

# Driving Poverty Alleviation through Digital Financial Inclusion

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## I. Introduction

Eliminating poverty in rural areas by 2020 is the most difficult task facing China's efforts to comprehensively build a moderately well-off society. In 2015, the Central Committee of the Communist Party of China (CPC) and the State Council issued the *Decision on Winning the Fight Against Poverty*. The Central Committee of CPC and the State Council have also attached great importance to the development of financial inclusion, as evidenced by the *Plan for Advancing the Development of Financial Inclusion*<sup>1</sup> (2016–2020), issued by the State Council at the end of 2015.

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<sup>1</sup> According to the definition of the *Plan for Advancing the Development of Financial Inclusion (2016-2020)*, financial inclusion refers to the provision of appropriate and effective financial services at affordable costs to all sectors and groups of society with financial service needs based on the requirement of equal opportunity and the principle of commercial sustainability. Special groups such as small and micro enterprises, farmers, urban low-income people, poor people and disabled people, and the elderly are the key service targets of China's financial inclusion efforts. Financial inclusion covers payments, credit, insurance, and other basic services. “Digital Financial inclusion” generally refers to all actions that promote financial inclusion through the use of digital financial services. It includes the use of digital technology to provide a range of formal financial services to groups that do not have access to financial services or are underserved by financial services. Financial services thus provided can meet their needs and are provided in a responsible and cost-effective manner that is sustainable for service providers. Global Partnership for Financial Inclusion (GPFI). Global Standard-Setting Bodies and Financial Inclusion: The Evolving Landscape. March 2016. This article’s international experiences section is based on research that includes, but is not limited

The Research Institute of Finance, under the Development Research Center of the State Council, has long tracked the development of rural finance in China and paid attention to the new trends and new problems facing the development of rural financial inclusion. As a leading global payments technology company, Visa has rich practical experience in promoting global financial inclusion, and has committed to fulfilling the World Bank Group's "Universal Financial Access by 2020" by providing payment accounts for 500 million people without financial services by 2020. Furthermore, Visa actively promotes financial inclusion in poverty-stricken areas of China through research, financial education, and capacity building. Teaming up to fully leverage their respective advantages in promoting China's efforts to win the battle against poverty, the Development Research Center of the State Council and Visa signed a research cooperation memorandum in March 2018 to jointly research the role of digital finance in boosting poverty alleviation efforts. This report represents the outcomes of this cooperative project from 2018 – 2019.

Studying the role that digital financial inclusion can play in contributing to China's battle against poverty is of great practical significance, especially in this critical stage of China's journey in poverty alleviation. China's "Reform and Opening-up" strategy aims to build a modern, prosperous country. One key task of this strategy is to comprehensively build a moderately well-off society before 2020, including

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to, the rural population. However, because the rural population is the most important target group of digital financial inclusion in most countries, the digital financial inclusion mentioned in this report basically covers the rural digital financial inclusion. Furthermore, the spread and development of digital payments has already played a role in increasing the level of financial inclusion. Rural insurance services have also rapidly infiltrated the rural area under the government incentives. This paper focuses on the difficult problems facing China, namely the credit service barriers in poverty-stricken areas.

fully alleviating poverty by 2020. The National Bureau of Statistics, in a series of reports issued in September 2018 on achievements in economic and social development during the 40 years of “Reform and Opening,” stated that the number of impoverished rural residents in China decreased by 740 million from 1978 to 2017. The national poverty rate also fell from 10.2 percent at the end of 2012 to 3.1 percent at the end of 2017; poverty rates in 17 provinces have even fallen below 3%. In the past five years, China has lifted 68.53 million rural people out of poverty, a poverty reduction rate of close to 70%. This means China lifted an average of nearly 13.7 million citizens out of poverty every year. According to the UN *Millennium Development Goals Report 2015* and the White Paper entitled *Progress in Human Rights over the 40 Years of Reform and Opening Up in China* issued by the State Council Information Office in December 2018, China's contribution to global poverty reduction exceeds 70%. These results are remarkable, but more work needs to be done to fully eradicate poverty by 2020 – including improving financial measures aimed at alleviating poverty. The No. 1 Central Document<sup>2</sup> highlighted a complete grasp of rural revitalization efforts as the key to poverty eradication, with an especially deep focus on solving outstanding problems in severely poverty-stricken areas. As an important policy measure, poverty alleviation through financial means aim to removes all bottlenecks in providing financial services to agriculture, rural areas, and farmers, and improving services in aspects such as agricultural insurance, agriculture-related credit, futures, and options, as well as combining policy incentives to ensure the successful establishment of the agricultural support and protection system.

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<sup>2</sup> The No. 1 Central Document is China’s annual agriculture policy paper that is issued by the Central Committee of CPC.

Using financial inclusion to fully implement financial poverty alleviation policies, and ultimately win the fight against poverty, is important for five reasons. First, the key targets of inclusive financial services overlap with the target population of poverty alleviation. Inclusive financial services are designed to also penetrate financial services to vulnerable groups, especially poor households. Second, inclusive financial services operate according to principles of commercial sustainability; the right policy incentives ensure that a variety of commercial organizations can fully participate, thereby mobilizing social resources to help fight poverty. Third, insufficient financial services are an important factor restricting the development of poverty-stricken areas. In particular, the lack of basic financial services such as payment and settlement, credit, and insurance represent a crucial challenge in preventing poor households from overcoming the difficulties they face in production and sales. The development of financial inclusion is an important element of creating the right conditions for poor households to transform their production and lifestyle. Fourth, inclusive financial services play an essential role in building the capacity of vulnerable groups. Credit services are based on the customer's ability to repay; inclusive financial services can build greater customer capability, thereby working to improve customer credit – and creating a virtuous cycle. Strong principles of poverty alleviation require combining poverty alleviation with other development work, including strengthening vocational education, developing local characteristic industries, and channeling export of labor. What underlies all of these efforts is building the productive capacities of poor households. Therefore, inclusive financial services and poverty alleviation policies can form synergies. Fifth, developing financial inclusion – including improving the convenience and availability of financial services, as well as reducing their cost –

can lower farmers' production and living costs, saving more money and improving quality of life.

