

# The Structural Equation Modeling of factors Influencing University students' Social Welfare Behavior Intention in Taiyuan region, China

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## Abstract

Social welfare practice is an important way to realize the educational goal of "practice education" in Chinese colleges and universities. The formation mechanism of university students' social welfare practice behavior intention has guiding significance for colleges and universities to carry out social welfare practice.

This research adopted the theory of planned behavior as the basic framework, then added public welfare study variables and built a confirmatory factor model of the literature research results. The questionnaire survey collected 467 sets of questionnaires. Subsequently, a structural equation model was created and the assumptions were examined to analyze the influence of various factors such as, public welfare education, behavioral attitudes, subjective norms and perceived behavioral control on intentions in social welfare behavior of university students.

This research could be concluded that behavioral attitude, subjective norm, and perceived behavioral control had a significant direct impact on university students' social welfare behavioral intentions, on the other hand, public welfare education indirectly affected behavioral intentions through behavioral attitudes, subjective norms, and perceived behavioral control. We should strengthen the factors affecting university students' public welfare behavioral intentions in various aspects in order to stimulate students' motivation to participate in public welfare activities and promote active participation in public health activities among university students.

**Keywords:** University Students; Social Welfare Behavior Intention; Influencing Factors; Planning Behavior Theory; Structural Equation Model

## Introduction

In recent years, Chinese university students have been active in various fields of social welfare activities and have achieved outstanding results. According to statistics, more than 268 million youths have provided more than 6.1 billion hours of voluntary services for the society. (Official Website of Chinese Volunteers) Social welfare has now become an important driving force for China's social development.

In order to better guide the majority of young university students to actively participate in social welfare activities, China's educational circles put forward the concept of "practice educating people" in the education system of university students. Actively encouraging university students to carry out public welfare practice, and carrying out various public welfare activities have become an important means of "practical education", and public welfare education has become an important influencing factor for university students to form correct social welfare intentions.

Research in the field of public welfare in China started later than developed countries in the West, and there is a relatively lack of research on the public welfare behavior intentions of university students. Both in the field of qualitative research and quantitative research, it needs to be further expanded and deepened. The theoretical results of quantitative research on the impact of public welfare education on university students' social public welfare behavior intention are even more scarce. Therefore, combined with existing theories, it is necessary to conduct quantitative research on public welfare education in the field of social public welfare for university students.

This study expands the scope of literature related to social welfare through an empirical study of university students' social welfare behavior intentions. This study enriches the behavioral intention research based on the Theory of Planned Behavior (TPB) model by constructing a research structure model. This study compiled a questionnaire on public welfare education, combined with the theory of planned behavior, and made an exploratory empirical study from the perspective of the impact of public welfare education on university students' public welfare behavior intentions, which broadened the research field of public welfare education. In practice, this study provides theoretical and practical references for understanding the intention of university students' public welfare behavior more effectively, cultivating university students' public welfare awareness from various aspects, and organizing university students' public welfare activities more effectively.

## Research Objectives

From the perspective of the theory of planned behavior, this study takes public welfare education as an independent variable and public welfare behavior intention as a dependent variable to study the factors that affect university students' public welfare behavior intention, the relationship between public welfare education and university students' public welfare behavior intention, and the factors that guide and stimulate university students' public welfare behavior.

First, construct a factor confirmation model of factors affecting university students' social welfare behavior intentions in Taiyuan, China by analyzing the data of empirical research.

Second, analyze the influencing factors of university students' social welfare behavior intention in Taiyuan, China.

Third, make Suggestions on constructing a mechanism to guide and stimulate university students' public interest behavior intentions.

## Hypothesis of Research

### **Behavioral Attitude and Behavioral Intention.**

The theory of planned behavior constructed by Ajzen (1991) believes that behavioral attitude is the main factor affecting individual behavioral intention. A large number of research results show that the stronger the individual's behavioral attitude, the stronger the behavioral intention. Research by Kim & Lee (2014) shows that behavioral attitudes affect people's willingness to participate in volunteer activities through social networking sites. Sura *et al.* (2017) study also shows that behavioral attitudes significantly affect people's willingness to donate online.

In this study, the researcher draws on the research conclusions that behavioral attitudes put forward by researchers in other fields will significantly affect behavioral intentions. Combined with the research field of this study, the following hypothesis is put forward:

H1: There is a significant positive correlation between university students' attitudes towards social welfare behaviors and their intentions to social welfare behaviors.

