

# What Constrains Your Choice?

## A Quantitative Research on the Impact of Gender Stereotypes on Major Selection

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### ABSTRACT

This paper explored the impact of gender stereotypes on Chinese high school students' and college students' professional choices. The quantitative study used a questionnaire in Wenjuanxing and collected 316 valid responses to identify what kinds of factors will affect students to determine their specialized subject. To a certain extent, the characteristics involved in the survey do partially confirm that gender stereotypes will influence students' professional choices, but the effect is more implicit. Male and female students have different attitudes towards gender stereotypes. Major choice has little to do with Occupational gender stereotypes, mainly due to the traditional gender role. All findings offer an insight into the elements affecting students' decisions on major selection, a solidification of traditional gender role recognition, and a lack of gender equality education in the high school stage.

**Keywords:** Gender Stereotypes, Major Selection, Gender Role, Implicit Theories.

## 1. INTRODUCTION

Men have to be the pillar of a family and become successful businessmen, while women are identified as the group of people who should stay at home and take care of the family. These labels attached to different genders are the gender stereotypes in contemporary society in China. A gender stereotype is a generalized view or preconception about attributes or characteristics or the roles that are or ought to be possessed by, or performed by, women and men [1]. It lies everywhere in society, which can be harmful because it limits women's and men's capacity to develop their personal abilities, make their major choices, pursue their professional careers, and make choices about their lives.

This paper aims to analyze the impact of gender stereotypes on students' major choices, specifically high school students and undergraduates. Further discussion of the underlying causes of gender stereotypes and the survey results will be presented as well. Therefore, it is hypothesised: (a) Gender stereotype has a certain impact

on students' major choice; (b) Female and male students have significant differences in the influence of gender stereotype in choosing majors; (c) The gender difference of major selection helps to alleviate the occupational gender stereotype.

## 2. LITERATURE REVIEW

### 2.1. Gender Stereotype in Daily life

In our daily life, gender stereotypes are very common in families, which exist between the host and the hostess of the entire household. According to some studies and academic papers, the stereotype of women in the family has affected many aspects and led to the existence of many social problems. We should not ignore fair treatment for women in the Patriarchy. Postpartum depression is often caused by some gender stereotypes in the family [2]. Stereotypes of men and gender roles and cultural displays of paternity over women. Patriarchal cultural identity and gender role stereotypes are substantially defined, and multiple regressions affect the

age of a woman. Professor Bornstein and Men believed that the unequal treatment of men and women in the family based on gender issues was addressed by law [3]. With the rapid development of modern society, people's minds are becoming more and more open, so this phenomenon will be less than before.

Traditional concepts in the family will give people traditional gender stereotypes. These gender stereotypes will use traditional parenting methods to require children to grow up in accordance with their own established norms of gender role behavior [4]. The negative impact of gender stereotypes should be paid more attention to, as it deprives individual gender interaction and social function. Childhood is not only an important stage in the development of personality of gender role and gender consciousness. Any factors that may have negative effects should not be ignored, especially the cultivation of gender consciousness, which cannot be avoided in daily life, and should be paid more attention to.

## 2.2 Gender stereotype in Campus life

Campus life is an inseparable place in the process of everyone's growth. Individuals' ideas and codes of conduct are gradually formed here. Gender stereotype directly refers to the expectation of parents and teachers to students, the way of education, and the content of teaching materials. Teachers' stereotype of gender influences their attitudes, expectations and educational methods towards male and female students. It expands the gender differences between male and female students in their study and mind. Getting rid of gender stereotypes has become one of the important issues in education [5].

An article published in Science in 2017 tells us that "Gender stereotypes about intellectual ability emerge early and influence children's interests" [6]. This leads to the emergence of real gender differences. Biological factors are not the main factors affecting gender differences. There is only a tiny biological core behind the gender stereotype, and gender differences are more formed in the process of nurturing and educating different gender individuals [7]. The influence of social roles on hormone regulation, self-regulation, and social regulation is higher than that of gender, which will lead to different thoughts, feelings, and behaviors of men and women [7].

