The Farmers' Financing Willingness of Inclusive Finance in China: An Empirical Analysis of Guizhou Province,China

Dalin Zhang[1] and Wasin Phromthiphakkul[2]

Received May 03, 2022 **& Revise** December 26, 2022 **& Accepted** January 21, 2023

Abstract

The purpose of this paper is to investigate and understand China's rural farmers' financing willingness of inclusive finance, and it examines related drivers like knowledge of inclusive finance, perceived benefits and perceived risks of formal finance. Besides, the social enterprise embeddedness and digital finance are integrated into the conceptual model to further investigate their moderating impact. It suggests that knowledge of inclusive finance can strengthen both perceived benefits and perceived risk of formal finance. Interestingly, the embedders of social enterprise can significantly reduce risk perceptions and improve perceived benefits of formal finance. Furthermore, perceived benefits of formal finance can positively enhance rural farmers' financing willingness of inclusive finance, whereas perceived risks can negatively influence the financing willingness. Moreover, digital finance as a modifying factor can significantly strengthen the positive correlation between perceived benefits of formal finance and financing willingness of inclusive finance. The research indicates that a systematic inclusive finance educational project is needed to enhance rural farmers' understanding of inclusive finance and its components. Moreover, the study reveals that it is crucial to promote social enterprise participation and digital finance to develop inclusive finance in rural China, as the service attributes of social enterprise and efficiency of digital finance can greatly reduce the existing transaction cost of farmers.

Keywords : Inclusive finance, Digital finance, Perceived benefits of formal finance, Perceived risks of formal finance, Social enterprise embeddedness

[1]Ph.D. Candidate, Management, School of Management, Shinawatra University
E-mail: zhangdalin5728@126.com
[2]Ph.D, Management, School of Management, Shinawatra University
E-mail: wasin.p@siu.co.th

Introduction

Representing close to 20 percent of the world population, China is one of the fast growing countries in terms of economy and political influence. However, still a majority of its rural farmers have been suffering from poverty (World Microfinance Forum Geneva(WMFG), 2010). For decades, one of the most popular ideas in the bottom of the pyramid (BOP) literature is that poor people inevitably have limited access to financial products and services (Sharif, 2000). The BOP market refers to a market segmentation in which customers earn less than 1,500 dollar annual income (Prahalad, 2010). It should be noted that BOP markets include many subdivisions, for instance, poor rural communities, marginal farmers, landless laborers (Anderson et al.,2010). In this sense, poor rural farmers can be categorized as a segment of the BOP market in China. Such an assumption can be justified, as the majority of rural farmers suffering from poverty and poor infrastructure and limited resources are quite common (Li, X., Gan, C. & Hu, B. (2011). Increasing numbers of organizations have become interested in the potential business opportunities in the BOP market by designing products and services that exclusively serve the poor customers (Jebarajakirthy et al., 2015). One example is that the provision of inclusive finance conveniently fulfills the financial needs of customers in the BOP markets (Pitta et al., 2008). Inclusive finance refers to a type of finance model in which financial institutions provide a range of quality financial services that can reach everyone, without excluding the poor, disabled, rural population (Ashraf & Noor, 2010). Comparing with traditional financial institutions, the major aim of inclusive financial institutions is to improve the accessibility of affordable financial services to underserved consumers (Varghese, 2001). Thus, inclusive finance is important for improving the living conditions and eliminating the poverty of poor farmers, rural non-farm enterprises and other vulnerable groups. Especially, rural farmers need financial access to improve agricultural productions and further develop entrepreneurial activities in the rural areas.

However, the development of inclusive finance in rural China is full of various challenges along with opportunities. Whether the new coming social enterprises, especially the agricultural social enterprises, can play a significant role in terms of inclusive finance development? Whether the application of digital finance can accelerate the process of inclusive finance implementation? These underlined questions need to be answered by researchers' in-depth

investigation, and further effective measures need to be taken to enhance the performance of inclusive finance poverty alleviation projects in China.

To elaborate the significant role of inclusive finance in China, it is crucial to explain the rural financial system. In China, inclusive finance providers include rural credit cooperatives, rural commercial banks, rural cooperative banks, village banks, microcredit companies, urban commercial banks, postal saving banks and agricultural social enterprises (WMFG, 2010). Social enterprises like microcredit companies are the new players in rural financial system (Tang, 2009). By contrast, informal lending is a very common way of financing in rural China, which can further indicate the potential size of the market (Turvey and Kong, 2010). However, the regional wealth disparity is still one of the significant problems considering the sustainability of national economic growth (Li et al., 2011). To shorten the increasing wealth disparities, the central government has been providing the poor and rural population financial access through rural credit cooperatives (Wang, 2004). Social enterprises like microcredit companies also play a significant role in rural financial system. However, social enterprises have not met the needs of rural consumers due to the notion that a social enterprise is relatively new, leading to a source of confusion (Wang et al., 2015).Therefore, social enterprises need ongoing promotions in the rural areas to meet the needs of underserved population. Furthermore, the progress of developing inclusive finance in rural China needs long-term efforts from various stakeholders, including government, inclusive financial institutions, social enterprises to accelerate the systematic adaptations of financial technology and to improve the service quality and efficiency (Chan, 2010). Additionally, a technology-oriented approach of inclusive financial institutions is essential to put in place to ensure the sustainability of inclusive finance system and to improve the willingness of inclusive finance (Koh et al., 2018).

Rural credit cooperatives and microcredit companies provide a small amount of loan to people who cannot get access from traditional financial institutions with low interest rate asking for collaterals (Tang, 2009). Therefore, inclusive finance can empower the rural farmers, local vendors and SMEs to accelerate the economic growth of countryside (Li et al., 2011). From this perspective, it is essential to enhance the efficiency of inclusive finance in rural China to re-balance the Chinese economy to a domestic demand-led model (Li et al., 2011). Although social enterprises have reached a small proportion of the BOP market, thousands of poor

farmers and vendors across the nation have benefited from loans over the course of time (Albert and Ren, 2001). Therefore, rural China represents potential opportunity for promoting the inclusive finance. Thus, the main aim of this research study is to investigate rural farmers' benefit and risk perceptions on obtaining formal finance and financing willingness of inclusive finance. It further investigates related drivers, the embeddedness of social enterprise and digital finance integrated as modifying factors to examine the moderating impact on the model. A unique conceptual model has been developed for research purpose, which is empirically tested. The proposed model and its findings can possibly be applied to other customer segments of the BOP markets, hence providing managerial implementations. A total of 424 valid empirical data were collected from respondents aged under 60 in Guizhou province of China in 2020. The collected data represented the rural population of the BOP market in China. Moreover, agricultural activities like farming, stockbreeding and entrepreneurial activities were the main economic activities in the rural areas of China (Tang, 2009).

