

## A Stereotypic Explanatory Bias Study of College Students' Occupational Gender Stereotype

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### Abstract

Using Stereotypic Explanatory Bias (SEB), the present study investigated college students' occupational gender stereotype. It was founded that there universally existed occupational gender stereotype among college students; No difference in gender was found in implicit occupational gender stereotype by SEB; No difference in grade was found in implicit occupational gender stereotype by SEB; people tend to give more internal attribution regardless of the context and the gender of the behavior's subject.

**Key words:** Occupational gender stereotype; Stereotypic explanatory bias; College students; Attribution

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### INTRODUCTION

Occupational gender stereotype still exists nowadays. People may admit explicitly that women can make the same achievements as men in some areas, however, the traditional occupational gender stereotype still exists implicitly, and directs people's daily thoughts and behaviors in an automatic way. The research nowadays has gone beyond the occupational stereotype and gender stereotype, the college students' occupational gender

stereotype was concerned by some scholars. Occupational gender stereotype is a prejudgment about men and women engaged in certain occupations after the classification of occupation, which has a direct influence on people's cognition, attribution, motivation, behavior and choice of occupation (Zhu, 2010). As a form of stereotype, occupational gender stereotype has high stability, once formed, it is not easy to be changed. Generally, men are considered to be strong, independent, brave, and suitable for challenging and stressful work, such as lawyers, doctors, managers, etc; women are considered to be mild, delicate, timid, introverted, and suitable for the service or trivial work, such as secretaries, nurses, teachers, etc.. (Wang, 2010)

Earlier studies on the occupational gender stereotype mainly use directly explicit measurement. But people are often forced by the pressure of social evaluation, and unwilling to admit that they have occupational gender stereotype, therefore explicit measurement results may not reflect the people's real attitude. With the introduction of the research methods of implicit measurement at the end of the 20<sup>th</sup> century, more and more psychologists believe that occupational gender stereotype is associated with the implicit social cognition. The methods commonly used to research occupational gender stereotype are latency judgment technology, projection test, Implicit Association Test (IAT), word completion, false reputation method, etc.. (Li, 2007) Among them, IAT has high validity and reliability, and can be used to measure thoughts and attitudes that have not direct contact with positive or negative, so IAT is applied widely in the field of implicit social cognition.

However, with the progress of the research, the shortcomings of IAT are gradually exposed. Many research results supported the reliability and validity of IAT, but the operation indexes didn't give a reasonable explanation about its operation mechanism. Karpinski

and Hilto (2001) found that the measurement results of IAT couldn't predict those behaviors related to the implicit attitude significantly. Just when the IAT was applied widely and questioned, Stereotypic Explanatory Bias (SEB) is applied gradually in the field of implicit social cognition. SEB was based on the explanatory bias put forward by Hastie (1984), Hastie believed that persons would give more explaining attributions in the situation that was inconsistent with their occupational gender stereotype, so that the inconsistent situation could be explained reasonably. Attribution is a key problem in SEB measurement, SEB scores are also provided by the explaining quantities and the attribute properties. The researches about attribution can date back to the 1983. Kulik found people tended to give environmental attribution rather than personal attribution when their behaviors were not consistent with the expected behaviors (Liu, 1998). Compared with the IAT, SEB has some particular advantages, such as combining with the situation, reflecting the implicit attitude naturally, high external validity, good predictability, etc. The SEB has been widely used in the study of the occupational gender stereotype.

This study adopts SEB to explore the occupational gender stereotype of the college students, and discusses gender difference, grade difference and internal or external attribution tendency.

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## 1. MATERIALS AND METHODS

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### 1.1 Participants

We tested 64 college students in Chengdu randomly (28 males and 36 females). The samples covered 15 freshmen, 14 sophomores, 16 juniors and 19 seniors.

