

A Study of Regional Stereotypes in North and South

Liulu Sheng

Taizhou Vocational and Technical College, Taizhou, Zhejiang, China

Abstract: The differences between the north and the south are not only reflected in the geographical environment, history, culture and economic activities, but also reflected in the psychological differences between southern group and northern group. "Birds of a feather flock together" has a certain truth. "Hearts are different, each is its own face" also has its truth. Stereotypes can simplify perceptions and thus create biases. In the process of sorting out the research on regional stereotypes at home and abroad, it is found that stereotypes undergo an automatic to controlled transformation. For negative stereotypes, researchers use various methods to suppress them, among which the presentation of anti-stereotypes information can effectively suppress stereotypes. By using the questionnaire method, students from two universities in the north and the south were selected to carry out free association test on the characteristics of the northern and southern groups and the evidence of the existence of regional stereotypes was found. Using the North and South group behavior assessment questionnaire, the results show that there are stereotypes of southern group being apathetic and stingy and northern group being irritable and careless and showing the characteristics of "in-group preference, out-group exclusion". Using the North and south regional stereotype interpretation bias questionnaire, the results show that there are two stereotypes: the South group is apathetic and stingy and the North group is irritable and careless. Compared with the stereotype inconsistent behavior situation, the subjects made fewer attributions in the stereotype consistent behavior situation and were more inclined to internal attribution. Compared with the stereotype-consistent behavior situation, the subjects made more attributions in the stereotype-inconsistent behavior situation and were more inclined to extrinsic attribution.

Keywords: Regional Stereotype; Anti-Stereotype; Southern Group; Northern Group

1. Introduction

The difference between the southernmost point (about 4 degrees north latitude) and the northernmost point (about 53 degrees north latitude) of Chinese territory is nearly 50 degrees. The Qinling Mountains and Huai River are the dividing line between North and South, has also made the awareness of North-South geographical differences more obvious in the minds of the Chinese people. Regional stereotype is a kind of cognitive structure, which involves the perceiver's group ideas, knowledge and expectations about the people in a certain area. It should be noted that stereotypes often have cognitive biases, which can easily lead to discrimination against a certain individual or group. In fact, the differences between the north and south regions of China are complex and diverse, with each region having its own uniqueness while also sharing many things in common. Regional stereotypes in the north and south are usually the product of geographical environment, historical culture and social phenomena and should be premised on caution and understanding.

The southern area of China accounts for about 25% of the country and the population accounts for about 55% of the country. The northern region accounts for about 20% of the country's total area and 40% of its population. It can be seen that although the area of the north and the south accounts for less than half of the total area of the country, the total population accounts for more than 90% of the total population of the country. In 1992, China's total population was 1,171,7171 million and in 2022, China's total population was 1,41175 million. In the past 30 years, China's population has increased by 0.2 times. There are now more than 200 million migrants

in China, many of them seasonal or temporary migrant workers. With more and more frequent population movement, many northerners are moving south to Guangdong, Zhejiang and Jiangsu for work and living, while many southerners are moving north to Beijing and Tianjin for work and living. Contacts between the northern and southern communities are getting closer. This study explores whether the North and south regional stereotypes exist in explicit and implicit levels and what are their characteristics.

There are a group of sub-members under the stereotype, but their research maturity is not synchronized, among which gender, occupation and discipline stereotypes have been studied more. Although regional stereotypes are also a member of the stereotype, there are too many versions of regional stereotypes and different places may have different regional stereotypes. The additional factors that need to be controlled are also more complex, resulting in limited research results in this area at home and abroad.

Initially, social psychologists simply defined stereotypes as thought systems about social groups and focused on identifying and measuring the content of these thought systems. With the rise of cognitive psychology, research in this area has increasingly focused on what these structures look like, how they are formed and how knowledge and ideas about social groups are stored and retrieved in memory. The definition of a regional stereotype can be derived from the definition of a stereotype, which is established when the perceiver acquires knowledge and ideas about a group and these ideas are associated with the group. In this study, the regional stereotype refers to the cognitive structure of the subjects' perceptions of the personality (temperament and character) characteristics of the southern and northern groups.