Research objectives

2.1 To analyze the current status of inclusive finance in Guizhou province.

2.2 To research the financial inclusion development.

2.3 To study the farmers' income with its factors.

2.4 To study the relationship between inclusive finance and farmers' income.

Literature review

3.1 Knowledge of inclusive finance's impact on attitudes Knowledge is a component of human cognitive structure that has a significant impact on individuals' perception toward a particular object or phenomenon (Jebarajakirthy and Lobo,2014). Knowledge of inclusive finance refers to consumers' level of awareness of inclusive finance-related concepts such as interest rate, transaction cost, method of payment, etc.(Cheng, 2007). Consumers with a high level of knowledge of inclusive finance have a rational understanding of benefits and risks that are associated with a financial decision (Chien & Devaney, 2001). Consumers' evaluating criterion of financial decision is based on the level of information they possess (Michael, 2009). It suggests that consumers with sufficient knowledge of financial product have a larger probability to make

rational and risk-averse purchasing decisions (Smith et al., 2008). In contrast, lack of inclusive financial knowledge leads to impulsive and irrational decision, which is to say, consumers might overrate the desirable outcome and undesirable outcome of their financial decisions based on their perceptional attitudes (Jebarajakirthy et al., 2015). Since inclusive finance is complex to understand by mass majority of rural population in China, the low-literate consumers have a big disadvantage in inclusive finance market (Cheng, 2007). The low-literate rural population copes with the barriers of illiteracy by avoiding situations wherein they have to expose their low level of knowledge in terms of inclusive finance. Hence, the first hypothesis is formulated as:

H_1. Knowledge of inclusive finance has a positive impact on perceived Benefits and perceived risk.

3.2 Attitudes' impact on willingness of inclusive finance. There is a complex relationship between attitudes and behavior. This paper will consider two types of attitudes and examine the relations between attitude and willingness of inclusive finance. Pitta et al. (2008) suggested three types of attitudes toward financial decisions, namely, perceived benefits, perceived risks and perceived deterrents. As perceived deterrents are components of financial exclusion, perceived deterrents have not been applied in this research paper. Further, considering the market maturity of China's inclusive finance system, perceived risks and perceived benefits are integrated as two types of major attitudes toward inclusive finance. Thus, two types of attitudes are formulated: perceived benefits and perceived risks.

3.2.1 Perceived benefits of formal finance. Jebarajakirthy et al.'s (2015) survey results indicated that perceived benefits can significantly enhance consumers' willingness's. Therefore, consumers' desirable and positive interpretations of inclusive finance can strengthen their financing willingness's. Direct benefits and indirect benefits are the two types of perceived benefits (Gärling et al., 2009). Direct benefit is the consumers' perceptions of instant and short-term beneficiaries of inclusive finance (Koh et al., 2018). The expectation of increasing household income by utilizing financial services is a type of direct benefit. Indirect benefit is consumers' perception of profound and long-term beneficiaries that result from applying inclusive finance products (Koh et al., 2018), for instance, improving household's life standards and developing communities well-being (Li et al., 2011). Thus, the second hypothesis is formulated as:

H_2. Perceived benefits of formal finance have a positive impact on the willingness of inclusive finance.

3.2.2 Perceived risks of formal finance. Making financial decisions includes extensive mental accounting and entails a certain kind of perceived risk (Michael, 2009). In this research paper, perceived risk refers to consumers' conception that inclusive finance has potential negative consequences. From the perspective of accessibility and availability of inclusive finance, risk-related perception exists among the people from the bottom of the pyramid (Turvey and Kong, 2010). Inclusive finance is a comparatively new concept in rural China, as the business scope of inclusive financial institution has not reached its potential due to certain constrictions (Li et al., 2011). However, considering the low-literate rate of rural population, it is reasonable that complicated financial terms and operational procedures might be perceived as potential risks by rural consumers (Li et al., 2011). Jebarajakirthy et al. (2015) suggested that perceived risks reduce consumers' willingness of obtaining financial services and decrease the willingness of inclusive finance by extension. In contrast, perceived risk is not a decisive factor for consumers who have less income as they have less to sacrifice from an irrational, impulsive financial decisions (Michael, 2009). For instance, highly confident consumers have less to worry about social risks that are related to purchasing financial services that inclusively serve underbanked population, whereas financially and psychologically vulnerable consumers might experience undesirable social risks (Godwin, 1997). In total, five dimensions of risks are underlined in previous research studies, namely, monetary risk, functional risks, physical risks, social risks and psychological risks (Jacoby and Kaplan, 1972). People tend to remain concerned about the risks associated with the decisions, as applying for the credit might affect their financial safety (Jacoby & Kaplan, 1972). Scholars increasingly mentioned that consumers' perceived risks of inclusive finance reduce their willingnesss (Cheng, 2007;Li et al., 2011). Physical risk refers to individuals' interpretation of the consequences of behavior related to physical safety; psychological refers to individuals' perception of the consequences of the decision related to self-esteem; financial risk refers to individuals' perception of over-indebtedness; social risks refer to the individuals' anticipated pressures from social interaction as the consequence of the financial decision; and time risks refer to the cost of time, which are related to inclusive finance services (Jacoby and Kaplan, 1972). Jebarajakirthy et al. (2015)

suggested that perceived risks reduce consumers' willingness's and decrease the consumers' willingness of inclusive finance. Thus, the third hypothesis is formulated:

H_3. Perceived risks of formal finance have a negative impact on consumers' willingness of inclusive finance.

