

Retraction

Retracted: Analysis of Digital Life Effect of Residents' Trust Based on Multivariate Discrete Choice Model

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation. The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

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Research Article

Analysis of Digital Life Effect of Residents' Trust Based on Multivariate Discrete Choice Model

Fan Zeng^(b),¹ Xiao Cao^(b),¹ and Huan-Ming Zhang^(b)²

¹School of Finance, Shanghai University of Finance and Economics, Shanghai 200433, China ²School of Statistics and Applied Mathematics, Anhui University of Finance and Economics, Bengbu 233030, China

Correspondence should be addressed to Huan-Ming Zhang; zhanghm@aufe.edu.cn

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In view of the impact of digital life on residents' trust, firstly, based on the data of China Household Finance Survey (CHFS), this paper analyzes the change of residents' trust in the era of data flooding. Through basic research and marginal effect analysis, it is found that digital life enhances residents' trust. Secondly, the robustness of the conclusion is confirmed by constructing a series of models such as ordered probit of instrumental variable (IV-O probit), ordered probit of propensity score matching method (PSM-O probit), and ordered probit Heckman (O-probit-Heckman). Finally, through the mechanism test, it is concluded that digital life can enhance residents' trust by increasing social activities and forming an inclusive social environment. It will also increase trust by obtaining information and increasing their cognitive level. The conclusion that digital life can enhance residents' trust is more prominent among urban residents, nonpoor Hukou residents, and Han residents. Further research shows that the breadth and depth of digital life have a positive impact on residents' trust, and digital life can improve residents' risk tolerance.

1. Introduction

1.1. Background of the Problem. The development of social modernization has produced many uncertainties, leading to social risk problems. For instance, when individual speculation, value conflicts, and moral and ethical failures are exposed intermittently in people's lives, it has serious effects on their trust. Notably, the trust relationship and trust system are vital action structures in society and affect the movement, change, and development of social organisms. A society with a high level of credit has greater enthusiasm and creativity. Hence, attention must be paid to the issue of residents' trust because digital technology continues to penetrate residents' lives; thus, negative impacts on residents' trust cannot be ignored.

1.2. Comparison of the Impact of Digital Life on Residents' Trust. Digital technology is rapidly changing the production, living, and ecological patterns of individuals, making social life much more complex. This digitalization will inevitably address the existing insufficient information and social uncertainty problems in the society, changing residents' living habits and thinking patterns, which will impact their trust. As exhibited in Figure 1, although the trust of residents in China is declining year by year, the trust of those who use smartphones is significantly higher than that of residents who do not use smartphones. Smartphones are the most important and direct medium for residents to pursue a digital life, showing that digital life does affect residents' trust. Hence, this study examines the effect of digital life on residents' trust.

1.3. Research Significance. A sound social system can make people's behaviors credible [1]. Simultaneously, when the trust of the residents increases, it will reduce the cost of social operation, which is conducive to the improvement of the social system. The correlation between residents' trust and social cost represents a virtuous circle wherein trust is conducive to social development, and social development increases residents' trust. As residents' trust increases, society will realize its true potential, generating greater net gains in social efficiency. Digital life may also result in trust abuse from an individual's perspective but can equally increase trust among residents from multiple dimensions, such as

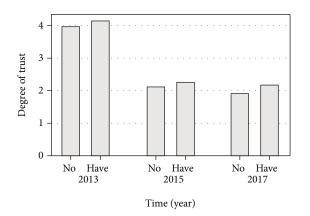


FIGURE 1: Smartphone usage and changes in residents' trust. *Data source: data from the China Household Finance Survey (CHFS).

social cognition and social recognition. Therefore, it is beneficial for the healthy development of our society to study the impact of digital life on residents' trust and increase its positive impact.

1.4. Contributions. The main contributions of this study are as follows. First, the logic of social trust is inconsistent under different cultural and institutional backgrounds. This study investigates the impact of digital life on residents' trust for the first time, in tandem with the characteristics of residents' trust in the digital era, providing a new perspective for improving residents' trust. Second, numerous scholars have used the social trust survey results of Zhang and Ke to study this topic, believing that trust is permanent but based on a stable social environment [2]. This study analyzes the changes in individuals' trust in the era of change, enriching the dynamic trust-related literature. Third, it reveals that the expansion of social activities and knowledge acquisition brought by digital life is the primary ways to affect residents' trust, which provides a reference for improving residents' trust.

Through the research and promotion of this article, we can improve the level of social trust and make trust play a greater role in social life and social economy, so as to build a harmonious and sustainable society.

2. Literature Review

2.1. Trust Changes over Time. Trust ensures economic cooperation and is critical for promoting social innovation and development. However, the degree of trust declines significantly once the trust of the residents enters the social level [3, 4], which may be because the interpersonal trust plays a major role in the "different order pattern" of "closeness and trust" [5]. With the emergence of social transformation, both the trust pattern and the social demand for trust have changed, and the factors affecting trust have changed as well.

The existing literature on the influencing factors of residents' trust is primarily gauged from two perspectives, namely, the macroperspective on behalf of the system and the rule environment and the microperspective on behalf of personal heterogeneity. 2.2. Introduction to Relevant Literature Research. Earlier research on trust has typically adopted a macro perspective, emphasizing the formation of trust. These include the theory of cultural generation [6–8], the theory of system generation [9, 10], and the theory of political regulation [11]. Such theories lead to the commonality of trust formation (i.e., trust has regional and long-term characteristics). For example, the trust formed by religious culture is a result of long-term precipitation; hence, trust should be difficult to change [12]. However, people's trust during different periods of time, observed for the same culture, is inconsistent (i.e., it is not comprehensive to explain this contradiction from a macro perspective).

