

Research on Material Donation Behavior Based on Planned Behavior Theory

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Abstract: During a public health emergency(PHEIC), emergency materials are crucial for the containment of the affected area. The main means of obtaining these materials is through donations, thus it is important to explore the factors that influence material donations. In this study, the TPB theory and social trust theory were used to establish a research model, and relevant hypotheses were put forward to explore the behavioral mechanism that affects material donations. Using data from 530 questionnaires and the help of SPSS27.0 and AMOS24.0 software, empirical analysis was conducted to verify the hypotheses. The results indicate that social trust and behavioral intention can significantly influence donation behavior, while donation attitude and perceived behavioral control play a mediating role. Finally, recommendations were made to simplify the donation process and improve the supervision system.

1. Introduction

During the early stages of a PHEIC, donations of medical supplies and daily essentials are essential to help contain the outbreak. However, the traditional management system faces challenges in tracking and distributing donated materials dynamically, leading to a trust crisis. More research is needed to investigate the dynamic factors influencing material donation behavior and its characteristics.

2. Theoretical Model and Research Hypothesis

2.1 Theoretical Model Framework

TPB theory, an extension of TRA theory introduced by Ajzen, incorporates perceived behavioral control variables to describe behaviors in which the will is not controlled, making it a more comprehensive framework for explaining behavioral phenomena in real life^[1].

Social trust is essential to maintaining social stability. Tian Jinhui's research^[2] shows that false information can harm social trust and donation attitudes, while social trust can positively influence donation satisfaction and behavior.

This paper combines compliance motivation and normative beliefs into subjective norms using Davis' partitioning measures^[3]. Xie Peng et al^[4] also found that charitable activities in a company's region can influence the company's charitable donation behavior.

Insufficient research on material donation behavior led us to develop a model based on TPB and social trust theory. The model illustrates the relationship between material donation intention and behavior during PHEIC. Fig.1 presents the theoretical framework for the material donation behavior discussed in this paper.

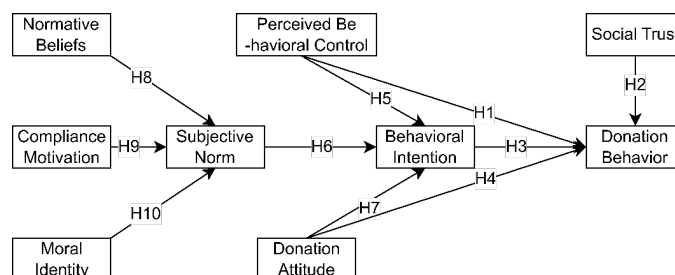


Fig.1 Theoretical Model Framework

2.2 Research Hypothesis

(1) Donation behavior and its influencing factors

Perceived behavioral control positively affects individuals' intentions and behavior in many fields. Zhang Jinhui^[5] suggests that perceived behavior control has predictive effect on behavior. Li Yanan^[6] believes that donors make different donations according to their level of trust. In TPB theory, behaviors that are not entirely controlled by an individual's will are influenced by behavioral intention. Sherman et al. proposed that attitude may influence behavior^[7].

H1: Perceived behavioral control significantly and positively influences donation behavior. H2: Social trust has a significant positive effect on donation behavior. H3: Donors' behavioral intention has a significant positive effect on donation behavior. H4: Donor's attitude towards donation has a significant positive effect on donation behavior.

(2) Behavioral intention and its influencing factors

Currently, Astrid^[8] discovered that the environmental behavioral intention of high school students is predicted by perceived behavior control. Through empirical studies, Divad, et al. demonstrated that subjective norms have a positive effect on individuals' behavioral intentions^[8]. Suaini^[9] found that individuals' willingness to donate online is positively influenced by attitudes.

H5: Perceived behavioral control of donors has a positive effect on behavioral intention. H6: Donors' subjective norms have a significant positive effect on behavioral intention. H7: Donor's attitude towards donation has a positive impact on behavioral intention.

(3) Subjective norms and their influencing factors

In various fields, it has been demonstrated that normative beliefs have an impact on an individual's subjective norms. For example, Zhang Yanning et al^[10] found that drivers' normative beliefs influence their subjective norms. Hu Quan^[11] found that compliance motivation positively affects subjective norms. Moral identity can regulate the relationship between donation behavior and moral inclination^[12].

H8: Normative beliefs have a significant positive effect on subjective norms. H9: Compliance motivation has a significant positive effect on subjective norms. H10: Moral identification has a positive effect on subjective norms.

3. Study Design

3.1 Data Collection and Verification

The study collected data by sending out 530 questionnaires through a network platform. After removing invalid questionnaires, 518 valid ones were obtained, resulting in a high recovery rate of 97.7%. Measurement items were tested for normality using skewness and kurtosis, and all were found to meet the normal distribution.

