Analysis of Influencing Factors of Public Crowdfunding Based on Social Media- -Take "Water Drop Fund" as An Example

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Abstract. With the popularity of mobile phone clients and the rapid development of Internet, social media has infiltrated into people's daily lives. In this context, China's public crowdfunding has developed and grown, forming a unique operating mode under the impact of the times. Many public crowdfunding platforms based on social media such as Weibo and WeChat have emerged. "Water Drop Fund" is a typical new public welfare under the combination of social media and public welfare. By studying the "Water Drop Fund" platform, we can discover the epitome of this new form of public welfare under the context of the new era. This article takes "Water Drop Fund" as an example, collects relevant information about applicants on the public welfare platform, and uses regression analysis to describe the different influencing factors in this crowdfunding project. It summarizes the relationship between various factors and the crowdfunding rate, and further discovers that the target amount, the number of confirmations, and the number of reposts are the key factors affecting this new type of public welfare crowdfunding. Suggestions for the future development of the public welfare crowdfunding system are made based on these key factors.

Keywords: social media; public crowdfunding; regression analysis.

1. Introduction

With the development of media technology and the innovation of the Internet, Internet 2.0, characterized by user sharing and information aggregation, has brought profound changes to the whole society. The increasingly popular and applied Internet has penetrated China's democratic politics, economy, and social life. In the field of public welfare and charity, the interaction between public welfare organizations and individuals through Internet technology has made public welfare more socialized, civilian, and socialized [1]. This interaction has given rise to a new form of public welfare called "micro public welfare," which also means that the field of public welfare has entered a new era called the "micro public welfare era." With the emergence of social media, the main participants in public welfare are becoming "equal." Assistance through third-party financing platforms has become an effective and convenient way. Therefore, it is realistic to study and analyze the factors affecting the crowdfunding rate in the context of the booming development of social media and the inability of many families to afford high assistance fees. In addition, mainstream Internet public welfare crowdfunding platforms include "Tencent Foundation," "Love Donation," "Fun in Funding," "JD Crowdfunding," "Water Drop Fund," etc. However, crowdfunding project on many platforms generally have low crowdfunding rates. Therefore, it is necessary to collect information posted by applicants and accessible to donors on public welfare crowdfunding projects, and analyze them in relation to the crowdfunding rate. Based on this, we can further explore ways to strengthen the management of social media public welfare crowdfunding projects and improve the operation of the platform itself, and help the future development of charity and public welfare crowdfunding systems.

2. Concept and advantages of social media public crowdfunding

2.1. Concept of social media public crowdfunding

Social media, also known as socialized media, refers to platforms or applications based on web thinking and technological foundations. Social media public crowdfunding is a new form of public

welfare that emerges from the interaction between the internet and crowdfunding [2]. It is a form of public welfare that utilizes social media as a carrier. Social media public crowdfunding is also a type of internet crowdfunding. Currently, internet crowdfunding models can be divided into four categories: product crowdfunding, donation crowdfunding, debt-based crowdfunding, and equity-based crowdfunding [3]. Among them, donation crowdfunding refers to public crowdfunding, and internet donation crowdfunding is social media public crowdfunding. Online medical crowdfunding projects usually appear on donation-based crowdfunding platforms. They are donation projects that publicly appeal to the public through the internet to raise funds for health-related needs and expenses. The "Waterdrop Crowdfunding" platform is an example of such a project [4]. Nowadays, many social organizations and individuals adopt this model to publish fundraising information on internet platforms. Based on the demand for the number of people, callers will choose to publish on social platforms. Social media is socializing with acquaintances based on traditional media. By using social platforms to publish fundraising projects, the channels for raising funds are greatly expanded, and the efficiency is greatly improved due to the "acquaintance effect." This type of fundraising project that seeks help using social media platforms generally uses the "snowball effect" to raise funds. Each person donates a small amount, but with a large number of donors, the amount of funds raised will also increase accordingly. In general, using social media public crowdfunding is a fundraising method that conforms to development trends and is extremely beneficial to society and individuals if used properly and promotes its healthy development.