### 1.2 Materials

Based on the theory of SEB, we developed a questionnaire (Yu & Liang, 2005). The questionnaire is made up of 25 sentences required to fill out the reason, participants need to fill out the reason according to results. 25 sentences are divided into 16 sentences of SEB and 9 irrelevant sentences according to whether the sentence has specific relations with the occupational gender stereotype. 16 SEB sentences are consist of 8 subjects of typically male name, such as Deng Guoqiang, and 8 subjects of typically female name, such as Xu Fang. 9 irrelevant sentences don't have obvious information about gender, such as Xiao He. Every gender group is consist of 4 sentences consistent with occupational gender stereotype and 4 sentences inconsistent with occupational gender stereotype, at the same time, these sentences have both negative side and positive side. The SEB scores are calculated as follows: each attribution stands for one point, sum up all the attributions which are divided into 2 kinds of

SEB scores consistent or inconsistent with occupational gender stereotype, then we can get the ultimate SEB scores by using the inconsistent scores to minus the consistent one. More SEB scores indicate that persons give more explaining attributions in the sentence context inconsistent with occupational gender stereotype, that is to say, occupational gender stereotype exerts a greater impact on information processing. In addition, we can find the occupational gender stereotype according to internal or external attributions on the SEB sentence.

The test-retest reliability of the questionnaire is 0.75 ( $p < .001$ ) after an interval of two weeks, the homogeneity reliability is 0.728. The two kinds of reliabilities meet the test requirements of the preparation. Similarly, Yu (2005) developed a similar questionnaire according to the SEB theory, the test-retest reliability is 0.85, the homogeneity reliability is 0.875.

### 1.3 Procedure

The questionnaire was carried out in strict accordance with the psychological test procedure. The instructions were unified before filling out the questionnaire, and all participants were asked to finish it independently.

### 1.4 Data Processing

We invited 2 psychology experts to review the questionnaire, and all data were statistically analyzed by using Spss 20.0.

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## 2. RESULTS

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### 2.1 The Overall SEB Scores

In the calculation of the overall SEB scores, we firstly calculate the four types of explaining quantities in SEB sentences: When the results of behaviors of the typical female actor are consistent with the occupational gender stereotype, we mark the explaining quantities for FF; when the results of behaviors of the typical female actor are inconsistent with the occupational gender stereotype, we mark the explaining quantities for FM; when the results of behaviors of the typically male actor are consistent with the occupational gender stereotype, we mark the explaining quantities for MM; when the results of behaviors of the typically male actor are inconsistent with the occupational gender stereotype, we mark the explaining quantities for MF. In light of male and female groups, each participant can get two SEB scores: SEB1 and SEB2,  $SEB1 = FM - FF$ ,  $SEB2 = MF - MM$ , 64 SEB1 scores and 64 SEB2 scores can be obtained respectively. And then, difference test is given between the two SEB scores and 0. If the difference is significant, it indicates that the attribution process is affected by the occupational gender stereotype, and vice versa. The specific SEB1 scores and SEB2 scores are reported in Table 1.

**Table 1**  
**The Overall SEB Scores**

Factor	N	M	SD	t	df	Sig.
SEB1	64	0.78	1.581	2.796	63	0.009**
SEB2	64	1.03	1.331	4.381	63	0.000**

Note. \*\* indicates  $p < .01$ .

From the Table 1, we can know that SEB1 and SEB2 are all significantly greater than 0 ( $p < .01$ ), which indicates that the explaining quantities inconsistent with the occupational gender stereotype are significantly greater than the ones consistent with the occupational gender stereotype, no matter whether the subject of sentence is the typically female name or the typically male name. According to the SEB theory, it shows that participants have strong occupational gender stereotype regarding the role of women or men.

## 2.2 Differences in Gender and Grade of SEB Scores

**Table 2**  
**Two-Way Anova About Differences in Gender and Grade of Seb Scores**

Source	The dependent variable	df	F	Sig.
gender	SEB1	1	1.092	.301
	SEB2	1	2.950	.091
grade	SEB1	3	1.240	.304
	SEB2	3	1.619	.195
gender*grade	SEB1	3	1.733	.171
	SEB2	3	2.009	1.198

A two-way ANOVA is carried out on the SEB1 scores and SEB2 scores respectively in Table 2, which indicates that no differences in gender or grade were found in occupational gender stereotype by SEB, the interaction between the different genders and different grades is of no significance.