This round of field research revealed that credit services are a particularly difficult challenge facing financial inclusion in poor areas. This is related not only to banks' traditional business models on the supply side, but also to the production capacity and operational risks of poor households on the demand side. The development of digital financial inclusion help to break through the obstacles faced by the traditional financial service model, but work still needs to be done to improve basic conditions like the collection and sharing of credit information, investment in information technology infrastructure, as well as more effective promotion of digital financial applications to poor households. At the same time, these efforts need to include stakeholders like the government, financial institutions, and other service providers involved in supporting the agriculture, rural areas, and farmers to strengthen complementary coordination, optimize resource allocation, better prevent and control risks, and promote the development of poor households.

## **II. Challenges Facing the Development of Rural Financial Inclusion**

Overall, financial inclusion in China has already achieved remarkable results. As of the end of 2017, the coverage rate of banking outlets at township-level reached 96%; the coverage rate of agricultural insurance service outlets reached 95% at township level and exceeded 50% at village level; and agricultural insurance covered 84% of the cultivated land. Through the deployment of ATMs and POS terminals, the coverage rate of basic financial services in administrative villages nationwide exceeds 96%. Banking sector provided a total of 249.7 billion yuan of

poverty alleviation loans for 6.07 million registered poor households, with the average loan size at 40,000 yuan for each household, and one-fourth of registered poor households received micro loans under poverty alleviation policies.<sup>3</sup> However, in poor rural areas, the development of rural financial inclusion still faces some practical challenges. According to the World Bank, nearly 200 million rural Chinese lack sufficient access to formal financial services.<sup>4</sup> Improving inclusive financial services in poor areas is of foundational importance.

The research team visited poverty-stricken areas in the central, western and northeastern regions of China including five provinces (cities), and conducted in-depth exchange with provincial- and county-level agriculture-related government departments, regulatory authorities, rural financial institutions, farmers' cooperatives, and poor households. Based local information and insights, credit services are the main challenge in improving inclusive financial services in poverty-stricken areas. Two main obstacles exist in providing effective credit services: the cost of providing services, and the risk prevention and control in providing such services. Sharing costs through local financial incentives, such as financial subsidies, and sharing risks through state-controlled financing guarantees or risk compensation fund can alleviate this pressure to a certain extent, but these methods cannot solve the problem fundamentally. Only when the financial institutions' business model is such that its operating income cover the costs and risks of providing services in rural areas can it develop sustainably under the government's

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<sup>3</sup> Based on the relevant data published in the abridged version of *Development of Financial Inclusion in China* released by China Banking and Insurance Regulatory Commission in September 2018.

<sup>4</sup> Based on World Bank report, *The Global Findex Database 2017, Measuring Financial Inclusion and the Fintech Revolution*.

policy incentives. Furthermore, risk prevention and control is crucial, and the rate of non-performing loans must be kept within a reasonable range. However, the traditional financial business model still has a lot of limitations, especially in poverty-stricken areas. For example, the traditional face-to-face service model is limited by temporal and spatial constraints in rural poverty-stricken areas: financial institution staff can only serve a limited number of customers in these sparsely-populated areas. Furthermore, the value of each single transaction is small, and the asymmetry in consumer information, making it difficult for these institutions to develop a sustainable business. On the demand side, poor households are limited by a lack of financial understanding, limited production and management capabilities, and a lack of qualified collateral and guarantees. At the same time, the traditional agricultural models relied upon by poor households is vulnerable to natural disasters and price fluctuations in the agricultural product market. These factors hinder the development of rural financial inclusion, especially credit business, in rural poor areas.

According to demand-side survey questionnaires collected as a part of this research,<sup>5</sup> nearly 89% of local farmers' have savings accounts, and the government's distribution of subsidies for rural households has been digitized. However, rural financial inclusion still needs to be improved, primarily in the following aspects. Firstly, village-level financial services need to be upgraded in two main areas: coverage and quality. Although macro data shows that the coverage rate of agent banking networks in the administrative villages across China has

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<sup>5</sup> The research team conducted a demand-side survey and sampled 38 national-level impoverished counties of 14 provinces within the 14 contiguous impoverished areas of china, and collected 587 valid questionnaires.

reached 97%<sup>6</sup>, 50% of survey respondents indicate that they cannot access financial services in their respective administrative villages. This is primarily because poverty-stricken rural areas accounted for the remaining three percent of not covered by banking agents. As for service quality, customer satisfaction in financial services indicates room for improvement. 64% of survey respondents want simplified procedures to improve the convenience of financial services, and 28% of respondent are still dissatisfied or very dissatisfied with the traditional financial services of banking institutions. The second area of improvement for rural financial inclusion is credit services. As high as 43% of the respondents who applied for loans from banks in 2018 failed to pass the loan application processes, mainly due to lack of collaterals, guarantees, or credit record. Thirdly, residents in rural poverty-stricken areas often lack financial education. Although 29% of survey respondents have received financial education, this was mainly delivered via TV programs, WeChat posts, text messages, leaflets, and other channels for financial information, which is often of limited relevance. In addition, the insurance business needs to be better developed, as only 14.31% of the respondents have indicated that they have received services from insurance company.

These data show that rural inclusive financial services face some practical challenges in meeting current needs, especially in poor areas. Financial services in poor areas not only face coverage problems, which indicate that the access to financial services need to be further improved, but also face challenges around service quality, which means that key indicators such as customer satisfaction, convenience, and credit availability need to be improved.

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<sup>6</sup> Source: Financial Consumer Protection Bureau of the People's Bank of China: Analysis Report for Indicators of Financial Inclusion in China 2017.

### **III. Digital technology helps transform financial inclusion**

Information asymmetry is a key obstacle in risk management and control for financial inclusion; relying on manual face-to-face services presents the primary cost challenge. To solve these problems, we need to rely innovative business models. For example, we can reduce information asymmetry through high-efficiency, low-cost collection and evaluation of customer credit information to strengthen post-lending management, thereby improving risk control. Another example is to reduce costs by replacing manual services with electronic services. From the perspective of digital technology, the basic conditions for solving the above problems are already in place. Digital financial services are not subject to spatial or temporal constraints, and have obvious advantages in rural areas, including poverty-stricken areas as their convenience and service efficiency are far superior to that of traditional models.

