# *A Study on the Popularity of MBTI in Social Media Platform Brings Self-labeling and Group Stereotype to College Students*

**Shiyao Li[1,a,*]**

[1]*Department of Media and Communication, Korea University, Seoul, 02841, South Korea*
*a. lishiyao@korea.ac.kr*
*\*corresponding author*

*Abstract:* With the development of the Internet, MBTI personality test has rapidly entered the field of view of college students with its accessible and entertaining characteristics. For college students who are in a period of life choice and confusion, the "relatively scientific" MBTI personality test has become an important rely on their self-cognition and group sociability. In order to explore the negative impact of MBTI personality test on college students, quantitative statistics were carried out through questionnaires and PLS-SEM to analyze its impact on college students' self-cognition and social choice. From the results, there are negative effects on college students such as self-labeling and group stereotype, which is not conducive to the formation of correct self-cognition. In addition, through the analysis of the results, it is found that the Internet and the intervention of intelligent algorithms have played a non-negligible intermediary role. Therefore, at the level of solutions, it is suggested that students improve their own literacy and emphasize the role of the Internet as a correct guide to improve the existing problems.

*Keywords:* MBTI, PLS-SEM, barnum effect, stigmatization theory

## 1. Introduction

The MBTI, or Myers-Briggs Type Indicator, is a forced selection, self-reported personality assessment tool used to measure and describe people's mental activity patterns and manifestations of different personality types in terms of information acquisition, decision-making, and handling of life. It is based on Jung's psychological type theory and developed jointly by Briggs and Myers mother and daughter in the United States [1].

Each individual's personality type is described in terms of a four-letter code. Four dichotomous dimensions classify individuals either as extraverted (E) or introverted (I), sensing (S) or intuitive (N), thinking (T) or feeling (F), and judging (J) or perceiving (P). Combinations of the four preferences determine personality types. Each individual is classified in terms of one of 16 possible four-letter codes (such as ESFJ, ENFP, INTP, and ISFJ). Each type is said to define a specific set of behavioural tendencies, reflecting differences in attitudes, orientation, and decision-making styles [2].

On China's social media platform Weibo, the number of MBTI-related topics has surged since March 7, 2022. As of June 9, 2023, the #MBTI# has been read 3.15 billion times and discussed 737,000 times. In addition to #MBTI#, there are also dedicated topics for different personality

categories, such as hashtag# INFP #, which has been read 1.17 billion times and discussed 634,000 times. The MBTI is far more entertaining and commercial than simple personality or psychological tests. Attracting audiences through scientific labels, combined with simple and accessible test content and analysis, quickly entered the public eye with the help of the Internet.

Adolescence is a crucial period for establishing self-identity and becoming a social person. However, under the conflict of society, culture and self, teenagers at this stage usually fall into an "identity crisis" [3]. Young people who stand at the crossroads of life choices often pin their uncertainty on horoscopes and even religious beliefs. But unlike astrology, because of the lack of disciplinary theory, people are more likely to recognize that the stereotypes brought about by horoscopes do not give any pre-existing social reality [4]. MBTI provides a "more scientific" choice for young people to find their identity and influence their behavior by looking for the same type of MBTI personality type and the explanation of personality type.

"Where to travel with different MBTI", "How to relieve stress with ESFP", "The best partner for INFP", since MBTI has become so popular on the Internet, everything can be related to any choice. But it's worth noting that the effectiveness and limitations of the MBTI personality test have long been debated. Surveys have shown that using the MBTI questionnaire without the participation of an evaluator can result in a 30% error rate, which can include inaccuracies in the translation of test questions and deliberate choices made by understanding the content of the test [1]. Error aside, it's hard to substitute 16 different permutations for the personalities of the world's people. The MBTI uses the results of a series of questions to calculate the proportion of different tendencies in the four dimensions but may overlook that the two tendencies are not necessarily binary opposites. A person is not necessarily rational or emotional, nor is he dependent on intuition or deliberation, when the proportion is around 50%, it is difficult to describe a person objectively. In addition, MBTI is an innate human nature, a tendency to behave naturally within individuals, and a relatively stable, uniform explanation [1]. However, after 16Personalitie, a popular MBTI test site, updated its question bank in April 2023, many testers took to the social media platform to say that their classification had changed.

With the continuous development of social media platforms and the Internet, MBTI has become a new trend among college students, and many derivative creations have been produced in the process of dissemination. While MBTI helps college students to know themselves accurately, due to the characteristics of the Internet and the limitations of the test itself, it may have strong negative effects on college students, including self-labeling and stigmatization of a certain group. In this study, questionnaires were used to understand the extent of MBTI personality test in college students, and the possible negative effects on self-perception and stereotype were analyzed. Finally, as sociologist Lippmann put it, avoiding stereotypes requires "looking at everything in detail with a fresh perspective, not generalizing or stereotyping all problems," and coming up with some practical solutions [5].

