

# Study on the Influencing Factors of Undergraduate Students' Major Choice

----Based on a Survey from an International High School in Shenzhen

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## ABSTRACT

Due to the economy's improvement, young people's plan is different from those in the past as the Major choice is an essential part of the plan; this paper can analyze the changes in the future planning of young people by studying the major choices undergraduate students. This paper conducts a questionnaire survey on the recent graduates of an international high school in Shenzhen and finds that the major choices of international high school students are often affected by school performance and family factors. Students with high school records are more likely to choose social sciences, humanities, and arts majors; students with lower school grades are more likely to choose majors in economics and management. Students from single-child families will choose majors with good employment prospects among family factors. Students from Self-employed families are more likely to choose a major related to their parent's industry. We can assume that these three factors will affect young people's major choice, and consequently influence their career path.

**Keywords:** Study abroad, Major choice, High school students

## 1. INTRODUCTION

### 1.1. Research background

Since the 21st century, China's economic environment has undergone tremendous changes compared with 20 years ago. The factors affecting the major choice of international students are also different from those in the past.

As the number of students who study abroad has been increasing, according to the Ministry of Education (2019) statistics, the total number of Chinese students studying abroad in 2019 was 703,500, an increase of 41,400 or 6.25% over the previous year. For this growing group of international students, the choice of majors has always been a certain topic.

### 1.2. Literature review

Yang et al. (2009) analyzed that the influence on undergraduate students' major choices mainly includes the following aspects: personal characteristics, family background, and economic factors [1]. Wang (2016) analyzed that students' major choices can be divided into

four types according to students' grades, interests, abilities, and consideration for employment [2]. Fan et al. (2015) proposed that students from different families with various economic and educational backgrounds show significant differences in major choices. Students from families with better economic conditions and educational backgrounds usually choose a major which has a good working environment, like business or engineering. In contrast, students with low family economic conditions and educational background usually choose liberal arts, science, and medicine, is it difficult to find a job in the current working environment [3]. Yang (2014) found that students with better family conditions are more likely to choose humanities and arts majors with higher tuition fees and higher requirements for family culture. In addition, he proposed that parents' occupations have a significant impact on students' major choices. The father's occupation will have a greater impact on male students, while the mother's occupation will have a greater impact on female students [4]. Ruan (2017) analyzed that in the influence of parents' occupations on students, parents' working for the government positively impact graduates' employment, which impacts students' major choices [5]. Yang (2019)

found that different regions also affect students' major choices. Students from developed regions are more rational in their major choices and more enthusiastic about their schools. In contrast, students from developing regions are relatively cautious and conservative in choosing majors and schools [6]. Fan et al. (2009) found that the influencing factors of major choice also impact the satisfaction degree of students' major choice [7].

**1.3. Research gap**

Most scholars have studied the influence of students' ability, family background, and family economic conditions on the major choices of undergraduate international students. Few scholars have studied the impact of parental independence on students' major choices. Parents want their children to choose a profession similar to their industry in many independent families. Therefore, if students are independent operators, they may have a greater possibility of choosing a major similar to their parents' industry. At the same time, few scholars have studied the influence of whether students come from only-child families in the family background.

**1.4. Research framework**

This paper first designs a questionnaire that obtains some relatively reliable data through a questionnaire survey in an international school. Secondly, this paper analyzes the current situation of international students' major choices through an empirical model. Finally, this paper obtains some factors influencing the choice of majors ultimately and verifies whether the parents are independent and the students are children have an impact on the majors choice of international students.

**2. METHOD**

**2.1. Survey design**

This paper design a questionnaire that surrounds whether the majors chosen by the international students are affected by the parents' independent management and the students being the only children. The questionnaire also combines three family factors of students' ability, family background, and family economic capital. The questionnaire includes two aspects include student personal information and family background. Each question in the questionnaire is set with different intervals to obtain data on the survey sample's personal ability, professional choice, and family background.