Financial technology has developed rapidly in China and provided a good foundation for the development of digital financial inclusion. According to the World Bank report, 57% of adults in China use mobile phones or the Internet to shop and make payments in 2017, doubling since 2014 and exceeding the global average of 52%<sup>7</sup>. According to a survey by the People's Bank of China, the proportion of Chinese adults using electronic payments nationwide in 2017 was 77%, of which 67% were in rural areas. The reason for the rapid spread of financial technology is that China's information technology leads among developing countries. According to World Bank, 68% of adults in developed countries use the

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<sup>7</sup> Based on World Bank report, The Global Findex Database 2017, Measuring Financial Inclusion and the Fintech Revolution.

Internet, compared with 49% in China, and an average of 11% in developing economies other than China. How to solve the last mile challenge in financial services requires active exploration of technology and institutional innovation, and digital financial inclusion has great potential in this regard. China has carried out many explorations in this area and there are many successful cases of the application of a large number of financial technologies in the fields of third-party payment, agent banking, and e-banking which provide a new way to improve financial services in rural areas. These practices also show that digital financial inclusion can play an important role in promoting poverty alleviation.

The credit risk management of traditional bank relies on a second source of repayment. Even if it does not require a pledge or guarantee, a credit record must be available. This business model does not match the actual situation faced by the rural areas. Based on big data, artificial intelligence, and cloud computing, digital financial inclusion can more effectively judge customers' real repayment ability and willingness through, including anti-fraud screening, through extensive collection and analysis of customers' credit-related information, and, at the same time, directly connect with the merchants at the upstream and downstream of rural customers' businesses to improve post-lending management, demonstrating the unique advantages in risk control. Combining online and in-person data collection can realize cross-checking and achieve better results. At present, some rural micro-credit institutions have developed new progress in improving the risk control model based on the digital micro lending technology, through research and development or external cooperation. In short, digital technology is an important force to promote a diverse and innovative financial system and will help improve rural

financial services. It becomes a general trend to develop digital financial inclusion<sup>8</sup> services in rural poverty-stricken areas.

Therefore, digital technology can help amplify poverty alleviation effort and accelerate financial inclusion development.

#### **IV. Relevant International Experience and Domestic Innovations**

The development of digital financial inclusion is an important trend in today's world, and China's exploration and practice have also made positive progress. Drawing lessons from domestic and international experience will help to better solve current challenges.

##### **i. International experience in digital financial inclusion**

The international community has carried out many explorations in the development of digital financial inclusion and promoted the formation of the G20 High-Level Principles for Digital Financial Inclusion<sup>9</sup>.

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<sup>8</sup> Digital financial inclusion covers various financial products and services (payments, transfers, savings, credit, insurance, securities, financial planning, bank bill services, etc.) and relies on digital or electronic technologies for transactions. Global Partnership for Financial Inclusion (GPFII). *Digital Financial Inclusion and the Implications for Customers, Regulators, Supervisors and Standard-Setting Bodies*. 2014.

<sup>9</sup> The G20 Hangzhou Summit endorsed the *G20 High-Level Principles for Digital Financial Inclusion* in September 2016. These Principles include: promoting a digital approach to financial inclusion; balancing innovation and risk to achieve digital financial inclusion; providing an enabling and proportionate legal and regulatory framework for digital financial inclusion; expanding the digital financial services infrastructure ecosystem; establishing responsible digital financial practices to protect consumers; strengthening digital and financial literacy and awareness; facilitating customer identification for digital financial services; and tracking digital financial inclusion progress. Source: Global Partnership for Financial Inclusion (GPFII). *G20 High-Level Principles for Digital Financial Inclusion*. 2016.

In addition to Brazil, Mexico, India, and other developing countries promoting the government's digital distribution of subsidies to farmers, the European Union and other countries have carried out regulatory tests around the balance between the innovation and risks in the development of digital financial inclusion. The United Kingdom provides enterprises with a safe space through the "Regulatory Sandbox"<sup>10</sup> to test new products and services, business models, and payment mechanisms to ensure that consumers are protected. Similar testing frameworks have been launched in the United States, Australia, Malaysia, Singapore, Thailand, the United Arab Emirates, and some low- and middle-income countries. As far as the prevention and disposal of systemic financial risks is concerned, Australia and other places collect and share information of financial market transactions and related information of government and other public sectors through legislation and regulatory division of labor. Such experiences can also be used to facilitate the integration and sharing of credit-related information. However, relevant cases also show that excessively encouraging consumer financing, insufficient transparency, and imperfect accountability mechanisms lead to high default rates for small online lending. The default rate is as high as 31% in Tanzania, and 12% in Kenya<sup>11</sup>. These experiences can provide enlightenment for China to better develop inclusive financial services, broaden ideas from the perspective of financial service supply and supervision, and promote the development of poverty-stricken areas. In view of the problems faced by China in developing the rural digital financial inclusion, such as the lack of rural households' accumulated credit records and the dispersion

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<sup>10</sup> Global Partnership on Financial Inclusion (GPFI). Digital Financial Inclusion: Emerging Policy Approaches. 2017

<sup>11</sup> CGAP studies. A Digital Credit Revolution: Insights from Borrowers in Kenya and Tanzania. October 2018

of credit-related information, it is necessary to adapt to local conditions and strengthen relevant basic work when learning from international experience.

### **Box 1: The Case of Mexico**

*Based on Mexico's extensive network of small- and micro- enterprises, Visa, OXXO (the largest convenience store chain in Mexico) and Banamex (one of Mexico's leading banks) partnered to introduce a simplified account (Saldazo) to promote the opening and use of new bank accounts and improve the coverage of inclusive financial services in Mexico. The program has the following features:*

- 1. Low know-your-customer (KYC) requirements;*
- 2. No minimum balance (albeit capped deposits and transactions);*
- 3. Sold and activated for US \$2.50, in 5 minutes;*
- 4. Available at more than 16,000 OXXO outlets.*

*This card works like a card-based digital wallet (but it is a bank-issued account) with optional convenient access to mobile-phone based financial services offered by Banamex, including mobile payment, transfer, balance inquiry, withdrawal and card-free payment of mobile phone charges, etc.*

*Since 2013, this Saldazo account has reached 10 million customers. It is the first formal account for 42% of its users.*

