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Choosing American colleges from Afar: Chinese Students' Perspectives

Yefei Xue
Nanjing University, China
Siguo Li
Massachusetts General Hospital, USA
Liang Ding
Macalester College, USA

ABSTRACT

Chinese students studying abroad have been increasing rapidly in the past decades and become a significant financial contribution to receiving countries. Accordingly, understanding their enrollment choice is essential to facilitate college marketing and admission strategies. Though the decision process is believed to be different from domestic students, empirical analysis of Chinese students' enrollment choices is still lacking. This paper fills the void by examining the influential factors of Chinese students' enrollment choice with novel student-level data. We find that in addition to factors domestic students typically consider, such as financial aid and academic quality, Chinese students particularly emphasize college ranking, reputation, and location in their decision process. Furthermore, unlike domestic students who usually prefer colleges with proximity to home, Chinese students' location preference is linked to job prosperity. We also find that the impact of the factors varies for students from different regions of China, which can be attributable to uneven economic development within the country.

Keywords: College Choice, Enrollment Decision, Chinese Students

The global higher education market has grown exponentially in volume, scope, and complexity over the past two decades. Thanks to its fast economic growth, China has become a top "sending" country of international students to all major "receiving" nations such as the US, the UK, and Australia. Chinese students who choose to study abroad are often from families with relatively high socioeconomic status, therefore recruiting Chinese students is strategically important for the

financial models of universities in the receiving countries. Understanding how Chinese students make their enrollment choices is critical for higher education marketing and admission strategies in these countries.

As China has emerged as the largest source country of international students, there has been a growing body of research focusing on the choices made by Chinese students studying abroad. While a significant portion of this research has centered on the selection of destination countries (e.g. Chen (2007), Counsell (2011), Bartlett et. al. (2018), Tang et. al. (2018) and Henze and Zhu (2012)), there is a noticeable dearth of studies that delve into the specific aspects of college choice (e.g. Bodycott (2009), Cebolla-Boado, Hu and Soysal (2018) and Rafi (2018)). Nevertheless, the existing studies on college choice are often constrained by limitations related to qualitative methodologies, reliance on primary data sources, and limited sample sizes. As a consequence, the field of Chinese students' foreign college choice literature lacks empirical research based on objective student-level data. Such research would require a dataset that contains student characteristics, their application results and final enrollment choice.

Since 2016, Yixiao, a Chinese education consulting company, has been surveying high school students in leading international schools in China to make their annual ranking of international high schools. The data happen to contain the information desirable for enrollment choice research and therefore make an empirical examination of Chinese student's college choice plausible[1]. Note that the survey is conducted only in leading international high schools in China, and the US is a top destination country for students from these schools. Therefore, this characteristic of the data leads the research to focus on Chinese students' choice of colleges in the US.

With this novel student-level data, which contains student characteristics, schools admitted, and enrollment choice of about 1800 individual Chinese students, this paper fills the void by examining influential factors of the decision process with the conditional Logit approach. We particularly want to answer the following questions in this research: Do Chinese students prioritize ranking over tuition and financial aid? What role does college reputation play in the decision process? What are Chinese students looking for in a college's location? Additionally, we inspect whether the role of the factors varies for students from different regions of China.

We find that in addition to factors domestic students typically consider, such as financial aid and academic quality, Chinese students particularly emphasize college ranking, reputation, and location in their decision process, while tuition does not appear to be a significant influence. Unlike domestic students who usually prefer colleges with proximity to home, Chinese students' location preference is linked to job prosperity and safety. Moreover, since liberal arts

[1] One of the authors has been working as an external consultant for the company and hence obtained access to the data. Yixiao has also provided approval to use the data in this research. More details of the data are described in the data section of the paper.

colleges are less well-known in China, our research does show evidence that students prefer universities rather than liberal arts colleges. We also find that the impact of the factors varies for students from different regions of China, which can be attributable to uneven economic development within the country. Note that the survey is conducted only in leading international high schools in China, so our sample only represents high-aptitude students, and our empirical findings only apply to selective colleges in the US.

This paper mainly contributes to the literature in three aspects. First, while most existing research on Chinese students' enrollment choices used data from survey responses, this paper uses detailed student-level application and enrollment data, which allows us to conduct empirical tests that could not be done previously. Second, using quantitatively identified influences and rigorous empirical methodology, this research provides strong evidence on the validity of conclusions from prior qualitative studies. Third, in addition to examining the impact of possible factors, we also investigate regional inconsistency of the impact on students from different cities in China.

The findings of this paper have great implications for college marketing. Since Chinese students care more about ranking, reputation, and job prosperity rather than social life, athletics, and campus culture, strategies working well for domestic students might not work effectively for Chinese students. The results of our research suggest that the most effective marketing strategy for Chinese students is ranking. Additionally, colleges should benefit from enhancing their reputation by promoting through Chinese social media, especially WeChat. If a college is near or located in a metropolitan area, marketing efficacy can improve by emphasizing the location advantage through the aspect of job availability and career development.

