Applying Data Mining in order to Motivate Inclusive Finance

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Keywords: inclusive finance; data mining; agriculture、rural & farmers issue

Abstract：Without doubt, administering inclusive financial assistance to relieve the poor of poverty has been put under spot light recently. This present study itry to apply data mining, cloud computing, artificial intelligence and financial technologies to promote the project of inclusive finance in rural areas to help the financially disadvantaged groups. While implementing inclusive finance in rural areas, both supply and demand sides should be considered in order to form a comprehensive development of inclusive finance. Through administering financial services in poor and remote areas can benefit the financial disadvantaged groups in rural areas in the long run.

1. Introduction

There are four characteristics of inclusive finance showing as follows: (1) individuals or families can obtain financial services at reasonable prices. (2) inclusive finance involve sound financial institutions and strict supervision mechanism. (3) inclusive finance can provide long-term and effective financial services. (4) inclusive finance can form a healthy competitive atmosphere among the financial institutions when they provide services.

Especially on January, 2016, Chinese government issued the “Promotion of Inclusive Financial Development Plan (2016-2020)” by stating that the small-and micro-enterprises, farmers, urban low-income groups, the poor and disabled, are the target subjects of China’s inclusive financial services. This completely reveal the government's attitude towards the policy of inclusive financee in poverty alleviation.

However, the policies, professionals, credit funds, incentive mechanisms, and measures are not perfect enough. The inadequacy of policies do no induce expected results with regard to poverty alleviation in certain extent. Integrating financial policies with science and technology and applied e-finance by means of big data might be potential in the future if the government intends to promote inclusive finance to every corner of Chinese society.

2. Current Status of Inclusive Finance in China

He Dexu (2008) used financial exclusion to point out the imbalance between supplies and demands in financial markets in China's rural areas. He thought that formal financial institutions seldom considered the financial needs in rural areas. Tian Lin (2009) applied the theory of financial exclusion to analyze the economic status in rural areas. He suggested that the long-term separation of rural areas from urban areas resulted in a big gap in economic and financial development between rural and urban areas. Liu Tuyu’s (2013) study indicated that there existed insufficient financial services and financial infrastructures in rural areas.

By the end of 2017, there were less than 3,600 agricultural financial institutions (e.g., rural credit cooperate institutions, rural commercial banks, and rural banks, etc.). Taking rural banks as an example, only 1,045 counties (cities) were allowed to set up banks in rural areas, with a 54.57% of coverage. China’s bank loan related to agriculture, rural areas and farmers was less than 10% of the total amount of loan. The per capita loan was far lower than the national level. In 2016, the

agriculture, forestry, fishing and animal husbandry was about 6% of GDP, but the loan accounted for only 1.54%. However, the agricultural loan involved in the project of inclusive finance was about 30.95 trillion RMB, the loan of small-and micro-enterprises was about 30.74 trillion RMB, and that of housing projects was about 4.48 trillion RMB. Moreover, the number of rural banks and financial service personnel in rural areas were far below the national average level. For example, the rural population is as high as 56.1% of the overall population, the corresponding personnel in agricultural financial institutions was only 22.6%, and agricultural banks was 9.5%.

3. Problems caused for China in Inclusive Finance

In China, there is a big gap between rural areas and cities in terms of acquisition and utilization of financial services. Especially in remote rural areas, the geographical structure in rural area is unfavorable for the development of financial services. China Banking Regulatory Commission (CBRC) data showed that by the first quarter of 2016, the amount of loan concerning agriculture reached 460,000 RMB among 1,400 rural banks, 7% lower than the same period last year. In the fourth quarter of 2016, the balance of default credit in rural commercial banks was 234.9 billion RMB, with a defaulted rate of 2.49%, higher than that of ordinary urban commercial banks. It can be seen that the rate of formal loans in rural areas was low and the rate of default credit was high. China’s problems with regard to inclusive finance are as follows.

3.1. Information gaps between urban and rural areas

Underdeveloped rural areas do not have many financial institutions, poor farmers have long believed that they are not qualified to borrow money from financial institutions, and financial institutions are also worried about that the financially disadvantaged groups may not be able to settle their loans or mortgage on time. Both the borrowers and lenders do not trust each other and make the poor farmers unable to borrow money from financial institutions.

According to the statistical reports of the 40th Statistical Report on the Development of China's Internet in Beijing issued by China Internet Network Information Center (CNNIC), up to June 2017, 26.7% of rural people use Internet, accounting for 201 million rural residents. City or town Internet users account for 73.3%, 550 million people. The Internet users in rural areas are less than half of the town users. Besides, rural residents generally have low education level, insufficient legal awareness, and weak financial knowledge. In remote rural areas, where the population is highly mobile and local residents are mostly children and the elderly, who may not even know how to access financial services.