The empirical study of stereotype can be traced back to study on the stereotype of college students. They used a simple way to measure stereotype, which is to give subjects an adjective list describing qualities and ask them to point out content that fits a certain group. And those adjectives that appeared with the highest frequency were considered to define the group stereotype. The free response rule makes it easy to get an intuitive view of the group by asking the subject to respond to their

attitude or evaluation of the group. This research method has the advantages of being more direct, time-saving and easy to operate, but it may require a certain amount of patience to put together. For example, when people are asked to talk about their impression of scientists, most of them will come up with a series of positive words such as rigorous, intelligent and great people. When people were asked to talk about beggars, most people came up with a series of negative words, such as poor, old, weak, sick and dirty. As a direct measure of stereotypes, in addition to Katz-Braly and the free response method, there are also Gadener and Bigham methods, which evaluate stereotypes on a scale or percentage.

Stereotypes influence the judgment of others who possess the traits contained in the stereotype, for the most part in ways that consciousness is not well aware of or able to suppress. Although academic definitions of stereotypes do not distinguish between conscious and unconscious psychological mechanisms, some studies have shown that it is necessary to examine the extent to which stereotypes operate implicitly outside of conscious cognition, because certain attributes of certain social categories involved in stereotypes cannot be recognized by individual introspection [1]. The methods used to measure implicit stereotypes include projective tests, priming tests, stem complement tests, serial priming tasks, processing separation procedures, reactivity-based IAT and GNAT and the Stereotype Explanatory Bias Questionnaire.

Stereotype, as a kind of social cognitive bias, is manifested in that individuals are prone to cognitive bias of one kind or another in the process of recognizing others and forming impressions about others due to various environmental factors. In most cases, subjects are not aware of their cognitive bias. To measure the implicit stereotype is to use the results of the first half sentence of the object of study and fill in the blanks according to their own views. The SEB questionnaire generally includes 16 sentences related to stereotypes and 9 sentences unrelated to stereotypes. Some literature describes that the SEB questionnaire is composed of 16 sentences related to stereotypes and 8 sentences unrelated to stereotypes [2]. The SEB effect is based on subtracting the number of attributions from the

sentences inconsistent with the stereotype. If the number is greater than 0, it proves the existence of implicit stereotype. In addition, the presence of the SEB effect can also be demonstrated if the external attribution of the sentence inconsistent with the stereotype is greater than the internal attribution. In general, individuals tend to make more extrinsic attributions to sentences that are inconsistent with stereotypes and more internal attributions to sentences that are consistent with stereotypes [3].

Chinese scholars have also conducted localized studies on regional stereotypes, mainly covering urban and rural groups, local people and outsiders, Chengdu and Chongqing, Southern and Northern Jiangsu, Northeast people and non-Northeast people, etc. In addition to using explicit or implicit methods to verify whether regional stereotypes exist in these groups. They also conducted in-depth research on the formation causes, characteristics and intervention methods of stereotypes, which laid a foundation for future generations to continue to study regional stereotypes. However, it is doubtful whether implicit stereotype can be accurately measured by reaction time index and the ecological validity of the measured data is limited by the environment of laboratory computer operation. The use of stereotyped explanatory bias questionnaire can measure implicit stereotypes from the perspective of subjective attribution, although the data statistics are troublesome.

To sum up, regional stereotype research has always been one of the important topics in psychology, sociology, cultural studies and other fields. Researchers aim to understand people's stereotypes about different places, countries, cities, or cultures and how these stereotypes affect people's attitudes, behaviors and decisions. In cross-cultural comparative research, many studies focus on whether people's stereotypes of different places and cultures are universal. Research has found that immigrant groups who speak the local language of a specific linguistic region would be perceived as more competitive within this region than in another linguistic region [4]. These studies often include samples from different countries and regions that are used to compare similarities and differences in stereotypes. Studies have found that some stereotypes are common across cultures, but