*The scale and impact of the partnership in Mexico can be credited to several factors: location-specific marketing measures, digital account design offering convenience and ease of access; well-established small- and micro-enterprise network, diverse ways and places to use it; low costs and interoperability; and partnership among various parties (including a retail chain, bank, MNO and Visa)*

*Source: Saldazo. Consumer profile and habits, September 2016. Ipsos Mexico. Commissioned by Visa*

## **ii. Practices and cases from Chinese financial institutions**

In promoting digital financial inclusion in rural areas<sup>12</sup>, China has taken advantage of the Internet, big data, cloud computing and other technologies to extend geographic coverage, expand service coverage, lower and cost, and improve service quality and efficiency. This has resulted in the fast spreading of the related services as mobile payment, mobile banking, and Internet wealth management. The typical arrangements are as follows: Firstly, as represented by the local pilot of the People's Bank of China in Zhejiang and other places, the local municipal governments took the lead to establish specialized agencies to integrate credit-related information from the governments, justice authorities, and public services under the guidance of the regulatory authorities, and provide credit assessment for financial institutions' reference.

Secondly, the rural credit cooperative system in some provinces and municipalities such as Hainan Province hired agricultural professionals as loan officers to provide guidance and technical support on agriculture production and sales, at the same time collecting key credit-related data concerning production, consumption, and personal conduct of the customers through leveraging the micro-lending technology, together with the back-office information system to provide credit decision support. This is characterized by offline collection of professional data with online comprehensive evaluation for lending authorization and monitoring.

Thirdly, the Agricultural Bank of China and other financial institutions independently research and develop digital credit service products, collecting multi-dimensional data on farmers and their businesses through various channels<sup>13</sup>,

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<sup>12</sup> China Banking and Insurance Regulatory Commission: Development of Financial Inclusion in China, 2018

<sup>13</sup> For example, use Internet conduct data collection including agriculture-related industry data,

calculating the input cost and operating income level of agricultural products, fully considering such factors as credit status, asset status, and operating industries and duration, and automatically authorizing credit line after comprehensive analysis.

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oil subsidy data from marine and fishery authorities, tobacco farmers' data from the tobacco companies, and subsidy data finance departments as well as the household data collected by client managers.

## **Box 2: Case of Rural Credit Cooperatives Network**

*With the support of the People's Bank of China, the Taizhou Municipal Government established the financial service credit information sharing platform in December 2013, which offers 20 functions including information inquiry, comprehensive services, credit scoring, and risk warning and diagnosis. The platform is home to more than 70 million pieces of information in 78 categories from 15 government departments in charge of finance, law suits, public security, state taxation, local taxation, electricity, social security, state land, environmental protection, housing construction, market supervision, and quality inspection. It covers detailed information about 520,000 enterprises and individual business in Taizhou. The platform can automatically collect and update information in real time and has become an important support for financial institutions in their lending management, business marketing, customer screening, and risk warning. The quantity, quality, and convenience of banks' access to customers' "soft information" has been fundamentally improved, and the banks will inquiry into the credit information of more than 95% of small- and micro- enterprises through the platform before issuing the credit. This has provided support for banking institutions' services innovation for financial inclusion. On this basis, Zhejiang Taizhou Luqiao Rural Commercial Bank, part of Zhejiang Agricultural Credit network, has formed a set of micro-financial service models according to local conditions, including adopting a grid-based management model, offering one-stop all-round services, and using micro-credit centers to promote the development of small and micro-enterprises. The details of the platform are as follows:*

*1. Establish a grid-based management platform. The towns and sub-districts of Taizhou are divided into 375 grids, and integrated management is carried out in combination with virtual maps for customer comprehensive information, division of responsibility of credit personnel and business.*

*2. Gradually establish the "harvest station". Efforts shall be made to gradually set up a "harvest station" network at the village level to offer financial services, online shopping, and utility bill payments to the villagers.*

*3. Establish the dedicated organizations to offer services to small- and micro-enterprises. In 2013, Taizhou introduced the micro-loan technology from Taiwan to set up a micro-lending center. In 2015, Taizhou set up the first technology-based branch based on the pilot of the micro-lending center, and developed professional processes and specialized products to provide full-scale, specialized financing and settlement services for technology-based enterprises.*

*4. Established a new model of integrating government into bank branches, where residents can walk into the local branches or through APP to access a variety of social services.*

*By the end of 2017, Luqiao Rural Commercial Bank lent agriculture related loans to 45,539 households as well as micro loans to 8,012 small- and micro- enterprise. 52.53% of the loans supported the farmers, rural areas and agriculture as well as the small and micro-enterprises and the coverage for personal loans is at 46.14%. The default rate (based on the regulatory of non-performing loans) reached 1.2%, lower than the previous year by 0.47%.*

*Under the support of the financial service credit information sharing platform, local*

Fourthly, China Construction Bank innovated the platform-based business models through financial technology, integrating internal and external data to promote inclusive financial services, combing supply chain and other information resources, creating the “Internet open access + full online credit services” that target at small- and micro-enterprises and provided one-stop services through the “Hui Dong Ni” APP for farmers and other customer.

Fifthly, on the basis of the research and development of digital credit tracking system and risk control system, online loan application APP, and online financial education curriculum module, CD Finance evaluates and analyzes customers’ risks through risk control products of third-party companies. The result is then used as a reference for customer risk assessment. The online application, review, and approval process has been deployed for loan size that is below 20,000 yuan. Our data findings from the demand-side survey show that farmers' satisfaction of Internet financial services has surpassed that of traditional financial services.