### **Subjective norm and behavioral intention.**

According to Ajzen's Theory of Planned Behavior, subjective norm can influence participation willingness. Subjective norm refers to the social pressures that individuals feel about whether or not to perform an act. According to the empirical research results of Ajzen (1991), Liu, J.F (2017), and Zhang, D (2021), subjective norms will have a significant impact on people's behavioral intentions.

Combined with the existing research results and the specific research object of the university student group, the following hypothesis is put forward:

H2: There is a significant positive correlation between the subjective norms of university students' volunteering and social welfare behavior intentions.

#### **Perceived behavioral control and behavioral intention.**

The theory of planned behavior (TPB) is based on the theory of rational behavior (TRB) and adds the influence of perceived behavioral control on behavioral willingness. It believes that perceived behavioral control is an important factor affecting people's behavioral willingness. Both Marta et al. (2014) and Zhang et al.(2021) affirmed the positive effect of perceived behavioral control on the willingness to participate in social welfare practices in their research.

According to the situation of university students participating in public welfare activities, combined with the existing research results, this study puts forward a hypothesis:

H3: There is a significant positive correlation between perceived behavioral control of university students' social welfare and university students' willingness to volunteers.

#### **Public welfare education and behavior intention**

There are very few empirical studies at home and abroad on the impact of public welfare education on social welfare behavior intentions. However, many scholars have conducted relevant research on the importance and necessity of public welfare education and suggestions for carrying out public welfare education.

Shen (2014) proposed to integrate "public education" into the modern education system as a new educational element. Wang (2016) believes that the practice of public welfare can be guided accordingly through the practice of charity and public welfare education, interpersonal public welfare education, environmental public welfare education, and scientific public welfare education.

It can be seen from the above research results that public welfare education has become an effective means to cultivate university students to improve their own quality and form public welfare awareness. Due to the lack of relevant literature on empirical research in this area, this study draws on the research results of scholar Liu (2017) on the impact of entrepreneurship education on university students' entrepreneurial intentions, compiles a questionnaire, and studies the impact of public welfare education on university students' social welfare behavior attitudes, subjective norms, perceptual behavior control and university students' public welfare behavior intentions from an empirical perspective, so as to broaden the research field of public welfare education.

Therefore, this study proposes the following hypotheses:

H4: There is a significant positive correlation between public welfare education and university students' social welfare behavior intention.

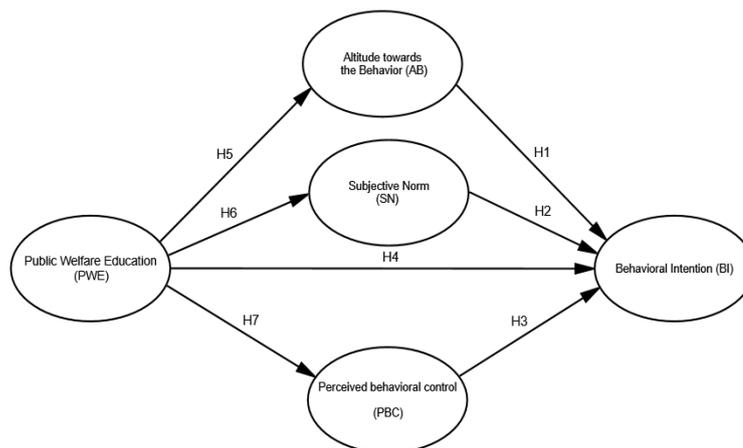
H5: There is a significant positive correlation between public welfare education and university students' attitude towards social welfare behavior.

H6: There is a significant positive correlation between public welfare education and the subjective norms of university students' social welfare.

H7: There is a significant positive correlation between public welfare education and university students' perceived behavioral control of social welfare.

### Research Framework

On the basis of analyzing and summarizing relevant domestic and foreign literatures and related research results, this study attempts to add the independent variable of public welfare education based on the theory of planned behavior, and propose a model of the impact of public welfare education on public welfare behavior intentions. Since there is no relevant theoretical model about public welfare education in the existing research results, this study draw on the model of the impact of entrepreneurship education on entrepreneurial intention proposed by Liu,J.F (2017), a hypothetical model of the impact of public welfare education on university students' public welfare behavior intention from the perspective of TPB is proposed.