3.3 Moderating effects of social enterprise embeddedness Social enterprise is a form of enterprise that makes profits and maintains business sustainability through maximizing the social value (Dees, 1998). Social enterprise integrates both commercial sustainability and social welfare to enhance the overall value of a society (Doherty et al., 2014, Zhang et al., 2010). The priority of social enterprise is vulnerable social group like farmers, and they will not only provide agricultural production services but also include inclusive financial services to best serve the interest of rural households (Wang et al.,2015). According to the empirical research study conducted in China, the participation of agricultural social enterprise can largely stimulate the agricultural production performance and promote sustainable agricultural development in China (Xie et al., 2017). Most social enterprises like Microcredit companies mainly targets poor families in rural regions, with small and medium loan characterized by a relatively small size, which is under 30,000 Yuan per loan within 1─2-year loan duration (Zhang et al., 2010). Social enterprises not only provide inclusive financial services like microcredit loan but also provide non-financing services, such as training of agriculture technique, innovation of make-to-order agriculture business management model and financial education (Xie et al., 2017). In this respect, consumers' trust of institution is related to an individual's willingness to accept services from a social enterprise. It has been suggested that trust can reduce uncertainty by making risks manageable (Gärling et al., 2009). Since obtaining financial services is associated with vulnerability, risk and interdependence, it is important to understand the moderating impact of social enterprise embeddedness. Furthermore, two dimensions of trust have been suggested by scholars to investigate consumers' trust in social enterprises (Weisberg et al.,2011). The first dimension is institutional trust, which refers to the extent to which a social enterprise is perceived as being worthy of trust (Gärling et al., 2009). Institutional trust can be influenced by the image and reputation of the institution, and also can be built by both sustainable policy, practice and effective external communications (Weisberg et al., 2011). The second dimension of trust is interpersonal trust, which refers to the consumers' level of confidence and positive

expectations toward functional attributes of the social enterprise(Epstein and Yuthas, 2011). Social enterprise embeddedness can be reflected by the level of trust of consumers and willingness of applying services. The level of consumers' trust on social enterprise might impact rural farmers' financing willingness (Liu et al., 2013). The embeddedness of social enterprise can fill the gap between inclusive financial service demand and supply. More specifically, most of the rural farmers have difficulty in understanding the financial terms and related knowledge in application to repayment process due to restrictions of their low educational level (Zhang et al., 2010). They might be aware of their financial needs, but they have less constructive idea when it comes to utilizing the loan to improve their agricultural production and enhance family income. Therefore, the embeddedness of social enterprise will provide instructions to rural farmers with inadequate financial awareness and investment capacity. The social enterprise embeddedness enhances rural farmers understanding of inclusive finance and related terms with financial educational projects and services. Furthermore, social enterprise can build up a platform to link rural farmers with distributors and improve their expected investment return, which could increase rural farmers' perceived benefits (Xie et al., 2017). By providing helping mechanism, social enterprise embeddedness can track rural farmers' credit and prevent them from loan default, which could decrease their perceived risks. Thus, we assumed that the level of social enterprise embeddedness has a moderating impact on the risk tolerance and the level of positive expectations of inclusive finance (Mayer et al., 1995). Hence, the fourth hypothesis is formulated:

H_4. Social enterprise embeddedness has a positive impact on the association between knowledge of inclusive finance and perceived benefits of formal finance, and a negative impact on the association between knowledge of inclusive finance and perceived risk of formal finance.

2.4 Moderating effects of digital finance The main mission of inclusive finance is to increase the customer scope, availability and satisfaction of financial services to meet the increasing financial needs of the people from BOP with convenient, efficient and safe approach (Koh et al., 2018). Digital finance plays a significant role in terms of improving the efficiency of service and saves a considerable amount of transaction cost caused by applying financial services from traditional methods (Bruett, 2007). Moreover, by providing convenient and flexible financial services, digital finance has largely decreased the transaction cost and enhanced the

accessibility of inclusive finance (Owens, 2013). The connectivity of supplier and consumers, and consumers and consumers is the major feature of digital financial service. Telecommunication network enables customers to connect and communicate with the provider's transaction authorization system through mobiles (Koh et al., 2018). The third party payment applications like Wechat payment, Alipay provide identification capturing points and virtual account for customers' payment transactions (Koh et al., 2018). Digital finance like P2P makes it easy for agricultural firms to get financial access for agricultural innovation (Radcliffe & Voorhies, 2012). Furthermore, from the prospective of economic growth, the vulnerable farming household has a greater reliance on digital finance, and it experiences larger marginal revenue by applying inclusive finance (Owens, 2013). However, the limitation of financial technology and the low level of educational literacy might hinder rural household to evaluate pros and cons of inclusive finance. Digital finance might enhance the association between perceived benefits and financing willingness of inclusive finance with decreasing the transaction cost and improving time. As compared to traditional face-to-face transaction method, digital finance makes it easy for rural farmers to transfer money through their digital account without risking loss of paper currency. Furthermore, the efficiency and the virtual transparency of digital finance might decrease rural farmers' risk perceptions. Hence, the hypothesis is formulated as follows:

H_5. Digital finance can strengthen the association between perceived benefits and willingness of inclusive finance, and decrease the negative association between perceived risk of formal finance and willingness of inclusive finance.

Hypothesis

From the macro point of view, the improvement of farmers' income cannot be separated from the development of the economy. Without sustained economic growth, farmers' income will not be stable and continuous improvement. Rural inclusive finance development, increased the farmers and other vulnerable groups gain access to financial services, increase the capital sources in rural areas, improve the efficiency of rural financial market, promote the development of rural economy, raise the income level of farmers. The rural inclusive finance development to a great extent, affects the level of farmers' income

From the micro perspective, consummating inclusive finance system can enlarge the

coverage of rural financial services, effectively reduce the financing constraints for farmers. Let those marginalized vulnerable groups can also enjoy the development of the financial, create more jobs and entrepreneurial opportunities. Further development of production can improve farmers' living conditions, thus to raise the income level of farmers. Specifically, rural inclusive finance is mainly to increase farmers' income by providing them with savings, credit and insurance. Savings provides farmers with a stable source of funds, which can smooth their consumption, alleviate major expenditures or changes, and enhance their anti-risk ability. Credit can make up the capital shortage of farmers' periodic production and help them to put into production as soon as possible and increase their income. Agricultural insurance for farmers is given priority to with agricultural production and operation, through innovative insurance, new agricultural products futures prices for general financial products, such as the enhanced ability to resist market risk of peasant, the farmer unbearable risk transfer out, will greatly improve the operations of farmers, and to raise the income level of farmers.