Notably, an individual is the carrier of trust from a micro perspective. Based on the heterogeneity of individuals, the expectations of people may be different because their information and processing methods are different when they form beliefs. Trust is often the result of people's rational choice [2], and people gain trust in long-term games, forming dynamic characteristics [13, 14]. According to recent research [15], when interviewees from European countries experienced unfair treatment and inferiority, they trusted individuals present in institutions. Hence, people's individual microcharacteristics lead to different rational cognitions. Part of the literature studies the influence of individual characteristics on trust from a microperspective, including income, education level, gender and age, religious belief, optimism and well-being, neighborhood, relationship satisfaction, and the number of friends [7, 16–18].

In the literature research on the two types of factors influencing residents' trust, it can be found that residents' trust comes from both individual microcharacteristics and social environment and also changes in people's long-term repetitive communication behaviors. We can infer that the change in trust is closely related to the change in the external environment. Both the environment and personal cognition of residents change when a community transforms from a traditional to a modern society. Besides, digital life affects individual characteristics and the social environment, changing the way residents' work and form social networks [19]. Accordingly, the transactions and exchange relationships of residents in the digital age will continue to be influenced and thus need to be discussed.

2.3. New Research Areas. Currently, people mainly focus on digital commerce and rarely study the basic issues of digital life. The issues we need to understand are intricate and difficult to discern, such as the contradiction between personal information security and social openness and the contradiction between cultural shaping and traditional order. Therefore, it is necessary to clarify the role of digital life in terms of trust formation. When digital technology is integrated with people's lives, what will be the response of combining objective conditions with people's subjective consciousness? How will residents' digital life affect individual trust? And how does it influence the direction of digital life? Research on it will help to effectively make use of digital life to make up for the uncertainty in residents' lives and the incompleteness in social rules and promote social development.

3. Theoretical Analysis and Research Hypotheses

3.1. Theoretical Analysis. Predominant beliefs cannot remove the constraints of the living environment. Therefore, the scope of changes in residents' way of thinking and value system in different life modes must be understood to clarify its impact on residents' trust. Digital life inevitably impacts subjective factors, such as residents' living environment, cognition, and emotions, as well as objective facts such as residents' wealth changes, opportunities, encounters, and deception. Digital life is a result of modernity; hence, making the social system more complete will inevitably increase the credibility of individual behavior. The logic of its impact on trust is to increase the social acceptance, understanding, and resource integration capabilities of residents. In a highquality living environment, it may be best for individuals to use the "trial rule" (i.e., residents are willing to give trust).

3.2. Research Hypotheses. Specifically, the improvement of residents' trust in digital life is mainly reflected in the following aspects: the first is from the perspective of social capital: digital life constructs and forms huge social resources through the network, which increases social fairness, reduces corruption, and even resolves the problems of distribution and equality. Whether from the perspective of income or education gap, social problems have been alleviated. In digital life, the cost of knowing whether other people are trust-worthy will be reduced (i.e., the degree of information asymmetry will be reduced) during interactions. In this case, individuals can trust people other than relatives and friends according to the "trial rule," and others may bring more social resources.

Second, from the perspective of the thinking mode, people's thinking mode is based on inheritance and the characteristics of times, with the doctrine of the mean, conservative, closed, and other irrational, subjective consciousness characteristics. With the further development of digital life, social network thinking changed people's ideologies imperceptibly. Compared to the traditional way of thinking, social network thinking has obvious creative and interactive characteristics. People utilize this way of thinking to expand new social boundaries, shorten the relationship between people and between people and society, and enhance trust.

Third, from the perspective of a rational economic man, digital life is a lifestyle with low transaction costs and high economic benefits. People have greatly changed the way of work through digital life, improving economic benefits and gaining added advantages, such as wealth management and deputy positions. The relative improvement in the economy provides a material guarantee for social communication in the face of uncertain decisions [20]. Hence, the more resources an individual has, the smaller the proportion of losses and the higher the trust [21].

Fourth, from the perspective of the self-correction mechanism, several factors threaten residents' trust in digital life, but social networks also have mechanisms to correct the crisis of trust. Digital life facilitates an increasingly close social relationship between individuals. Individuals pay higher costs for violating the principle of trust, and other factors in cyberspace are constantly maintaining social trust, such as popular science knowledge and network control, to help regulate trust behavior, leading to an increase in residents' trust. Hence, the following hypothesis is proposed based on the above analysis:

Hypothesis 1. Digital life enhances residents' trust.

According to the above analysis, digital life impacts trust by changing personal knowledge. Digital life is considered the main driver of the changing social environment, and its impact on trust is ultimately reflected in the will of people. Thus, the process whereby digital life changes residents' lives and affects trust must be explored. This mechanism is analyzed from the perspectives of social activities and knowledge acquisition as the mediating variables of digital life that influence trust. In particular, digital life increases residents' trust via two aspects: increasing social activities and information acquisition.

Digital life has changed the traditional ways of socialization, breaking the original social restrictions due to geographical, racial, occupational, and other reasons and enabling people with the same hobbies and values to network. Due to expanding social activities and close communication, the contact methods and interaction effects among individuals and societies have been changed. Consequently, the transformation and access rate of information has increased, inevitably leading to an increase in trust. Additionally, the transparency of public opinion concerning residents has also increased, the discourse power has been redistributed, and the concentration of discourse on autocracy has decreased. A deeper negotiation and understanding between individuals can form trust; therefore, this hypothesis is proposed:

Hypothesis 2. Digital life forms an inclusive social environment by enriching residents' social activities, thereby enhancing residents' trust.

The unknown and low-risk tolerance is crucial for the low sense of trust among residents. Digital life has altered the way residents receive information and knowledge, establishing an equal trust relationship. Knowledge is no longer a symbol of wealth, and every individual has the right to acquire knowledge and create information, which weakens the problem of information asymmetry and greatly increases information identifiability and risk tolerance. Therefore, this study proposes the following hypothesis:

Hypothesis 3. Digital life improves risk cognition ability by increasing residents' access to knowledge to increase trust.