### Research Methodology

This study uses quantitative methods. According to the interview results, combined with the theory of planned behavior, the initial questionnaire was compiled with reference to the Maturity Scale (Wang, 2014; Gong, 2018; Liu, 2017; Hu, 2021). This study used a five–point Likert scale to design the

initial questionnaire, ranging from 1 "strongly disagree" to 5 "strongly agree". The questionnaire has 5 dimensions, 4 questions for each dimension, and 6 questions about the personal information of the sample, a total of 26 questions.

there are regional differences in the development of University students' social welfare activities. Just as there are regional differences in economic and social development, the social welfare activities of University students also have unbalanced development due to different school levels and regions. Taiyuan is a developing region in the central region of China. In contrast, its education industry is relatively underdeveloped. Studying the social welfare of University students in this area has valuable reference for the development of social welfare undertakings in small and medium-sized areas in China.

According to statistics, there are 17 undergraduate universities in Taiyuan, and the number of undergraduate University students in 2021 will be 289,918 (summarized by the official websites of each school). Universities, government-run science and engineering universities, government-run specialized undergraduate universities, and private undergraduate universities. This study selects one of each of the above types of universities, and a total of 4 universities are selected for sampling. The sample frame for this study is based on all undergraduate students enrolled in these 4 universities. The four universities selected for this study are the universities with the largest number of undergraduates, the largest scale, and the longest school history in each type of university, and are representative of each type of university in Taiyuan.

In this study, 500 questionnaires were distributed in these four universities by means of purposive sampling and stratified sampling, and 467 valid questionnaires were recovered, with a recovery rate of 93.4%.

In this study, quantitative analysis was carried out on the effective questionnaires recovered, and statistical methods were used to process the data. The data were analyzed by descriptive statistics and inferential statistics. Descriptive statistics were used to examine the demographic factors and general information of the respondents. Inferential statistical analysis used confirmatory factor analysis (CFA) and structural equation modeling (SEM) to test research hypotheses. Based on the analysis of various indicators, the existing model is revised to obtain the new model of this study.

## Research Results

### 1. Cronbach's $\alpha$ and Convergent Validity

Cronbach's  $\alpha$  and convergent validity required the evaluation of each dimension and the variables of the measurement dimension, and the five dimensions were analyzed separately in this study.

**Table 1** Cronbach's  $\alpha$  and Convergent Validity

Constructs/ Indicators	Estimate	S.E.	C.R.	P	Factor loading	Cronbach's $\alpha$	CR	AVE
PWE	PWE1	1.022	0.03	30.9	**	0.907	0.957	0.850
			3	78	*			
	PWE2	1.017	0.03	33.9	**			
				72	*			
	PWE3	1.06	0.03	34.44	**	0.943	0.77	0
			1	4	*			
	PWE4	1						
					0.898			
AB	AB1	0.995	0.03	29.15	**	0.86	0.938	0.790
			4	7	*			
	AB2	0.902	0.03	25.77	**			
			5	7	*			
	AB3	1.034	0.02	36.9	**	0.938	0.76	0.3
			8	85	*			
	AB4	1						
					0.935			
SN	SN1	1			**	0.909	0.911	0.735
					*			
	SN2	1.53	0.09	16.54	**			
			2	9	*			
	SN3	1.464	0.08	16.87	**	0.934	0.916	0.6
			7	3	*			
	SN4	0.722	0.04	16.92	**			
			3	2	*			
PBC	PBC1	0.86	0.04	19.80	**	0.752	0.921	0.745
			3	3	*			

Constructs/ Indicators	Estimate	S.E.	C.R.	P	Factor loading	Cronbach's $\alpha$	CR	AVE
PBC2	0.958	0.03	28.6	**	0.927			
		3	31	*				
PBC3	0.919	0.03	26.8	**	0.893			
		4	6	*				
PBC4	1				0.872			
BI1	1.158	0.03	33.6		0.954			
		4	23					
BI2	1.09	0.03	33.14	**	0.949		0.96	0.867
		3	2	*				
BI3	1.134	0.03	32.5	**	0.942	0.963	32	7
		5	4	*				
BI4	1			**	0.879			
				*				

Note. Created by author SE=Standard Error, CR = Composite Reliability, AVE = Average Variance Extracted, \*\*\*= $p < 0.001$ ; \*\*= $p < 0.01$ ; \*= $p < 0.05$ .

As can be seen from the results, all items in each variable are significant and all measures meet the criteria. The Cronbach's  $\alpha$  evaluation value of all dimensions in this study was above 0.9, which met the following criteria: using the Likert scale to test internal consistency with a minimum coefficient of 0.70 was an acceptable value (Taherdoost, 2016).