Based on the above analysis, this study proposes a hypothesis: the development of rural inclusive finance has a positive impact on farmers' increasing income. It can be shown as hypothesis H1 and hypothesis H_2.

H_1: There is the positive influence of inclusive finance on farmers' increasing income.

H_2: There is the positive influence of inclusive finance on farmers' increasing income by the control variables.

Conceptual Framework

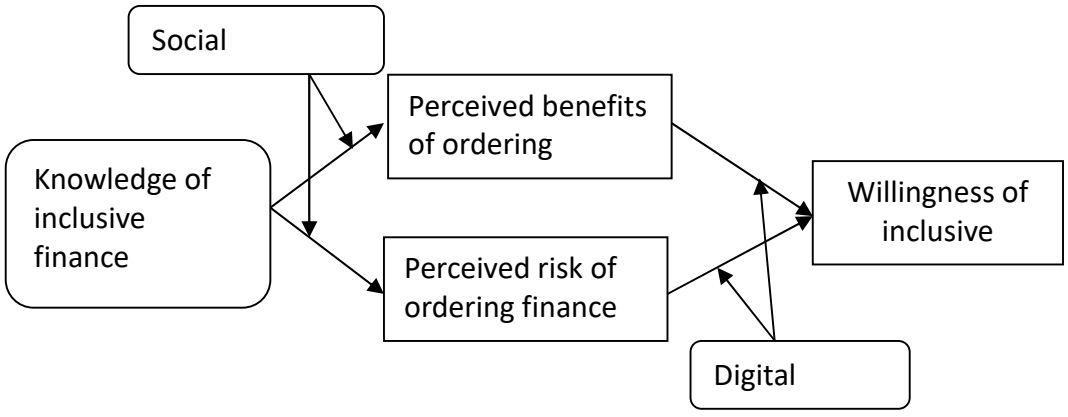

Figure1 Conceptual model for the study

Methodology

1 Research design a good research design should collect all applicable information to ensure the efficiency and rigorousness of research conduction (Malhotra, 2009). Thus, based on the research conceptual model and formulated hypotheses, both exploratory and conclusive research strategies are applied in this study. The primary research strategy includes conclusive research method. The major primary research is defined as quantitative research, and a questionnaire is developed to gather data to answer the research problems. The data collection and analysis procedures are included.

1.1 Secondary research strategy. The main aim of secondary research is to develop a conceptual model and identify hypotheses. Secondary data have been collected from the various sources, which include existing literature about consumers' attitude and willingness of inclusive finance, industrial reports and socio-demographic reports, such as current situation of the inclusive finance in China, an analysis of rural financial system. However, it should be noted that the validity of secondary data is not certain (Malhotra, 2004). In order to summarize the findings and explore the gaps in the existing research, a thorough secondary research is already conducted in the context of inclusive finance. The secondary sources are adopted to identify six constructs and conceptualize the variables. Secondary data are collected by reliable academic journals like Journal of Retailing and Consumer Services, International Journals of Consumer Studies, etc. Insights from secondary research will play an important role in formulating questions for the survey (Malhotra, 2009).

1.2 Primary research strategy. Conclusive research is applied, and it aims at testing the specific hypotheses of a study and examining the relations between various constructs (Malhotra, 2009). In conclusive research, findings relatively conclusive can be used as contribution in managerial decision-making process (Malhotra, 2009). Thus, conclusive research design has been applied for this study to test the hypotheses. Conclusive research is selected to gather primary data within a limited period of time, as it is a cost-efficient method (Churchill & Iacobucci, 2002). This study applies a quantitative survey to gather data, and respondents are asked 33 questions on personal information, knowledge of inclusive finance, attitudes toward formal finance and financing willingness of inclusive finance. Survey method is applied, as it is a cost-efficient approach to gather large amounts of data (Malhotra, 2004).

2 Sampling and instrumental development Identifying the sampling frame enables researcher to identify the target population of the study (Malhotra, 2004). From the perspective of age, the sample should be above 18 years and under 60 years, the age range that is legally applicable for inclusive finance clients (Chan, 2010). As a special study, Guizhou province is chosen for this empirical analysis. There two reasons as shown for this. First is that the lever of socio-economic development is very low comparing with other province in China. In 2018, Guizhou province's GDP had reached 1.480645 trillion yuan, ranking 25th in China, the per capita GDP was 41,244 yuan, lower than the national average of 6,4520.74 yuan reached 23,391.71 yuan. It ranked 29th, third from last, just ahead of Yunnan and Gansu. Second, Guizhou has the largest number of poor people, the deepest degree of poverty and the widest range of poverty in China. Poverty alleviation is a daunting task. It can be said that if Guizhou is lifted out of poverty, the whole country will be lifted out of poverty, and if Guizhou is well-off, the whole country will be well-off. By the end of 2018, the province had established a registered poor population of 1.5512 million. At the end of 2018, the total population of the province was 36 million, the number of agricultural populations was 18.89million, accounting for 52.48%.

In general, As for the study on the relationship between individual objects and the population, it is necessary to determine the population and sample size of the study. Yamane (1967:886) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes. A 95% confidence level and P = 0.5 are assumed for equation.

Where, n is the sample size, N is the population size, and e is the level of precision. In the study, the population size is 36,000,000, so the sample size n is shown as the formula: So the sample size must be higher or equal 400. In the study, we have integrated 424
persons in Guizhou province. It should be on behalf of human being of Guizhou.

