Research on the Influencing Factors of the Development of Digital Credit Score System in Yunnan Province

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Abstract: The credit report is a personal “economic ID card”. With the development of digital technology, digital credit scoring is increasingly penetrating into people’s daily economic activities. Based on the 178 valid questionnaires obtained from field research in some cities and villages in Yunnan Province, this paper studies the influencing factors of the development of digital credit scoring system in Yunnan Province. The results show that the factors affecting the development of Yunnan's digital credit scoring system including: the difference between city and country, the average number of smartphones, use of digital financial services, credit awareness and the difference of gender, etc. The research is to understand the influencing factors of the development of digital credit scoring system, and on this basis, it provides empirical evidence and effective reference for accelerating the development of digital credit scoring system.

1. Introduction

On June 6, 2018, Premier Keqiang Li emphasized that “Let the untrustworthy can't move a step in the whole society, let the trustworthy pass all the way” at the meeting. In recent years, the construction of the credit system has been highly valued by the state. In June 2014, the State Council issued the “Outline for the Construction of Social Credit System (2014-2020)”,pointing out that to comprehensively promote the construction of a social credit system, it requires not only the promotion of the government, but also the spontaneous initiative of the market entity to make behavior choices based on interest incentives. Credit instruments such as Sesame Credit Score and Tencent Credit, which rely on the construction of market entities, can use the big data analysis to “softly constrain” the market entities and effectively assist the government in building a credit society. Therefore, the research on the development of the digital credit scoring system has great practical significance for the development of the social credit system.

For the digital credit scoring system, no one has yet accurately defined it. Duoguang Bei (2017) describes it as: Deep use of digital technologies such as big data technology, artificial intelligence and machine learning in the process of credit reporting. It has the advantages of wide data sources, high recognition ability of fraud, accurately and timely credit evaluation.

2. Empirical Analysis of the Influencing Factors in the Development of Digital Credit Scoring System in Yunnan Province

2.1. Building a model

In order to study the influencing factors of the development of Yunnan's digital credit scoring system, we separately visited Wuhua District and Panlong District of Kunming City, Yunnan Province, Shilin Yi Autonomous County of Kunming City, Yunnan Province, Damogu Town of Luliang County, Qujing City, Yunnan Province, Xundian Hui and Yi Autonomous County of Kunming City, Yunnan Province and Pingyuang Town, Yingjiang County, Dehong Prefecture, Yunnan Province. Since the digital credit scoring system is a new thing and young people have more contacts, the main target of the survey is young people in urban and rural areas. A total of 178 valid questionnaires were obtained, including 86 urban questionnaires and 92 rural questionnaires.

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Questionnaire surveys were conducted in some cities and villages such as

In order to further analyze which factors in the questionnaire have a significant impact on the development of digital credit information, we refers to the “Consumer Financial Literacy Survey and Analysis Report (2017)” issued by the People’s Bank of China, assigns the quantifiable variables in the questionnaire, and constructs multiple regression model. The assignment of dependent and independent variables is shown in Tables 1 and 2:

Table 1 dependent Variable Assignment

Variable classification	dependent Variable		Assignment
Ordered variable	RDC: Recognition of Digital Credit	Never heard of digital credit reporting	1
		Heard of digital credit but have never used it.	2
		Heard that digital credit reporting is less used.	3
		Familiar with digital credit reporting and use more	4

Table 2 Independent Variable Assignment

Variable classification	Independent variable			Assignment
Categorical variables	gender		Male	1
			Female	0
	area		Urban	1
			Rural	0
	profession		Student	Pro_1=1,others are zero
			Financial practitioner	Pro_2=1,others are zero
			Farmer	Pro_3=1,others are zero
			Other occupations	$Pro_{i=1、2、3}$=0
Ordered variables	phones		One or less	1
			One	2
			More than one	3
	DFS: Digital Financial Services	Network platform payment frequency	Almost no use	1
			1-3 times a week	2
			4-6 times a week	3
			7 times a week	4
		Credit card usage	No	1
			Bank credit card	2
			Internet credit card	3
			Both have	4
		Loan situation	No	1
			Bank loan	2
			Online loan	3
			Both have	4
	CA:Credit Awareness	The importance of credit in life	Unimportant	1
			Generally important	2
			More important	3
			Very important	4
		Understanding of traditional credit information	Don’t understand	1
			Understand little	2
			Understand much	3
			Understand all	4

Construct a multiple regression model as follows:

$$\mathbf{RDC} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1 gender} + \boldsymbol{\beta_2 Pro_1} + \boldsymbol{\beta_3 Pro_2} + \boldsymbol{\beta_4 Pro_3} + \boldsymbol{\beta_5 education}$$
$$+\boldsymbol{\beta_6 area} + \boldsymbol{\beta_7 phones} + \boldsymbol{\beta_8 DFS} + \boldsymbol{\beta_9 CA} + \boldsymbol{\varepsilon}$$

Wherein, $\boldsymbol{\beta_0}$ represents an intercept variable,$\boldsymbol{\beta_{(i=1...9)}}$ indicating a regression coefficient to be estimated, and $\boldsymbol{\varepsilon}$ is a random disturbance term. RDC represents the degree of understanding of digital credit reporting. The higher value represents the person more understanding of digital credit reporting. The use of digital financial services is equal to the average frequency of payment on the network platform, credit card usage and loan sum; credit awareness and understanding of traditional credit is equal to the average importance of credit in life and the understanding of traditional credit information.