2.2. Advantages of social media public crowdfunding

2.2.1 Simple fundraising process and low costs

Taking "Water Drop Fund" as an example, the fundraising process for severe illnesses on the platform is very simple. The caller only needs to click "Initiate Fundraising" on the platform and fill in information such as the target amount, fundraising title, and description of the request according to the guidance, and can also attach pictures. After the fundraising is completed, the caller can choose to withdraw the funds and submit a withdrawal application. After the withdrawal application is approved and publicly displayed, the platform will promptly transfer the funds to the caller's account. Overall, the costs are low, the process is fast, and it can resolve urgent fundraising needs for callers. For donors, the participation process is also very simple. They only need to click the relevant link, choose the amount to donate, and during the donation process, they can see the caller's reasons for seeking help, a pledge, and relevant supporting documents. Similarly, donors can make donations through mobile payment, which greatly avoids the risks associated with fund transfers for callers, and donors also avoid the hassle of converting loose change during the donation process. It is precisely because this fundraising method is simple for both callers and donors that crowdfunding platforms like "Water Drop Fund" are becoming increasingly popular.

2.2.2 Diverse channels of dissemination and wide range of diffusion

After the rapid popularization of the internet, social media has accelerated the speed of spreading public welfare information and rectified the deficiency of traditional media in disseminating welfare information in a timely manner. The public has transitioned from being passive recipients to acting as "dual-role" recipients and disseminators, as they can not only provide donations to those in need but also spread the information through their social networks. This has transformed the communication model from the previous mainstream media's asymmetric two-way communication to a recipient-centered interactive communication model. In terms of innovation, spreading information through social media enables wider diffusion. Information can rapidly spread and flow under the influence of social media, sparking innovation in the forms of public welfare and the content of public services. For example, during the COVID-19 pandemic in 2020, a large number of agricultural products faced unsold situations. The Taobao platform contacted farmers in the original production areas, launching a "Help Farmers by Eating" public welfare sales campaign, utilizing the advantages of e-commerce to create a selling channel for farmers and reduce their losses [5]. This

shows that the involvement of the internet allows public welfare information to be disseminated more widely, and the saying "many hands make light work" applies to internet-based public welfare crowdfunding, significantly increasing the success rate and speed of fundraising.

2.2.3 "Familiarity effect" and higher trustworthiness

WeChat is a social network among acquaintances. Based on mutual authentication mechanisms, the mutual acceptance between users forms the foundation of their relationship on the WeChat platform. The existing social connections of users are the basis for building the WeChat network. Most of the contacts on WeChat are real-life acquaintances, which is significantly different from platforms like Weibo [6]. Moreover, WeChat's mode of communication is interpersonal, mainly based on peer-to-peer communication, while Weibo is more of a social platform for strangers, with weaker social connections between users. Fundraising for public welfare is also a form of transaction, and people compare and evaluate factors such as whether to engage in a transaction, what to trade, with whom to trade, and under what conditions before making a decision. On the "Water Drop Fund" platform, there are requirements for callers to sign a "Initiator Commitment" and provide personal information, which is then audited by the platform to enhance its credibility. This third-party auditing effectively prevents negative impacts caused by the "familiarity effect." In addition, the official website of Water Drop Fund also publishes a blacklist of untrustworthy fundraisers, providing double assurance for donors.

3. Hypotheses and model construction - taking "Water Drop Fund" as an example

3.1. Data source and sample selection

The author searched for the keyword "Water Drop Fund" on Weibo and obtained nearly 200,000 links to assistance cases. The author selected complete displayed data from July 2023 and backwards, resulting in a total of 2,759 cases available for analysis. Due to the large sample size, which makes it difficult for subsequent data analysis and statistics, the author randomly sampled the collected 2,759 sample links. Following the principles of random sampling and systematic sampling, the sample size was determined to be 550 cases. Based on a sampling interval of 5, the starting point of the sample was randomly selected from the first 5 case links after sorting all the data, and then every 5th case was selected as a sample in subsequent rounds. After the sampling was completed, a total of 550 samples were selected. By screening, the author excluded crowdfunding links that were not related to "Water Drop Fund" assistance and some advertisements about "Water Drop Fund" assistance. After excluding these links that did not meet the analysis criteria, the final confirmed sample size in this study was 516. Excluding the household annual income and household debt situation due to the inability to summarize them based on the information provided by the callers, each sample consisted of the target amount, raised amount, number of reposts of the public welfare information, the age of the caller, the number of verifications, the household income situation (car ownership, property ownership), and the household financial security situation (property insurance, personal insurance, medical insurance), with a total of 516 samples.