RELATED LITERATURE AND RESEARCH QUESTIONS

The international student choice literature typically encompasses two primary research domains: the selection of destination countries and the selection of specific institutions. The classical push-pull framework is usually used to explain the motivations and considerations that influence a student's decision to study abroad. Particularly for the country choice of Chinese students, for example, Chen (2007) finds that education quality, environment, payoff of the education, and the ease of visa/immigration highlight the main factors for Chinese students to choose Canada; similarly, Counsell (2011) concludes that it is the search for a quality higher education, higher career values and a desire to improve their foreign language skills that cause Chinese students to choose the UK for their studies; Gesing and Glass (2019) also suggest that economic push-pull factors influence intent to stay in the U.S. for Chinese graduates with STEM majors. On the macro level, Choudaha (2011 and 2017) argues that the wave of Chinese students who chose to study abroad was shaped by the global financial recession in 2008 which triggered financial motivations for recruiting international students and growing China's middle-class who could afford to study abroad.

Instead of aiming to explain why Chinese students choose the US, this research specifically focuses on the other domain of the literature: how Chinese students choose which college to attend in the US. The institution choice literature usually considers choosing a particular school as a function of influential factors, which can be generally categorized as student characteristics and institution characteristics. Typical student characteristics include race, gender, academic ability, family income, parents' educational attainment and occupational status. (Toutkoushian, (2001), Griffith and Rothstein (2009), Jez (2014), Bergerson (2009), Hossler, Schmit, and Vesper (1999), Myers and Myers (2012), etc.). Among institutional characteristics, representative studies such as Griffith and Rask (2007), Bowman and Bastedo (2009), Bamber (2014), Collins and Park (2016), as well as Pigini and Staffolani (2016) find that cost, financial aid, college ranking and reputation, brand image, distance from home, academic quality, career development support, course and major options, campus culture and facilities are consistently identified as important. In research particularly focused on international students, Lee (2008) finds that the reputation of the institution was the most important, followed by being offered work/assistantship, financial assistance, and the college's special education programs.

As China rose as a prominent 'sending' country in the international higher education landscape, studies focused on Chinese students' enrollment choices started emerging. Bodycott (2009) and Rafi (2018), for instance, find that the most important factors Chinese students consider for selecting colleges in the US are international standing, college reputation, employment prospects on graduation, scholarships and cost of tuition, physical living environment, and location. Similarly, Cebolla-Boado et. al. (2018), find that university prestige is the most important driver for the sorting of Chinese students across British universities, and the cost of study does not seem to drive the Chinese students' university choices. It is worth noting that these factors are also considered by domestic students when making their enrollment decisions. However, as indicated by studies such as Gray, Fam, and Llanes (2003), the college choice processes for Chinese students differ notably from those of domestic students. These differences manifest in terms of the priority assigned to each factor, the relative weight attributed to these factors, and the specific aspects within each factor that students consider.

The aforementioned studies on Chinese students' choices predominantly rely on primary data with a limited sample size and use qualitative methodology. Bodycott's (2009) research was based on the interview responses of 100 students and 251 parents in mainland China, and its results cover 24 different factors that influence students' and parents' decisions. Rafi (2018) interviewed 12 Chinese students studying in the US and asked three main questions regarding their own college choices and their parents' roles in their college decision-making process. Cebolla-Boado et.al. (2018) used much larger data and a more objective and quantitative method, however, their data are aggregated macro data and do not contain individual student information. By using new student-level data, we can conduct empirical tests that could not be done before. Specifically, we would like to study the following questions in this research:

1) Do Chinese students prioritize ranking over tuition and financial aid?

Net cost (tuition minus financial aid) is undoubtedly an important influence domestic student consider. However, comparatively, qualitative studies such as Bodycott's (2009) and Rafi (2018) suggest that Chinese students care less about tuition and financial aid, and they consider this factor only when comparing colleges with similar rankings. Therefore, we will test the relative significance of tuition and financial aid in the Chinese students' decision process.

2) What role does college reputation play in Chinese students' enrollment decisions?

As suggested by Merchant et al. (2015), Bodycott (2009), and Rafi (2018), most Chinese students consider college reputation as a crucial factor that affects their enrollment decision. In their research, which is based on interview surveys, reputation is a subjective description and lacks an objective measurement. We will quantitatively measure college reputation and explore the significance of this factor on Chinese students' enrollment decisions.

3) Do Chinese students prefer universities to liberal arts colleges?

A related question with the reputation consideration is regarding the choice of liberal arts colleges. Liberal arts colleges are less known in China because this type of school is not common in China and typically does not have graduate programs. Our data contains a significant number of students who are admitted by liberal arts colleges and universities simultaneously so that we can test if Chinese students have any significant preference over a particular type of school.

4) What are Chinese students looking for in a college's location?

Almost all the existing literature stress the importance of location in students' enrollment decision. For domestic students, the literature suggests that they prefer colleges close to home after controlling other conditions. However, for Chinese students, colleges in the US are thousands of miles away from their homes. As Rafi (2018) points out, when Chinese students consider location, they care more about the weather, the convenience of living, and the prospect of getting good jobs and internships. We will empirically test which aspect of location Chinese students consider for their college choice decision.

5) Do Chinese students from different cities consider the factors differently?