others are specific to one region or culture. In the field of media and stereotype research, mass media (film, television, internet) play an important role in the formation and spread of regional stereotypes. Entertainment media selection is predicted by preexisting beliefs: greater endorsement of a particular stereotype predicted a decrease in the selection of shows featuring representations challenging that stereotype. Findings indicate that those who could benefit most from these representations are less likely to be exposed to them, undermining the utility of mass media in the widespread reduction of harmful stereotypes [5]. Researchers focus on how regional stereotypes are shaped and transmitted by media and the impact this has on society. In the study of social cognitive and psychological mechanisms, researchers also explore how individuals form and maintain regional stereotypes and how these impressions interact with social cognitive and psychological mechanisms, including the study of concepts such as cognitive bias, social identity and social attribution. Some scholars have found that the more distant regional identities are perceived to be, the less generous help-givers are, both in terms of their decision to help and to give wrong directions, as well as in their expressed emotions [6]. In the study of methods to suppress or weaken stereotypes, some studies focus on how to reduce or correct regional stereotypes, which includes changing people's perceptions and attitudes through education, cross-cultural communication, media advocacy and other means. In studies of factors such as race, gender and age, studies have shown that there is a link between regional stereotypes and other stereotypes (such as race, gender, age). The study also involves the interaction between different factors. Aggregated responses on bias tests from individuals in geographic proximity have shown to relate to important society-level discriminatory outcomes. Research examines the pressing issue of gender inequality in employment from a regional perspective of inter-group bias [7]. Some studies have shown that improving regional cognitive resources is not the only way to eliminate regional stereotypes. It is also an important way to create a good cognitive environment so that people can get positive recognition of the cognitive environment in every social learning

and social reinforcement [8].

2. Negative Stereotypes and Anti-stereotype Feature Word Screening

2.1 Research Objective

There are no available materials for the study of regional stereotypes in the north and the south. Therefore, the high frequency commendatory and derogatory feature words should be counted based on the subjects' free responses to the characteristic adjectives of the northern and southern groups and the antonyms of the most prominent derogatory feature words should be selected as anti-stereotype features.

2.2 Research Methods

2.2.1 Subjects

Stratified sampling method was adopted to randomly select 1000 subjects for adjective responses in the northern and southern groups and screen the valid responses of 962 subjects, including 423 males and 539 females. 489 people from the south and 473 people from the north. The participants ranged in age from 16-62 years, with an average age of 27.50 years.

2.2.2 Procedure

Through the guidance, the subjects were asked to freely respond to the northern group and the southern group on the personality characteristics of the description of at least 1 words. By using paper questionnaire, electronic questionnaire and questionnaire star platform, 1130 words about the characteristics of the northern and southern groups were finally collected, including 602 words describing the characteristics of the southern group and 528 words describing the characteristics of the northern group. After preliminary sorting out, words that do not belong to the personality characteristics were eliminated and words with the same or similar meanings were combined to screen out the high-frequency personality characteristics words. In addition, anti-stereotypical feature words were found for the description of derogatory feature words of the northern and southern groups.

2.3 Research Results

After counting the frequency of characteristic words in the northern and southern groups, the first two positive characteristics described by

the subjects to the southern group were: intelligent (47 times), gentle (32 times). The first two derogatory features of the southern group were: apathetic (28 times) and stingy (26 times). It can be seen that the participants may have a negative stereotype of the southern group as apathetic and stingy, so the characteristic words for the anti-stereotype of the southern group can be set as: enthusiasm and generosity. The first two positive characteristics of the northern group were: bold (58 times), enthusiastic (43 times). The first two derogatory features of the northern group were: grumpy (36 times) and careless (19 times). It can be seen that the subjects may have a negative stereotype of the northern group as irritable and careless, so the characteristic words for the anti-stereotype of the northern group can be set as: docile and careful.