3.2. Hypotheses

The author summarized and extracted the information about the callers disclosed on the "Water Drop Fund" platform, including the age of the callers, the target amount of their fundraising, the number of verifications, the number of reposts, the financial situation of their households (property ownership, car ownership), and their financial security situation (property insurance, personal insurance, medical insurance). Based on the obtained information, the author believes that the above-mentioned information will influence the crowdfunding rate (raised amount/target amount) studied in this paper. Therefore, the following research hypothesis is proposed.

H1: The older the age of a crowdfunding project caller, the higher the crowdfunding rate.

According to the statistics from the National Health Commission's Information Center, it can be found that the two-week visit rate for residents in certain regions reaches 52.3% among the 46-69 age group, indicating a high proportion of medical visits among middle-aged and elderly people. Common diseases among middle-aged and elderly people in the age group of 46-69 include esophageal cancer, diabetes, Parkinson's disease, and senile cataracts. The treatment costs for these diseases are relatively high, and most of them are chronic diseases with long treatment durations. Therefore, when faced with high medical expenses, families often have to bear high medical costs, and seeking social assistance becomes the only option in the face of high medical expenses and the desire to survive. Hence, the first research hypothesis is proposed in this paper.

H2: The smaller the target amount of a crowdfunding project, the higher the crowdfunding rate.

Blair et al. proved through experiments that small donation requests are more likely to gain the recognition of donors. If large sums of money are requested, it significantly reduces the likelihood of potential donors complying with the request [7]. Therefore, the size of the target amount of a fundraising project will have an impact on the success rate of crowdfunding. Hence, the second research hypothesis is proposed in this paper.

H3: The more confirmed persons a crowdfunding project has, the higher the crowdfunding rate.

In social media, when users perceive higher trust from the functionality settings and reputation of a website, the likelihood of participating in activities also increases [8]. Therefore, it can be inferred that when donors have a high level of trust in a charitable activity on social media, they are more likely to participate in donations. The number of confirmed persons is an indicator of trust. During internet donations, donors cannot truly understand the authenticity of the information. However, when there are more confirmed persons, donors develop a sense of identification and tend to donate to projects with more confirmed persons. Therefore, the third research hypothesis is proposed in this paper.

H4: The more times a crowdfunding project is shared, the higher the crowdfunding rate.

There are significant differences in the crowdfunding rates between different charitable crowdfunding projects, and the difference in the spread of charitable crowdfunding projects is one of the reasons for this difference. In the field of mass communication, the spread effect refers to the impact of disseminated information, which receives attention, leaves a memory, changes attitudes, and leads to changes in individual or social behavior [9]. According to the information obtained from the “Water Drop Fund” platform, the displayed number of shares can be used to measure the spread of the project. Therefore, the fourth research hypothesis is proposed in this paper.

H5: The economic and security situations of a fundraising project requester will have an impact on the crowdfunding rate.

Requesters can provide explanations about their own economic status and security situation on the “Water Drop Fund” platform, including whether they have a car, property, medical insurance, property insurance, and personal insurance. Donors can choose whether to donate and the amount of their donation based on this information. Therefore, the sixth research hypothesis is proposed in this paper.

3.3. Model Construction

This study takes the crowdfunding rate (crowdfunding rate = raised amount / target amount) as the dependent variable and analyzes it with the independent variables of requester's age, target amount, confirmed persons, and number of shares. Based on the observation of scatter plots, the regression model in this study can be written as:

$$Y = \beta_0 + \beta_1 X_i + \varepsilon \tag{1}$$

Y is the crowdfunding rate; i=1,2,3,4 (X_1 represents the requester’s age, X_2 represents the target amount, X_3 represents the confirmed persons, X_4 represents the number of shares).