China is a vast country and has uneven economic development in different regions, which could lead to inconsistency in the decision process for students from different Chinese cities. Accordingly, we speculate that Chinese students from more developed cities are less sensitive to college tuition. Also, families from more developed cities might be better informed about higher education in the US, so they likely have less bias against liberal arts colleges. In this research, we will examine how differently students from different cities make their enrollment decisions.

METHOD

Following many studies of college choice decisions, we use the stochastic utility model (conditional Logit model) to conduct the tests. Chinese students'

goal can be described as maximizing their utility by choosing a college under the constraint of the pool of colleges they have been accepted to. This utility maximization process is best represented as:

$$P_{ij}^{*} = \frac{\exp\left(\theta Z_j^{*}\right)}{\sum_{j=1}^{J_i} \exp\left(\theta Z_j^{*}\right)}, f\ or\ j^{*} = 1,2,3, \ldots$$

Where:

P^{*}_{ij} = the probability that student i chooses college alternative j

θ = the vector of parameters

Z_j = the vector of attributes associated with college alternative j

J_i = the number of college alternatives in student i's choice set

The parameters in the conditional logit model is equivalent to the stochastic utility model:

$$U_{ij} = \theta Z_j + e_{ij}$$

In this study, we consider the following factors that can play a critical role in the enrollment decision:

Student's academic ability compared to a college's average academic ability: Students usually prefer a college where students have similar or comfortably higher academic ability than themselves for a better learning experience. We use the difference between each student's SAT score and the mean SAT score of all students in each college as a proxy for this factor.

Financial Aid: Intuitively, students would favor colleges that offer them financial aid and reduce their cost of education. The ratio of financial aid over total education cost would be an ideal measurement; however, the data we have only contains information on whether a student receives financial aid. Accordingly, we use a dummy variable to measure this factor.

College Ranking: College ranking can be a reflector of a college's quality, resources, and prestige, so in general, given other conditions similar, students would prefer a school with a higher ranking. We use the U.S. News World Report ranking for each college each year to measure the college ranking variable[2].

College Cost: college affordability can be an important factor for many families, especially families without high incomes. We use the average tuition before 2020 obtained from the IPEDS database and convert it to a logged form to measure the cost of each college.

College Type: College type refers to whether the college is a liberal arts college or a university, which is measured by a dummy variable.

International Student Ratio: The international student ratio can be an indicator of campus diversity and inclusion. Chinese students might feel more

[2] National Universities and Liberal Arts Colleges are ranked separately in the US News ranking system.

comfortable attending colleges with more international students. The percentage of international students is used to measure this factor for each college.

Admission Type: Admission type refers to whether the admission is an early action or a regular decision. Students usually submit EA applications to colleges they are more interested in; hence students are more likely to enroll in colleges with EA admission. A dummy variable is used to indicate the type.

College Reputation: Given other conditions similar, students are more likely to choose a "better-known" or "world-renowned" school. We define college reputation for Chinese students as the likelihood that an average Chinese person has heard about this college. Public recognition of an American college is important for Chinese students and their families mainly because of the signal effect. Usually, a more prestigious college is better known, so more people knowing the college can imply the rigor and high selectivity of that college, indicating attending students' capability and qualifications. This signal effect projects to the job market in the sense that students who graduated from a more reputable college are easier to be recruited by leading companies in China.

To measure a college's reputation in China, we scan the most popular social media in China - WeChat, and count the number of WeChat articles that contain the college's name as a measurement. WeChat has more than 1 billion active users in China and has become an essential source for Chinese people to gain information on a daily basis. WeChat articles are published by WeChat official accounts operated by various individuals and organizations. These articles are publicly available and can be searched using Sougou WeChat official account search engine. We search each college's name with the search engine and capture the number of articles from the search result as our measurement.

College Location: Geographic proximity to home, climate, living environments, and convenience of life are a few aspects of location Chinese students would consider when choosing which college to attend. As all colleges in the US are far away from China, geographic proximity to home can be considered as the convenience of traveling back home. So, the distance of each college to its nearest international airport can be used as a proxy for geographic proximity. Furthermore, city population, city income per capita, city violent crime rate, the proportion of the city Asian population, and city comfort index created by the Bestplaces[3] website are used as a proxy to measure living environment and convenience of life.

Additionally, we use median home price as one proxy for location in the sense that a higher median home price usually implies a higher attractiveness of a city in terms of career prosperity, business opportunities, and living environment. It is also likely that cities with a higher median home price are larger cities that are more well-known to Chinese students. We divide the cities of the colleges into

[3] Their comfort index is calculated based on the total number of days annually within the comfort range of 70-80 degrees with a penalty for days of excessive humidity.

four tiers based on their home median price so that the results would be easier to interpret.

Given the factors and measurements described above, a general framework of the empirical model for the probability of student i enrolling college j could be written as:

$$\begin{aligned}\text{Prob. of enrollment}_{ij} = {} & \theta 1 * \text{Students academic ability} + \theta 2 * \text{Financial aid} \\ & + \theta 3 * \text{College location} + \theta 4 * \text{College ranking} \\ & + \theta 5 * \text{College reputation} + \theta 6 * \text{College Cost} \\ & + \theta 7 * \text{College type} + \theta 8 * \text{International student ratio} \\ & + \theta 9 * \text{Admission type} + £ij\end{aligned}$$

In order to test if Chinese students from different cities weigh the factors differently, we follow the popular city tier system in China, divide Chinese students' high school cities into three tiers and use the city tiers to interact with factors of our interest discussed in this section. Each city is given a tier based on the City Tier Report published by a leading Chinese business media - China Business Network, which ranks Chinese cities mainly with economic development indicators.