3. Trait and Behavior Material Matching and Abnormal Degree Evaluation of Anti-stereotype Information

3.1 Research Objective

Based on the negative stereotype words and anti-stereotype words of the North and south groups determined by the subjects' free response, the corresponding behavioral materials were collected for the compilation of the North and South group behavior assessment Questionnaire and the implicit Regional Stereotype Questionnaire. The anti-stereotype behavior materials were divided into moderate anomaly and extreme anomaly by means of mean value and whether the difference in anomaly degree was significant was tested.

3.2 Research Methods

3.2.1 Subjects

In the behavioral material collection stage corresponding to traits, 30 subjects were randomly selected, including 15 in the south, 15 in the north, 12 in males and 18 in females. The subjects were 20-32 years old with an average age of 22.60 years old.

In the evaluation stage of behavior abnormality corresponding to traits, 25 subjects were randomly selected, including 16 southern subjects, 9 northern subjects, 7 males and 18 females. The subjects were 19-26 years old, with an average age of 23.40 years old.

3.2.2 Procedure

Referring to previous methods of collecting trait coincident behaviors [9], an open-ended "trait coincident behavior Collection questionnaire" was generated from 8 traits related to stereotyping and anti-stereotype in the two groups (apathetic, stingy, enthusiastic, generous, irritable, careless, meek and careful). The subjects were asked to compile behaviors that could reflect the meaning of each trait. Three graduate students majoring in psychology were asked to merge, sort and screen the written behavioral materials with synonyms and select 2 sentences of high-frequency behaviors corresponding to 8 traits, totaling 16 sentences related to stereotypes. The North and South group behavior assessment questionnaire and the North and South regional stereotype interpretation bias questionnaire were prepared. Explicit measurement, the subjects were asked to evaluate the degree of conformity of the behavior of the north and south groups in the negative stereotype matching. The implicit measure consisted of 24 cause-filling sentences, of which 16 were related to stereotype-related behavior situations and eight were unrelated behavior situations. Questions 4, 8, 11 and 23 were behavioral situations in which the Southern group served as the subject of the sentence and was consistent with the negative stereotype (apathetic, stingy) and questions 1, 14, 17 and 20 were behavioral situations in which the Southern group served as the subject of the sentence and was inconsistent with the negative stereotype (enthusiastic, generous). Questions 2, 13, 16, 19 are the behavior situation in which the northern group as the subject of the sentence is consistent with the negative stereotype (irritable, careless), questions 5, 7, 10, 22 are the behavior situation in which the northern group as the subject of the sentence is inconsistent with the negative stereotype (meek, careful). In order to avoid the subjects guessing the purpose of the test, the name of the questionnaire was changed to "Extended association questionnaire" and the subjects were required to operate according to the guidance and the reference examples were given.

When evaluating the abnormal degree of behavior materials (anti-stereotype information) corresponding to anti-stereotype traits, 10 anti-stereotype sentences for the southern group

and 10 anti-stereotype sentences for the northern group were selected and the questionnaire for evaluating the abnormal degree of behavior of the northern and southern groups was compiled. The subjects were asked to score on 7 points. The higher the score, the more abnormal the anti-stereotype information.

3.3 Research Results

The "warm and generous" trait of the southern group corresponds to the abnormal degree of behavioral sentences. Judging from the average, the 1st, 3rd, 5th, 7th and 9th sentences become the anti-stereotype information of the middle abnormal degree in the southern group and the 2nd, 4th, 6th, 8th and 10th sentences become the extremely abnormal anti-stereotype information in the southern group. The paired sample T-test was conducted on the anti-stereotype information of the moderate and extreme abnormalities. It was found that there were extremely significant differences between the two groups of anti-stereotype information ($t=29.300$, $p<0.001$, $d=7.565$), which proved that the distinction between the moderate and extreme abnormalities of the anti-stereotype information of the southern group was effective.