4. Analysis of influencing factors of social media public crowdfunding: a case study of "Water Drop Funding"

4.1. Descriptive Statistical Analysis

4.1.1 Descriptive Statistics of the Dependent Variable

The dependent variable in this study is the crowdfunding rate, which is the ratio of the raised amount to the target amount. The crowdfunding rate reflects the success or failure of a crowdfunding project. Table 1 shows the frequency distribution of the crowdfunding rate.

From Table 1, it can be seen that the most common crowdfunding rate range is 0-20%, and crowdfunding projects with rates below 40% account for 98.1% of the total. According to Table 2, the mean crowdfunding rate is 6.9% and the mode is 3.9%. This indicates that the crowdfunding rates are generally low. In other words, on the "Water Drop Fund" platform, it is difficult for people seeking help to reach their expected funding amount. However, the low crowdfunding rate could also be due to the short duration of the campaigns, so further investigation is needed.

Table 1. Frequency statistics of crowdfunding rate

		Frequency	Percentage	Effective percentage	Cumulative percentage
Effective	0%-20%	474	91.9	91.9	91.9
	21%-40%	32	6.2	6.2	98.1
	40%-60%	6	1.2	1.2	99.2
	60%-80%	4	0.8	0.8	100.0
	80%-100%	0	0	0	100.0
	Total	516	100.0	100.0	

Table 2. Descriptive statistics of crowdfunding rate

	N	Minimum	Maximum	Mean	Mode
Crowdfunding rate	516	0.5638	69.417	6.9	3.9
Number of valid cases (in rows)	516				

4.1.2 Statistical Description of Independent Variables

Generally, the age groups are classified as follows: 0-6 years old as infancy; 7-12 years old as childhood; 13-17 years old as adolescence; 18-45 years old as youth; 46-69 years old as middle-aged; and 69 years old and above as elderly. According to Table 3, it can be observed that the highest number of callers on the "Water Drop Fund" platform falls within the age group of 46-69 years old.

Table 4 shows that the average age of callers on the "Water Drop Fund" platform is 41.94 years old, with the mode being 52 years old, indicating that the highest number of callers are middle-aged at 52 years old. The maximum age of callers is 84, while the minimum age is 0, suggesting a wide age distribution among those seeking help through the "Water Drop Fund" platform.

Table 3. Frequency statistics of age of callers

		Frequency	Percent	Effective Percent	Cumulative Percent
Effective	0-6 Years old	42	8.1	8.1	8.1
	7-12 Years old	14	2.7	2.7	10.8
	13-17 Years old	23	4.5	4.5	15.3
	18-45 Years old	139	26.9	26.9	42.2
	46-69 Years old	282	54.7	54.7	96.9
	Over 69 years old	16	3.1	3.1	100.0
	Total	516	100.0	100.0	

Table 4. Descriptive statistics of the age of callers

	N	Minimum	Maximum	Mean	Mode
Age of callers	516	0	84	41.94	52
Number of valid cases (in rows)	516				

In addition to age statistics, this study also collected and organized data from the fundraising pages on "Water Drop Fund." Numerical variable statistics are presented in Table 5. According to Table 5, the average target amount for fundraising is 11.1329 million yuan, and combining this with the mean crowdfunding rate of 6.9%, the average amount actually raised by callers is 0.7681 million yuan.

The "number of shares" on the "Water Drop Fund" platform refers to the number of times donors share the campaign, generally indicating that more shares lead to more funds raised. However, there are cases where a high number of shares does not necessarily result in a large fundraising amount. Therefore, the number of shares is also considered as an independent variable affecting the crowdfunding rate.

Table 5 shows that the average number of shares for crowdfunding projects is 950 times. "Confirmed persons" is a method used by the "Water Drop Fund" platform to verify the authenticity of a caller's situation through the verification of others. According to Table 5, the mean number of confirmed persons is 25 times, which means that, on average, each crowdfunding project has 25 instances of verification by others.