2.1 Questionnaire design. To analyze the impact of independent variables on the dependent variables, a questionnaire has been designed and tested (Malhotra, 2009). In this study, dependent variable is willingness of inclusive finance, independent variable is knowledge of inclusive finance, the intermediary variables are perceived benefits of formal finance and perceived risks of formal finance. The modifying variables are the social enterprise embeddedness and digital finance. A survey was designed from the existing validated scales and the combination of some self-developed items. The existing validated scales were adjusted to

apply in the context of inclusive finance, where applicable. The scale of knowledge of inclusive finance included six items adopted from Jebarajakirthy & Lobo (2014). Perceived benefits of formal finance were measured by using five items adopted from Jebarajakirthy & Lobo (2014); five items of perceived risks of formal finance were adopted from Jacoby & Kaplan (1972), Anita et al. (2008); and three items measuring financing willingnesss of inclusive finance were adapted from Weisberg et al. (2011) and Luarn & Lin (2005). The modifying factors of social enterprise and digital finance were measured through self-adopted items based on literature review. Demographic data were collected through fixed-alternative questions. The majority of the scales mentioned above were adopted from literature related to inclusive finance. A seven-point Likert-type scale was applied in this study, in which the score of 1 stood for "strongly disagree" and the score of 7 stood for "strongly agree." The questionnaire was divided into four sections, with a total of 34 questions; personal information, knowledge of inclusive finance, perceived benefits of formal finance, perceived risks of formal finance, consumers' willingness of inclusive finance were comprised in four sections.

2.2 Survey implementation procedure. The field survey was conducted for both geographic and demographic purposes, within a convenience and short-time scale experiment(Malhotra, 2009). Research data were collected over a 2-week period, from 1 April to 14th April 2020. The questionnaire was conducted by researchers (see Appendix). The detailed requirements were explained thoroughly by cell phone, wechat and QQ approach. The demographic profile of the sample included five major aspects: gender, age, educational level, annual income, source of income, major expenditure, major factor affecting household income and the main way of increasing farmers' income.

Results

In order to analyze the data collected by questionnaire, three techniques were applied. First of all, the reliability test was applied to examine the reliability and validity of items from each construct. Second, one simple t-test and correlation analysis were applied to test means and standard deviations of each item. Third, multiple regression analysis model and hierarchy regression analysis were applied to test the first five hypotheses except modifying factors. Also, BOOTSTRAP method was applied, which is considered to be an effective method to test the

mediating effect of the construct in complicated situations (Preacher and Hayes, 2004; Wen & Ye, 2014). BOOTSTRAP method includes the examination of multiple mediating variables, multistage of multiple variables, moderated intermediary variables and mediating variables of intermediary variables.

1 Construct validity and reliability. In this research paper, SPSS V.26 software was applied to process collected data. A reliability test was conducted to check the internal consistency of the scales. Cronbach's α is the measurement of the internal consistency of the various constructs (Malhotra, 2009).The reliability test results indicated that the Cronbach's α value of research constructs was above 0.80, which indicated high internal consistency of all variables, and it was doable to measure the essential features of the concepts steadily and reliably. In this paper, the scale validity was assessed from the content and the structure. The main variables and their measurement items were adopted from reliable literature source and further adjusted and revised based on the combination of empirical rural field research and suggestions given by the experts from the research field. Thus, the questionnaire has a high content validity. The results of confirmatory factor analysis showed that the factor loads of each item in the main variables were higher than 0.7, indicating that the scale had good structural validity. The results of statistical description, reliability and validity analysis of variables are presented in Table 1.

Table 1. Summary of Cronbach's α

Construct	Means	SD	Load of factors	Cronbach'sα
Knowledge of inclusive finance	3.77	1.53	0.72	0.820
Social enterprise embeddedness	4.31	1.54	0.86	0.878
Perceived benefits of formal finance	4.16	1.37	0.74	0.929
Perceived risks of formal finance	4.41	1.54	0.75	0.807
Digital finance	4.67	1.54	0.85	0.807
Financing willingness of inclusive finance	3.47	1.62	0.91	0.897

2 Respondent profile analysis

Table 2. Respondents' profile

Category	N	%	code
Gender			
Male	170	40.1	1
Female	254	59.9	2
Age			
0-18	13	3.1	1
18-30	398	93.9	2
31-40	6	1.4	3
41-50	4	0.9	4
51-60	1	0.2	5
Above 60	2	0.5	6
Family income (yuan)			
Under 3000	200	47.2	1
3000-6000	138	32.5	2
6000-9000	41	9.7	3
9000-12000	22	5.2	4
Above 12000	23	5.4	5
Educational level			
Primary school or below	5	1.2	1
Junior middle school	6	1.4	2
High school	12	2.8	3
Junior college	36	8.5	4
Bachelor degree or above	365	86.1	5

Table 2 presents the key demographic data of the respondents. The demographic profiles of the sample were representative, since a total of 424 questionnaires were collected from target respondents. The gender ratio was balanced. From the age perspective, *93.9* percent of participants were *18*—*30*-years old. Moreover, the sampling covered target consumers of inclusive finance in every age group. As for family income, *47.2* percent of respondents' income level was lower than 3,000 Yuan, and *32.5* percent of respondents were earning a monthly income between 3,000 to 6,000 Yuan. In terms of educational level, *86.1* percent of the respondents had a bachelor degree or above. Other respondents' educational levels were below than bachelor degree.

3 Correlation analysis

Table3. Correlation matrix for constructs and descriptive information

	Gender	Age	Education	income	know	enterprise	benefit	risk	digital	willingness
Gender	1	0.021	0.048	-0.049	0.036	0.015	0.006	0.057	0.015	-.117*
Age	0.021	1	-.282**	.221**	0.081	-0.076	0.087	0.018	-0.018	0.051
Education	0.048	-.282**	1	-.216**	-0.068	0.016	-0.075	-0.047	-0.007	-0.020
Income	-0.049	.221**	-.216**	1	0.003	0.033	0.071	-0.028	0.093	0.029
Know	0.036	0.081	-0.068	0.003	1	.432**	.572**	.332**	.330**	.451**
Enterprise	0.015	-0.076	0.016	0.033	.432**	1	.549**	.428**	.496**	.442**
Benefit	0.006	0.087	-0.075	0.071	.572**	.549**	1	.464**	.475**	.480**
Risk	0.057	0.018	-0.047	-0.028	.332**	.428**	.464**	1	.559**	.177**
Digital	0.015	-0.018	-0.007	0.093	.330**	.496**	.475**	.559**	1	.173**
willingness	-.117*	0.051	-0.020	0.029	.451**	.442**	.480**	.177**	.173**	1