The trait of "meekness and carefulness" in the northern group corresponds to the abnormal degree of behavioral sentences. Judging from the average, sentences 1, 3, 5, 7 and 9 become the moderate abnormal degree of anti-stereotype information in the northern group and sentences 2, 4, 6, 8 and 10 become the extreme abnormal anti-stereotype information in the northern group. The paired sample T-test was conducted on the anti-stereotype information of moderate and extreme abnormalities. It was found that there were extremely significant differences between the two groups of anti-stereotype information ($t=35.693$, $p<0.001$, $d=9.216$), which proved that it was effective to distinguish the moderate and extreme abnormalities of the anti-stereotype information of the northern group.

4. Research on the Explicit Negative Stereotypes in North and South Groups

4.1 Research Objective

To test the real existence of the negative regional stereotype in the north and the south,

the apathetic and stingy stereotype in the South and the irritable and careless stereotype in the north were measured by the north-south group behavior assessment questionnaire.

4.2 Research Methods

4.2.1 Subjects

A total of 86 subjects were randomly selected, including 54 in the south, 32 in the north, 48 in females and 38 in males. The subjects were 21-27 years old with an average age of 25.50 years old.

4.2.2 Procedure

In the form of a paper questionnaire, the subjects were asked to use a 7-point score to evaluate the degree of conformity of the southern group on the behavior corresponding to apathetic and stingy, the degree of conformity of the northern group on the behavior corresponding to irritable and careless.

4.3 Research Results

The ANOVA results of different types of subjects on explicit negative stereotypes of the north and south groups are shown in Table 1. The results showed that gender had no significant main effect on negative stereotypes in the southern group ($F_{(1,82)}=0.394, p=0.532, \eta^2=0.005$) and no significant main effect on negative stereotypes in the northern group ($F_{(1,82)}=1.706, p=0.195, \eta^2=0.020$). Household registration had a significant negative stereotype effect on the southern group ($F_{(1,82)}=147.952, p<0.001, \eta^2=0.643$) and on the northern group ($F_{(1,82)}=138.190, p<0.001, \eta^2=0.628$). There was no significant interaction between gender and household registration in the southern group ($F_{(1,82)}=0.132, p=0.718, \eta^2=0.002$). There was no significant interaction between gender and household registration in the northern group ($F_{(1,82)}=1.706, p=0.195, \eta^2=0.020$).

Table 1. ANOVA Results

	Dependent Variable	SS	df	MS	F	p	η^2
Gender	Apathetic & Stingy	0.095	1	0.095	0.394	0.532	0.005
	Irritable & Careless	0.530	1	0.530	1.706	0.195	0.020
Household Registration	Apathetic & Stingy	35.590	1	35.590	147.952	<0.001	0.643
	Irritable & Careless	42.903	1	42.903	138.190	<0.001	0.628
Gender * Household Registration	Apathetic & Stingy	0.032	1	0.032	0.132	0.718	0.002
	Irritable & Careless	0.530	1	0.530	1.706	0.195	0.020
Error	Apathetic & Stingy	19.725	82	0.241			
	Irritable & Careless	25.458	82	0.310			

Table 2. Independent Sample T-test Results

	Overall (N=86)		South (n=54)		North (n=32)		t	p	d
	M	SD	M	SD	M	SD			
Apathetic & Stingy	4.163	0.813	3.662	0.440	5.008	0.555	12.416	<0.001	2.770
Irritable & Careless	4.663	0.903	5.204	0.595	3.750	0.512	-11.518	<0.001	2.570

The mean and standard deviation of negative stereotype ratings of 86 subjects for the southern and northern groups are shown in Table 2. The total mean value of the 7-point score for the southern group was greater than the median value of 4 ($M=4.163, SD=0.813$), which proved that the negative stereotype of the southern group existed at the explicit level. The total mean of 7-point scores consistent with violent careless behavior of the northern group was also greater than the median value of 4 ($M=4.663, SD=0.903$), which proved that the negative stereotype of the northern group also existed at the explicit level.

See Table 2 the independent sample T-test of negative stereotype scores of different household registration subjects in the southern

group. The results showed that when the negative stereotype of southern groups was evaluated, the subjects in the southern region with household registration had in-group preference ($M=3.662, SD=0.440$) and the subjects in the northern region with household registration had out-group exclusion ($M=5.008, SD=0.555$). There were significant differences in the scores of subjects with different household registration locations on negative stereotype of southern groups ($t=12.416, p<0.001, d=2.770$).