In contrast to qualitative methods used in existing studies on this topic, our method allows for precise measurement and quantification of variables. Also, we apply statistical techniques to test hypotheses, identify patterns, and establish relationships between the variables we are studying. This precision of variable measurement and application of statistical tools provide a solid basis for concluding and enhance the reliability of findings.

DATA

The data utilized in this paper is derived from a diverse array of sources. Student characteristics, which encompass individual SAT scores, the high school attended, the colleges to which they were admitted, and their final enrollment decisions, have been gathered by a Chinese education consulting company, Yixiao. With the rising number of Chinese students opting to pursue their undergraduate studies abroad, the landscape of international high schools in China has notably expanded. Consequently, there has arisen a pressing need for guidance in the selection of these educational institutions.

Moreover, the process of applying to colleges overseas significantly diverges from the college admission procedure in China. This disparity has underscored the importance of assessing one's chances of gaining admission, a matter of keen interest for both students and their parents. In light of this, Yixiao conducts an annual survey spanning over a hundred international high schools across China. This survey serves a dual purpose: it facilitates the creation of an annual ranking for Chinese international schools and offers a comprehensive insight into the profiles of Chinese students who gain admission to various colleges.

For the sake of data accuracy and comprehensiveness, Yixiao's dedicated staff collects this information via one-on-one interviews with students. In total,

our sample comprises approximately 1,800 individual students over the period from 2015 to 2018. It is worth noting that this survey exclusively targets leading international high schools in China and most students in these schools consider the US as their top priority destination country. Consequently, our sample is emblematic of high-aptitude students and their enrollment decisions for selective colleges in the United States.

College characteristics (percentage of international students, average tuition) are collected from IPEDS. College average SAT score is from prepscholar.com. College rankings are US News national university and liberal arts college rankings in corresponding years. As explained in the previous section, college reputation is measured by the Sougou WeChat search engine search result.

Regarding location-related data, city population, city income per capita, city violent crime rate, city comfort index, city Asian population are extracted from bestplaces.net. Distance from the nearest international airport is from travelmath.com. College city home median price is extracted from Zillow.com. Chinese city tier data is from the City Tier Report published by a leading Chinese business media - China Business Network, which ranks Chinese cities mainly with economic development indicators.

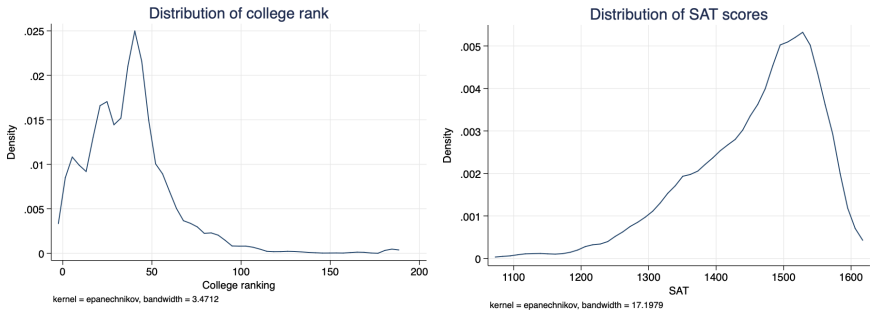

Figure 1: Distributions of SAT and College Rank

Table 1 shows summary statistic of the data, and Figure 1 illustrates the distribution of SAT scores and admitted schools' ranking in our sample. As we can see from the statistics, most students in our sample have high academic ability with an average SAT score of 1458 out of 1600. Meanwhile, only a small fraction of Chinese students in our sample received financial aid. The average college rank, around 37, is fairly high, meaning that the colleges in our data sample are mostly highly selective colleges. Our data is skewed toward high-aptitude Chinese students because the data source - Yixiao's survey, focuses on students in top international schools in China. Accordingly, we need to note that this study applies to the decision process of high-aptitude Chinese students for selective colleges in the US.

Table 1: Summary statistics

Variables	Mean	Std. Dev.	Min.	Max.
Enroll = YES	0.297	0.457	0	1
Highschool Mean Home Price Tier	1.995	0.88	1	3
SAT	1458.28	93.37	1090	1600
Financial Aid	0.087	0.283	0	1
College Reputation	1777.30	1565.98	16	7570
Distance from International Airport	127.18	119.796	3.9	924
LAC = YES	0.103	0.304	0	1
City Asian Population (%)	11.34	8.322	0.02	42.25
City Population	834451	1769787	919	8560072
City Income Per Capita ($)	53187.2	18901.28	15000	151000
City Comfort Index	7.472	0.874	6.100	9.300
City Violent Crime Rate	27.06	15.84	5	86.8
College Rank	37.47	24.636	1	185
Difference in SAT Scores	104.18	97.67	-375	440
Percentage of International Student	12.38	5.683	1	37
Average Tuition	37887	14248	5620	59430
Admission Type	0.944	0.23	0	1

Compared to the primary data used in most of the existing research, our data has several advantages: sample size is significantly larger, which can increase the statistical power of a study; data collection is more objective and less prone to researcher bias, which would reduce the influence of the researcher's subjectivity; our data contain more information on students background and enrollment choice, which would allow us to test the effect of factors more objectively and scientifically.