4. Data and Methodology

4.1. Sample Selection and Variable Definition. To examine the impact of digital life on residents' trust, this study selects survey data from the China Household Finance Survey (CHFS) in 2013, 2015, and 2017 to form unbalanced panel data [22], with a total of 32,703 samples. Also, this study analyzes from the perspective of micro individuals; therefore, it selects data of individuals who participated in the survey.

4.2. Variable Definition

4.2.1. Trust. Residents' trust is defined as the possibility of an individual bearing the injury risk of the other party when confronting uncertain events. The degree of trust in strangers is an effective indicator for measuring social trust [23–25]. If the investigator's trust in strangers increases, we can infer that their trust in the whole society will increase accordingly. This study employs the question: "How much do you trust people you do not know?" From the survey data, there are five levels of choices in the questionnaire: no trust at all, less trust, adequate trust, more trust, and complete trust. The greater the number of questions answered in the questionnaire, the more trusting the respondent felt. Besides, the higher the investigator's trust in strangers, the lower the presumable risk adopted in the face of uncertainty.

4.2.2. Digital Life. Smartphones have become the most basic intervention tool for residents to participate in digital life. Therefore, this study assesses whether residents employ smartphones to replace digital life indicators. In the robustness analysis, this study further questions whether the Internet, a computer, or a smartphone should be used to represent digital life indicators.

4.2.3. Influence Mechanism Variables. According to a previous analysis, social activities and information acquisition are direct influence mechanisms of digital life that affect residents' trust. This study utilizes dummy variables to determine whether smartphones are used for socializing and whether information should be obtained from smartphone activity categories provided in the 2015 and 2017 questionnaires.

4.2.4. Control Variables. The variables chosen in this study from the resident level mainly include gender, age, marital status, income, recreational expenditure, physical health, housing, and education. Moreover, this study selects year as the control variable to control the influencing factors at the macroeconomic level.

The detailed variable explanation is presented in Table 1.

4.3. Model Construction. This study intends to investigate the impact of digital life on the trust level of residents to clarify changes in people's behavior and thinking in changing times. First, this study empirically analyzes the relationship between digital life and residents' trust, solving possible endogeneity problems. Second, it evaluates the mechanism from the perspective of digital life that affects residents' access to information and social activities. Third, this study analyzes the heterogeneity of residents' characteristics from the perspectives of household registration, poverty, and nationality. Finally, this study further evaluates the depth and span of digital life and the risk perception brought by digital life to residents. The primary steps to construct the model are as follows.

The first step is to ascertain the impact of digital life on residents' trust. Among them, the explained variables are sorted data, which is not suitable for ordinary least squares (OLS) model estimation. Thus, this study uses the orderedprobity (O-probity) model for estimation, and the structural model is as follows:

trustit =
$$F\left(\beta 1$$
 phoneit + $\sum_{k=2}^{n} \beta k$ Controlsit + $ut + \varepsilon it\right)$. (1)

The explained variable trust_{it} is the residents' trust status, and the main explanatory variable is the digital life index, which is represented by the residents' use of smartphones. It is a virtual variable, and when residents use smartphones in the survey year, it is defined as 1; otherwise, it is defined as 0. On the other hand, Controlsit constitutes the control variables of residents' characteristics. To control the influence of macro change factors, this study fixed the annual variables. $F(\cdot)$ is expressed as a nonlinear function as follows:

$$F(\text{trust}_{\text{it}}^{*}) = \begin{cases} 1 & \text{trust}_{\text{it}}^{*} < \mu_{1}, \\ 2 & \mu_{1} < \text{trust}_{\text{it}}^{*} < \mu_{2}, \\ \vdots & \vdots \\ 5 & \text{trust}_{\text{it}}^{*} > \mu_{4}. \end{cases}$$
(2)

Among them, is the latent variable, which is the unobservable continuous variable, and $\mu_1, \mu_2, \dots, \mu_4$ specify the tangent point, which is the solve-for parameter.

trustit^{*} =
$$\beta$$
1phoneit + $\sum_{k=2}^{n} \beta k$ Controlsit + ut + ε it. (3)

The second step is to gauge the trust mechanism of residents impacted by digital life. This study performs the test based on the mediation model of Wen et al. [26]:

$$\operatorname{trustit} = F\left(\beta 1 \operatorname{phoneit} + \sum_{k=2}^{n} \beta k \operatorname{Controlsit} + ut + \varepsilon \operatorname{it}\right),$$
$$\operatorname{Pr}(Mit) = \varphi\left(\beta 1 \operatorname{phoneit} + \sum_{k=2}^{n} \beta k \operatorname{Controlsit} + ut + \varepsilon \operatorname{it}\right),$$
$$\operatorname{trustit} = F\left(bMit + c'\operatorname{phoneit} + \sum_{k=2}^{n} \beta k \operatorname{Controlsit} + ut + \varepsilon \operatorname{it}\right).$$
(4)

Among them, *M*it represents the mediating variable. In this study, the mediating variable that digital life affects residents' trust is represented by the two variables of residents' use of smartphones for social activities and information acquisition. The judgment and interpretation of the mediation effect are consistent with Wen et al. [26].