Table 5. Descriptive statistics of target amount, confirmed number and share times

	N	Minimum	Maximum	Mean	Standard deviation
Target amount	516	33	656034	111329	136436.011
Confirmed number	516	1	235	25	23.259
Share times	516	9	11710	950	1332.811
Number of valid cases (in rows)	516				

In the "Information Disclosure" section of "Water Drop Fund," callers can provide information about their family's financial situation, such as the presence or absence of property and vehicles. Similarly, callers can also disclose information about their own insurance coverage, such as personal accident insurance, property insurance, and medical insurance. This study also collected statistics on these unrelated variables. According to the statistics, among the callers who initiated campaigns on the "Water Drop Fund" platform, 403 individuals own property, 168 individuals own vehicles, 40 individuals have personal accident insurance, 80 individuals have property insurance, and 467 individuals have medical insurance. These percentages account for 78.1%, 32.6%, 7.8%, 15.5%, and 90.5% respectively.

Table 6. Frequency statistics of real estate, vehicles production, personal accident insurance, property insurance, medical insurance, and topic format

independent variable	Yes or NO	Frequency	Percentage	Cumulative percentage
Do you have real estate?	Yes	403	78.1	78.1
	No	113	21.9	100
Do you have vehicles?	Yes	168	32.6	32.6
	No	348	67.4	100
Do you have personal accident insurance?	Yes	40	7.8	7.8
	No	476	92.2	100
Do you have property insurance?	Yes	80	15.5	15.5
	No	436	84.5	100
Do you have medical insurance?	Yes	467	90.5	90.5
	No	49	9.5	100

4.2. Analysis on factors affecting the crowdfunding rate of "Water Drop Funding"

SPSS statistical software was used to conduct statistical analysis on the sample in this study. Based on the relevant information of "Water Drop Fund" and the data collected by the author, an analysis was conducted to identify the factors that influence the crowdfunding rate of "Water Drop Fund".

4.2.1 Analysis of age of callers and crowdfunding rate

Through Pearson correlation analysis of the collected data on the ages of the callers, it was found that the correlation analysis shows that r was -0.054, and the p-value was 0.219 > 0.05. This indicates that there is no relationship between the age of the callers and the crowdfunding rate.

Table 7. Correlation analysis between age of callers and crowdfunding rate

	Mean	Age of callers	Crowdfunding rate	p-value
Age of callers	41.94	1		0.219
Crowdfunding rate	6.866	-0.054	1	

Note: * * * means $p < 0.001$, * * means $p < 0.01$, * means $p < 0.05$.

4.2.2 Analysis of target amount and crowdfunding rate

On the "Water Drop Fund" platform, the target amount filled in by the callers is determined based on their personal and family circumstances, as well as the expenses required for treatment of their illnesses. To investigate whether the required funding amount affects the crowdfunding rate, a Pearson correlation analysis was conducted on the target amount and the crowdfunding rate. The Pearson correlation analysis shows that r $r=0.433^{**}$ and $p < 0.01$, indicating a significant correlation between the target amount and the crowdfunding rate.

To further explore the impact of the target amount on the crowdfunding rate, regression analysis was performed with the funding amount as the independent variable and the crowdfunding rate as the dependent variable. The results are shown in Table 9. According to the table, the regression equation is:

$$Y = 3.331 + 0.0000318 X_2 \quad (2)$$

Where Y represents the crowdfunding rate, X_2 represents the funding amount. The regression coefficient of the funding amount is significant and positive, indicating that the target amount has a significant positive predictive effect on the crowdfunding rate ($\beta = 0.0000318$, $p < 0.01$). The regression equation also has a high level of statistical significance ($F = 118.89$, $p < 0.01$), and explains 18.8% of the variance in the crowdfunding rate. In conclusion, the larger the target amount filled in by the callers, the higher the crowdfunding rate.

Table 8. Correlation analysis between funding amount and crowdfunding rate

	Mean	Funding amount	Crowdfunding rate	p-value
Funding amount	111329.6	1		0.000
Crowdfunding rate	6.866	0.433**	1	

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

Table 9. Regression analysis of funding amount to crowdfunding rate

	Non-standardized coefficient		Standardization coefficient	t	p	VIF	R^2	Adjust R^2	F
	B	Standard error	Beta						
Constant	3.331	0.513	-	6.499	0.000**	-			
Funding amount	0.0000318	0.000	0.433	10.904	0.000**	1.00	0.188	0.186	118.89

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

4.2.3 Analysis of verification count and crowdfunding rate

To ensure the authenticity of the information provided by the callers and enhance the trust of donors in the public welfare information, the "Water Drop Fund" platform added a "verification count" column to the public welfare information. Public welfare information with a higher verification count is usually more trusted by donors. The relationship between the verification count and the crowdfunding rate was analyzed. According to the correlation analysis in Table 10, the Pearson correlation analysis shows that r was 0.115**, with a significant p-value at the 0.01 level, indicating a significant correlation between the verification count and the crowdfunding rate.