RESULTS

We first conduct the benchmark test specified above. Since some factors included in the regression are likely to be correlated, we calculate the Variance Inflation Factor (VIF) to detect multicollinearity issue. Generally, a larger VIF indicates greater collinearity for a variable, and a VIF index smaller than 10 means that the multicollinearity of this variable is insignificant. Next, we run a series of tests dropping one variable with the highest VIF each time until all variables have VIFs below 10 and report the results in Table 2. As we can see from the table, several location measurements have a significant correlation, making intuitive sense given that the location factors inherently influence each other in many ways.

Accordingly, we run the benchmark test several times dropping one variable with the highest VIF value each time until the multicollinearity issue becomes insignificant for all regressors. The results of the tests are displayed in Table 3. The scale of the results is on the odds ratio scale, where a result higher than 1 means positive impact, and a result less than 1 means negative impact.

As we can see from the table, college ranking, reputation, and differences in SAT scores are the most significant factors in the students' considerations. According to the table, one rank decrease in College ranking will cause the odds of choosing the college to drop by about 95%. The coefficient of college reputation is highly significant, and its value of around 1.6 means that one more WeChat article written for the college is associated with a more than 160% increase in the student's likelihood to enroll in this college. The difference between the student's SAT score and the college's average SAT score has a significant negative effect, indicating that Chinese students prefer colleges with higher average academic abilities than themselves.

Table 2: VIF Results

	(1) VIF 1	(2) VIF 2	(3) VIF 3	(4) VIF 4	(5) VIF 5	(6) VIF 6	(7) VIF 7
Log tuition	1021.05						
Log income per capita	959.58	475.86					
Log population	107.64	107.49	102.6				
City comfort index	161.63	161.44	87.21	67.92			
Log reputation	214.67	162.44	83.4	63.65	32.92		
Admission type	20.27	20.23	20.07	20.07	19.04	11.72	
Home price tier	10.84	10.18	8.83	8.36	7.77	6.65	6.4
City violent crime rate	9	8.7	8.39	6.62	6.49	5.05	4.26
Percentage of int student	7.91	7.11	6.9	6.75	6.49	6.44	5.85
City Asian population	6.11	5.84	5.83	5.72	5.18	4.28	3.63
College rank	5.5	5.5	5.07	4.78	4.35	4.33	4.23
Distance from int airport	3.4	3.4	3.36	3.35	3.34	3.33	3.3
Diff SAT 100	2.86	2.85	2.85	2.79	2.7	2.63	2.58
Is LAC	2.11	1.85	1.51	1.5	1.41	1.41	1.37
Financial aid	1.19	1.18	1.18	1.17	1.17	1.17	1.17

In contrast, tuition has a negative impact, but the result is not significant. This result supports the speculation that most Chinese students attending colleges in the US are from families with relatively high socioeconomic status and lower price elasticity to the education cost. On the other hand, financial aid has a significantly positive impact, consistent with the theory that students prefer colleges that provide them with financial support. Our model suggests that the odds of choosing a college that offers financial aid are approximately two times higher than choosing a college that does not offer financial aid. This result implies that, in general, Chinese parents do not care much about tuition, but given other conditions same or similar, they are more likely to choose a college that provides financial aid.

Liberal arts education is still not a well-known concept in China. Additionally, because liberal arts colleges usually have small sizes and no

graduate schools, this type of schools are less known in China. So, we are curious if Chinese students have a significant preference for universities rather than LACs. After dropping several variables that cause multicollinearity, our benchmark test does show a significant negative result of the LAC dummy variable. With its value of about 0.45, such a result means Chinese students are 45% less likely to choose liberal arts colleges given other conditions similar.

Among several measurements of location factor, college city home median price is consistently significant. According to the result, one tier lower in home price tier makes Chinese students about 90% less likely to enroll in college, suggesting that cities Chinese students prefer happen to be the ones with higher home prices. In the US, high home price cities are typically metropolitan areas on the East and West Coast where more high-paying jobs are available. Hence, we believe Chinese students' location preference demonstrates their consideration of job opportunities when selecting colleges.

According to Table 3, the violent crime rate is partially significant in some of the regressions. Its negative result is intuitive because Chinese parents and students prefer a safer city given other conditions similar. On the other hand, other location measurements such as distance from the nearest international airport, city population, city comfort index, and city Asian population do not seem to impact Chinese students' enrollment decisions significantly. All these results suggest that Chinese students' location preference is more associated with job prosperity and safety than climate, culture, and transportation convenience.

