will also help the contact between students.

3- Justify the financial investment between the city of Seoul and the universities

We should justify the financial investment between the City of Seoul and universities of Seoul, so we got basic understanding of the budgets in Seoul by *Seoul City (2021). 2021 Budget School. and Yoon, S. (2017). A research on the operation status of the participatory budget system.* Seoul City is using the budget by 'Participation budget (참여 예산)' policy, so we have to submit business proposal to get the budget. There are 3 types of proposal (wide area unit proposal, regional unit proposal, deliberation type) that we can submit, and between those we should choose 'wide area unit proposal' because it fits our conditions. If the citizens feel need for our business and if our proposal gets through all the proper procedures, we can get 4 billion won in maximum.

Also when persuading city of Seoul, we thought that it is effective to persuade them by saying that international students can bring financial benefits to city of Seoul. From '*Ortiz, A., Chang, L., & Fang, Y. (2015). International student mobility trends 2015: An economic perspective. World Education News and Reviews*, 1.', we could find out that in the last 20 years, the international mobilities have grown a lot in numbers and they therefore have a bigger economic impact on the host country. The study is about the US but could be also applied to other countries with high numbers of international students and shows the huge contribution to the US's economy (almost 1.5 billion dollars with tuition and fees and living expenses alone). Also, '*Hegarty, N. (2014). Where we are now—The presence and importance of international students to universities in the United States. Journal of International Students*, 4, 223-235.' showed that international students play big part in university's financial well-being. The economic aspects which are brought by the international students are not limited to universities but are also extended to the cities they are in and the whole country in general.

Also, we should use the bibliography about cultural aspects. We should persuade city of Seoul by saying that international students can contribute in the spread out of Korean culture. There are papers that claim South Korean cultures played a key role in attracting international students to South Korea. If the Korean culture spread out more globally, then

more international students will come to Korea, and they will contribute to more economic benefits in Seoul City.

Research plans:

1- Convincing the presidents of the universities

During the EDA process, we have collected data on the financial soundness of different universities in South Korea and on the number of foreign students in the country each year. We could firstly try to get a positive correlation between the increasing number of international students and the bettering of the universities' financial situation. Then we could use the bibliography to finish persuading the presidents of the universities, as we saw having an international accommodation increases the attractivity of nearby universities and will also positively impact the reputation of the school as statistically more students will succeed in their studies. We will use the EDA to persuade the presidents that the international accommodation campus is financially worth it and then select within the bibliography all other arguments pointing towards the positive impacts of attracting more international students.

2- Choosing the location

In the previous steps of the project, we have found and used data on the location of universities, the budget magnitude of each district as well as rent information about the districts. Now, we will concentrate on finding the remaining data on other features influencing the location of the accommodation: crime rates and the number of cultural centers in each district. Once we have found both, we will be able to start doing feature engineering with all the location data and weighing the features to create grades for each district to select the most suitable one.

3- Justify the financial investment between the city of Seoul and the universities

First, we should calculate the practical number of students who need accommodation by using the dataset of international students and bibliography on characteristics about international students. After that, we can decide the magnitude of the accommodation.

<p>Total Cost = Land price+Construction price+Tax etc.</p>	<p>1) City of Seoul - submit business proposal (4 billion won max) - persuade using EDAs (Economic impact by foreigners, spread out of Korean culture by students etc.)</p> <p style="text-align: center;">+</p> <p>2) Communities</p> <p style="text-align: center;">+</p> <p>3) Universities of Seoul</p>
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The total cost of building the accommodation can be calculated by adding the land price and construction cost and the taxes incurred in the process. We couldn't find the land price data, so based on EDA6 by using house price data, we will analyze which features give effects to house price and roughly estimate the land price. Also, since we don't have any knowledge about architecture or construction, we will search for more papers or articles about calculating the construction price and taxes.

The total cost can be funded by 1) City of Seoul, 2) Communities, and 3) Universities of Seoul. According to the bibliography, if we submit a business proposal to Seoul City, we can get 4 billion won maximum. We will persuade them by using bibliographies such as papers about economic benefits by foreigners and spread out of Korean culture by international students. Also, we will search for communities who can invest or sponsor in the project. The rest of the cost can be invested by the universities of Seoul. Also, based on the number of students of each university using the accommodation and the distance between each university and accommodation, we will calculate how much each university has to invest.

This is the rough schedule that we planned. (Yellow: Convincing the presidents of the universities, Green: Choosing the location, Blue: Justify the financial investment between the city of Seoul and the universities, Red: About final presentation)

Week 12	Week 13	Week 14	Week 15	Week 16
Find datasets about crime rates and cultural centers in each district	Use all the location data to create the district suitability index	Find if communities can support the project to determine the necessary investment from each university		
Decide the magnitude of the accommodation	Calculate the total cost of the accommodation		Project presentation	Project presentation
Investigate on the reasons that attract foreign students to Korean universities	Weigh the location factors according to their importance for international students	Prepare for the presentation		