To further investigate the impact of the verification count on the crowdfunding rate, linear regression analysis was conducted, with the verification count as the independent variable and the crowdfunding rate as the dependent variable. Table 11 shows that the regression equation is:

$$Y = 5.625 + 0.049X_3 \quad (3)$$

Where Y represents the crowdfunding rate, X_3 represents the verification count. The model's R^2 value (R2) is 0.013, indicating that the verification count explains 1.3% of the variance in the crowdfunding rate. The F-test showed that the model passed the F-test (F = 6.881, p = 0.009 < 0.01), indicating that the verification count has a significant impact on the crowdfunding rate. The analysis result obtained for the regression coefficient is (β = 0.049, p < 0.01), indicating a significant positive predictive effect of the verification count on the crowdfunding rate. In other words, the more verification counts, the higher the crowdfunding rate.

Table 10. Correlation analysis between verification count of people and crowdfunding rate

	Mean	Verification count	Crowdfunding rate	p-value
Verification count	25.142	1		0.009
Crowdfunding rate	6.866	0.115**	1	

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

Table 11. Regression analysis of verification count of people on crowdfunding rate

	Non-standardized coefficient		Standardization coefficient	t	p	VIF	R^2	Adjust R^2	F
	B	Standard error	Beta						
constant	5.625	0.645	-	8.724	0.000**	-			
Funding amount	0.049	0.019	0.115	2.623	0.009**	1.000	0.013	0.011	6.881

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

4.2.4 Analysis of retweet count and crowdfunding rate

In the public interest link of "Water Drop Fund," there are statistics on the number of retweets for the public interest information. The more retweets, the more funds raised. However, there are also individual large donors, so it is possible to have a high crowdfunding rate with fewer retweets. To explore this issue, the author conducted a Pearson correlation analysis on the number of retweets and the crowdfunding rate. The analysis showed that there is a strong correlation between the number of retweets and the crowdfunding rate (r = 0.585**, p < 0.01). Setting the number of retweets as the independent variable and the crowdfunding rate as the dependent variable, a linear regression analysis was performed. According to Table 13, the model equation is:

$$Y = 2.698 + 0.004X_4 \tag{4}$$

Where Y represents the crowdfunding rate and X_4 represents the number of retweets. The model's R2 is 0.342, which means that the number of retweets can explain 34.2% of the variation in the crowdfunding rate. When performing an F-test on the model, it was found that F = 267.362, p = 0.000 < 0.01, indicating that the model passed the F-test and that the number of retweets does indeed have an impact on the crowdfunding rate. Furthermore, the regression analysis yielded a result of (β = 0.004, p < 0.01), indicating that the more retweets, the higher the crowdfunding rate.

Table 12. Correlation analysis between sharing times and crowdfunding rate

	Mean	Sharing times	crowdfunding rate	p-value
Sharing times	950.025	1		0.000
crowdfunding rate	6.866	0.585**	1	

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

Table 13. Regression analysis of sharing times on crowdfunding rate

	Non-standardized coefficient		Standardization coefficient	t	p	VIF	R^2	Adjust R^2	F
	B	Standard error	Beta						
constant	2.698	0.439	-	6.149	0.000**	-			
Funding amount	0.004	0.000	0.585	16.351	0.000**	1.000	0.342	0.341	267.362

Note: * * * means p < 0.001, * * means p < 0.01, * means p < 0.05.