Notes: *, ** Correlation is significant at p<0.05,p<0.01,respectively

Table 3 shows the mean, standard deviation and Pearson's correlation coefficient between each pair of variables in this study. The size of the value of the correlation coefficient determines the strength of the relationship between variables (Malhotra, 2012). The negative correlations indicate a reverse relation between two variables (Malhotra, 2009). It can be seen that there is a significant correlation between the explanatory variables of willingness of inclusive finance and the explanatory variables of knowledge of inclusive finance and perceived benefits and perceived risks of formal finance. However, Pearson correlation analysis presents the possible correlations between two variables, and the results cannot directly indicate the existence of causality. Besides, Pearson correlation analysis cannot examine the significant correlation of two variables accurately when multiple explanatory variables coexist in a model. Thus, it is essential to further analyze the collected data and test the hypothesis of the study. In addition, the correlation coefficients between the main explanatory variables are lower than 0.5, and according to VIF test, the variance expansion factor is less than 10. Therefore, there is no multicollinearity between the main explanatory variables.

4. Data analysis.

The model contains multiple explanatory variables, including both direct and indirect effects composed of moderating and mediating effects. Therefore, in this paper, multiple hierarchical regression analysis was applied to test the conceptual model. The verification analysis was divided into two major steps: the first step verified the impact of the knowledge of inclusive finance on perceived benefits and perceived risk of formal finance, and the moderating role of social enterprise embeddedness.

Second, the mediated moderation financing willingness of inclusive finance integrated in the first part of the model was examined to analyze the knowledge of inclusive finance's impact on the financing willingness of inclusive finance. Further, it examined whether the moderating impact of social enterprise embeddedness was mediated by the intermediaries, namely, perceived benefits and perceived risks.

The first step was to test the impact of the knowledge of inclusive finance on perceived benefits and perceived risks of formal finance, and the moderating effect of social enterprise embeddedness. The regression results are shown in Table 4.

Table 4. Descriptive statistics and correlation matrix for intermediary variables

Variables	Perceived benefits			Perceived risks		
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model3b
Gender	-0.036(-0.359)	-0.038(-0.420)	-0.044(-0.491)	0.071(0.662)	0.069(0.683)	0.066 (0.642)
Age	0.065(0.532)	0.197(1.771)	0.186(1.669)	-0.035(-0.268)	0.076(0.605)	0.070(0.553)
Educational	-0.031(-0.415)	-0.047(-0.686)	-0.046(-0.672)	-0.062(-0.763)	-0.076(-0.977)	-0.075(-0.969)
Income	0.068(1.507)	0.041(0.989)	0.041(0.990)	-0.025(-0.516)	-0.048(-1.042)	-0.048(-1.041)
Knowledge of inclusive finance	0.618*(14.117)	0.437*(9.935)	0.559*(4.540)	0.386*(8.123)	0.234*(4.692)	0.306*(2.194)
Social enterprise embeddedness		0.352*(9.513)	0.445*(4.686)		0.297*(7.092)	0.352*(3.275)
Knowledge of inclusive financex Social enterprise embeddedness			-0.027(-1.061)			-0.016(-0.556)
F-value	41.424	56.992	49.026	13.769	21.210	18.194
R-sq	0.331	0.451	0.452	0.141	0.234	0.234

Note:* Correlation is significant at p<0.05

In total, three models were designed, and perceived benefits and perceived risk of formal finance were identified as explanatory variables. Model 1 included all control variables and main explanatory variables. Model 2 was based on the integration of Model 1 and modifying variables. Model 3 was designed on the basis of the integration of Model 2 and other interactive items. Model 1 indicated that there was a significant positive correlation between the knowledge of inclusive finance and perceived benefits and risks of formal finance. This positive correlations indicated that the farmer household with more knowledge of inclusive finance

tended to have greater benefits and risk perception of their financial decision. Model 3a showed a positive coefficient correlation between the knowledge of inclusive finance and social enterprise embeddedness, which indicated the cooperation of social enterprise strength farmer households' perceived benefits of formal finance. However, Model 3b showed a significant negative correlation between the knowledge of inclusive finance and social enterprise embeddedness, which indicated the mediating impact of social enterprise embeddedness. However, such mediating impact of social enterprise decreased farmer households' risk perceptions of formal finance.

The second step was to verify the mediating impact of perceived benefits and perceived risks of formal finance. Meanwhile to verify the mediating impact of digital finance between the perceived benefits , perceived risks of formal finance and financing willingness of inclusive finance respectively. The regression results are shown in Table V.

Table 5. Descriptive statistics and regression matrix for independent variable

Variables	Financing willingness of inclusive finance			
	Model 4	Model 5	Model 6	Model 7
Gender	-0.407(-3.109)*	-0.410(-3.300)*	-0.389(-3.203)*	*-0.390(-3.241)*
Age	0.065(0.402)	0.199(1.295)	0.147(0.979)	*0.131(0.875)*
Educational	0.053(0.528)	0.037(0.389)	0.042(0.449)	*0.051(0.556)*
Income	0.032(0.538)	0.004(0.075)	-0.015(-0.268)	*0.003(0.044)*
Knowledge of inclusive finance	0.587(10.126)*	0.403(6.632)*	0.297(4.476)*	*0.300(4.556)**
Social enterprise embeddedness		0.358(6.992)*	0.287(5.081)*	*0.324(5.619)**
Perceived benefits			0.314(4.614)*	*0.342(5.011)**
Perceived risks			-0.133(-2.211)*	*-0.069(-1.070)*
Digital finance				*-0.158(-2.699)**
F-value	22.273	28.835	25.519	*23.837*
R-sq	0.210	0.293	0.330	*0.341*