			TABLE 1: Definition of variables.
Variable type	Variable name	Variable interpretation	Definition
Explained variables	trust trust1	Trust Trust	Indicates the degree of trust in strangers, and the larger the number, the greater the degree of trust. This variable denotes the trust placed in certain kinds of people, and the more kinds of people trust, the higher the degree of trust
Core explanatory variables	phone computer internet phoneut	Smartphone Computer The internet Mobile phone usage time	A dummy variable; 1 means using a smartphone and 0 means not using a smartphone. A dummy variable; 1 means using a computer and 0 means not using a computer. A dummy variable; 1 means using the Internet and 0 means not using the internet. This variable is expressed as the time interval from the year of smartphone use to the year of the survey.
Mediator variables	social info	Social activities Acquisition of information	A dummy variable; 1 means socializing with a smartphone and 0 means not socializing. A dummy variable; 1 is to use a smartphone to obtain information and 0 is to not obtain information
Resident variables	brosis rural poorh han wlhd sjhd risk	Brothers and sisters Type of household Hukou The poverty household Nationality Network activity Mobile phone activity Risk	This variable indicates the number of siblings. A dummy variable; 1 for rural and 0 for non-rural. A dummy variable; 1 for poor households and 0 for nonpoor households. A dummy variable; 1 for Han nationality and 0 for other ethnic minorities. This variable represents the number of network activities used and cross-sectional data for 2017. This variable represents the number of mobile phone activities according to the 2015 cross-sectional data. This variable indicates the risk tolerance level of residents. The larger the number, the stronger the risk tolerance.
Other control variables	Gender age marr income expand healthy house edu year	Gender Age Marital status Income Expenditure State of health Own house Education level Years	 A dummy variable; 1 for men and 0 for women. This variable indicates the difference between the survey year and the year of birth. A dummy variable; 1 is married and 0 is another status. This variable indicates family income status. This variable signifies cultural and entertainment expenditure. This variable signifies cultural and entertainment expenditure. A dummy variable; 1 means house owned and 0 is no house owned. The larger the number of this variable, the higher the education level. This variable indicates the year of investigation.

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
trust	87,582	2.6927	1.3	1	5
trust1	36,956	1.1230	0.4	1	3
phone	105,441	0.3680	0.5	0	1
computer	105,441	0.3360	0.5	0	1
internet	105,441	0.2959	0.5	0	1
phoneut	38,827	4.1233	3.6	0	26
social	37,200	0.7181	0.4	0	1
info	37,200	0.5740	0.5	0	1
brosis	48,732	2.8996	2	0	16
rural	104,319	2.9325	134	0	1
poorh	38,973	0.1444	0.4	0	1
han	66,752	0.9320	0.3	0	1
wlhd	18,572	2.7925	1.2	0	6
sjhd	18,628	4.0530	2.4	1	11
risk	78,231	1.8982	1.2	1	5
Gender	104,596	0.5196	0.5	0	1
age	104,589	52.1878	15	2	117
marr	105,441	0.8285	0.4	0	1
income	78,073	23319.2200	1126	0	1619439
expand	104,523	78.6637	477	0	59999.98
healthy	104,545	3.1703	1.1	1	5
house	71,661	0.7966	0.4	0	1
edu	104,470	3.4219	1.7	1	9
year	105,441	2015.2250	1.6	2013	2017

In the third step, this study examines the impact of digital life on residents' trust based on the heterogeneity of residents' characteristics.

trustitj =
$$F\left(\beta 1$$
phoneitj + $\sum_{k=2}^{n} \beta k$ Controlsitj + u tj + ε itj $\right)$,
(5)

where j represents different groups. To verify the contrast, this study conducts an empirical analysis according to the type of household registration, poverty, and nationality classification.

5. Analysis of Econometric Model Results

5.1. Univariate Analysis. Firstly, this paper uses statistical software to process the selected variable time series separately, and Table 2 illustrates the descriptive statistics of the variables. According to the descriptive statistical results, the average value of the residents' trust index is 2.6927, the minimum value is 1, and the maximum value is 5. The residents' trust degree gap is large, and the trust degree is low, outlining that residents' current ability to bear other party's behavior damage is low. Concerning the use of smartphones by residents, the use rate of smartphones has been 0.5 (dig-

TABLE 3: Univariate analysis.

Year	Options	Trust level	Mean difference
2012	Digital life	4.1522	0.1757***
2013	Without digital life	3.9765	0.1737
2015	Digital life	2.2798	0.1469***
2015	Without digital life	2.1329	0.1409
2017	Digital life	2.1543	0.2770***
2017	Without digital life	1.8773	0.2770

*** indicates statistical significance at 1%.

ital life level) since 2017. In the future, the number of smartphone users will continue to increase; thus, the residents' trust will be impacted even more.

Table 3 lists the mean difference in the trust level of residents in different years with and without digital life. This study conducts the mean difference t-test and finds that the trust degree of residents in digital life is higher than that of residents without digital life, regardless of the year.

5.2. Digital Life and Residents' Trust. This study focuses on the impact of digital life on residents' trust, and it uses the O-probit model to estimate the results. The findings are provided in Table 4, where in the first column represents the

	Mod	el 1			Mod	el 2	
Variable	Coefficient value	Variable	Coefficient value	Variable	Coefficient value	Variable	Coefficient value
-1	0.2760***		_	<u>_1</u>	0.0761***	Eutern J	≤0.0001***
phone	(0.0082)	expand	—	phone	(0.0151)	Expand	(≤0.0001)
Gender	_	healthy	_	Gender	0.0265**	healthy	0.0177***
Genuer	_	пешну	_	Genuer	(0.0124)	neutiny	(0.0060)
	_	house	—	0.00	-0.0044***	leaven	0.0001
age	—	nouse	house age (0.	(0.0005)	house	(0.0152)	
	—	, dec	—		-0.1265***	a du	0.1021***
marr	_	edu	_	marr	(0.0155)	edu	(0.0039)
	_	Year fe	Y		≤0.0001***	Year fe	Y
income	_	_		income	(≤0.0001)	—	_
Ν		8.75e+04		Ν		3.27 <i>e</i> +04	
Pseudo R ²		0.0078		Pseudo R ²		0.2551	

TABLE 4: O-probit model results of digital life and resident trust.

the values in parentheses are standard errors, and *** and ** indicate statistical significance at 1% and 5% respectively.

model results without control variables, and the second column is the model results with added control variables. From the outcomes of the model, residents' digital life has a significant positive impact on their trust. Notably, digital life is confirmed as an important factor affecting residents' trust. The possible explanation is that digital life promotes residents' quality of life and efficiency, providing opportunities for residents' personal and spiritual development. It improves the sense of trust by increasing self-confidence.