### **Box 3: Case of China Construction Bank (CCB)**

*In 2017, CCB was dedicatedly proposed the strategy of financial inclusion development, calling for serving the development of the national economy and people's livelihood improvement, fulfilling the responsibilities of the Bank by leveraging finance and technology, and improving the data management capability by innovating the platform-based business models. According to the data disclosed by CCB's official website, as of 2017, CCB's incremental financial inclusion loans ranked No.1 among top four largest commercial banks in China, and has met the "three no-less-than" regulatory requirements for seven consecutive years, and provided nearly 5.9 trillion yuan of loan services to more than 1.3 million small- and micro- enterprises cumulatively. The total number of accumulated customers and incremental customers made CCB's credit services the first among the top four largest commercial banks. In 2018, CCB used financial technology to empower financial inclusion, and launched the "Hui Dong Ni" APP for small- and micro-enterprises, and innovated the "Internet open access + full online credit services" business-model to build a reliable and mutual beneficial ecosystem covering the entire life cycle of the enterprises. CCB expanded the development of inclusive financial business through the integration of big data, issued incremental loans of over 200 billion yuan under financial inclusion framework, and achieved initial gains in solving social difficulties and improving people's livelihoods. The specific practices are:*

*1. CCB integrated internal and external data, and work with external institutions to innovate inclusive financial products and services. CCB built a new generation of full-process data management and accountability system, and accumulated more than 80,000 data specifications to ensure data consistency from the source, and comprehensively improved the level of IT-based management. CCB established a unified introduction and sharing mechanism for external data resources, and quickly put into the production a series of platforms. At the same time, CCB continued to innovate inclusive financial products and services in partnerships with the State Administration of Taxation, China Union Pay, payment institutions, and acquirers. It has created a series of brands such as "quick loan", "small- and micro- quick loan" and "cloud tax loan" to better meet the needs of consumer finance and small and micro enterprises.*

*2. CCB provided online services to enable the development of Internet for rural economies. CCB provided Internet online services to relevant participants to rural economies such as farms, agriculture related enterprises, farmers, new agricultural operating entities, governments, financial institutions, etc., and fulfil the financial services needs of the agriculture-related entities.*

*3. CCB integrated supply chain information and resources to support the development of private and small- and medium-sized enterprises. CCB builds new supply chain service business components, reconstructing the supply chain management process, realizing the integration of transactions, logistics, capital, and information, enhancing the service capability for supply chain product, and further strengthening the support for the private and small- and medium-sized enterprises.*

*4. CCB adopted technology empowerment strategy and independently developed the "Hui Dong Ni" APP that met farmers' financial needs. In 2018, the average daily visit volume of the APP at about 2.1 million. This APP has been connected to the Ministry of Agriculture and Rural Affairs' "New Farmers' Direct Reporting System" as the third-party*

#### **Box 4: Case of Education on Digital Financial Inclusion**

*In 2016-2018, Visa cooperated with the China Foundation for Development of Financial Education (CFDFE) and the China Foundation for Poverty Alleviation (CFPA) to carry out capacity building for rural residents, rural middle school students, township cadres and leaders, and employees in rural financial institutions. This training took the form of mobile Internet finance education and targeted poverty alleviation pilot projects in the impoverished areas of the Daxing'anling Mountain Poverty Alleviation Region (covering 41 poverty-stricken counties in Heilongjiang, Jilin and Inner Mongolia), with the purpose of promoting the popularization of mobile Internet financial services in rural areas and exploring new paths to fill the digital gaps of financial inclusion.*

*The capacity building model that CFDFE implemented has following characteristics: Firstly, actively mobilizing, coordinating and integrating resources from public and private partners. Secondly, better understanding the financial capacity of rural population through baseline research and delivering targeted trainings through online and in-person channels. Thirdly, extending coverage through the training of trainers (ToT) model. The project is implemented by the volunteers of the provincial and county branches of the People's Bank of China as well as establishing a collaboration mechanism among different government agencies in order to integrate local resources and carry out activities in a coordinated way. By the end of 2018, the program had covered more than 6.3 million rural residents, including 200,000 township leading cadres and leaders, 420,000 rural middle school students and 160,000 employees of rural financial institutions.*

*The project promoted by the CFPA was implemented by China Doorstep Finance (CD Finance). It has the following characteristics: Firstly, CD Finance developed the financial education learning modules for loan officers and guided them to learn new types of financial knowledge and tools. Trained loan officers then disseminated Internet finance and other knowledge to farmers and herdsmen in poverty-stricken areas. Secondly, by taking advantage of organizational and management features of loan officers, CD Finance conducted targeted Internet-based financial education through online and in-person channels. Thirdly, CD Finance leveraged their loan officers' local know-how to carry out individualized, routine and non-standardized financial education activities (e.g. how to use mobile phone to apply for and repay loans), thus embedding the financial education in the life and use cases of farmers and herdsmen in poor areas.*

*By end of 2018, CD Finance had developed 8 financial education learning modules for loan officers, and published 117 Wechat articles on financial knowledge related to insurance, credit reporting, wealth management and fraud prevention, benefiting more than 44,000 rural population from 10 counties of Inner Mongolia, from whom more than 60% of them are women.*

*Source: China Foundation for Development of Financial Education, China Foundation for Poverty, and CD Finance.*

### **iii. Digital Technology Transforming Financial Inclusion**

The above-mentioned international and domestic practices and explorations in the development of digital financial inclusion have shown that the banking industry has made positive progress in the adoption of digital technology (e.g. mobile payments) and reducing manual interference, which has laid solid foundation for deepening rural digital financial inclusion.

Firstly, digital technologies such as big data, artificial intelligence, cloud computing, and mobile communications can help not only expand service coverage and drive efficiency, but also alleviate information asymmetry faced by traditional financial business models and improve the access to and convenience of credit services, thus improving the overall satisfaction of rural financial inclusion services. For example, electronic payments accumulate a large amount of transaction data and improve transaction efficiency. In one aspect, it can serve as the basis for customer income and repayment ability, and become the basis for credit enhancement; in another aspect, it can improve the convenience of financial services, reduce transaction costs, and better attract target customers for financial inclusion. Therefore, digital technologies have effectively promoted the development of financial inclusion in terms of expanding service coverage, reducing operating costs, and improving risk control mechanisms, from which data-driven has become the key trend for innovation development.

Secondly, various financial institutions can flexibly adopt independent Research & Development (R&D) or cooperation with external professional institutions and other means to enhance their financial technology application capabilities and

improve digital financial inclusion services based on their own scale and strength, including the introduction of credit information-based customer risk assessment mechanisms. However, no matter what mode is adopted, they must comply with the development trend of digital technology, improve the availability, convenience and satisfaction of financial services, and effectively improve the risk control mechanism.

Thirdly, government plays an important role in improving rural financial infrastructure. The task at this stage is to promote the aggregation and sharing of credit-related information held by public institutions such as the government, and to improve the promulgation of supporting laws and regulations. Relevant practices show that the government has organizational advantages in promoting the aggregation and sharing of credit-related information, where an effective coordination mechanism is key to amplifying government's role.