Note:* Correlation is significant at p<0.05

In total, four models were designed to examine the willingness of inclusive finance as the explained variable. Model 4 included all control variables and major explanatory variables. Model 5 added social enterprise embeddedness as a moderating variable on the basis of Model 4. Model 6 added perceived benefits and perceived risk of formal finance on the basis of Model 5. Model 7 added digital finance on the basis of Model 6. Model 4 showed significant positive correlations between the knowledge of inclusive finance and the willingness of inclusive finance, which indicated that the farmers' financing willingness of inclusive finance would be enhanced with their increasing knowledge level of inclusive finance. In Model 6 the coefficients of perceived benefits and perceived risks were significant, which meant that the correlation between knowledge of inclusive finance and financing willingness of inclusive finance was mediated by perceived benefits and perceived risks. Model 7 illustrated the digital finance had a significant moderating impact on the correlation between the knowledge of inclusive finance, perceived benefits of formal finance and financing willingness of inclusive finance. However, the moderating impact of digital finance was not significant on the correlation between perceived risks and financing willingness, which indicated that the correlation between perceived risks of formal finance and financing willingness of inclusive finance was not significantly moderated by digital finance. One possible explanation is that digital finance has not been largely applied in rural areas. Moreover, digital finance provides medium of payment and it still has safety supervision concerns. The main role of digital payment is to improve time efficiency and decrease transaction cost. Due to the incomplete digital finance regulations, it is reasonable that digital finance cannot decrease consumers' risk perceptions. At the same time, with the impact of social enterprise embeddedness, perceived risk's adverse impact on financing willingness has already weakened. Therefore, there is a limited room for digital finance to further weaken the association between perceived risks and financing willingness.

Conclusion Discussions and Suggestion

Conclusion

The inclusive finance is important for improving the living standards and eliminating the poverty of poor farmers, since they need financial access to improve agricultural productions and further develop entrepreneurial activities in the rural areas. However, the development of

inclusive finance in rural China is full of various challenges along with opportunities, as it has not gained enough popularity due to the misconceptions from different stakeholders. Especially, the lack of inclusive financial knowledge and irrational risk perceptions prevent farmers to get access from inclusive financial institutions. Therefore, this paper investigates rural farmers' level of inclusive financial knowledge, perceived benefits and risk perceptions on obtaining formal finance and financing willingness of inclusive finance in the context of BOP market in rural China.

Discussions

1.Research Deficiencies' , At first, in this study , The data collection is an important and difficult process. For this reason, there were some abandoned indexes in the selection of inclusive finance index system, which affects the comprehensiveness of inclusive finance. At the same time, among the selected indicators, the macro data indicators are easy to collect, while the micro data are difficult to obtain, so the description of the penetration degree and use of inclusive finance is not accurate enough. The average data at the macro level hides part of the financial exclusion, and the obtained inclusive finance index cannot reflect the financial development level of a region comprehensively and accurately. Secondly, in order to study the relationship between inclusive finance and farmers' income, this study selected 9 prefecture-level cities in Guizhou province as the research objects of inclusive finance. It was difficult to obtain data through the channel. The index data from 2007 to 2018 was selected and 108 sample data were obtained. The sample size was small, and the actual correlation that can be explained was relatively low.

From a statistical point of view, the greater the range of observed data, the less representative the average. For example, for Guizhou province, the national per capita GDP in 2018 will level the development level of the backward western regions and the developed eastern coastal regions. The reality is very different. Similarly, the representativeness of provincial regional data is lower than that of municipal data of the whole province, and the representativeness of provincial municipal data is lower than that of county data of the whole city.

Suggestion for future

From the above defects More in-depth and detailed work will be of great importance in

future research. There should be more perspectives from economics, sociology such as psychology and management science. This enables a comprehensive understanding and a profound summary of the role of integrated finance development in the social economy. at the same time Gather relevant information from multiple channels and even conduct personal surveys, questionnaires and exclusive interviews. Analyze additional research problems from qualitative analysis and quantitative analytical methods and have experts in the legal, legal and process of scientific research. to be able to do all the research better.

New Knowledge from research

The Farmers' Financing Willingness of Inclusive Finance in China An Empirical Analysis of Guizhou Province, China that a systematic inclusive finance educational project is needed to enhance rural farmers' understanding of inclusive finance and its components. Moreover, the study reveals that it is crucial to promote social enterprise participation and digital finance to develop inclusive finance in rural China, as the service attributes of social enterprise and efficiency of digital finance can greatly reduce the existing transaction cost of farmers.

Reference

Albert, P. & Ren, C. (2001), "Microfinance with Chinese characteristics", World Development, 29(1), 39-62, available at: http://0-dx.doi.org.wam.leeds.ac.uk/10. 1016/S0305-750 X(00)00087-5

Anderson, J.L., Markides, C. & Kupp, M. (2010), "The last frontier: market creation in conflict zones, deep rural areas, and urban slums", *California Management Review*, 52(4),6-28.

Anita, L.Z., Hanmer-Lloyd, S., Ward, P. & Goode, M.M.H. (2008), "Perceived risk and Chinese consumers' internet banking services adoption", *The International Journal of Bank Marketing*, 26(7),505-525.

Ashraf, M.A. & Noor, M.S.I. (2010), "Microfinance customer (borrower) experience towards the effectiveness of MFIs in Bangladesh: an exploratory analysis", *ABAC Journal*, 30 (2),12-25.

Bruett, T.C. (2007), "Kiva, and prosper.com: how disintermediation and the internet are changing microfinance", Community Development Investment Review, 3(2),44-50.

Chan, S. (2010), "Microfinance in China: an overview", Microfinance Focus, July 28, available

at:www.microfinancefocus.com/news/2010/07/28/microfinance-in-china-an-overview/ (accessed January 21, 2011).

Cheng, E. (2007), "The demand for microcredit as a determinant for microfinance outreach-evidence from China", *Savings and Development*, 31(3),307-334.

Chien, Y.W. & Devaney, S.A. (2001), "The effects of credit attitude and socioeconomic factors on credit card and installmentdebt", *Journal of Consumer Affairs*,35(1),162-179.

Churchill, G.A. & Iacobucci, D. (2002), Marketing Research: Methodological Foundations, Harcourt College Publishers, Dryden Press, NY.