The factor loadings of all measurement items in the 5 dimensions are between 0.653 and 0.951, and the p-value is lower than 0.001. All the appropriate thresholds for factor loadings should be greater than 0.50 (Truong & McColl, 2011), and the p-value is less than 0.5. In addition, the lowest CR value in this study was 0.9161, and according to Srinivasan *et al.* (2002), the Composite Reliability (CR) value should be greater than or equal to 0.70, indicating that the scale items are at an appropriate level. The measurement items in this study met this standard. The mean variance extraction (AVE) of this study was between 0.7356 and 0.8677, which was higher than the cut-off point of 0.5 and reached a sufficient degree of convergent validity (Hair, et al., 2013)

### Discriminant Validity

Discriminant Validity can be assessed by computing the square root of each AVE. Discriminant validity between constructs is indicated when the assessed value is greater than or equal to 2 and the

standard error is less than 1.00 (Schmitt & Stults, 1986). The data from this study show that the values of discriminant validity are in line with the relevant indicators, Therefore, discriminant validity is supportive.

**Table 2** Discriminant Validity

Variables	AB	SN	PBC	BI	PWE
AB	<b>0.889</b>				
SN	0.738**	<b>0.858</b>			
PBC	0.673**	0.658**	<b>0.864</b>		
BI	0.834**	0.743**	0.752**	<b>0.932</b>	
PWE	0.646**	0.587**	0.747**	0.700**	<b>0.922</b>

Note.\*\* The correlation was significant at level 0.01 (two-tailed). The diagonally listed values are the AVE square roots of the variables, and the lower triangle area below the diagonal is the Pearson correlation of the latent variable.

### Goodness of Fit Test

In this study, the AMOS statistical procedure was used to test the preset models to check the acceptable threshold levels of each indicator. After the first-stage estimation of the model fit in SEM, we modified the matrix according to the correction index to obtain a better SEM matrix goodness-of-fit.

**Table 3** Goodness of Fit for Structural Model After Adjustment

Index	Criterion	Statistical Values
$\chi^2/df$ (CMIN/DF)	<5	4.371
GFI	>0.85	0.872
AGFI	>0.8	0.832
TLI	>0.9	0.944
CFI	>0.9	0.953
IFI	>0.9	0.953
RMSEA	<0.08	0.085
SRMR	<0.08	0.067

Model summary

In harmony with empirical data

Note. CMIN/DF=The Ratio of the Chi-Square Value to Degree of Freedom, GFI=Goodness of-Fit Index, AGFI= Adjusted Goodness-of-Fit Index, CFI= Comparative Fit Index, TLI=Tucker-Lewis Index, IFI= Incremental fit index SRMR=Standardized Root Mean Square, RMSEA= Root-Mean-Square Error of Approximation,

As can be seen from Table 6,3, after adjustment,  $\chi^2/df$  (CMIN/DF) = 4.371, goodness of fit index (GFI) = 0.872, adjusted goodness of fit index (AGFI) = 0.832, comparing the fit Index (CFI) was 0.953, Tucker–Lewis Index (TLI) = 0.944. Incremental Fit Index (IFI) = 0.953, Root Mean Square Error of Approximation (RMSEA) = 0.085, Standardized Root Mean Square (SRMR) = 0.067 .

The adjusted model is slightly different from the fitting standard (RMSEA=0.085), but it is very close to the standard value. Except for this value, all other fitting values met the acceptable threshold level. It can be considered that the fitting of the model degree is good.

#### 4. Research Hypothesis Test

Path analysis can be used to confirm whether the data conforms to a hypothesized variable, thereby confirming a causal relationship between the data and the hypothesized variable. This study tested alternative hypotheses after adjusting for SEM matrices whose goodness of fit matched relevant criteria.