5.3. Marginal Effect Analysis. Through the O-probit model, the parameters of the impact of digital life on residents' trust

are only provided information from the aspects of significance and symbol, while the meaning is not intuitive. Therefore, this study computes whether there is a discrete marginal effect of digital life on residents' trust based on the above model.

This study calculates the discrete marginal effect of phone on trust*i*. Under the condition of maintaining the average value of other control variables, the probability of residents' trust corresponding to the two values is estimated when phone = 1 and phone = 0. The difference between the two is the discrete marginal effect of the phone variable. The model is as follows:

$$\Delta \operatorname{Prob}\left(\operatorname{trust} = i | x^{(r)} = \bar{x}^{(r)}\right) = \operatorname{Prob}\left(\operatorname{trust} = i | \operatorname{phone}^* = E(\operatorname{phone}^* | \operatorname{phone} = 1), x^{(r)} = \bar{x}^{(r)}\right) - \operatorname{Prob}\left(\operatorname{trust} = i | \operatorname{phone}^* = E(\operatorname{phone}^* | \operatorname{phone} = 0), x^{(r)} = \bar{x}^{(r)}\right), \quad (i = 1, 2, 3, 4, 5),$$

$$(6)$$

where $x^{(r)}$ represents other explanatory variables except for phone^{*}.

Table 5 presents the findings of the model, indicating the probability of residents' trust value under different conditions. Column (4) relays the difference between the probability when phone = 1 and the probability when phone = 0. The outcomes validate that compared to residents without a digital life, the probability of total distrust of residents with a digital life is reduced, and the probability of trust is increased (i.e., digital life improves the overall trust of residents).

5.4. Endogenous Test

5.4.1. IV-Ordered Probit Model. Due to the possible missing variables and other limitations of the study, endogenous problems were observed in the above models, which made

the results of this study biased and the parameter estimates inconsistent. To address this problem, this study introduced tool variables in the O-probit model and used the IVordered (IV-O) probit model to estimate the results. This study selects variables on the basis of the following two aspects: first, finding completely exogenous tool variables is difficult in real life. The commonly used exogenous grouping variables include age, gender, and region. According to the questionnaire, age is categorized into six groups (under 25 years old, 26-35 years, 36-45 years, 46-55 years, 56-65 years, and over 66 years old), and the education is divided into three groups (junior high school and below, undergraduate and above, and other qualifications). The regions are classified according to 34 groups (grouped by the province) and two groups of household registration types (rural and nonrural groups), making a total of 1,224 groups. For resident

Trust level	(1)	(2)	(3)	(4)
i i ust ievei	$x = \overline{x}$	phone = 0	phone = 1	Δ
No trust at all	-0.0037***	0.1109***	0.1004***	-0.0105
Less trust	-0.0146***	0.1866***	0.1820***	-0.0046
Adequate trust	-0.0096***	0.2805***	0.2797***	-0.0008
More trust	0.0183***	0.2367***	0.2375***	0.0008
Complete trust	0.0096***	0.1853***	0.2004***	0.0151

TABLE 5: Discrete marginal effects of smartphone usage.

*** indicates statistical significance at 1%.

Model		(1)	(2)	(3)	
Variable	IV-C) probit	PSM-O probit	O probit-H	Ieckman
—	First stage	Second stage	—	Select equation	Main equation
<u> </u>	_	0.1063***	0.0762***	-	0.1144***
phone	_	(0.0248)	(0.0151)		(0.0316)
in phone	0.8297***	_	-	_	—
iv-phone	(0.0053)	_	-	_	_
whours	_	—		_	—
witours	—	—	-	—	—
bartum	—	—	2	0.0304***	—
partym	_	-		(0.0064)	—
brosis	—	-	—	0.0012	—
010313	—	-	-	(0.0013)	—
Convar	Y	Y	Y	Y	Y
Year fe	Y	Y	Y	Y	Y
Ν	4.46 <i>e</i> +04	4.46 <i>e</i> +04	3.27 <i>e</i> +04	3.92 <i>e</i> +04	3.92 <i>e</i> +04
Pseudo R^2 / R^2	0.5906	0.2551	0.2551	0.0888	0.2551

the values in parentheses are standard errors, *** indicates statistical significance at 1%.

i, this study estimates the probability of smartphone utilization in the respective group as a tool variable, and the twostep estimation of the IV-O probit model is used.

This study has conducted and passed the weak IV test. The outcomes of the IV-O probit model in the case of IVs are shown in column 1 of Table 6. The results confirm that the results of the first stage are consistent with the above analysis, and the findings of the second stage denote that the digital life of the model does improve residents' trust.

5.4.2. O-Probit Model Based on PSM. This study conducts the O-probit model based on the PSM method to solve the error in the trend of residents with digital life and nondigital life, using the nearest neighbor matching and one-to-one method to carry out propensity matching scores for residents with and without digital life. The probability distribution density function of nearest neighbor propensity score is shown in Figure 2. The probability distribution density function plot of propensity score value, in tandem with the balance of covariates in the digital life group and the no digital life group, shows that the matching effect is better. The outcomes in Table 6 verify that the impact of digital life on residents' trust is still significantly positive after the propensity matching method has been used, which is consistent with the previous O-probit model results.