4.2.5 Financial Situation and Self-protection Situation of Caller and Crowdfunding Rate

According to the information disclosed on the "Water Drop Fund" platform, the financial situation of the Caller can be reflected in whether they have a car and whether they have real estate. Since whether they have real estate or cars are categorical variables, the author categorized them as having real estate = 1 and no real estate = 0, having a car = 1 and no car = 0. The author conducted a Spearman correlation analysis on the financial situation of the beneficiaries and the crowdfunding rate, and the

results from Table 14 showed that the two variables do not have any significant relationship with the crowdfunding rate.

Table 14. Correlation analysis of real estate, vehicles production and crowdfunding rate

	Mean	p-value
Real estate	0.781	0.549
Vehicles production	0.326	0.536
Crowdfunding rate	6.866	

Note: * * * means $p < 0.001$, * * means $p < 0.01$, * means $p < 0.05$.

The self-protection situation of the caller can be reflected in whether they have property insurance, personal accident insurance, and medical insurance. Similarly, the author categorized the data for convenience, where having property insurance = 1 and no property insurance = 0, having personal accident insurance = 1 and no personal accident insurance = 0, having medical insurance = 1 and no medical insurance = 0. The author conducted a correlation analysis on the self-protection situation of the caller and the crowdfunding rate, and the results from Table 15 showed that these two variables do not have any significant relationship with the crowdfunding rate.

Table 15. Correlation Analysis of Property Insurance, Personal Insurance, Medical Insurance and Crowdfunding Rate

	Mean	p-value
Property Insurance	0.155	0.326
Personal Insurance	0.078	0.538
Medical Insurance	0.905	0.910
Crowdfunding Rate	6.866	

Note: * * * means $p < 0.001$, * * means $p < 0.01$, * means $p < 0.05$.

4.3. Summary of analysis results

Age of the caller does not influence the crowdfunding rate. The research results indicate that there is no relationship between the age of the caller and the crowdfunding rate, and the model did not pass the F-test. This result contradicts hypothesis H1 (the older the age of the caller in a crowdfunding project, the higher the crowdfunding rate).

The crowdfunding target amount does influence the crowdfunding rate. The study found that the crowdfunding target amount has a significant positive predictive effect on the crowdfunding rate. In other words, the higher the target amount set by the caller, the higher the crowdfunding rate. This result contradicts hypothesis H2 (the smaller the crowdfunding target amount in a crowdfunding project, the higher the crowdfunding rate).

The number of verification count has an impact on the crowdfunding rate. The research found a strong significant correlation between the number of verification count and the crowdfunding rate. The regression analysis showed ($\beta=0.049$, $p<0.01$), indicating that the number of verification count has a significant positive predictive effect on the crowdfunding rate. In other words, the more confirmations there are, the higher the crowdfunding rate. This result aligns with hypothesis H3 (the more verification count in a crowdfunding project, the higher the crowdfunding rate). This demonstrates that trust plays a significant role in the donation process, and therefore, the caller, crowdfunding platform, and public sector should take measures to improve trustworthiness.

The number of shares affects the crowdfunding rate. According to the analysis, there is a strong correlation between the number of shares by donors and the crowdfunding rate. Based on this, a regression analysis was conducted, and the results showed $\beta=0.004$ and $p<0.01$, indicating that the more shares there are, the higher the crowdfunding rate. This result aligns with hypothesis H4 (the more shares in a crowdfunding project, the higher the crowdfunding rate). Therefore, expanding the

reach of public welfare information is crucial, as a wider dissemination will greatly improve the success rate of crowdfunding. All stakeholders must implement strategies to expand the reach.

The economic and protection situation of the caller does not significantly impact the crowdfunding rate. Through analysis, it can be concluded that factors such as whether the caller has a car, property, property insurance, personal accident insurance, or medical insurance have little impact on the crowdfunding rate. This contradicts hypothesis H5 (the economic and protection situation of the caller in a crowdfunding project will affect the crowdfunding rate).

5. Recommendations for the development of social media public crowdfunding

Based on the research results of this article and the shortcomings of this new public welfare model, the following recommendations can be made for social media public crowdfunding.