**Table 4** Hypotheses Testing Result form the Structural Model

Path relationship	Estimate	Product of Coefficients			Supported
		S.E.	C.R.	P	
H1 AB→ BI	0.562	0.052	12.294	***	Yes
H2 SN → BI	0.138	0.044	3.331	***	Yes
H3 PBC→BI	0.256	0.056	5.775	***	Yes
H4 PWE→BI	0.069	0.057	1.661	0.097	No
H5 PWE→AB	0.672	0.049	16.378	***	Yes
H6 PWE → SN	0.620	0.056	14.453	***	Yes
H7 PWE → PBC	0.791	0.044	19.29	***	Yes

Note.\*\*\*=p<0.001; \*\*=p<0.01; \*=p<0.05

It can be seen from Table 6.4 that among the seven hypotheses, one hypothesis is not supported, and the remaining six are all supported. The assumption that Public Welfare Education directly affects Behavior Intention is not valid. Among the established assumptions, the independent variable Public Welfare Education has the greatest impact on Perceived Behavioral Control. For the dependent variable Behavioral Intention, the three intermediary variables Attitudes towards Behaviors, Subjective Norm, and Perceived Behavioral Control all affect it. Among them, the path coefficients of Attitudes towards Behaviors, Subjective Norm, and Perceived Behavioral Control on Behavior Intention are 0.562, 0.138, and 0.256 respectively. Among these three variables, Attitudes towards Behaviors

has the greatest influence on Behavior Intention, Subjective Norm has the least influence on Behavior Intention.

### 5. Mediation effect Test

In this paper, Bootstrap is used to test the mediation effect, and the confidence interval is set to 95% and repeated sampling is performed 1000 times. If the confidence interval does not include 0, it means that the mediation effect is significant, and if the confidence interval includes 0, it means that the mediation effect is not significant.

**Table 5** Hypotheses Testing Result form the Structural Model

Path relationship	Estimate	Product of Coefficients		Bootstrapping BC 95% CI	
		S.E.	C.R.	Lower	Upper
		H8 PWE → SN → BI	0.086	0.065	1.8
H9 PWE → AB → BI	0.378	0.118	4.347	0.306	0.753
H10 PWE → PBC → BI	0.202	0.116	2.371	0.073	0.542
Total Indirect Effect	0.666	0.15	6.033	0.652	1.243

The independent variable Public Welfare Education mainly has an indirect effect on Behavior Intention, that is to say, Public Welfare Education mainly affected Behavior Intention through three mediating variables. The standardized path coefficients from public welfare education to behavioral attitudes, subjective norms, and perceived behavioral control are 0.672, 0.620, and 0.791, respectively, while the standardized path coefficients from behavioral attitudes, subjective norms, perceived behavioral control to public welfare behavior intentions are 0.562, 0.138, and 0.256, respectively. Therefore, the indirect effect of public welfare education to public welfare behavior intention can be calculated as:  $0.672 \times 0.562 + 0.620 \times 0.138 + 0.791 \times 0.256 = 0.666$ . Among them, Attitudes towards Behaviors has the largest mediating effect, and the path coefficient is 0.378.

### Discussion and Conclusion

Based on the data analysis results, this study made the following discussions on the hypotheses put forward by the study:

**1. Behavioral attitude, subjective norm and perceived behavioral control have a direct and significant impact on University students' social welfare behavior intention.**

The behavioral attitude of University students to participate in social welfare represents a kind of judgment and evaluation of individual University students on social welfare behavior. If the individual perceives that participating in social welfare is something he likes and is willing to do, and it is beneficial to himself, he will increase his self-esteem and behavioral intent. For example, many University students regard social welfare as a job they love, and have made an amazing investment in it (Jhony et al., 2019), and many University students participated in social welfare to improve their abilities, expand social relationships, and gain Satisfaction (Chen & Fen, 2021). In this study, the behavioral attitude factor of University students' social welfare has a significant positive impact on behavioral intention, with a value of 0.562, which is consistent with the conclusions of previous research results.

The same is true for subjective norms. When an individual perceives a stronger sense of a norm, the more they will act in accordance with that norm. Whether it is an exemplary norm or a prescriptive norm, it will have an impact on an individual's behavioral intentions. This conclusion has also been confirmed in other studies related to social good. The study by Jhony et al. (2019) mentioned that under the propaganda and drive of family members, individuals are more likely to have the motivation to participate in volunteer services. In this study, the subjective normative factors of University students' social welfare have a significant positive impact on behavioral intention, with a value of 0.138, which is consistent with the conclusions of previous research results.

Perceived behavioral control mainly reflects the difficulty of an individual's perceived behavior. It is generally believed that if the individual feels that the expected activity is relatively simple, it will increase the willingness to act, and if it is difficult, it will reduce the willingness or even give up doing a certain behavior. For example, due to factors such as personal safety and travel methods (Jhony et al., 2019) or economic reasons (Deng, 2020). In this study, the perceived behavioral control factors of University students' social welfare have a significant positive impact on behavioral intention, with a value of 0.256, which is consistent with previous research results.