5.4.3. Heckman Selection Bias Problem in O-Probit Models. Due to possible bias in sample selection, residents participating in the questionnaire could have certain preferences and would have been more likely to accept new things. Thus, the interviewed residents may be more able to accept digital life because of certain characteristics. To avoid the impact of this problem on the basic regression model, the O-probit based Heckman selection model was examined by referring to Du et al. [27]. Through the construction of the probit model in the first stage, this study determines whether the residents are party members, together with the number of brothers and sisters as exclusive constraint variables, because the former factors have a leading role in residents' acceptance of their new lifestyle. The latter factors, however, need digital life to increase relevance while controlling for other variables. In the second stage, this study puts the inverse

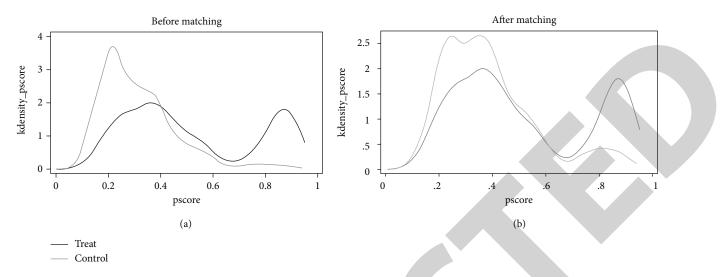


FIGURE 2: Probability distribution density function plot of propensity score value.

Model	(1)	(2)	(3)
Variable	Replace the explained variable	Replace explai	natory variables	Balance panel
	0.0413*	—	_	0.0907***
phone	(0.0244)	—	-	(0.0178)
	-		0.0750***	_
computer	-	_	(0.0139)	_
internet	-	0.1137***	_	_
internet	_	(0.0151)	_	_
Convar	Y	Y	Y	Y
Year fe	Y	Y	Y	Y
Ν	2.45 <i>e</i> +04	3.27 <i>e</i> +04	3.27 <i>e</i> +04	2.49 <i>e</i> +04
Pseudo R ²	0.0037	0.2554	0.2552	0.2378

TABLE 7: Robustness test.

the values in parentheses are standard errors, and *** and * indicate statistical significance at 1% and 10%, respectively.

Mills ratio calculated in the first stage into the benchmark model for O-probit basic regression. The findings are shown in column 3 of Table 6. Lastly, the results of the O-probit-Heckman model confirm that the basic model conclusions of this study are still valid under the condition of controlling a certain degree of selection bias.

5.5. Robustness Test

5.5.1. Replace the Explained Variable. To ensure the robustness of the model, the explained variables are replaced according to the answers in the CHFS. The more types of people the respondents trust in the questionnaire, the greater the investor trust. The outcomes are shown in column 1 of Table 7, proving that digital life has a significant positive impact on residents' trust, which is consistent with the results of the main model.

5.5.2. Replace Explanatory Variables. This part employs the method of replacing explanatory variables to test the robustness. Based on the answers in the CHFS, this study selects

two dummy variables concerning whether residents use computers or the Internet as substitute variables for digital life. The use of computers and the Internet by residents is also the basis of their participation in digital life; so, they can be used as explanatory variables. Column 2 in Table 7 lists the results of the model after the explanatory variables are replaced. The result highlights that the indicators of residents' use of computers and the use of the Internet have a positive impact on residents' trust, and they are significant at least at the 1% level.

5.5.3. Replace the Sample Space. As the samples selected in this study are from survey data, there is a lack of samples, which leads to an unbalanced panel. The unbalanced panel data may result in biased estimates due to the problem of sample cross-section. Hence, this study converts the unbalanced panel to a balanced panel and, on this basis, performs empirical analysis according to the above basic model. The results are shown in column 3 of Table 7, demonstrating that digital life has a positive effect on residents' trust, which is consistent with the conclusions of previous research.

Model	(1)	(2)	(3)	(4)	(5)
Variable	Trust	Social	Trust	Info	Trust
thous	0.0761***	0.1545***	0.0488**	0.1034***	0.0499**
phone	(0.0151)	(0.0234)	(0.0248)	(0.0219)	(0.0248)
an si al	_	_	0.0602**	-	_
social	_	_	(0.0274)	_	_
info	_	_	—	-	0.0451*
info	_	_	—		(0.0245)
	_	0.9205***	_	-0.4925***	
_cons	_	(0.0802)	_	(0.0743)	_
Convar	Y	Y	Y	Y	Y
Year fe	Y	Y	Y	Y	Y
Ν	3.27 <i>e</i> +04	1.55 <i>e</i> +04	8.95 <i>e</i> +03	1.55 <i>e</i> +04	8.95e+03
Pseudo R^2 / R^2	0.2551	0.1775	0.0305	0.0924	0.0305

TABLE 8: Mechanism test results.

the values in parentheses are standard errors, and ***, **, and * indicate statistical significance at 1%, 5% and 10%, respectively.

5.6. Mechanism Inspection. According to the above analysis, digital life increases residents' trust. Digital life is a new lifestyle that has evolved from a traditional life mode. It greatly promotes the formation of social capital accumulation and innovation from the perspective of social activities and knowledge acquisition. Trust, as an integral factor of social capital, is bound to be affected. According to the analysis of the impact path of digital life on residents' trust, we need to confirm whether digital life impacts the direction of trust through the two aforementioned aspects.

5.6.1. Digital Life, Social Activities, and Resident Trust. According to the theoretical analysis, digital life has a profound impact on residents' social activities, thereby improving personal trust. To verify this conduction mechanism, this study conducts an empirical analysis based on the mechanism model constructed by the above model. The results of the analysis are provided in columns 1-3 in Table 8, together with the corresponding results of the model (i.e., columns 4-6).

Individuals can benefit from other people or other organizations in the future due to social activities (i.e., social activities can create personal social capital and enhance residents' trust) [19]. According to the questionnaire, the answers to "do you use smartphones for social activities?" show the social activity indicators of residents. If the interviewee answers "yes," it will be recorded as 1; otherwise, it will be recorded as 0.