## 2.3 Internal and External Attribution Properties of SEB

Through the concrete analysis of attribution properties aiming to 16 SEB projects in the questionnaire, we can also know whether participants have occupational gender stereotypes or not. The internal and external attribution properties of SEB are reported in Table 3 and Table 4.

**Table 3**  
**Accounts of Attribution in the Positive Situation**

	Internal attribution	External attribution
Female actor	252	156
Male actor	318	60

**Table 4**  
**Accounts of Attribution in the Negative Situation**

	Internal attribution	External attribution
Female actor	266	128
Male actor	230	168

Assessing with chi-square statistics accounts of attribution in the positive situation from Table 3 ( $\chi^2=49.236$ ,  $P < .01$ ), we can know that the accounts of internal attribution about male actors in the positive situation are significantly greater than the accounts of internal attribution about female actors in the positive situation. Similarly, assessing with chi-square statistics accounts of attribution in the negative situation from Table 4 ( $\chi^2=7.998$ ,  $P < .01$ ), we can know that the accounts of external attribution about male actors in the negative situation are significantly greater than the accounts of external attribution in the negative situation. This shows participants have occupational gender stereotypes no matter whether it is positive or negative situation. In addition, we find that participants tend to give more internal attributions regardless of the context and the gender of the actor. The accounts of internal attribution (1,066) are much greater than the accounts of external attribution (512).

## 3. DISCUSSION

### 3.1 The General Analysis of SEB Scores

From the above results we can see that, as expected, occupational gender stereotype exists in college students. We can know that SEB1 and SEB2 are all significantly greater than 0 according to the T-test. As college students receiving higher education, they still have very strong occupational gender stereotypes. It suggests that education has no significant effect on changing occupational gender stereotype. In fact, occupational gender stereotype is a kind of very common phenomenon.

### 3.2 Analysis of Difference in Gender and Grade of SEB Scores

The above results indicate that there is no significant difference in gender. Xu (2003) and Lian (2004) researches all showed that no difference in gender was found in occupational gender stereotype. The findings of the study were consistent with results found in previous researches. However, the research of Zuo (2006) showed that there was significant gender difference in occupational gender stereotype by SEB. The reason of the difference may be that SEB score is an unstable value and easily affected by context. And then, SEB focuses on the attribution process, which is a dynamic process of information processing. Meanwhile, we can't completely control over the additional variables in surveying process, thereby affecting the measurement results of SEB.

The above results also indicate that there is no significant difference in grade, all college participants of four grades have occupational gender stereotype. The reason may be that, from freshman to senior, age span of participants is small, which brings participants to the same physiological maturity level. At the same time, college Students, as a unified group, suffer relatively similar academic atmosphere and cultural influence, they can also influence each other and have similar value. In addition, most college students have not yet entered the society and lack of work and life experience, they usually make a judgment based on the subjective imagination, which means that most college students may have a partial view of the occupation.

### 3.3 Analysis of Internal and External Attribution Properties of SEB

Above results indicate that people tend to give more internal attribution regardless of the context and the gender of the actor, which also shows that there universally exists fundamental attribution bias in the attribution process. Moreover, this tendency in positive situations is more apparent, and to some extent, it reflects the self-interest attribution bias of participants in the process of attribution.

On the one hand, from the internal and external attribution properties of SEB, we can see that the accounts of external attribution about male actors in the positive situation are significantly less than the accounts of external attribution about female actors in the positive situation. For men's success, people used to think that it should be like this. Men have more intrinsic quality of success, they can rely more on abilities and strengths to succeed. However, the accounts of external attribution about female actors in the positive situation are more than the accounts of external attribution about male actors in the positive situation, which indicates that people usually think the success of women is more likely caused by some accidental or external factors, such as environment, fortune, appearance, etc.. On the other hand, the accounts of external attribution about male actors in the negative situation are more than the accounts of external attribution about female actors in the negative situation. For women's failure, people usually attribute it to the internal factors, such as abilities, character, knowledge, etc. Compared with men, people usually think women have less intrinsic quality of success. But on the whole, it is generally believed that although a person's success or failure is the result of many factors, but the key factor lies in the more internal factors, such as abilities, character, personal expertise, hard work, etc..