2.2. Analysis of the results of empirical analysis

In this paper, the least-squares method (OLS) is used to estimate the parameters of the above measurement model. The specific estimation results are shown in Table 3:

Table 3 OLS Regression Results of Digital Credit Reporting

	Intercept	gender	Pro_1	Pro_2	Pro_3	edu	area	phones	DFS	CA
RDC	-0.535	0.268**	0.205	0.394	0.138	0.023	0.370***	0.237**	0.313***	0.391***

Note: The numbers in this table represent the following correlations. “*”, “**”, “***” represent significant levels at 10%, 5%, and 1%, respectively. And the same below

The regression results in Table 3 show that the five factors of gender, area, the average number of smartphones, digital financial service usage, and credit awareness are 5%, 1%, 5%, 1%, and 1%, respectively. The level is significantly correlated.

In order to highlight the correlation between each independent variable and the dependent variable, we refer to the practice in the China Inclusive Financial Development Monitoring Report (2017•Zhejiang) issued by the China Academy of Financial Inclusion of Renmin University of China in 2018. The five significant independent variables in Table 3 were compared by multivariate regression and single regression. The results are shown in Table 4:

Table 4 Digitalized Credit Multivariate and Single Regression Results

Dependent variable: Recognition of Digital Credit (RDC)			
Multivariate regression		Single regression	
Independent variable	coefficient (t value)	coefficient (t value)	Adjust R square
Intercept	-0.080 (-0.234)	—	—
Gender	0.251** (1.989)	0.428*** (3.353)	0.055
Area	0.349*** (2.743)	0.746*** (6.260)	0.170
Phones	0.228** (2.416)	0.350*** (3.206)	0.050
DFS	0.288*** (3.676)	0.509*** (6.870)	0.207
CA	0.357*** (3.031)	0.787*** (7.806)	0.253
F:22.228,Sig:0.000, Adjust R^2:0.393			

As can be seen from the multivariate regression in Table 4, all independent variables have a significant effect on the dependent variables at the 1% or 5% level. From the single regression, it can be seen that the significant level of gender and the average number of smartphones is changed from 5% in multivariate regression to 1% in single regression. Explain that gender and the average number of smartphones also have an important impact on the variables being interpreted.

3. Conclusions and policy recommendations

3.1 Conclusion

Through empirical research, the following conclusions can be drawn:

1) Geographical (urban or rural) is an important factor affecting the development of digital credit scores. The development level of cities is more superior to the development level of rural areas about the digital credit scoring system;

2) Residents have better credit awareness and higher exposure to Internet and digital financial services, and their understanding of digital credit scores will be higher;

3) Gender differences will also have an impact on the development of digital credit scores. Men have a stronger sense of credit and a better understanding of digital credit.

3.2 Policy recommendations

3.2.1. The government should to commit to implementing rural revitalization

The government is implementing the principles of rural revitalization, poverty alleviation, poverty alleviation, and inclusive finance, and guides all parties to actively participate in rural construction. At the same time, it should pay more attention to the construction of rural credit system. On the one hand, we should broaden the information channels, collect and sort out the credit information of farmers, agricultural enterprises, etc. and network with the credit information system of the whole province or even the whole country as soon as possible to gradually realize the communication of credit information; on the other hand, accelerate the pace of the construction of the “credit town” and “credit village” and “trust users”, build a mobile credit information platform, credit information publicity workstations, etc., as soon as possible to establish a credit rating and credit loan line correlation mechanism. Help farmers turn credit into a pass, and then increase the enthusiasm of building a rural credit system.

3.2.2. Financial institutions expand the scope of financial services

Financial institutions should use the preferential policies of the government to grasp the favorable opportunity to vigorously develop inclusive finance and open up the “last mile” of digital inclusive financial development, and send the formal financial services at a lower cost and higher service level to the door of the village demander. Financial institutions should: Accelerate the popularity of mobile banking and enhance the propaganda of financial and credit knowledge.

3.2.3. Financial technology companies accelerate market promotion

Financial technology companies should seize the opportunity of rural revitalization and actively cooperate with the local government, so that financial technology companies can not only obtain project support benefits from the government; they can also develop and promote suitable rural residents. Digital financial products and services expand the customer base to the rural market and achieve greater economies of scale. Financial technology companies should actively promote rural digital credit products, fully tap local resources and develop targeted credit products in line with local characteristics.

3.2.4. Residents strive to improve their overall quality

The improvement of residents' comprehensive quality is a necessary condition to keep up with the digital trend. Firstly, residents should actively cooperate with the government's guidance, the call of financial institutions, and actively learn the use of financial and credit knowledge, digital products and services. Secondly, residents should also seriously study the safety knowledge of self-protection and self-discrimination such as financial fraud and online fraud, and actively participate in the digital trend. Finally, rural families should break through the limitations of men’s economics, encourage women to participate in the management of family assets, and create more economic opportunities for women to obtain equal economic status in the family.

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