3.2. Inappropriate and unsatisfactory government’s inclusive finance policies

The institutions administering inclusive finance include rural credit cooperatives, rural commercial banks, village banks and some micro credit enterprises. Rural credit cooperatives and rural commercial banks are the main providers of inclusive finance. The excessive pursuit of personal interests will make credit cooperatives and rural commercial banks miss the target. The main reasons are：(1) the Agricultural Bank of China had withdrawn and merged some ineffective branches since the implementation of the joint-stock reform. (2) the investment strategy of the credit market had changed. Only the areas with high financial quality and economic potential are able to get loan from banking services. Therefore, the implementation of inclusive finance for the rural residents is relatively unfavorable.

As a result, the farmers have to undertake the default credit. The rate of default credit with regard to poverty alleviation programs is as high as 50%, which also imposes some pressure on banks when they implement Inclusive Finance.

3.3. The sluggish development on rural areas

The reasons of caused the imbalanced development between rural and urban areas mainly comes from unfair development in policies and financial strategies. The cost and risk of financial services in rural areas are higher than that in urban areas. Due to rural areas are vast and sparsely populated,

in which is difficult to formed an accumulation effect. Peasants scattered sparsely in rural areas might not get finance service from banks. In order to overcome the geographical obstacles in rural areas in order to serve sparsely distributed peasants in rural areas, most banks required to set up more branches in rural areas. Unfortunately, the high operation cost and low credit of farmers, the enthusiasm of financial services will be restrained.

3.4. Poor credit in rural areas caused difficulties in loans or mortgage

Once, residents want to obtain loans, they need to provide effective mortgage, guarantee and credit records. However, since China has not yet established a comprehensive personal credit programs in rural areas, it is difficult for farmers to provide effective proof of personal credibility. In addition, few items can be mortgaged by farmers, among which some items that cannot be mortgaged are because of property rights or value disputes, such as the life expectancy of cultivated land, farm implements and agricultural products, etc.

Agriculture is also a weak industry, greatly affected by the natural environment, most of the rural enterprises are labor-intensive, which have potential crisis in operation. In order to prevent moral hazard, financial institutions usually adopt more strict and conservative risk assessment procedures and increase credit conditions, which is not conducive to the development of inclusive finance in rural areas.

3.5. Staff with superiority attitude & low level of service awareness

Relatively, financial institution staff enjoy higher socioeconomic status and have a higher level of knowledge. They are recruited through the national unified examination, coming from urban areas and unfamiliar with local culture. The geographical constraints of rural areas, scattered residents and different service request of peasants also make these bank employees difficult to get used to the jobs in rural areas.

4. How to increase the motivation of financial services through artificial intelligence

4.1. Apply data mining to dig out needs for rural areas people

The financial institution are required to well realize their inclusive finance products, rural areas people needs, and construct a risk prevention system through information system tools. Applying the integration with the Internet, big data, and artificial intelligence, simplify the credit approval process, optimizing the post-loan management, enhance risk management, and improve service quality and efficiency.

4.2. Building up inclusive financial credit investigation sharing platform

It is plausible to collect the peasants' personal information by collecting the information from their land, agricultural products, and land circulation and input them into the Internet as references of financial status. Then, set up their own credit investigation sharing platform to access consumers' behaviors through networks, e-commerce platforms and Internet. Consumers' consuming records can be accessed through retailing chains and suppliers in order to analyze their consuming willingness, preferences and capabilities, which in turn can be used to reduce cost of credit.

4.3. Recruiting and providing training for local staff with inclusive finance

Due to most staff are recruited through the national unified examination, they are coming from urban areas and unfamiliar with local culture. It is necessary to recruit or re-training the local staff with update inclusive finance knowledge. Endowing with the obligation to assist farmers to solve their agriculture issue. Moreover, it has to build up the evaluation system along with staff's duty and their efficiency.

4.4. Providing personal service, educate users with correct inclusive financial knowledge

Sending qualified service staff to serve peasants are urgent to solve this problem. To rapidly develop inclusive finance in rural areas, it is imminent to increase peasants' financial knowledge.

Besides, we may try to ask the poor to save some money before borrowing money from the bank, even if the saving is little. Once the poor had the habit of saving money, which not only enabled the poor to better handle the debts but may also result in better credit allocation. Through this, it is also an education for rural people to get use to handle their credit.

Acknowledgement

This paper is“Funded by Inclusive finance and Rural e-commerce collaborative innovation Center (Minjiang University) (No. XTZX1813)”. And the author taking all responsible for this research.

Reference

[1] China Banking Regulatory Commission (CBRC) Research Group of GSP Finance Ministry. International experiences and references of inclusive finance. [J] China's Rural Finance. 2016-12: 78-82

[2] Ji, Xiao Qing and Ou, Ming Gang. India's inclusive financial policy and effect. [J] Banker. 2017 (10): 103-107

[3] Ma Guangqi and Bian Shenglei. Brief analysis on the handling and application of P2P network loan in online financial enterprises. [J] Practice of Foreign Economy. 2014 (5): 66-68

[4] Ma Guangqi, Problems and countermeasures in solving inclusive finance in rural areas.[J] Rural Economy/Finance. 2016

[5] Zhou Xiaochuan. The party's pro-public approaches to promote the development of inclusive finance. Seeking Truth. 2013 (3): 11-18