According to gender stereotypes, girls believe that "intelligence" is a male trait at the age of six. The results showed that five-year-olds all associate intelligence with their same-sex group, but by the age of six and seven, girls (48%) were less likely to do so than boys (65%)[6]. It is precise because these ideas are expressed in early childhood that there is more time to influence the educational trajectory of boys and girls. After analyzing data from the 2011 TIMSS report, a large international assessment of primary and secondary school students'

achievement, attitudes, and beliefs in Mathematics in 45 participating countries, the researchers found that boys had more positive attitudes towards mathematics and science, while girls had more negative attitudes and lower self-assessment. These cultural information influences girls at the early stage of children's development. These ideas have important implications for children's choice of learning style and show why girls decide not to participate in some subjects like physics, even though they can get high marks in school. Stereotype threats will reduce the sense of belonging of the threatened individuals, affect their motivations, and make them withdraw from the environment, resulting in fear of difficulties [8]. This cognition directly reduces girls' interest in fields suitable for very smart people, which may also explain why women lag behind in areas such as mathematics, physics, and philosophy that need intelligence quotient [6].

## 2.3. Occupational Gender Stereotype

"Occupational Gender Stereotype(OGS) means that in a specific social and cultural environment the public's expectation and requirement for different genders in the workplace, and its essence is the gender restriction of social and cultural occupations" [9]. In other words, people will make occupation choice or occupation evaluation based on gender stereotypes, such as "men are more suitable for engineers" and "women are more suitable for nurses", which also leads to the difference in the proportion of men and women in different occupational groups. Thus, Feminine Stereotyped Occupations and Masculine Stereotyped Occupations appear.

To a certain degree, Occupational Gender Stereotypes affecting high school students' direction of major choice in the future, and these choices determining the selection of future employment positions to a large extent. So the gender ratio of the major will be kept stable and continue to the corresponding employment positions. There is a study shows that college students, undergraduate students, graduate students, and doctoral students all suffer a huge employment gap because of gender differences [10]. Some organizations' recruitment information even specify "male-only". As a result, when students make their major choices, they have no choice but to narrow the range of major selection because of gender restrictions.

What's more, the implicit concept of "boys are better suited to learn mathematics" influences people's major choices [11]. It's undeniable that boys have greater advantages than girls in engineering or partial science learning. In terms of ability performance, people always believe that men are more excellent and capable, while women are more delicate in emotion [12]. Computer professionals, especially programmers, are often referred to as "geeks" or "nerds", which means smart, good at

assiduous studying, but lack interpersonal communication skills. Women are often thought to have stronger interpersonal skills, so the conflict between the computer professional social image and female gender role is bigger [13]. The names of "Science Greek" and "Programmer Monkey" representing people's OGS. Therefore, boys tend to choose engineering or science majors when making major choices, while girls more choose art majors such as nurses. This is the impact of OGS on high school students' major choices.

### 3. METHOD

This research is a quantitative study, collecting data through a questionnaire.

Before this research, we conducted a questionnaire survey which topic was the impact of gender stereotypes on today's society. The survey surveyed 220 people from different age groups and social groups in China on their views and understanding of gender stereotypes. Participants were randomly selected from different stages of Chinese society: students, working, retired, and freelancers. And there was not much difference between men and women, with the proportion of men being about 48 percent and women being about 52 percent. Most of the respondents come from people who have already participated in the work, accounting for about 69 percent. Freelancers accounted for the least, at 5 percent. We realized that gender stereotypes were prevalent among people of different ages and groups in society.

#### 3.1. Participants

**Table 1.** Basic information of survey subjects

Variables	Sample Size (Percentage)
<b>Gender</b>	
Male	154 (48.89%)
Female	161 (51.11%)
<b>Current grade</b>	
High school freshman	69 (21.9%)
High school junior	39 (12.38%)
High school senior	29 (9.21%)
College freshman	44 (13.97%)
College sophomore	80 (25.4%)
College junior	39 (12.38%)
College senior	15 (4.76%)

The topic of this study is whether gender stereotypes affect your choice of major. Participants were a randomly selected group of Chinese students from high school students to university students: senior one students, senior two students, senior three students, freshmen, sophomore students, junior students, and senior students. The proportion of men and women is basically equal, with about 49 percent of men and 51 percent of women. Among them, the number of sophomore students is the

largest, accounting for about 25 percent. Senior students accounted for the least, about five percent.