See Table 2 the independent sample T-test of negative stereotype scores of different household registration subjects in the northern group. The results showed that when evaluating negative stereotype of northern

groups, subjects in the southern region of domicile had out-group exclusion ($M=5.204$, $SD=0.595$) and subjects in the northern region of domicile had in-group preference ($M=3.750$, $SD=0.512$). There were significant differences in the scores of subjects with different domicile locations for negative stereotype of the northern group ($t=-11.518$, $p<0.001$, $d=2.570$).

The main results of this experiment are as follows:

- (1) At the explicit level, the stereotype of the southern group is apathetic and stingy and the stereotype of the northern group is irritable and careless.
- (2) Gender difference had no significant impact on the explicit negative stereotype of the northern and southern groups, but household registration difference had a significant impact on the explicit negative stereotype of the northern and southern groups, which was manifested as in-group preference and out-group exclusion.

5. Research on the Implicit Negative Stereotypes in North and South Groups

Brewer proposed that stereotypes are used by individuals in the process of information processing and affect their processing, which is the meaning of stereotypes. In their book, *Stereotypes as Explanations*, McGarty, Yzerbyt, & Spears (2002) explore the formation process of stereotypes and the methods people use to form impressions on different social groups. And systematically put forward the view that "stereotypes can be used as explanations for human behaviors". Existing studies have proved that the measurement method of Stereotypic Explanatory Bias can significantly detect implicit stereotypes^[10]. As an indicator to measure implicit attitude, it reflects the unconscious role of an individual's stereotype towards a social group in the information processing.

5.1 Research Objective

The North and South regional stereotype explanatory bias questionnaire was used to explore the existence and characteristics of implicit negative stereotypes in the north and south groups.

5.2 Research Methods

5.2.1 Subjects

Thirty-one subjects were randomly selected, including 14 in the south, 17 in the north, 21 in females and 10 in males. The subjects were 20-25 years old with an average age of 21.55 years old.

5.2.2 Procedure

The stereotype interpretation bias questionnaire of the southern and southern groups was used. For the valid questionnaires collected, 2 graduate students of psychology were invited to screen the 16 stereotype-related questions on each questionnaire and the reasons filled in by the subjects' attributions. The number of attributions was XX1 when the sentence subject of the southern group was consistent with the stereotype. When the sentence subject of the southern group is inconsistent with the stereotype, the number of attribution is XY1. If the value of SEB1 ($SEB1=XY1-XX1$) is greater than 0, then there is the SEB effect. By the same analogy, we can also get the SEB2 value of the inconsistent situation attribution number minus the consistent situation attribution number ($SEB2=XY2-XX2$) when the northern group is the main language. The larger the SEB1 and SEB2 values are, the more explanations the subject makes in the situation of behavior inconsistent with stereotype. The more the subject needs to explain this cognitive conflict to achieve balance and the greater the impact of stereotype on his information processing. However, the subject is often unaware that this stereotype implicitly affects his social cognition.

5.3 Research Results

Before calculating the SEB score, two graduate students of psychology classified and coded the contents filled in by the subjects in the last half sentence of the SEB item on each questionnaire and the codes of the two graduate students of psychology were highly correlated ($r=0.92$, $p<0.01$), so as to ensure the attribution value of the reasons provided by the subjects, so as to further calculate the SEB score.

Table 3. Single Sample T-test Results

Project	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
SEB1	1.03	0.752	7.642	30	<0.001
SEB2	0.97	0.657	8.195	30	<0.001

The paired sample T-test results of SEB1 and SEB2 compared with 0 respectively are shown in Table 3. SEB1 was significantly different

from 0 ($t=7.642$, $p<0.001$, $d=1.973$) and SEB2 was also significantly different from 0 ($t=8.195$, $p<0.001$, $d=2.116$), indicating that subjects' attribution to the subject of the sentence was significantly affected by its implicit stereotype. For the behavior situation inconsistent with the

stereotype, the subjects tended to make more quantitative explanations, which proved that the subjects had implicit negative stereotypes for both the southern group and the northern group.