We conducted a test and found good reliability overall with a Cronbach's α of 0.913. CFA was used to assess the accuracy of each item, The results showed that the AVE values of each dimension were above 0.5 and the CR values were greater than 0.7, indicating that the validity and reliability of each dimension met the standard.

3.2 Construction of Structural Equation Model

3.2.1 Sem Model Fit Test

The model's fitness was analyzed with Amos 24.0, and most indexes showed an excellent fit with the research data, indicating the model's acceptability (See Table 1).

Table 1 Indicates the Fit Index Values

Indicators	Reference criteria	Measured results
CMIN/DF	1-3 is excellent and 3-5 is good	1.969
RMSEA	<0.05 is excellent and <0.08 is good	0.043
IFI	>0.9 is excellent, >0.8 is good	0.946
TLI	>0.9 is excellent, >0.8 is good	0.938
CFI	>0.9 is excellent, >0.8 is good	0.946

3.2.2 Sem Model Path Relation Hypothesis Test Results

Hypothesis testing on path relations shows that H4 is not significant with a p-value of $0.08 > 0.05$, while all other hypotheses have p-values below 0.05, indicating their validity. Table 2 presents the results, while the model framework and standardized path coefficients are illustrated in Figure 2.

Table 2 Results of Sem Path Relationship Test

Hypothesis	Standardized path coefficient β	P	Conclusion
H1	0.278	***	Support
H2	0.284	***	Support
H3	0.191	***	Support
H4	0.093	0.08	Unsupported
H5	0.212	***	Support
H6	0.258	***	Support
H7	0.168	0.003	Support
H8	0.288	***	Support
H9	0.234	***	Support
H10	0.261	***	Support

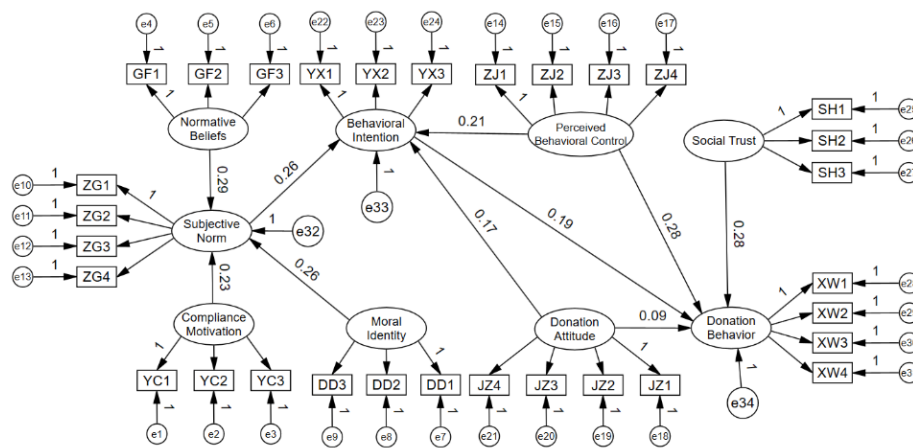


Fig. 2 Actual Model and Its Path Coefficient

3.2.3 Mediation Effect Analysis

In this study, a Bootstrap test was conducted to explore the factors influencing the dynamic change of material donation behavior. Table 3 presents the results.

Table 3 Test Results Of the Mediation Effect of Bootstarp3

Mediation path	Effects	Estimate	95% Bias-Corrected CI		Two-tailed P	Effect proportion
			Lower	Upper		
Giving Attitude > Behavioral Intention > Giving behavior	Indirect effect	0.1	0.055	0.154	0.001	26.53%
	Direct effect	0.277	0.166	0.388	0.001	73.47%
	Total effect	0.377	0.272	0.488	0.001	
Perceived behavioral control > Behavioral intention > Donating behavior	Indirect effects	0.098	0.059	0.155	0.001	22.27%
	Direct effect	0.342	0.245	0.452	0.001	77.73%
	Total effect	0.44	0.34	0.55	0.001	

The table above indicates that the two independent variables affect the dynamic change of donation behavior through intermediary variables in the following way:

(1) donation attitude has a positive impact on donation behavior through mediating variables. When donors perceive material donation as valuable, it strengthens their willingness to donate, making them more likely to donate and take the initiative to seek out and publicize information about material donation.

(2) perceived behavioral control has a positive effect on donation behavior through mediating variables. When material donation is not difficult for donors, they are more willing to make material donations.