For the classification of majors, this paper classifies many majors into five major categories, including science, medicine, engineering, business, social sciences, humanities, and arts

**2.2. Survey conduct**

The questionnaire survey was completed in January 2022. The survey recovered 112 samples, including 111 valid samples, and the recovery rate of valid questionnaires was 99%. Since the questionnaire is an anonymous survey on the Internet, the results will be biased to a certain extent. The researchers of this study were students of the school. The researchers distributed the questionnaires publicly in the school and asked the headteacher of each class to issue the questionnaires during class time. To reduce the bias of the questionnaire results. At the same time, the questionnaire results show that the collected GPA data samples are normally distributed. It can be seen that this questionnaire sample includes students of all academic levels in the school.

**3. RESULT**

**3.1. Hypothesis development**

Hypothesis 1: Students are more likely to choose a major related to their parent ' s industry if they are independent operators.

**Table 1.** the same and independent operator

Same	Sample	Std. Err.	z	P
Boss	111	.4473216	2.29	.022

The p-value of this hypothesis is less than 0.05, indicating a significant relationship between choosing a major similar to their parents' industry related to whether the parents are the independent operator. There is a linear regression relationship.

Whether the parents are independent operators impacts whether international high school students choose majors related to their parents' industries. Specifically, international high school students whose parents are independent operators are more likely to choose majors related to their parents' industries, consistent with the hypothesis. The p-value of this hypothesis is less than 0.05, probably because parents who are independent operators are more likely to let their children know about their industry during their school days. Independent operators are more likely to suggest their children choose a major related to their industry.

From the empirical study, it can be seen that the research hypothesis is valid.

Hypothesis 2: Students who are only children are more likely to choose majors with relatively good employment environments, like business and science.

**Table 2.** Science and Unique Birth

Science	Sample	Std. Err.	t	P
Boss	111	.4473216	2.29	.022

**Table 3.** Business and Unique Birth

Business	Sample	Std. Err.	t	P
Unique birth	111	.0952694	-2.17	.032

The p-value of this hypothesis is less than 0.05, indicating a significant relationship between whether an international student is an only child and whether an international student chooses a major with a better employment environment. It can be considered that choosing a major for good employment has a linear regression relationship with being an only child.

Whether a student is an only child impacts choosing a major with a better employment environment. Specifically, students with only one child are more likely to choose economic management and science majors with relatively good employment opportunities than students who are not only children. This is consistent with the hypothesis. The hypothesis p-value is less than 0.05, which may be because students from one-child families will have more pressure on supporting the old after graduation, so they are more likely to consider the employment environment when choosing majors.

From the empirical study, it can be seen that the hypothesis is valid.

Hypothesis 3: Students will choose their majors according to their academic level. Students with better school records are more likely to choose humanities, arts, and social sciences.

**Table 4.** Art and GPA

ART	Sample	Std. Err.	t	P
GPA	111	.0055879	-2.28	0.025

**Table 5.** Social science and GPA

Social	sample	std. err.	t	P
GPA	111	.0065188	2.08	0.040

The p-value of this hypothesis is less than 0.05. It shows a significant relationship between students' major choices and school records. It can be considered that there is a linear regression relationship between the major choices of humanities, arts, and social sciences and students' school performance.

School record has an impact on international students' major choices. Specifically, the impact of students' GPA is positive. The higher the student's GPA, the more positive effect on students' choice of humanities, arts, and social sciences, consistent with the

hypothesis. In these two types of majors, the P-test value is less than 0.05, probably because students hope to choose a major that suits their ability. These three types of majors have higher English proficiency and learning ability requirements. As the school record is the standard to test these two abilities, students with higher school records are more likely to choose majors in humanities, arts, and social sciences.

From the empirical results, it can be seen that the model assumptions in this paper are valid.

## 4. DISCUSSION

### 4.1. Factors influencing study abroad

The major choice of international students has always attracted much attention. Based on the special data analysis, we have found the relationship between the students' school records, whether their parents are independent operators, whether the students are only children, and their major choices.

The student's school record will impact the major choice for international students. Firstly, students hope to choose a major that suits their abilities. Secondly, the school record is a direct standard that reflects students' learning ability. Therefore, students will choose their majors to refer to their school records. Therefore, students' academic performance will impact the major choices of international students.