Finally, providing value-added services and promoting capacity building efforts for customers are related to the poverty alleviation measures and will help improve the risk management and control of rural financial services. At this stage, it should be fully integrated with poverty alleviation. Both domestic and international experience has shown that financial institutions can provide guidance to farmers on production and management, which helps to promote mutual benefit and win-win cooperation and is often the feature of the cooperative financial system in developed countries. China is promoting the "integrated" cooperation mode by integrating supply and marketing cooperation, production cooperation, and credit cooperation. Considering the unbalanced development of farmers' cooperatives in poverty-stricken areas, we should strengthen the assistance in production,

processing, transportation and sales for poor households in combination with the poverty alleviation policies, enhancing the complementarities between poverty alleviation efforts and digital financial inclusion services.

## **V. Recommendations for Amplifying the Role of Digital Financial Inclusion for Poverty Alleviation**

In order to accelerating the role of digital financial inclusion in promoting poverty alleviation, it is necessary to create conditions for the development of digital financial inclusion, improving the development environment, promulgating supporting policies, enhancing the synergy between financial services and poverty alleviation efforts, and improving the common development mechanism. To this end, it is necessary to integrate resources, promote supplementary and coordination effect within the financial industry, integrate financial inclusion services with poverty alleviation approaches, strengthen positive incentives, improve risk control conditions, and enable digital financial inclusion services to combine with rural industrial development, upgrading of value chain specialization, and the in-depth integration of agriculture, industry, and service sectors of the rural areas to promote rural revitalization and farmers' prosperity. In order to promote the deep penetration of digital financial inclusion for poor households, it is necessary to provide services at any time and any place through mobile terminals such as mobile phones, to promote financial services to be embedded in various types of farmer's transactions, and to provide settlement, financing, insurance and other ancillary services to enable the complementary coordination of relevant operations such as credit, insurance, financing guarantees, financial leasing, futures, options, commercial factoring and other related businesses to jointly serve the development of

agriculture, and complement and cooperate with various service industries related to agricultural production, rural development, and farmers' lives, to provide support for the procurement of agricultural materials, processing and sales of agricultural products and the development of rural tertiary industry.

In the business operations of financial institutions, it should be oriented to the full coverage of rural vulnerable groups and small- and micro- enterprises, and operated according to business rules and market principles, so that the income of service entities can cover costs and risks. To this end, we can use electronic services to replace manual services, and introduce digital technologies to overcome the problems of low population density, small transaction volume, and high transportation costs in the traditional service model, and effectively improve the efficiency of financial services. At the same time, with the help of big data, artificial intelligence, cloud computing and other technologies in the field of digital technology, we can process and analyze the customer credit information, solve information asymmetry, improve the post-lending management mechanism, make information as the purpose of using credit and customer cash flow more transparent, improve the internal governance of financial institutions, and enhance their internal audit supervision capabilities, thereby improving the overall risk control situations.

In order to give full play to the role of digital financial inclusion in driving poverty alleviation, we need to strengthen our efforts in the following five fields:

#### **i. Accelerating the collection and sharing of financial credit information**

The difficulty of financial inclusion services lies in risk control. Reducing

information asymmetry is key, and the availability of customers' credit information is a prerequisite. From a practical perspective, it is necessary to address key aspects. The first move is to improve the coordination level and play the catalytic role of the core sector. As for the obstacles encountered in the actual promotion, the level of coordination should be improved. The second move is to improve supporting regulations and sort out the information collection mechanism. The establishment of basic laws and regulations and supporting standards need to be accelerated. In particular, it is necessary to implement a supporting information collection mechanism to address existing problems. The third move is to upgrade the level of technology application and expand service functions. We need to take advantage of the customer credit information sharing mechanism to popularize evaluation methods, provide basic evaluation services, and encourage small- and medium-sized banks to use government's shared credit information to deepen financial inclusion services and promote the innovation and development of rural digital financial inclusion, enhance service efficiency as a whole, and improve the foundation for the market-based sustainable development of related businesses.

## **ii. Promoting the integration of service outlets**

With the gradual tilting of social resources to the rural communities, the number of outlets of various village-level service agencies has gradually increased, including community service sites and agent outlets of rural credit cooperatives, rural commercial banks or Postal Savings Bank of China, Agricultural Bank of China and other banking institutions, as well as the service outlets of e-commerce giants. By promoting the sharing of service sites, data, manpower, customers and other resources, the functions of different institutions can be complemented, the

efficiency of comprehensive services can be improved, financial institutions can attract rural customers through value-added services, and the accuracy of credit evaluation can be improved by using farmers' transaction data, thereby reducing credit risks and enhance the core competitive advantages. This can be realized by promoting market-oriented cooperation among institutions in the fields of finance, e-commerce, and logistics by strengthening government incentives. Areas with mature conditions may consider providing site support and guiding the development of a standardized cooperation model. This integration mechanism can help to promote the integration and expansion of functions of rural financial service outlets and e-commerce outlets, and enhance the overall attractiveness.

### **iii. Improving financial inclusion service mechanism along the industrial chains**

Supporting farmers to expand from agricultural production to agricultural processing and trade processes is a key step to increase farmers' income and an important way to improve financial inclusion services. The first move is to improve the financial services mechanism characterized by the in-depth and integrated financial cooperation. Efforts shall be made to promote the in-depth cooperation between the supply and marketing cooperatives, the rural credit cooperatives system and the farmers' specialized cooperatives from the procurement of agricultural materials to the processing, storage, transportation and sales of agricultural products, and develop a new type of rural cooperative financial organizations. The second move is to improve the driving mechanism by leading enterprises. With poverty alleviation in mind, efforts shall be made to combine the government incentives, mobilizing the enthusiasm of leading enterprises, achieving

market-oriented sustainable development, and improving the competition mechanism. The third move is to encourage powerful third-party market entities to explore and innovate industrial organization models. For example, e-commerce companies shall be encouraged to organize farmers to engage in production and processing, introduce customer demand in this process, promote the direct match between the supply and demand sides of agricultural products, in order to reduce transaction costs and enhance the matching of supply and demand.