## 2. Methodology

### 2.1. Questionnaire

In this study, 150 college students were given questionnaires to analyze the effects of MBTI on their self-cognition and social interaction. A total of 5 variables were involved in this study. The independent variable is Degree to which College Students are Influenced by MBTI; the intermediate variable is Intervention of Internet and Algorithm (IIA); and the dependent variable was self-cognition, group social choice and group stereotype. In the design of the questionnaire, in addition to the personal information collection part, the main part of the questionnaire adopts the 5-level scoring method of Likert scale, where 1 point represents strongly disagree and 5 points represents strongly

agree, and it is measured by integer numbers. In terms of the selection of dependent variables, Tang Xinwen's classification of MBTI videos on Bilibili website are used for reference, and articles by Huang Ting on the scientific nature and potential problems of MBTI [6,7]. The questionnaire will be distributed through China's questionnaire platform Wenjuanxing and Google Forms. Meanwhile, the questionnaire will be designed in both Chinese and English to facilitate the participation of more respondents.

## 2.2. Structural Model and Hypothesis

PLS-SEM, as a structural equation model, can better analyze more complex models or models with more assumptions. And it is suitable for testing a theoretical framework from a prediction perspective; From the perspective of sample size, this model can get relatively accurate results even with a small size [8]. Based on the research direction and data characteristics of this paper, based on related studies, the PLS-SEM structural equation model was constructed, and the partial least square method was used for regression, and smartPLS was used for data processing and calculation.

Based on the above theories, this paper will combine the relevant theories of communication and psychology to analyze the influence of MBTI on college students' social group, career inclination, self-cognition and personality bias in the process of network communication. Based on the constructed research model, hypotheses will be proposed from 6 aspects. H1: Degree to which College Students are Influenced by MBTI has a positive effect on self-cognition. H2: Degree to which College Students are Influenced by MBTI has a positive effect on group stereotypes. H3: Degree to which College Students are Influenced by MBTI has a positive effect on group social choice. H4: The mediating role of Intervention of Internet and Algorithm in the positive relationship between MBTI influence and self-cognition of college students. H5: The mediating role of Intervention of Internet and Algorithm in the positive relationship between the degree of MBTI influence and the group stereotype of college students. H6: The mediating role of Intervention of Internet and Algorithm in the positive relationship between the degree of MBTI influence and group social choice of college students.

## 3. Result

## 3.1. Validity and Reliability

A total of 155 questionnaires were collected, among which 4 were invalid due to incomplete answers, and the number of valid questionnaires was 151. Firstly, the reliability of the questionnaire was tested. The Cronbach's α Reliability coefficient of variables ranged from 0.850 to 0.892, all greater than the critical value 0.7. The Composite Reliability (CR) value ranged from 0.887 to 0.925, all greater than the critical value 0.7, indicating that the internal consistency between selected variables passed the test. Average Variance Extracted (AVE) value ranges from 0.611 to 0.754, greater than 0.5, indicating that latent variables can be explained reasonably. The validity test mainly adopts the criteria suggested by convergence and discriminant validity. One is to observe the cross-load value between variable factors, and the other is to observe the moment matrix of correlation coefficient. According to the results of the model, the average extraction variance of each variable meets the requirement that the convergence validity is greater than 0.5, and the load value of the observed variable's own factor is much larger than that of other variable factors, indicating that there is no problem in the discriminant validity test. In the correlation coefficient matrix, the squares of the correlation coefficients between variables are all smaller than the AVE value of the variable, indicating that the differential validity test is passed.

Table 1: Heterotrait-monotrait Ratio (HTMT).

| | MBTI | IIA | Self-cognition | Group Social Choice | Group Stereotype |
|---|---|---|---|---|---|
| MBTI | | | | | |
| IIA | 0.727 | | | | |
| Self-cognition | 0.584 | 0.688 | | | |
| Group Social Choice | 0.591 | 0.628 | 0.299 | | |
| Group Stereotype | 0.564 | 0.592 | 0.496 | 0.353 | |

Then the author uses the hetero-elemental ratio (See Table 1), which is the ratio of the between-trait correlation to the within-trait correlation. It is the ratio of the mean of index correlation between different dimensions to the mean of index correlation between different dimensions. The results are shown in the table below. In this study, the HTMT value between each of the two variables was lower than 0.85, indicating that each variable had good discriminative validity.

## 3.2. Result Analysis

About hypothesis H1: The degree to which college students are influenced by MBTI has a positive effect on self-perception. This hypothesis has been verified in the model of this paper. The model t value is 2.397, and the p value is 0.017, so this hypothesis has been verified. With the deepening of the influence of MBTI on college students, it can strengthen their self-cognition.