Dees, J.G. (1998), "Enterprising nonprofits", *Harvard Business Review*, 76 (1),54-69.

Doherty, B., Haugh, H. & Lyon, F. (2014), "Social enterprises as hybrid organizations: a review and research agenda", *International Journal of Management Reviews*, 16 (4),417-436.

Epstein, M.J. & Yuthas, K. (2011), "The critical role of trust in microfinance success: identifying problems and solutions", *Journal of Developmental Entrepreneurship*,16 (4), 477-497.

Gärling, T., Kirchler, E., Lewis, A. & Van Raaij, F. (2009), "Psychology, financial decision making, and financial crises", *Psychological Science in the Public Interest*,10(1),1-47.

Godwin, D.D. (1997), "Dynamics of households' income, debt, and attitudes toward credit, 1983–1989", *Journal of ConsumerAffairs*, 31(2),303-325.

Jacoby, J. & Kaplan, L.B. (1972), "The components of perceived risk", Proceedings of the 3rd Annual Conference of the Association for Consumer Research, Association for Consumer Research, Iowa city, Iowa, April 10-11.

Jebarajakirthy, C. & Lobo, A.C. (2014), "War affected youth as consumers of microcredit: an application and extension of the theory of planned behaviour", Journal of Retailing & Consumer Services,21(3),239-248.

Jebarajakirthy, C., Lobo, A. & Hewege, C. (2015), "Enhancing youth's attitudes towards microcredit in the bottom of the pyramid markets", *International Journal of Consumer Studies*,39(2),180-192.

Koh, F., Phoon, K.F. & Ha, C.D. (2018), "*Chapter 15-digital financial inclusion in South East Asia*", in Chuen, D.L.K. and Deng, R. (Eds), Handbook of Blockchain Digital, Finance & Inclusion, 2, Academic Press,387-403.

Li, X., Gan, C. & Hu, B. (2011), "Accessibility to microcredit by Chinese rural households", *Journal*

of Asian Economics,22(3),235-246.

Liu, M.T., Brock, J.L., Shi, G.C., Chu, R. & Tseng, T.-H. (2013), "Perceived benefits, perceived risk, and trust: influences on consumers' group buying behaviour", *Asia Pacific Journal of Marketing and Logistics,*25(2),225-248.

Luarn, P. & Lin, H.H. (2005), "Toward an understanding of the behavioral willingness to use mobile banking", *Computers in Human Behavior*,21(6),873-891.

Malhotra, N.K. (2004), Marketing Research: An Applied Orientation, 4th ed., Prentice Hall, Harlow.

Malhotra, N.K. (2009), Basic Marketing Research: A Decision-Making Approach, 3th ed., Prentice Hall, Upper Saddle River, NJ.

Malhotra, N.K. (2012), Basic Marketing Research: Integration of social media, 4th ed., Pearson Education, NJ.

Mayer, J.D. & Salovey, P. (1995), "Emotional intelligence and the construction and regulation of feelings", *Applied and Preventive Psychology,* 4(3),197-208.

Michael, R.S. (2009), Consumer Behavior: Buying, Having, and Being, 8th ed., Pearson Education, Upper Saddle River, NJ.

Owens, J. (2013), "Offering digital financial services to promote financial inclusion: lesson we've learned", *Innovation*, 8(1-2), 279-290.

Pitta, D.A., Guesalaga, R. & Marshall, P. (2008), "The quest for the fortune at the bottom of the pyramid: potential and challenges", *Journal of Consumer Marketing*,25(7),393-401.

Prahalad, C.K. (2010), The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits, Wharton School Publishing, Upper Saddle River, NJ.

Preacher, K.J. & Hayes, A.F. (2004), "SPSS and SAS procedures for estimating indirect effects in simple mediation models", *Behavior Research Methods, Instruments, & Computers*, 36 (4),717-731.

Radcliffe, D. & Voorhies, R. (2012), Digital Pathway to Financial Inclusion, Bill & Melinda Gates Foundation, Social Science Electronic Publishing, NY.

Sharif, N. (2000), "Developing sustainable livelihoods: the case of poor female youth in sub-Saharan Africa", *Journal of Sustainable Development in Africa*, 2 (1),1-24.

Smith, J.R., Terry, D.J., Manstead, A.S.R., Louis, W.R., Kotterman, D. & Wolfs, J. (2008), "The attitude-behavior relationship in consumer conduct: the role of norms, past behavior, and

self-identity", *The Journal of Social Psychology,*148(3),311-334.

Tang, L. (2009), "Study on China's sustainable development of rural micro-credit", International Journal of Business and Management,4(8),128-131.

Turvey, C.G. & Kong, R. (2010), "Informal lending amongst friends and relatives: can microcredit compete in rural China?", *China Economic Review*, 21(4), 544-556.

Varghese, A. (2001), "Women and microcredit in rural Bangladesh: an anthropological study of Grameen bank lending: women and microcredit in rural Bangladesh: an anthropological study of Grameen bank lending", *American Anthropologist*.,103(1),258.

Wang, H., Alon, I. & Kimble, C. (2015), "Dialogue in the dark: shedding light on the development of social enterprises in China", *Global Business & Organizational Excellence*,34(4),60-69.

Wang, Y. (2004), "Financing difficulties and structural characteristics of SMEs in China", *China & World Economy,12(2),34-49.*

Weisberg, J., Te'Eni, D. & Arman, L. (2011), "Past purchase and willingness to purchase in e-commerce: the mediation of social presence and trust", *Internet Research*,21(1),82-96.

Wen, Z. & Ye, B. (2014), "Intermediate effect analysis: methodological and model development", *Progress in Psychological Science,*22(5),731-745.

WMFG (2010), "Microfinance in China", WMFG, March, Geneva, available at: www.microfinancegateway.org/sites/default/files/mfg-en-paper-microfinance-in-china-mar-2010.pdf

Xie, J., Liu, L., Liang, L., et al. (2017), "Coordination for value networks of agricultural social enterprises: an empirical analysis from the perspective of social embeddedness", *Journal of Finance & Economics,*43(10),83-96.

Yamane, T. (1967) Statistics: An Introductory Analysis. 2nd Edition, Harper and Row, New York.