5.1. Establish personal identity authentication mechanisms and fill in fundraising goals reasonably

Many public welfare crowdfunding platforms, such as "Water Drop Fund," require fundraisers to provide relevant information, including medical certificates and identification. However, the authenticity of these documents still needs to be verified, and whether the fundraising goals stated align with the actual medical condition also requires further confirmation. Therefore, public welfare crowdfunding platforms urgently need to establish a personal identity authentication mechanism for fundraisers. A sound personal identity authentication mechanism can effectively prevent trust crises and fraudulent donations. Looking at crowdfunding platforms abroad, mainstream platforms like GoFundMe in the United States have emerged around the same time as China's internet crowdfunding platforms. GoFundMe and Facebook exchange identity information, ensuring that donors' personal information is consistent on both platforms, greatly enhancing the authenticity of fundraisers' identities. Following this example, Chinese public welfare crowdfunding platforms can also leverage third-party institutions such as Alipay or the national public security information platform for identity authentication, or establish dedicated personal identity authentication mechanisms specifically for public welfare crowdfunding, unifying the personal information authentication across all public welfare crowdfunding platforms. Only by establishing a personal identity authentication mechanism for fundraisers can the authenticity of the information provided be ensured to the greatest extent. Additionally, efforts should be made to bridge the digital divide.

5.2. Diversify platforms to complement each other and expand the channels and scope of public welfare information dissemination

Every medium has its own flaws, and the emergence of each new medium represents a supplement to the shortcomings of the previous medium. Therefore, different media should complement each other's strengths, or different parts within the same media should collaborate to achieve better dissemination effects. Due to the urgent demand for the spread of social media public welfare information, adjustments should also be made in terms of dissemination channels. Currently, social media public welfare transmission is mainly carried out through moments, WeChat groups, and public platforms. The integration of media resources should be fully utilized to expand the dissemination channels of social media public welfare. At present, public welfare information is mainly disseminated on WeChat and Weibo platforms, and the number of people reached is still limited. Moreover, public welfare information is usually only published on a specific public welfare platform, and due to profit issues, there are barriers between different public welfare platforms. In order to expand the channels and scope of public welfare information dissemination and address the urgent needs of beneficiaries, various public welfare platforms and media platforms can complement each other's information. This requires support and subsidies from relevant policies, as well as vigorous promotion and assistance from charitable non-governmental organizations such as the Red Cross. The Water Drop Fund public welfare platform can also establish an evaluation system for crowdfunding

projects and provide different forms of assistance for different crowdfunding projects. The platform can compile crowdfunding projects that urgently need help and are of the same type, and let the beneficiaries donate to the entire project compilation through the platform's integration of social network resources. At the end of the campaign, the raised funds can be distributed to each specific crowdfunding project through the platform's backend. If one crowdfunding project is not enough to impact the target audience, the sum of multiple projects is more likely to move the audience and generate empathetic emotions.

5.3. Improve relevant laws and regulations to create a good environment for public welfare activities

Improving relevant laws and regulations is an effective means to ensure the orderly progress of public welfare projects and the construction of a favorable external environment. Laws and regulations should clearly define the registration methods, donation methods, and dissemination methods of public welfare crowdfunding platforms. They should also penalize behaviors that disrupt normal public welfare activities and hold responsible those who engage in illegal activities related to online fundraising. It is crucial to establish a system where there are laws to follow, strict law enforcement, and accountability for violations. We can enhance the effectiveness of regulation by clarifying the coordination mechanism led by the competent department, reconstructing a reasonable charitable regulatory system, and using the quantity and quality of charitable organizations, the mobilization capacity of charitable resources, and the public satisfaction with participating in charitable activities as the core evaluation indicators. In addition, inappropriate regulations on internal matters of charitable organizations, such as charter formulation and leader's term and age limitation, should be eliminated. Only by improving relevant laws and regulations can we increase trust in the donation process and effectively address the trust crisis.

While improving relevant laws and regulations, government departments should also play an important role in daily management. Strict supervision should be carried out by the government on each link of public welfare crowdfunding to prevent occurrences of platform and individual malicious donation fraud. Moreover, not only government departments can conduct supervision, but citizens and social organizations can also participate in the supervision. The participation of a single institution cannot achieve the true implementation of supervision responsibilities; therefore, active participation from the society is required to improve the supervision mechanism. Only when all sectors of society attach importance to the development of public welfare can we most effectively promote the professionalism and standardization of public welfare platforms and charitable undertakings.

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