### 3.4 Reflection of SEB Results

Nowadays, a great many people advocate the equality of men and women, however, the traditional occupational gender stereotype exists implicitly among college

students. The reason for the formation of occupational gender stereotype may be that college students are subject to the same traditional culture and the social expectation. People always evaluate a career based on social status and economic income in a traditional view. Therefore, people respect occupations that have high social status and high income. These occupations are mainly professional and technical work, while the service is always regarded as an occupation of low social status and low income. In the past, women had low social status, they could only engage in the service without much technical content. The service was consistent with the occupational gender stereotype aiming for the female, so people formed the occupational gender stereotype that women were more suitable for the service. This concept has precipitated in the minds of the people through long-term accumulation, and influenced people's daily thoughts and behaviors in an automatic way, which also shows that the influence of occupational gender stereotype is profound and long-lasting. People often determine whether he or she is suitable for certain jobs based on a person's gender. It is widely believed that men should engage in armed police, coaches, managers, truck drivers, etc., while women should engage in kindergarten teachers, nurses, secretaries, nannies, etc., which limits the development of occupation, in a certain extent, especially the occupation choice of female college students.

However, with the development of the feminist movement, the traditional occupational gender stereotype has received the unprecedented challenge. The society actively promotes the occupation equality. As long as the occupation is good for the people and the society, it is worthy of our respect. Although men are still the subject of modern social work, many women also actively participate in society, and strive to realize their own value in a variety of positions with the social progress and economic development. All the countries around the world call for equality between men and women, In the meantime, the state also issued relevant rules, prohibiting all kinds of occupation discrimination. These measures attracted much attention of many people, and also got some good results. Nevertheless, the influence of occupational gender stereotypes is profound and long-lasting and affected by the social environment and culture, so problems can't be solved overnight, which requires us to pay a greater effort to avoid the negative influence of occupational gender stereotype.

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## CONCLUSION

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From what has been discussed above, this research draws the following conclusions:

(a) There universally exists occupational gender stereotype among college students.

(b) No difference in gender was found in implicit occupational gender stereotype by SEB;

(c) No difference in grade was found in implicit occupational gender stereotype by SEB;

(d) People tend to give more internal attribution regardless of the context and the gender of the behavior's subject.

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## REFERENCES

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- Hastie, R. (1984). Causes and effects of causal attribution. *Journal of Personality and Social Psychology*, 46, 44-56.
- Jiang, Y. D., He, L., & Wang, X. J. (2011). A stereotypic explanatory bias study of postgraduate students' implicit occupational gender stereotype. *Science of Social Psychology*, 26(1), 109-113.
- Karpinski, A., & Hilton, J. L. (2001). Attitudes and the implicit association test. *Journal of Personality and Social Psychology*, 81, 774-788.
- Li, Y. N. (2007). Preliminary study of occupation sex stereotype on social youth. *Science and Technology Information*, 36, 469-470.
- Lian, S. F. (2004). A study of social tuning effect on implicit stereotype. *Psychological Science*, 27(5), 545-560.
- Liu, Y. F. (1998). *Attribution theory and application* (pp.53-56). Shandong, China: Shandong People's Publishing House.
- Wang, X. H. (2010). *The research of the relationship between college students vocational gender stereotype and vocational interest*. Shandong, China: Shandong Normal University.
- Xu, D. Z. (2003). The effect of gender on gender stereotypes. *Psychological Science*, 26(4), 671-678.
- Yu, H. Y., & Liang, N. J. (2005). Stereotypic explanatory bias (SEB): A new index to show people's implicit attitudes. *Psychological Science*, 28(1), 42-44.
- Yu, H. Y. (2005). *A stereotypic explanatory bias study of social cognition*. Shanghai, China: East China Normal University.
- Zhu, X. Y. (2010). A study on college students' implicit occupational gender stereotype. *Science of Social Psychology*, 25(1), 47-52, 93.
- Zuo, B., & Liu, X. (2006). The researches of implicit gender stereotype based on IAT and SEB. *Psychological Development and Education*, 4(4), 57-63.