Students from single-child families are more likely to choose majors with better employment prospects. Firstly, students may analyze the employment prospects of the major when choosing a major. Secondly, students from one-child families will have more pressure on supporting the old after graduation. Therefore, studying abroad is a family investment for international students, and the major choice will affect future investment returns. It is reasonable for students from single-child families to choose majors with higher yields and better employment prospects.

Parents as Independent operators will impact the major choice for international students. First of all, parents as independent operators have a wealth of experience and knowledge in those industries. They can provide some advice and help in students' undergraduate study, suggesting students choose majors related to their industry. Secondly, under normal conditions, students whose parents are independent operators are the most familiar with the industry worked on by their parents, and students are likely to be familiar with the related majors. Therefore, parents as independent operators will impact the major choices of international students.

### 4.2. Optimize and promote study abroad countermeasures

The conclusions reflect that international high school students are greatly influenced by external factors when choosing their future major and are significantly affected by family background, future pension pressure, school performance, and employment environment. From the empirical results, it can be seen that when choosing a major, students will comprehensively consider their family situation, school performance, and future employment environment. At the same time, it also reflects that the economic expectations and employment environment will affect students when choosing a major. And most of the students choose majors with good employment prospects and high returns. This finding highlights that students' intrinsic interests in major are gradually decreasing when choosing a major, which is a significant change from the way students chose majors mainly based on their interests in the past. From the perspective of student growth, this is a clear change in the concept of learning.

Since the rapid development of China's economy in the 21st century, students' perception of the economic pressure, employment pressure, and pension pressure after graduation has gradually increased compared with the past. When choosing a study abroad major, students no longer only consider their interests and abilities but also consider the future employment environment, economic benefits, family responsibilities, and family business inheritance. In short, students have shifted from being primarily knowledge- and personal-interest-oriented to being economic-oriented. This shift reflects a change in students' stance when choosing majors. Due to the popularity of the Internet and social platforms, various information is also more transparent to students. This enables students to understand the employment environment of different study abroad majors and the impact on the economic benefits of future employment. Therefore, these pressures have changed students' stance on choosing a major to study abroad. In the past, students' stance on major selection was more from a student's perspective, choosing a major that is interesting, and that matches their ability. When choosing a major, students now choose a major with good economic benefits and good employment prospects for a future practitioner, or a family heir chooses a major that suits their family situation and the inheritance needs of the family business. When high school students choose their majors to study abroad, their family situation and performance gradually replace their interests and become the decisive influence for them to choose their majors to study abroad. This makes international students more inclined to choose a more suitable major than a preferred major. This change will cause some students to gradually lose their interest in learning in future professional studies and thus fail to achieve good grades.

From the experimental results, "students whose parents are independent businessmen are more likely to choose majors related to their parents' industries", which

can reflect the significant influence of parents on the majors choice of international students. Because parents of international students generally think that studying abroad is a family investment. It is very reasonable for parents to hope that students choose a major with good economic benefits and employment prospects. So parents usually guide students to choose a major with good future employment prospects in their opinion. At the same time, those parents who are independent operators hope that the company they run will be passed down, and they will guide students to choose a major related to their industry. Students are more likely to choose a major that their parents think is suitable for their students

Combined with the above-mentioned current situation of students when choosing a major, this study believes that the education system, including families and schools, should positively guide students to find an interest in a certain major. When students choose a major to study abroad, they should be guided by their interests. Make a reasonable professional choice based on your family situation and academic performance, and make the following suggestions.

First, due to the lack of interest in majors, students are guided by future economic benefits in major selection. Combined with their family situation and school performance, they will tend to choose majors with high economic benefits and a good employment environment in the future. However, this choice may lead to a lack of motivation for students to pursue their majors in the future. Therefore, high schools should encourage students to explore academic interests to improve the matching degree between individuals and majors. Second, the school needs to guide high school students to explore themselves and plan their future careers. Third, the school can stimulate students' exploration of their academic interests [8]. For instance, the school can provide lectures, outings, and other activities to guide students to find their favorite majors and let them know more about their favorite majors.