In order to test if Chinese students from different cities weigh the factors differently, we use Chinese city tier variables to interact with influences of our interests in the regression, and the results of the test are reported in the top panel of Table 4. Intuitively, we speculate that students from lower-tier cities might be more sensitive to tuition costs. However, the result does not support this speculation: the coefficients of tuition interaction with both tier 2 and 3 cities are insignificant. Furthermore, insignificant results are also obtained for the interaction of city tier and college reputation, college type, and academic match, which means that these factors on Chinese students' college choice are not significantly different across the country. This result makes sense because students from all cities in China get to know American colleges mainly through the internet, which does not have information asymmetry issues for students from different cities. The only significant difference detected by the test is the impact of ranking: our result suggests students from second-tier cities care even more about ranking than the first-tier cities.

This interaction test also provides additional supporting evidence on the insignificance of the tuition factor. Tuition, which is insignificant in the original benchmark test, was dropped early due to the multicollinearity issue. The new test includes the tuition factor with significant factors detected from the original test. According to Table 4, the tuition variable is still insignificant in the new test, confirming the result we obtained from the benchmark test.

Table 3: Benchmark Test Results

	(1) Enroll	(2) Enroll	(3) Enroll	(4) Enroll	(5) Enroll	(6) Enroll	(7) Enroll
Log tuition	0.800 (-0.71)						
Log income per capita	0.459 (-1.60)	0.483 (-1.50)					
Log population	1.038 (0.70)	1.038 (0.71)	1.041 (0.77)				
City comfort index	1.028 (0.22)	1.061 (0.51)	1.067 (0.56)	1.071 (0.60)			
Log reputation	1.647*** (3.45)	1.639*** (3.43)	1.696*** (3.72)	1.714*** (3.81)	1.643*** (4.06)		
Admission type	0.687 (-1.02)	0.689 (-1.01)	0.679 (-1.05)	0.664 (-1.12)	0.681 (-1.06)	0.672 (-1.11)	
Financial Aid	2.042* (2.37)	1.998* (2.32)	1.981* (2.27)	1.989* (2.29)	1.978* (2.27)	1.916* (2.19)	1.918* (2.19)
LAC=Yes	0.987 (-0.04)	0.907 (-0.31)	0.807 (-0.68)	0.784 (-0.78)	0.751 (-0.95)	0.458 (-2.82)	0.455 (-2.85)
College rank	0.947*** (-6.33)	0.948*** (-6.40)	0.950*** (-6.27)	0.950*** (-6.27)	0.949*** (-6.63)	0.940*** (-7.81)	0.941*** (-7.79)
% of international students	1.016 (1.15)	1.012 (0.94)	1.013 (1.00)	1.014 (1.08)	1.012 (1.01)	1.007 (0.59)	1.006 (0.48)
Diff_SAT	0.542*** (-4.40)	0.554*** (-4.37)	0.550*** (-4.39)	0.563*** (-4.33)	0.568*** (-4.30)	0.582*** (-4.18)	0.576*** (-4.27)
Distance from international airport	1.000 (0.25)	1.000 (0.26)	1.000 (0.43)	1.000 (0.38)	1.000 (0.34)	1.000 (-0.51)	1.000 (-0.55)
College home price tier	0.809* (-2.02)	0.827* (-2.39)	0.912 (-1.91)	0.890* (-2.36)	0.866* (-1.98)	0.867* (-1.99)	0.879* (-2.03)
City Asian population	0.992 (-0.70)	0.993 (-0.68)	0.988 (-1.06)	0.988 (-1.16)	0.990 (-1.02)	0.992 (-0.80)	0.992 (-0.76)
City Violent Crime Rate	0.983* (-2.48)	0.983* (-2.50)	0.986* (-2.09)	0.988* (-1.97)	0.989 (-1.91)	0.993 (-1.26)	0.993 (-1.28)

Note. Exponentiated coefficients; t statistics in parentheses, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

ROBUSTNESS TESTS

In the benchmark test, three location measurements, city income per capita, comfort index, and city population, are dropped due to multicollinearity issue. So, our first robustness test will focus on the validity of these three factors. We investigate the issue in the background and find the factor correlated with these location variables is college reputation, which can be confirmed by the second panel of Table 4 showing the location factors' VIFs value with and without college reputation.

To control college reputation, we select two sub-samples, a high reputation sample (colleges with top 25% tier of reputation) and a low reputation sample (bottom 25%) and test the location factors in each sub-sample separately. The test results are reported in the third panel of Table 4, from which we can see that these location factors still generate insignificant results. This result is consistent with findings in the benchmark test.

As stated in literature review, how college reputation influences the decision is a key question in this research. However, the reputation variable was dropped relatively early in the benchmark test due to its correlation with location factors. So as the second robustness test, we test reputation by controlling the location factors.

Based on Table 3 and 4, we can see that only home price tier is a statistically significant location factor, so we control location by dividing the sample into high home price sample (home price tier 1 and 2 cities) and low price sample (home price tier 3 and 4 cities) to run the test separately. The results of the test are reported in the bottom panel of Table 4. We can see that after controlling for the most significant location factor, reputation still has statistical significance, meaning that our result on reputation is quite robust despite the multicollinearity issue.