According to the significance of the model, it can be judged that social activities have a complete mediating role in improving residents' trust in digital life. Column 1 is the main model result, and the smartphone index coefficient in column 2 is significantly positive, inferring that smartphone can enhance the role of personal social life. Column 3 is the main model to which social activity indicators are added, and the coefficient is positive, implying that social activities have a positive effect on residents' trust. Therefore, residents increase social activities through digital life to increase trust.

5.6.2. Digital Life, Access to Information, and Residents' *Trust.* Digital life affects residents' access to information. Through digital life, it is easier for residents to acquire new knowledge, improve the possibility of rational judgment, and then affect trust. Accordingly, this study conducts an empirical analysis based on models to verify this conduction mechanism. The analysis results are shown in columns 4 and 5 of Table 8. According to the answers to the question, "do you use your smartphone to obtain information?," this study expresses the information acquisition index of residents. If the interviewee answers "yes," it will be recorded as 1; otherwise, it will be recorded as 0.

According to the significance of the model, the index of obtaining information has a complete mediating role in the result that digital life improves residents' trust. Column 1 is the main model result, and the coefficient of the smart-phone index in column 2 is significantly positive. Furthermore, column 3 is the main model to add access to information indicators, and the coefficient is positive, implying that access to information has a positive effect on residents' trust. In other words, residents gain information through digital life to increase individual-level trust.

5.7. Heterogeneity Analysis. This section further investigates the impact of digital life on residents' trust from the perspective of heterogeneity. In terms of the household registration type, the difference in the coefficient test between groups is not necessary, even in the case of a poor household with ethnic heterogeneity.

5.7.1. Heterogeneity of Hukou Types. In this study, the individual samples are divided into urban and rural hukou. The residents with unified resident hukou are classified according to the type of hukou before the unified resident

Model	(1)	(2)	(3)	(4)	(5)	(6)
Model	Hukou	u type	Poor hous	eholds	Nat	ionality
Variable	Town	Rural	Nonpoor household	Poor household	Minority	Han nationality
these a	0.0922***	0.0375	0.0812***	-0.0854	0.0848	0.0919***
phone	(0.0194)	(0.0255)	(0.0297)	(0.1019)	(0.0745)	(0.0184)
Convar	Y	Y	Y	Y	Y	Y
Year fe	Y	Y	Y	Y	Y	Y
Ν	1.92 <i>e</i> +04	1.29 <i>e</i> +04	6.46 <i>e</i> +03	7.37 <i>e</i> +02	1.40 <i>e</i> +03	2.35e+04
Pseudo R ²	0.2659	0.2285	0.0280	0.0096	0.1936	0.2410

 TABLE 9: Heterogeneity test results.

the values in parentheses are standard errors, and ***indicates statistical significance at 1%.

hukou is obtained. The test results of the heterogeneity of household registration types are presented in columns 1 and 2 of Table 9, outlining that digital life can have a positive role in relation to trust when residents belong to urban households. The effect is not significant, suggesting that there is a substantial difference in the impact of digital life on trust among rural and urban residents. The reason for the above outcomes may be due to the differences in the lifestyles and social ways of rural and urban residents. For rural residents, their use of smartphones is more likely to be for entertainment purposes, and their ability to acquire knowledge and process information is still weak. On the other hand, among the social purposes of using smartphones, rural residents are more willing to contact their relatives and friends; hence, their social network has not changed much. Thus, the impact of digital life on the trust of rural residents is not significant. Due to the development of the Internet and the digital economy, urban residents can obtain more benefits from digital life, and their social capital will be improved, which will naturally bestow a positive effect on trust [28-31].

5.7.2. Heterogeneity of Poor Households. This study divides the individual samples according to the heterogeneity of urban poor households, and the group test was performed according to poor and nonpoor households. The heterogeneity test results of poor households are exhibited in columns 3 and 4 of Table 9, showing that when residents are not in poor households, digital life can have a positive role in their trust, but the role of residents in poor households is not significant. Compared with the nonpoor households, the poor households pay more energy to ensure survival due to their high living costs and have limited time and ability to obtain information and social interaction through smartphones. The role of digital life in reducing social costs, self-improvement and increasing trust, is more significant among nonpoor residents.

5.7.3. Heterogeneity of Nationality. In this study, the individual samples are divided according to the heterogeneity of ethnic groups and tested according to the Han and minority groups. Results of the heterogeneity tests regarding ethnicity are presented in columns 5 and 6 of Table 9, implying that when residents belong to the Han nationality, digital life can have a positive role in their trust, but the role of residents belonging to ethnic minorities is not significant. The reason for the difference may be that the ethnic minorities and the Han people have different trust bases. The trust of the ethnic minorities is based more on kinship and region. Due to the population structure, it is easier to form a cultural community within the scope. They divide and cooperate through solid social relations to maintain the basic social order. Among them, trust is the cornerstone of communication and integration. This survival concept has a profound impact on thoughts and values, leading to a deep-rooted trust foundation, which is not easily changed by external factors. Likewise, the Han people are more influenced by the market economy and modern society and are more vulnerable to digital life.

6. Further Research

This study considers digital life as a basic perspective to study its impact on residents' trust. Then, from the perspective of the depth and span of digital life, the changes in these impacts are evaluated. From the perspective of time, digital life is a complete history. From the perspective of space, digital life is a trace of the integration of the Internet and life. The former is depth, and the latter is span [32]. Different perspectives have dissimilar impacts on residents. Therefore, changes in social trust must be studied according to these two perspectives.

The above analysis confirms that digital life increases residents' trust by creating an inclusive social environment and improving cognitive levels, thereby increasing residents' risk tolerance. The improvement of risk tolerance means that when confronting uncertain events, residents' ability to identify risks and deal with uncertain issues is enhanced. In turn, the probability of not being exposed to risks is improved. When the cognitive ability of social individuals is enhanced and mapped to the social level, it means that the society is more inclusive. To confirm this analysis, this study examines the impact of digital life on residents' risk tolerance.