Table 4. ANOVA Results

Source of variance	Dependent Variable	SS	df	MS	F	p	η^2
Gender	SEB1	0.153	1	0.153	0.136	0.715	0.005
	SEB2	0.703	1	0.703	1.595	0.217	0.056
Household Register	SEB1	0.095	1	0.095	0.085	0.772	0.003
	SEB2	1.648	1	1.648	3.738	0.064	0.122
Gender * Household Register	SEB1	0.181	1	0.181	0.162	0.691	0.006
	SEB2	0.630	1	0.630	1.430	0.242	0.050
Error	SEB1	30.195	27	1.118			
	SEB2	11.903	27	0.441			

The results of ANOVA for gender and domicile in SEB1 and SEB2 are shown in Table 4. The results showed that gender had no significant main effect on SEB1 ($F_{(1,27)}=0.136$, $p=0.715$, $\eta^2=0.005$) and SEB2 ($F_{(1,27)}=1.595$, $p=0.217$, $\eta^2=0.056$). The main effect of household registration on SEB1 was not significant ($F_{(1,27)}=0.085$, $p=0.772$, $\eta^2=0.003$) and the main effect of household registration on SEB2 was marginal significant ($F_{(1,27)}=3.738$, $p=0.064$, $\eta^2=0.122$). The interaction between gender and household registration on SEB1 was not significant ($F_{(1,27)}=0.162$, $p=0.691$, $\eta^2=0.006$) and the interaction between gender and household registration on SEB2 was not significant ($F_{(1,27)}=1.430$, $p=0.242$, $\eta^2=0.050$). In other words, the implicit negative stereotype of the southern group and the northern group was not affected by the difference between the gender of the subject and the region of domicile.

In addition, in-depth analysis of the nature of the reasons given by the subjects in the questionnaire can also determine whether there is a SEB effect. For example, if the subject sees the behavior situation that is consistent with the stereotype of the subject group, it is attributed to the subject's own factors, that is, internal attribution is made. If the subject sees the behavioral situation that is inconsistent with the subject group stereotype, it will produce cognitive conflict and then attribute it to external environmental factors, that is, make external attribution. In this way, when the subject of the sentence agrees with the behavioral situation, the SEB3 value of the external attribution number minus the internal attribution number is less than 0, which proves

the existence of implicit stereotype. When the sentence subject does not agree with the behavioral situation, the SEB4 value of the external attribution number minus the internal attribution number is greater than 0, which can also prove the existence of implicit stereotypes. The number of external and internal attributions made by subjects with different household registration locations and different genders for the four sentence types is shown in Attached Table 5 and Attached Table 6. The results show that for the sentences whose subject group is consistent with the stereotypical behavior situation, no matter the southern or northern subjects, no matter the female or male subjects, they tend to make more internal attributions, that is, the SEB3 value is less than 0. For sentences whose subject group was inconsistent with the stereotype behavior context, both southern and northern subjects and both female and male subjects, tended to make more extrinsic attributions, that is, the SEB4 value was greater than 0. From the two aspects of attribution quantity and attribution nature, it is proved that the negative stereotype of the northern and southern groups exists on the implicit level.

The main results of this experiment are as follows:

(1) On the implicit level, the southern group has the stereotype of being apathetic and stingy, while the northern group has the stereotype of being irritable and careless. The existence of the implicit negative stereotype of the northern and southern groups was not affected by the differences of gender and household registration.

(2) Compared with the stereotype inconsistent behavior situation, subjects in the stereotype consistent behavior situation made fewer attributions and were more inclined to internal attribution. Compared with the stereotype-

inconsistent behavior situation, the subjects made more attributions in the stereotype-inconsistent behavior situation and were more inclined to extrinsic attribution.