It's acknowledged that various students applied to different numbers of schools and received varying numbers of admissions. This could potentially introduce estimation bias, particularly towards students who received more admissions, if their decision-making patterns significantly differ from those who received fewer admissions. Despite that existing literature and our anecdotal knowledge do not suggest significant differences in the decision patterns of Chinese students based on the number of admissions received, with access to student-level data, we are able to test this hypothesis. We divided the sample into four quantiles based on the number of admissions each student received, then conducted regressions interacting key explanatory variables with the top (highest number of admissions received) and bottom (lowest number of admissions received) quantile groups. The interaction items are all found to be insignificant, indicating that there is no significant disparity between the group of students who received more admission and the group who were admitted to fewer schools. Due to the journal's limit on the number of tables, the results of this test are not shown in the appendix but available upon request.

DISCUSSION AND IMPLICATIONS

The results of our research suggest that when choosing which college to attend, Chinese students do prioritize ranking over tuition; given similar ranking schools, more socially recognizable schools gain strong preference; and Chinese students' location preference is linked to job prosperity rather than transportation convenience, culture accommodation, and living environment.

Table 4: Robustness Tests Results

Interactions of High School City Tier

	No interaction		Interaction with Tier 2		Interaction with Tier 3	
log tuition	1.678	(0.241)	0.492	(0.291)	0.361	(0.064)
log reputation	1.618*	(2.37)	0.925	(-0.25)	0.885	(-0.46)
LAC = YES	0.775	(-0.53)	1.511	(0.60)	1.107	(0.16)
diff sat 100	0.431***	(-4.01)	1.554	(1.51)	1.275	(0.95)
College Rank	0.932***	(-5.18)	1.061***	(3.43)	0.996	(-0.20)

VIF with Different Locations

	With Reputation			Without Reputation		
	Income Per Capita	City Comfort	City Population	Income Per Capita	City Comfort	City Population
Location	180.77	51.54	55	11.01	10.58	9.72
College Reputation (log)	133.25	39.56	45.91			
Pct of Int Students	6.22	6.13	5.93	6.01	6.13	5.93
College Rank	4.7	3.53	3.63	3.81	3.53	3.6
Difference in SAT/100	2.47	2.52	2.38	2.42	2.48	2.38
LAC = YES	1.52	1.19	1.19	1.2	1.18	1.18
Financial Aid	1.16	1.16	1.16	1.16	1.15	1.16

Location Robustness Test

	City Income Per Capita		City Comfort Index		City Population	
	Higher Reputation	Lower Reputation	Higher Reputation	Lower Reputation	Higher Reputation	Lower Reputation
Location	1.150	3.063	1.038	1.074	0.969	1.500
	(0.48)	(1.42)	(0.29)	(0.34)	(-0.64)	(1.18)
Financial Aid	2.252*	0.762	2.251*	0.811	2.237*	0.433
	(2.03)	(-0.41)	(2.03)	(-0.31)	(2.01)	(-1.09)
LAC = YES	0.484	1.047	0.507	1.009	0.467	2.224
	(-1.35)	(0.09)	(-1.27)	(0.02)	(-1.39)	(1.31)
College Rank	0.928***	0.969*	0.928***	0.963*	0.926***	0.965*
	(-6.46)	(-2.08)	(-6.08)	(-2.39)	(-6.72)	(-2.40)
Percentage of Int Student	1.019	0.990	1.019	1.020	1.020	1.008
	(1.30)	(-0.23)	(1.29)	(0.47)	(1.36)	(0.19)
diff sat 100	0.711*	0.295***	0.707*	0.376***	0.725*	0.375***
	(-2.21)	(-3.64)	(-2.02)	(-3.54)	(-2.15)	(-3.59)

Model Controlling for Home Price Tier

	Enroll = YES			
	Higher Tier		Lower Tier	
Log Reputation	1.824**	(2.91)	1.808*	(2.47)
Financial Aid	1.758	(0.71)	1.269	(0.53)
LAC = YES	0.0578*	(-2.52)	1.353	(0.74)
College Rank	0.901***	(-5.99)	0.975*	(-2.50)
Percentage of International Student (%)	0.927*	(-2.36)	1.020	(1.04)
diff sat 100	0.579**	(-2.95)	0.504**	(-3.08)

Note. Exponentiated coefficients; t statistics in parentheses, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$

Many studies reviewed in literature survey section also suggest domestic students consider ranking and reputation as well. Indeed, in almost every country and culture, elite university worship is common, higher-ranked and more reputable universities are a status symbol, and education payoff is true (e.g. Chetty, Deming and Friedman (2023)). This common value exists fundamentally because higher ranking and reputation usually mean higher selectivity, more resources, and a more stimulating academic environment, which all lead to better education quality and experience.

Additionally, pursuing ranking and reputation can be attributed to the signal effect and halo effect because the value in a prestigious education is not the education itself; it's the prestige per se, which, as superficial as it is, has a payoff in the job market and business development. Despite the common value and rationale shared by human society across cultures, college ranking and reputation are just especially valued among the Chinese. These factors being the most influential in Chinese students' college choice decisions are rooted in the characteristics of the Chinese economy, society, and culture.