6.1. The Impact of Digital Life Span on Residents' Trust. First, this study examines the impact of digital life span on

Model	(1)	(2)	(3)
Variable	Digital	life span	Digital life depth	Risk tolerance
thous	—	_	_	0.1093***
phone	_	_	_	(0.0131)
the arrest	_	_	0.0146^{***}	
phoneut	_	_	(0.0034)	-
	0.0649***	_	_	
wlhd	(0.0233)	_	-	
-:1. 1	_	0.0299***	-	
sjhd	_	(0.0061)	_	-
Convar	Y	Y	Y	Y
Year fe	Y	Y	Y	Y
N	1.69 <i>e</i> +03	7.256 <i>e</i> +03	2.49 <i>e</i> +04	4.34 <i>e</i> +04
Pseudo R ²	0.0299	0.0320	0.2377	0.0975

TABLE 10: Results of further research.

residents' trust. In this study, the diversity of smartphone and network activities is used to express the digital life span. According to the questionnaire on family finance in China [33], the number of activity types of residents using smartphones and the Internet is used to replace the digital life span index. The structural model is as follows:

trustit =
$$F\left(\beta 1 phone 1 it + \sum_{k=2}^{n} \beta k Control sit + ut + \varepsilon it\right)$$
, (7)

where phone1it represents the span of digital life, which is represented by the indicators of smartphone activity diversity (sjhdit) and network activity diversity (wlhdit), and the model settings are consistent with the basic model. The findings are shown in column (1) of Table 10. The span of digital life has a significant positive impact on residents' trust, validating that digital life can provide residents with better life experience and work convenience, and the synergy between digital life and personal social capital is increasing [34].

6.2. The Impact of the Depth of Digital Life on Residents' *Trust.* Second, this study studies the impact of digital life depth on residents' trust and utilizes residents' smartphone usage to represent the span of digital life. Based on the CHFS, this study replaces the depth of digital life with the difference between the survey year and the year residents used smartphones. The model is constructed as follows:

trust_{it} =
$$F\left(\beta_1 \text{phone2}_{it} + \sum_{k=2}^n \beta_k \text{Controls}_{it} + u_t + \varepsilon_{it}\right)$$
, (8)

where phone2it represents the digital depth, and the model settings are consistent with the base model. The findings are exhibited in column (2) of Table 10. Notably, the depth of digital life has a significant positive impact on residents' trust, inferring that as digital life continues to penetrate residents' daily life, their sense of identity and security in social life will be improved, increasing trust.

6.3. The Impact of Digital Life on the Formation and Cognitive Level of an Inclusive Society: Residents' Risk Tolerance. Finally, this study studies the impact of digital life on residents' risk tolerance. Based on the CHFS, this study uses the residents' risk tolerance index as the explained variable to construct a model. The risk tolerance index is ordered data; the larger the number, the stronger the risk tolerance.

risk_{it} =
$$F\left(\beta_1 \text{phone2}_{\text{it}} + \sum_{k=2}^n \beta_k \text{Controls}_{\text{it}} + u_t + \varepsilon_{\text{it}}\right).$$
 (9)

In the formula above, riskit represents the risk tolerance of residents, and other settings of the model are consistent with the basic model. The results are shown in column (3) of Table 10. Digital life has a significant positive impact on residents' risk tolerance, suggesting that digital life can improve residents' risk tolerance. When experiencing uncertain events, residents can provide more positive choices, which can consequently increase trust.

7. Conclusions and Suggestions

Considering the household and individual questionnaire data of the CHFS published in 2013, 2015, and 2017 as research samples, this study uses the O-probit model to gauge the trust of residents in digital life while conducting a marginal effect analysis. The results show that digital life has a positive impact on residents' trust [35].

This study uses IV-O probit, PSM-O probit, O-probit-Heckman model, and other methods to mitigate endogenous issues and studies the mechanism for two aspects: social activities and information acquisition. Additionally, this study conducts a heterogeneity analysis based on the characteristics of residents and conducts an extended study on the depth and span of digital life, in tandem with the nature of residents' trust. The outcomes show that, first, from the perspective of the mechanism of action, digital life affects residents' trust by increasing residents' social activities and improving their access to information. Social activities can increase residents' "relationship network" and lead to the generation of more human and social capital. Information acquisition can improve residents' thinking and judgement ability, such that they can accept and overcome uncertainty more rationally. Second, digital life has a positive impact on residents' trust. This impact has a significant positive effect on nonrural, nonflat poor households, and Han residents but has no significant impact on rural, poor, and minority residents. Residents who are currently influenced by digital life trust that the crowd is likely to accept new things, and it has an obvious influence on residents with strong time, energy, and "differential" patterns. Third, residents' trust has been enhanced in terms of the depth and span of their digital life. With the deepening and expansion of digital life, its positive effect on residents has also changed from improving their lifestyle to enhancing social capital. Fourth, digital life can increase residents' risk tolerance, improve cognitive ability, enhance social inclusion, and enhance residents' trust.

In summary, this study shows that digital life has a positive effect on residents' lives, laying a foundation for cooperation and communication to facilitate social and economic development and weakening the problem of residents' trust reduction due to abuse. However, it has not played a positive economic role in rural and minority digital life. To further optimize the social environment, we believe that while popularizing digital life, relevant institutions should pay attention to the role of digital life to improve the overall social and economic environment in addition to improving the efficiency of social division and cooperation.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Authors' Contributions

Fan Zeng was responsible for the methodology, conceptualization; supervision visualization, software, validation, and data analysis. Xiao Cao was responsible for the theoretical mechanism analysis. Huan-Ming Zhang was responsible for the verification, supervision, writing review, and editing. All authors read and approved the final manuscript.

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