#### 3.2. Measures

The data used in this research were collected by questionnaire. There are a total of 17 questions in the questionnaire. First of all, every member of our group participated in the discussion to determine the questionnaire's questions and modify them to make the content of the questionnaire easier to understand and look more concise. Then we started to release questionnaires, and all the respondents were in line with the requirements in the questionnaire to ensure the accuracy and authenticity of the data. Our expected survey sample was 300, but the actual survey sample was 315. The last step is to analyze the data of each question, draw a conclusion and think deeply.

### 4. RESULTS

#### 4.1. Gender stereotypes are still prevalent among young people but are not a major factor of major selection.

Through the survey, it can be seen from Table 2. that 72.06% of students indicated that they considered gender stereotypes still prevalent in contemporary society. In comparison, only 27.94% of students believed that gender stereotypes were not common sense, which means most of the students acknowledge the existence of gender stereotypes.

However, only 29.21% of students were willing to choose majors that they were not good at considering possible "gender advantages". 34.29% of students agreed that gender stereotypes affected their motivation to study. 26.98% of students had attributed the poor performance to gender factors, and only 36.51% of students had considered gender stereotypes as an influencing factor during major selection.

Compared with the other dominant factors such as personal interests and suggestions from family and friends, a lower proportion of students choose their major based on gender factors. 56.51% of students attributed their major selection to personal interests, and 32.7% chose their major according to suggestions from family and friends. In comparison, only 10.79% of students attributed the factor to gender advantages. In general, although most students had acknowledged the existence of gender stereotypes, the survey results did not indicate that students consider gender stereotypes as an influencing factor during the process of major selection.

**Table 2.** Cross-analysis of gender and statement 1

Statement	Agree or Not	Percent-age (%)	Male (%)	Female (%)
(1) You have considered gender stereotypes as an influencing factor during major selection.	Disagree	63.49	48.5	51.5
	Agree	36.51	50	50
(2) You will choose majors you are not good at due to possible "gender advantages".	Disagree	70.79	45.98	54.02
	Agree	29.21	56.52	43.48
(3) Gender stereotypes affect your motivation to study.	Disagree	65.71	49.52	50.48
	Agree	34.29	48.15	51.85
(4) You have attributed the poor performance to gender factors.	Disagree	73.02	51.95	48.05
	Agree	26.98	41.18	58.82
(5) You think gender stereotypes are still prevalent among contemporary young people.	Disagree	27.94	71.91	28.09
	Agree	72.06	40.09	59.91

#### ***4.2. Male and female students have different attitudes towards gender stereotypes. Major choice has little related to Occupational gender stereotypes.***

Based on the data obtained from this survey, for question (6) in Table 3, 56.83% of people hold a negative attitude when asked whether boys are better at science than girls. Compared to question (7) in the table when asked whether girls are better at liberal arts than boys, 62.22% of them held a negative attitude, which was nearly 5 percentage points higher than the question (6). And among those with negative attitudes, more than half are girls. In (6) and (7), the proportion of boys who approve of questions accounted for more than half.

Comparing the two questions (6) and (7), it can be seen that there are different attitudes between men and women. According to statistical data, it can be seen that girls do not have a clear understanding of their gender and subject, and they are more sensitive to this aspect involving gender stereotypes. It stands to reason that only the gender of the dominant object is changed for two

similar topics, and the result should be the same, but there is a small part of the difference. This difference shows the inequality of women and the impact on women and sexism.

**Table 3.** Cross-analysis of gender and statement 2

Statement	Agree or Not	Percent-age (%)	Male (%)	Female (%)
(6) Do you think males tend to handle STEM subjects better than females?	Disagree	56.83	44.13	55.87
	Agree	43.17	55.47	44.53
(7) Do you think females tend to handle Humanities subjects better than the male?	Disagree	62.22	47.45	52.55
	Agree	37.78	51.67	48.33
(8) Do you consider employment prospects when choosing a major?	Disagree	33.65	68.87	31.13
	Agree	66.65	39.05	60.95
(9) Do you think that gender restrictions in some occupations will affect the choice of major study?	Disagree	57.14	47.22	52.78
	Agree	42.86	51.47	48.53
(10) Will you give up your favorite major when you are employed because of occupational gender stereotypes?	Disagree	72.70	46.52	53.48
	Agree	27.30	55.81	44.19

In the comparison table (8) (9) (10), it can be seen that 66.35% of people will consider their employment prospects when choosing a major, among them, girls accounted for more than 60%, but 33.65% of students were employed regardless of their employment prospects, and boys accounted for nearly 40%. Analyzing gender stereotypes from the table data will have a greater impact on girls in terms of employment and career choices. It is easy for women to have a certain degree of unconfidence in understanding professional occupations. And 42.86% will choose a major based on gender stereotypes such as kindergarten teachers, Nurses all exist in people's memory as women. Still, the question (10) shows that up to 72.7% of people will not give up their favorite professions because of gender stereotypes in their professions. Therefore, for contemporary young people, gender stereotypes exist, but their impact on young people is not significant, and the impact on professional selection is minimal.