#### **iv. Further strengthening the coordination mechanism**

The first move is to enhance farmers' production and management capabilities through vocational and technical training. Efforts shall be made to enhance the effectiveness vocational and technical trainings, pay more attention to improve the quality standard of trainings, and improve poor households' level of professional skills. The second move is to promote the integration of rural financial inclusion services and supporting policies of rural revitalization and industrial development. Efforts shall be made to promote financial institutions to shift their decision-making priorities downward and move the risk control forward, and enhance the flexibility in organizational structure, product development, and marketing and promotion. The third move is to encourage the integration of rural financial inclusion services with agricultural technology and agricultural machinery promotion, deep processing of agricultural products, and marketing of agricultural products, and promote financial institutions to optimize the product structure, staffing, operating processes, work standards, and risk control models, and enhance the complementarities and symbiosis with local industries. The fourth move is to promote the integration of the financial education, financial consumer protection,

and the product promotion and service penetration of financial institutions. Through the three-party cooperation among the government, financial institutions, and customers to promote the pertinence and effectiveness of inclusive financial services, strengthen anti-fraud education, and enhance the interests of vulnerable groups.

#### **v. Popularizing effective reform experience and models**

It is recommended to focus on the promotion of the following experience and models: Firstly, the experience of gathering and sharing credit information. We shall focus on establishing sound data collection and coordination mechanisms, break existing barriers, and promote successful practice and experience models in pilot areas. Secondly, accelerating the promotion of the integrated cooperation in rural supply and marketing, production and credit. On the basis of pilot exploration, we will promote successful experience and service models for common problems, such as promoting the establishment of farmers' production and management organizations, launching farmers' cooperative associations following the bottom up methodology, promoting coordination among all parties, large-scale operations, internalization of transactions and the formation of economies of scale and so on. Thirdly, it is recommended to promote micro-credit technology and computer modeling for customer credit analysis, focus on popularizing relevant technologies for small and medium-sized banks and improve the overall technical level of the financial industry. Fourthly, we should promote multi-station integration of rural services and optimizing resource allocation, enabling the provision of complementary integration of services, and promoting the integration and sharing of rural public service resources, improve the efficiency of financial inclusion

services. Fifthly, we should strengthen the popularization and training of financial knowledge, change our existing ideas by strengthening financial knowledge popularization and training, and promote win-win cooperation among different parties.

## **VI. Conclusion**

Digital technology can provide key support for improving the service performance of financial inclusion, but the extent to which the role of digital technology can be played depends on whether the basic conditions for the promotion and application of inclusive financial technology are met, including making the necessary IT investments and improving the collection and sharing mechanism of credit information. At the same time, digital financial inclusion can only help the fight against poverty from the perspective of improving supply-side services, and cannot solve the root cause of credit risks, such as the improvement of production and management capabilities of poor households. Sustained efforts are needed in order to enable advanced financial technology to provide better services to poor households with limited knowledge capabilities, and to be widely accepted. To this end, the future development of digital financial inclusion to promote poverty alleviation needs to solve three key issues: First, the cost sharing of financial institutions for IT investment. Second, how to establish a more effective credit information collection and sharing mechanism. Third, how to effectively reduce the credit risk of poor households.

On the other hand, it is necessary for users of digital technology to strengthen mutual connection and communication, and promote information exchange and

action coordination. Innovation, interconnection and sharing are the future development trends. In the process of driving digital financial inclusion for poverty alleviation, in addition to promoting innovative technology and service models, and promoting the sharing of customers and information in different industries, it is also necessary to promote business convergence and complementary functions to enhance overall efficiency, which specifically includes how to effectively promote the connection between the financial institutions and the poor households, promote the connection between the government and financial institutions and other market entities, support the supply side of the agricultural support services, and promote the match between demand and supply sides' of digital financial inclusion. This requires the explorations by taking advantage of the development achievements of digital technology innovative applications combined with local practical conditions, but also call for distinctive experience models from different places.

## **Appendixes:**

I. Key Findings from Demand-side Research

II. Main references

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## **Key Findings from Demand-side Research**

### **I. Basic information on field research and questionnaire survey**

From August to December 2018, the Research Institute of Finance of the Development Research Center of the State Council and Visa formed a research team to visit poverty-stricken areas of five provinces in the central, western, Northeastern regions of China, and held discussions with government departments related to agriculture, rural areas, and rural farmers, and regulatory authorities, various types of rural financial institutions, as well as farmers' cooperatives and poor households at provincial and county levels. Furthermore, the research team selected 38 poverty-stricken counties in 14 provinces of 14 designated national contiguous impoverished regions of China to conduct a demand-side survey. A total of 587 valid questionnaires were collected through the survey work, with an average of approximately 15 questionnaires per county. In addition, 178 questionnaires from 71 non poverty-stricken counties in contiguous impoverished areas were collected as a control group to compare the similarities and differences between poverty-stricken counties and ordinary rural areas in terms of inclusive financial services.

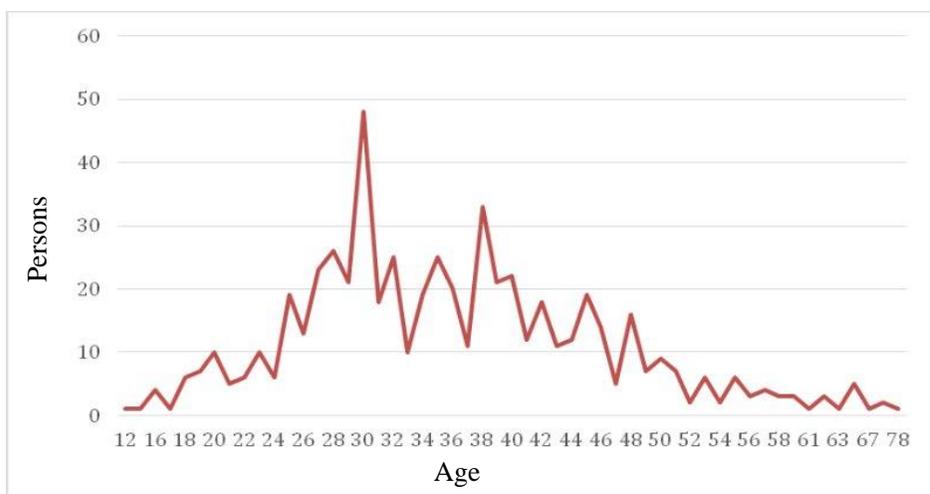
The survey mainly used a randomized sampling method within a specific geographic scope. On the basis of designing the survey questionnaire on “Farmers’ Access to Financial Services in Poverty-stricken Areas 2018” (including a total of 203 questions), a software company was appointed with the task of developing

survey instruments to select 38 national poverty counties for sampling survey. All the questionnaires were completed through online applications. JD Digit assisted data collection process through leveraging their nationwide rural financial stations<sup>14</sup> where their staff randomly select a certain number of farmers visiting rural financial stations and help facilitate them fill in and submit online questionnaires. After the software company had collected data in the back office, these data were analyzed by the research team members.