About Hypothesis H2: The degree to which college students are influenced by MBTI has a positive effect on group stereotypes. This hypothesis has been verified in the model of this paper. The t value of the model is 2.986, and the p value is 0.003, so this hypothesis has been verified. As the degree of MBTI influence of college students becomes deeper, students are more likely to form stereotypes about a certain group under the influence of MBTI personality test results.

About Hypothesis H3: The degree of MBTI influence of college students has a positive effect on group social choice. This hypothesis has been verified in the model of this paper. The t value of the model is 3.507, and the p value is 0.000, so this hypothesis is verified. As students become more exposed to MBTI, they may adjust their social choices.

Table 2: Indirect and Mediating effects.

| | Coefficient | Std. dev. | T Statistics | P-values | Bootstrap 95% CI Percentile | Bootstrap 95% CI Percentile |
|---|---|---|---|---|---|---|
| MBTI -> IIA -> Self-cognition | 0.283 | 0.068 | 4.145 | 0.000 | 0.158 | 0.426 |
| MBTI -> IIA -> group social choices | 0.228 | 0.059 | 3.830 | 0.000 | 0.126 | 0.358 |
| MBTI -> IIA -> group stereotype | 0.208 | 0.066 | 3.126 | 0.002 | 0.088 | 0.349 |

Suppose that H4-H6 is discussing Intervention of Internet and Algorithm (IIA) as an intermediate variable on the three dependent variables. It can be seen from Table 2 that for the self-cognition

mediator 0.283, the 95% confidence interval [0.158,0.426] does not include 0; For group social choice mediator 0.228, 95% confidence interval [0.126,0.358] does not contain 0 pairs. For stereotype mediator 0.208, 95% confidence interval [0.088,0.349] does not include 0, and the mediating validity of the three dependent variables all reach a significant level, so the hypothesis is valid. With the popularization of the Internet and algorithm, and under the influence of psychology and communication theories such as Barnum effect, MBTI plays a positive role in the self-cognition and stereotype formation of college students.

## 4. Discussion

According to this study, the degree of MBTI influences college students' self-cognition and the formation of stereotypes. In the influence process, the intervention of big data and the Internet has a significant mediating effect. Based on the results and the limitations of MBTI personality test, this paper will specifically discuss the negative impact these problems may bring to college students and put forward specific suggestions for college students to break the self-labeling and group stereotype.

### 4.1. Barnum Effect and the "Imaginary Self"

Because of the extreme dichotomy limitations of the MBTI personality test, its conclusions may lead to the Barnum effect. The Barnum effect is when people tend to believe that a general personality description is particularly suitable for them and accurately reveals their personality traits, but such descriptions are often general and empty [9]. With the authoritative label of "scientific and psychological test", many college students believe the results of MBTI more. In terms of self-cognition, 76.77% of the respondents believed that MBTI accurately described their personality characteristics, and 70.97% of the respondents would use the results of MBTI personality test to explain their behavior. Cooley put forward the concept of "Looking-glass self" in 1909. Audience behavior will be affected by their projection of others' expectations, that is, individuals' cognition and evaluation of themselves will be influenced by external influences [10]. Self is a concept established in interaction. It can be seen from the data that people not only compare themselves to a personality type, but also actively seek evidence to subjectively verify their personality type. In this process, MBTI is no longer a vague concept, and college students are constantly looking for clues to strengthen their ideal self in the vast interpretive space created by the concept.

### 4.2. Group Stereotype and "Stigma"

Sociologist Erving Goffman raised the concept of "Stigma" in 1963. The original meaning of the word was "body mark," a body mark that was pierced or burned into the skin to proclaim that the person was a slave or a sinner [11]. In today's social interaction, stigma is no longer a physical sign, but a difference between different groups in society. And that difference is often both disapproval and devalued. Prejudice is therefore often studied alongside stigma in the fields of sociology and psychology [12].

A particular personality type tends to be a relatively uniform portrait on the Internet, too passionate can be overwhelming ENFP, sentimental INFP or calm neutral INTP. These descriptions become the labels for certain groups, forming fixed, general stereotypes about different MBTI personality types. Based on these stereotypes, there are even career options on the Internet that suit different personality types. In the stereotype-related questions, 44.51% of the participants would hide their personality classification because they were not satisfied with their MBTI test results, and 46.15% of the participants hoped to have the opportunity to re-choose their MBTI. As an "objective scientific" personality test, the MBTI personality classification produces a certain ranking in which people may

tend to be more focused on intelligent personalities, or more sociable and popular personalities. In this process, people become aware of group differences and stigmatize some groups.