Second, students' access to higher education can be seen as a long-term investment, which requires much time, energy, and financial resources. This depends on the support of parents' economic, cultural and social resources to students[9]. Parents are more inclined to guide students to choose majors with good economic benefits and a good employment environment. In contrast, students' interest in majors is still relatively neglected. And as a result, high school students are generally confused about many majors. Their thought is easily affected by the outside world, so the concept of parents directly affects their children's professional choice[10]. Therefore, parents need to change their past concepts, first, pay attention to students' interests, and guide students to choose majors based on their interests, combined with the other conditions. Parents can communicate with students about the subjects that

students are interested in, extend from subjects to majors related to these subjects, and combine the future employment environment and economic benefits to find students interested in the economic benefits and employment environment.

## 5. CONCLUSION

Based on the special data, we found that students' school records, whether their parents are independent operators, whether the students are only children, these three factors will have an impact on the major choice of international students. Students with good grades are more likely to choose relatively difficult majors. Based on these conclusions, we found that since China's rapid economic development in the 21st century, students' perceptions of post-graduation economic pressure, employment pressure, and pension pressure have gradually increased. Students have gradually shifted from focusing on their interests and hobbies to the future employment environment, expected economic benefits, family responsibilities, and inheritance. Students have changed from being oriented mainly towards knowledge and personal interests to economic benefits.

We find a gap in the international education system based on a special sample. It has contributed to the improvement of further education guidance in international education. Based on the research, we make targeted recommendations for the lack of the student's interest on the major they choose, Students are short of the knowledge of their chosen major and student's and the guidance of life planning are insufficiency in international high school .

This paper uses the questionnaire survey method to obtain data, mainly using primary data and missing secondary data. Due to the small number of students in this school, the size of the data is small. We will use the interview method to obtain other primary data in the future.

## REFERENCES

- [1] Y.Liu, F.S. Kong, Y.P. Zhong, Chinese international students major selection and influencing factors, *Journal of Higher Education*, 2009, Vol.30, No.4,
- [2] H. Wang, The influence of family capital on the choice of major under the background of major enrollment, 2016. DOI:12.3969/j.issn.1672-0598.2015.03.015
- [3] W. Fan, P.P. Hao, J.H. Zhu, Investigation on the impact of Family Capital on major choice --- based on the perspective of educational equity, *Journal of Chongqing Technology and Business University*, 2015, Vol.32, No.3, DOI:12.3969/j.issn.1672-0598.2015.03.015
- [4] L.J. Yang, The impact of family socioeconomic status on college major selection, *Education Comments*, 2014
- [5] C. Ruan, The influence of parental occupation type on college students' employment performance --- based on the 2017 National College Graduates Employment Status Survey data, *Journal of Jiangxi University Of Finance And Economics*, 2019, Vol.126, No.6, DOI:10.13676/j.cnki.cn36-1224/f.2019.06.003
- [6] X. Q. Yang, K. Y. Lv, The inter generational transmission of social stratification: the influence of family capital on the college entrance examination application, *Chinese Journal of Education*, 2019
- [7] M. C. Fan, X. W. Chen, Basic Analysis of Major Survey of Chinese College Students, *Science of University Education*, 2009, Vol.115, No.3
- [8] H.Y. Dong, J. Chen, M.K. Li, Analysis on the influencing factors of students' major selection under the general training mode of research universities, *TSINGHUA JOURNAL OF EDUCATION*, 2016, Vol.37, No. 4, DOI:10.14138/j.1001 - 4519. 2016. 04.004606
- [9] S. Yang, M. Sun, Family background, major choice and income return——An empirical study based on the data of China Comprehensive Social Survey (CGSS), Northwest population, 2019, Vol.41, No.2, DOI:10.15884/j.cnki.issn.1007-0672.2020.02.005
- [10] Y. L. Gao, Y. X. Wu, the influencing factors of College Students' major choice under the family background, Rural economy and science and technology, 2016, Vol.27, No.24