4. Conclusion and Countermeasure Suggestions

4.1 Research Conclusion

In summary, the mechanism that influences material donation in a PHEIC context includes the following aspects:

(1) Social trust and intention positively influence donation behavior, while perceived control and attitude play a significant mediating role. This aligns with social capital theory, emphasizing trust's impact on behavior. Trust relationships can foster donation behavior in unfamiliar situations. High intention and trust in others are crucial to encourage donation behavior.

(2) Subjective norms, perceived behavioral control, and donation attitude strongly influence behavioral intention. A positive attitude towards donation from others increases compliance with the norm and generates donation intention. Convenient material donation, supportive surroundings, and positive attitudes can strengthen the donor's intention to donate.

(3) Normative belief, compliance motivation, and moral identity positively impact subjective norms. Normative beliefs reflect one's expectations of group behavior, influencing the subjective norms of the donor. Stronger moral identity and sense lead to more secure norms and behaviors.

4.2 Countermeasures and Suggestions

Given the unique nature of emergency material donations during PHEIC, ensuring supply and demand matching and safety is critical. Based on the findings of this study, the following recommendations are proposed:

4.2.1 Improve Material Donation and Its Supervision System

The government should not only continue to improve the incentive mechanism for material donation, but also optimize the system for material donation under PHEIC to ensure a smooth and efficient donation process.

An effective incentive mechanism for material donation should be established by exploring the intrinsic motives of donors. Currently, there is no corresponding mechanism to encourage individuals to continue donating^[7], so the government should formulate different incentive mechanisms according to the characteristics of society.

4.2.2 Simplify the Donation Process and Improve the Redistribution Efficiency

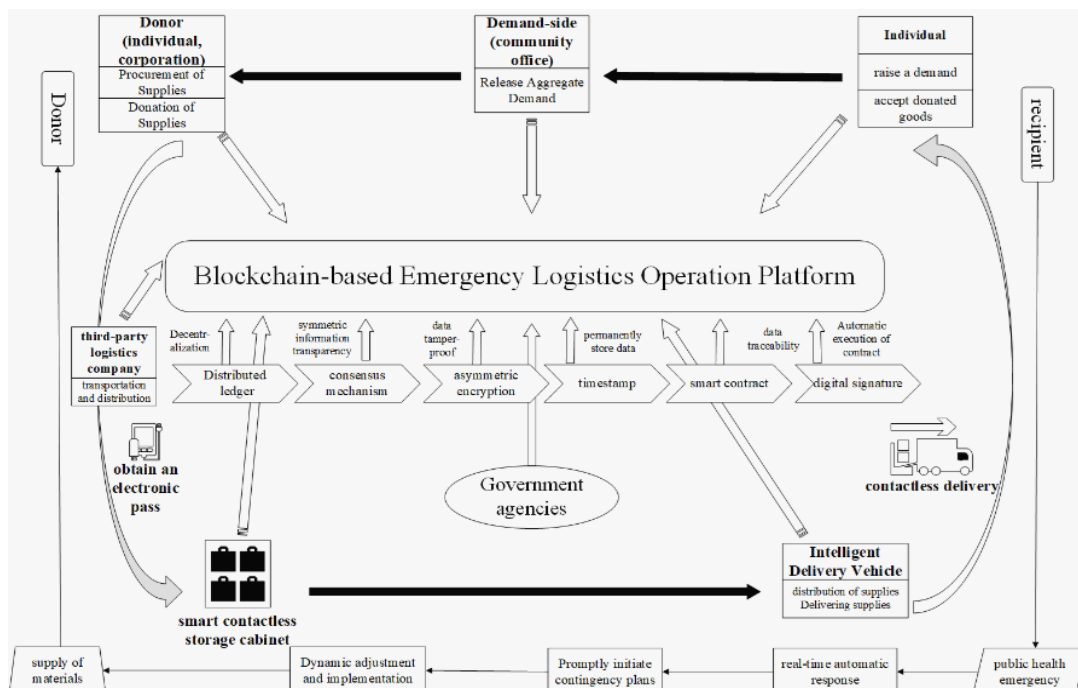


Fig.3 Platform Flow Chart 4-1

To encourage donations, the platform should simplify the process, enhance transparency, and establish a feedback mechanism to improve social credibility. Furthermore, adjusting the donation objects can help better match supply and demand. This study proposes focusing on community residents as donation recipients, with needs aggregated by community and transported through third-party logistics. Electronic passes can also be generated to coordinate with the government for contactless distribution (See Figure 3).

4.2.3 Strengthen Social Publicity and Cultivate Donation Awareness

To improve the acceptance and mobilization of material donations, strengthening social awareness and publicizing the value of donations is crucial. All sectors of society should work together to create a donation-friendly atmosphere and increase public willingness to donate in the post-pandemic era.

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