## 4.3. The Development of the Internet and Big Data

In the era of Web 2.0, various social media such as Facebook, YouTube and Weibo have appeared on the network platform and become a form of interaction and information exchange between users. User-centered services and platforms are created [13]. Users are not only consumers of information, but also constantly create and disseminate information. When it comes to the MBTI personality test, it's hard not to mention the endless memes popping up on social media platforms. Most of these memes are playful and express themselves in an unconventional way. At the same time, the advent of Web 3.0 has accelerated the spread of MBTI. More than 80% of respondents were exposed to the MBTI personality test for the first time on an online platform or were pushed related content by intelligent algorithms while browsing. Through continuous secondary creation, MBTI has successfully realized the spread of memes, and the volume of related content is also increasing, and successfully entered the college students under the influence of big data.

However, as Lippmann mentioned in the 1920s, in the information environment formed by mass communication, it is not a reproduction of the objective world, but a world selected, processed and reported by mass media [5]. Today's online world can be defined as such a "Pseudo-environment." The situation presented on the network may be different from the real world [14]. Due to the distance from the real environment and the lack of personal experience, it may strengthen the inaccurate cognition of a certain group of college students.

## 5. Conclusion

Speaking of MBTI today, it is easy to think of the constellation theory that was popular before this. Contrary to the stereotypes associated with horoscopes, the results of the MBTI personality test seem to be more scientific and convincing. But it also makes more people have a blind faith in the MBTI's personality classification, not only in individual choices, but also in group interactions such as friends and employment. Young people who are eager to find psychological dependence and sustentation will regard the results of MBTI as a creed and become the norm in life.

However, A person does not have to be rational or emotional, nor does he have to rely on absolute intuition or deliberation. In the test, most groups are simply labeled as extreme, and dozens of questions are asked to develop a limited way of thinking. As a group of college students, they should improve their own literacy, cultivate their critical thinking ability, and avoid labeling and self-cognition through a comprehensive understanding of MBTI personality test.

At the same time, as one of the main ways of MBTI personality test dissemination, the Internet should be checked for the dissemination of content, and timely popularization of relevant professional knowledge. The network platform should grasp the boundary of science and entertainment and encourage young people to form self-cognition in more diversified ways to avoid losing their direction.

Although this paper draws some conclusions through the form of questionnaires, there are still some limitations. The survey objects are mainly college students in three East Asian countries, China, Japan and South Korea, and the incision is small, which is easy to analyze, but also makes the analysis not deep and comprehensive. This paper focuses on analyzing the possible negative effects of MBTI personality test on college students' self-cognition and group sociability, but whether MBTI is widespread in college students in other aspects needs to be further explored in the future.

# References

[1]    Zeng, W. X., & Zhang, J. F. (2006). Theoretical research and practical application of MBTI Personality Type Scale. Advances in psychological science, (02), 255-260.

[2]    Boyle, G. J. (1995). Myers-Briggs type indicator (MBTI): some psychometric limitations. Australian Psychologist, 30(1), 71-74.

[3]    Hua, J., & Zhou, Y. X. (2023). Personality assessment usage and mental health among Chinese adolescents: A sequential mediation model of the Barnum effect and ego identity. Frontiers in Psychology, 14.

[4]    Lu, J. G., Liu, X. L., Liao, H., & Wang, L. (2020). Disentangling stereotypes from social reality: Astrological stereotypes and discrimination in China. Journal of Personality and Social Psychology, 119(6), 13-59.

[5]    Lippmann, W. (2010). Public Opinion. Wilder Publications inc.

[6]    Tang, X. W. (2022). Analysis on the popularity of MBTI test in the era of social media -- A case study of user videos from Bilibili. New media studies (17), 83-87. doi: 10.16604 / j.carol carroll nki issn2096-0360.2022.17.024.

[7]    Huang, T. (2022, September 14). Explosive MBTI personality test, really reliable? China Women's News,004.

[8]    Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European business review, 31(1), 2-24.

[9]    Peng, Z. L. (2014). Analysis on the relationship between college students' belief in constellation and Barnum effect. School Psychology (03),170-172.

[10]  Guo, Q. G. (2011). Journalism&Communication. China Renmin University Press.

[11]  Goffman, E. (1986). Stigma; notes on the management of spoiled identity.Simon & Schuster.

[12]  Bos, A. E., Pryor, J. B., Reeder, G. D., & Stutterheim, S. E. (2013). Stigma: Advances in theory and research. Basic and applied social psychology, 35(1), 1-9.

[13]  Huang, B. X. (2009). Podcast video transmission of network media in the Web2.0 era. Digital Fashion (New Visual Arts) (03),100-101+93.

[14]  Du, X. Q. (2022). The influence of "pan-labeling" network buzzwords on teenagers' thoughts and countermeasures. Modern Basic Education Research (03),133-137.