#### ***4.3. Occupational gender stereotypes are related to traditional gender roles, not to gender ratio in major.***

Almost 75.8% of people thought that occupational gender stereotypes were mainly derived from the recognition of traditional gender roles, and had little correlation with gender differences when choosing a

major. In other words, people did not think that occupational gender stereotypes were formed because of gender differences in professional choice, but based on gender roles that had been influenced by Chinese traditional culture for a long time. For example, Since ancient China, there has been a saying that "a woman without talent is virtuous", it's generally believed that men are superior to women in knowledge and technology learning ability. Therefore, people will think that boys should be more biased towards science, engineering learning, and other subjects such as liberal arts, which do not need to use logical thinking, which is considered to be for girls. So when facing employment choice, not only will the employers give priority to whether the gender of the candidate is traditionally suitable for a job, but also the employees will choose his or her employment direction because of the influence of traditional gender role recognition.

Through the data, we can also find that about 64.13% of people think occupational gender stereotypes are linked to the lack of gender equality education. The traditional gender role recognition is solidified, and the correct guidance of gender equality education is lacking, so the occupational stereotype is formed.

## 5. DISCUSSION

According to the data from the survey, it is suggested that gender stereotypes are still prevalent among young people but are not an influencing factor during the process of major selection. In contrast, another study also demonstrated that certain gender stereotypes from society impact the choice of major [14]. Our survey seems to show that young people in China today are less affected by gender stereotypes in their major choices, more affected by their own interests and others.

As a matter of fact, the possible reason for these conflicting perceptions is that students internalize their gender stereotypes as implicit gender stereotypes. In social identity theory, an implicit bias or implicit stereotype [15] is the pre-reflective attribution of particular qualities by an individual to a member of some social out group. In the survey, students who did not attribute gender stereotypes as an influencing factor of major selection claimed that they believed gender stereotypes are still prevalent and unconsciously affected by implicit gender stereotypes. It can be said that they are aware of the existence of gender stereotypes but deny the opinion of being impacted by gender stereotypes and social gender roles, especially while choosing majors.

Moreover, self-efficacy might be another reason for the results of the study. Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments [16]. Self-efficacy reflects confidence in exerting control over one's own motivation, behavior, and social environment [17]. Students with high self-efficacy

believed that they would not be challenged by environmental factors like gender stereotypes during the process of choosing majors. Thus they did not attribute gender stereotypes as an influencing factor.

In the process of individual socialization, gender stereotypes are duplicated and transmitted [14], leading male and female students to internalize their own ideas. Students constantly modify their own behaviors and form their expectations of future occupational roles according to gender stereotypes they believed in.

## 6. CONCLUSION

Overall, the results of our first study finally demonstrated the existence of gender stereotypes in different age groups in Chinese society. This study finally showed that gender stereotypes impacted the major selection of high school or college students. Gender stereotypes existed and were ubiquitous, but some respondents did not show them externally. This at least showed that gender stereotype would not be the main factor in students' active cognition. Meanwhile, males and females did have different attitudes towards gender stereotypes. We were also glad to see that most students would not be affected by occupational gender stereotypes when choosing their majors. The change of gender ratio of majors may also help to dispel the formed occupational gender stereotype.

The campus is the place where students grow up. The campus should provide students with an environment that can form a better and more independent personality. Boys and girls should promote their physical and mental development and perfect personality through natural contact. It's not gender that determines ability. It's behavior. It's everyone's choice, what kind of person they choose to be and what kind of things they choose to do. As a result, Gender stereotypes should not be the main factor in the choice of majors.

Although this paper also attempted to explore the relationship between male and female students' major choices and occupational gender stereotypes, the analysis is still relatively limited. Further research is needed in the future.

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