Table 5. Internal and External Attribution Statistics in Different Domicile Locations

Household register	n	Sentence type	External attribution	Internal attribution
South	14	Consistent with the stereotypes of North and South groups	132	159
		Inconsistency with the stereotypes of North and South groups	162	101
North	17	Consistent with the stereotypes of North and South groups	120	131
		Inconsistency with the stereotypes of North and South groups	135	109

Table 6. Internal and External Attribution Statistics in Different Genders

Gender	n	Sentence type	External attribution	Internal attribution
Female	21	Consistent with the stereotypes of North and South groups	174	194
		Inconsistency with the stereotypes of North and South groups	197	137
Male	10	Consistent with the stereotypes of North and South groups	78	96
		Inconsistency with the stereotypes of North and South groups	100	73

6. Future Research Direction

From a horizontal perspective, stereotype is a social and historical category. Localization of stereotype research in different social and historical backgrounds will help to explain social phenomena and explore cultural differences. As a core concept of social cognition, stereotype plays an important role in the process of individual cognition of society. On the one hand, stereotype can simplify the process of perceiving objective things, judging and acting on objects. On the other hand, stereotypes tend to lead to biased judgments and behaviors towards cognitive goals, that is, stereotype activation will eventually lead to inevitable prejudice and discrimination, which will lead to social injustice and inter-group conflicts. This means that the problem of social injustice and cluster conflict can be solved by weakening or even eliminating negative stereotypes.

From a longitudinal perspective, studying the relationship between stereotype and counter-stereotype is helpful to understand the nature of stereotype. It is not a single content of black and white. Both stereotype and counter-stereotype may exist at the same time, but which priming stimulus activates first and the influence of the intensity of activation on inhibiting the other side. These studies in the future will be conducive to the lasting and effective control of negative stereotypes.

Acknowledgments

This paper is supported by "Heart-warming Sun" Renowned Online Ideological and Political Teacher's Studio. This work was supported the funding of school-level project of Taizhou Vocational and Technical College: The challenge and countermeasure of network circle to higher vocational ideological and political education(NO. 2023YB45).

References

- [1] Wang Pei. Theory and research of stereotype. Gansu Education Press, 2002.
- [2] Zou Qing-yu, Jiang Yue. Advances in implicit stereotype research methods. Psychological Science, 2006, 29(2):505-507.
- [3] Yang Zhi-liang, Zou Qing-yu. A comparative study of IAT and SEB on implicit regional stereotypes. Psychological Science, 2007, (06):1314-1320.
- [4] Binggeli Steve, Krings Franziska, Sczesny Sabine. Perceived competition explains regional differences in the stereotype content of immigrant groups. Social Psychology, 2014, 45(1):62-70.
- [5] Mustafaj Matea, Dal Cin Sonya. Preexisting Stereotypes and Selection of Counter-Stereotypical Genius Representations in Entertainment Media. Hogrefe Publishing Group, 2023.
- [6] Alin Gavreliuc, Dana Gavreliuc, Alin Semenescu. Beyond the facade of

- generosity-Regional stereotypes within the same national culture influence prosocial behaviors. PLoS ONE, 2021, 16(5):e0250125.
- [7] Gödderz Alexandra, Calanchini Jimmy. Regional traditional gender stereotypes predict the representation of women in the workforce in 35 countries across five continents. *Current Research in Ecological and Social Psychology*, 2023, 5(1):100138-100138.
- [8] Sun Guo-hui, Liang Yuan, Li Ji-peng, Lu Meng-yu. Research on the Formation Mechanism of Regional Stereotypes from the Perspective of Social Cognition Theory: Data Analysis Based on the Depth Interview and Grounded Theory. 2019, (01):118-128.
- [9] Yan Xiu-mei, Wang Mei-fang. Experimental research on spontaneous trait reasoning of college students. *Psychological Exploration*, 2010, 30(06):58-62.
- [10] Yu Hai-yun, Liang Ning-jian. Stereotypic Explanatory Bias (SEB)-A New Index to Show People's Implicit Attitudes. *Psychological Science*, 2005, 28(1):42-44.