The data analysis of this study shows that among the three variables of behavioral attitude, subjective norm, and perceived behavioral control, behavioral attitude has a strong influence on public welfare behavior intention, and the path coefficient is 0.562, which is consistent with the point of Xiong (2018). However, the path coefficient of the influence of perceived behavioral control on behavioral intention in this study is 0.256, while the path coefficient of the influence of subjective norm on behavioral intention is 0.138, which shows that the impact of perceived behavioral control on University students' public welfare behavior intention is greater than that of subjective norm, which is inconsistent with other scholars' research.

**2. Public welfare education has no significant direct impact on University students' social welfare behavior intention, but public welfare education has a direct impact on behavioral attitude, subjective norm and perceived behavioral control. Therefore, public welfare education has an indirect impact on behavioral intention through behavioral attitude, subjective norm and perceived behavioral control.**

The impact of public welfare education in universities on the intention of University students' public welfare behavior, as well as the impact of public welfare education on behavioral attitudes, subjective norms and perceived behavioral control, are more the results of qualitative research. Public welfare education is a model aimed at cultivating individual abilities and raising awareness of responsibility (Zhang, 2013). Colleges and universities should actively carry out public welfare education for university students and guide them accordingly (Wang, 2016 )

The research in this study shows that public welfare education for university students can indirectly affect university students' public welfare behavior intentions through factors such as university students' behavioral attitudes, subjective norms, and perceived behavioral control.

Due to differences in the choice of subjects and sample ranges for public welfare behaviors, the conclusions drawn will also vary. The target group of this study is University students. One of the characteristics of this group is that they are high-educated. The higher the level of education, the higher the probability of high public welfare intention, because education promotes people's attention to social welfare needs and enhances people's civic awareness. For this reason, it is reasonable and feasible to directly affect the behavioral attitude, subjective norm, and perceived behavior control of University students by strengthening public welfare education, thereby indirectly affecting the public welfare behavior intention of University students. Data analysis shows that the path coefficients of public welfare education on behavioral attitude, subjective norm and perceived behavioral control are 0.799, 0.804 and 0.854 respectively. Through the influence of these three mediating factors, the indirect effect of public welfare education on behavioral intention is 0.666. This result supports the conclusion of qualitative research from the perspective of quantitative research.

## **Recommendation**

According to relevant empirical analysis results, this paper puts forward targeted suggestions as follows:

First, pay attention to guiding university students to establish a positive attitude to participate in social welfare activities, improve university students' rational recognition and value consensus on social

welfare, so that university students can have emotional trust in social welfare and form a self-consciousness;

Pay attention to the guiding role of people around university students and social public morality on university students. Advocate university students to actively share social public welfare knowledge and experience and gains when they participate in social public welfare practice with important people around them, such as parents, friends and classmates, so that university students and people around them can infect and influence each other, thus gaining more recognition and support. Colleges and universities should strive to create a good teaching environment, actively disseminate knowledge of public welfare through public welfare classrooms, introduce the history and culture of public welfare, and set up examples of public welfare, so as to enhance university students' public welfare awareness, stimulate their enthusiasm for public welfare, and cultivate their sense of public welfare mission.

Second, create a good environment for university students to practice social welfare. Colleges and universities should actively develop channels for social welfare practice, strengthen the construction of public welfare associations, establish volunteer archives, and actively carry out exchange activities, so that university students can obtain more conditions and opportunities to participate in social welfare activities. Improve the sense of gain for university students to participate in social practice, enable university students to find the most suitable public welfare activities, and achieve a win-win effect of university students' personal value realization and social value realization.

Third, integrate professional characteristics and combine social welfare practice with the majors studied by university students. When university students participate in social welfare practice, they can not only apply what they have learned, improve their professional level and personal ability, but also satisfy their psychological needs to serve the society and get development, truly integrate theory with practice, and improve their overall quality.

### **Suggestion for Future Research**

First of all, from the perspective of the survey sample, this study focuses on undergraduate students. Whether the research conclusions are applicable to other user groups needs to be further verified. In the future, the scope of the survey sample can be expanded to improve the robustness of the model research conclusions.

Secondly, from the perspective of examining the influencing factors, the influence of other factors on university students' willingness to participate in social welfare can be explored in the future, such as the role model of public welfare.

At the same time, whether different groups of university students have different willingness to participate is also worth exploring in the future, such as whether community management majors or public management majors have a stronger willingness to participate.

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