In general, Chinese society is quite conscious of hierarchy and reputation among social groups. We believe this is the legacy of the rigid Chinese education system. In such a system, test scores almost entirely determine admission of highly-ranked colleges, being admitted to certain schools reflects admirable traits such as intelligence, determination, and diligence. This signal effect benefits students directly in the job market and career development in China. Chinese students and their parents naturally extend such a way of thinking to the choice among American colleges. Especially when HRs in Chinese companies are not as familiar with American colleges as US companies, a somehow over-simplified but efficient way to screen candidates is to look at the ranking of applicants' graduation schools (Ren (2022)). Thus, the signal effect is amplified in China and becomes more important to Chinese students.

The halo effect of attending more reputable schools is far more than just individual traits in China. Chinese culture comparatively values group membership as a status symbol more than Western culture (Hofstede and Bond (1988)), while Western culture values individual accomplishment independent of a group membership. If Chinese students get into one of the higher-ranked and more reputable schools, their parents and family members would "have face", i.e. receiving respect or envy from peers and society, which does bring internal satisfaction.

The findings of our research have significant implications for college marketing. The challenge of marketing for higher education lies in the intangible nature of education. Therefore, successful marketing for higher education requires identifying the tangible characteristics of an institution and distinguishing them from that of competitors. Typical tangible indicators colleges focus on differentiating include academics, campus culture and social life, alumni and current students, facility, and athletics. However, as suggested by our paper, Chinese students and their parents are focused more on education payoff and prestige and pay less attention to social life, athletics, campus culture, and

historical legacy than domestic students. So strategies working well for domestic students might not work effectively for Chinese students.

The results of our research suggest that the most effective marketing strategy for Chinese students is ranking. However, for many legitimate reasons, most college administrators are reluctant to emphasize ranking and use it as a marketing tool. Our research also suggests that colleges should benefit from improving their reputation by promoting themselves through Chinese social media, especially WeChat. Furthermore, if a college is near or located in a metropolitan area, marketing efficacy can improve by emphasizing location advantage through job prosperity and career development.

CONCLUSION

This research conducts an empirical analysis of the college choice decisions of Chinese students who study in the US. By using novel student-level data containing more than 1800 students' admission results and enrollment decisions, we can examine a list of influences that could affect this decision process.

We find that Chinese students pay particular attention to college ranking when choosing which college to attend. Additionally, college reputation and academic ability match play a significant role in the decision process. Given similar other conditions, Chinese students prefer large metropolitan areas with higher home prices, while other location aspects such as distance to an international airport, Asian population, comfort index, and crime rate do not seem important.

In contrast, we find that tuition, a crucial factor in domestic students' college choice decision, does not have a significant impact on the decision of Chinese students, which can be attributed to the fact that Chinese students studying in American colleges are typically from families with higher socioeconomic status in China. That being said, financial aid, which only a tiny fraction of Chinese students can receive, does significantly lead to the matriculation of the college that offers the aid.

We also find that Chinese students prefer comprehensive universities over liberal arts colleges, which can be attributed to the fact that LACs are less known in China. Finally, when testing the consistency of impact on Chinese students from different cities of China, we find insignificant results for most factors except for ranking, i.e., students from lower-tier Chinese cities care more about the ranking.

These results demonstrate a combined purpose of payoff and social status for what Chinese students would like to gain out of their study abroad experience. They care about ranking, reputation, and location because these factors are connected with job market success after college. Meanwhile, Chinese parents want their children to go to a more well-known college or a college in a more well-known city so that their relatives and friends would easily recognize their children's accomplishments.

Despite the common values and rationale shared by human society across cultures, college ranking and reputation are especially valued among the Chinese.

These factors being the most influential in Chinese students' college choice decisions are rooted in the Chinese economy, society, and culture. The results of our research suggest that the most effective marketing strategy for Chinese students is ranking. Our research also suggests that colleges should benefit from improving their reputation by promoting themselves through Chinese social media, especially WeChat. If a college is near or located in a metropolitan area, marketing efficacy should improve by emphasizing location advantage through job prosperity and career development.

Limitations of the research mainly derive from the constraints of the data. As noted in section 5, although the student-level data used in this paper is new and relatively large, the data is skewed to high-aptitude students, so the results of our research are more applicable to selective colleges. Also, very few students received financial aid in our sample, and we have no knowledge on how much financial aid was received in each case, so the impact of financial aid detected in our research can be unreliable. Future research can improve by using more extensive data covering a wider range of students and colleges.

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In the preparation of this manuscript, we utilized Artificial Intelligence (AI) tools for content creation in the following capacity:

- ☒ *None*
- ☐ *Some sections, with minimal or no editing*
- ☐ *Some sections, with extensive editing*
- ☐ *Entire work, with minimal or no editing*
- ☐ *Entire work, with extensive editing*

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Author bios

Yefei Xue, PhD, is an assistant researcher at Nanjing University, China. Her research focuses on graduate education and human resource management in higher education institutions. Email: xueyf@nju.edu.cn.

Siguo Li, is a graduate of the Master of Data Science program at Northwestern University and Macalester College with a bachelor's degree in Economics and Applied Mathematics. She is currently a data scientist at Massachusetts General Hospital. Email: cocolisiguo@gmail.com.

Liang Ding, PhD, is a professor in the Economics Department at Macalester College, USA. One of his research interests is education economics. Email: ding@macalester.edu.