## ii. About the survey respondents

(1) Age distribution. The average age of the survey respondents was 36.11 years, and the age distribution is shown in the following figure (Appendix Figure 1).

**Appendix Figure 1: Age distribution**

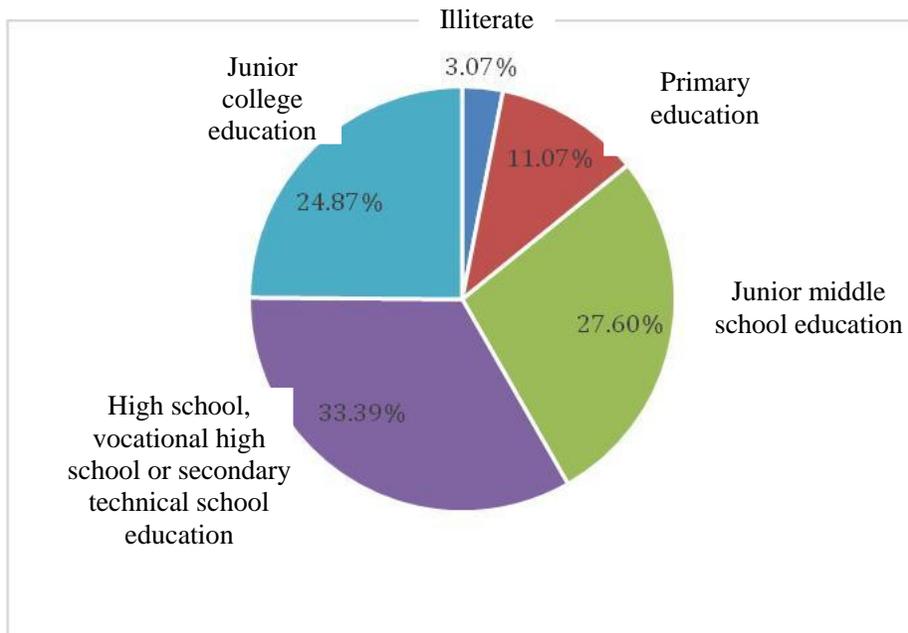


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<sup>14</sup> Established by JD Digit, the JD financial stations mainly provide ecommerce services for agriculture products, daily consumption goods, labor market information, and financial product consultation services. By end of December 2018, more than 10,000 JD financial stations have been established nationwide.

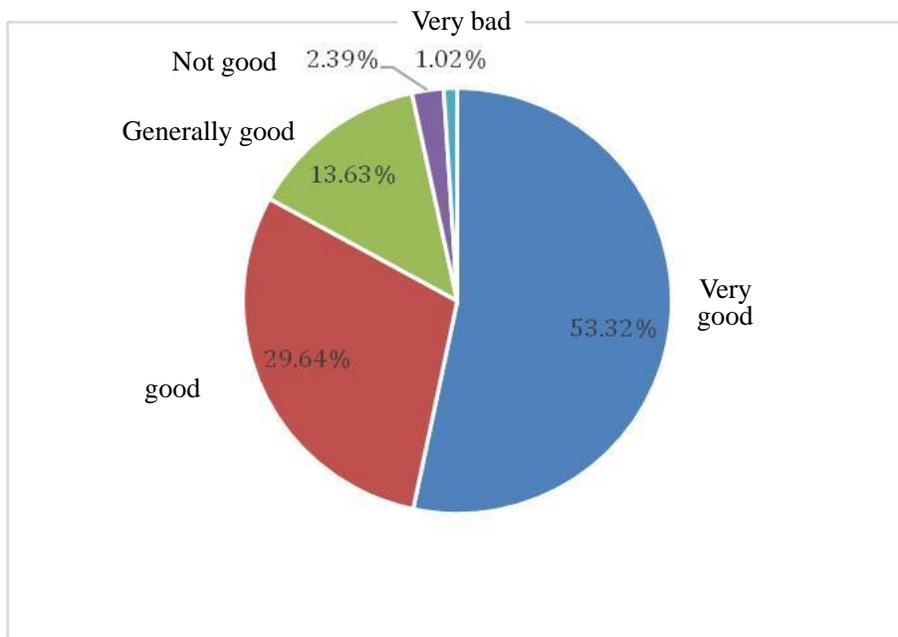
(2) Education background. The overall educational background of the respondents was at the lower-middle level. The proportion of illiterate farmers surveyed was 3.07%; the proportion of the surveyed farmers with a primary education level was 11.07%; the proportion of the surveyed farmers with junior middle school education was 27.6%; the number of farmers surveyed with the high school, vocational high school or secondary technical school education was the highest, accounting for 33.39%; and the proportion of farmers surveyed with junior college education and above was 24.87%. (Appendix Figure 2)

**Appendix Figure 2 The education level**



(3) Health status. Most of the survey respondents, claimed that their health status was “very good”, accounting for 53.32%; only 3.41% indicated that their health status was “not good” and “very bad”.

**Appendix Figure 3: Health status**



### **iii. Survey limitations**

(1) Limitations of the survey method. Considering that the people who visit JD Rural Financial Stations for services is more likely to be equipped with relatively high financial capability among the locals, hence they cannot fully represent the average level of local poor farmers.

(2) Limitations of survey analysis. Because the survey is based on the demand side of rural farmers in poverty stricken areas, the recovered data cannot fully represent the financial supply side of poor rural areas as the survey is affected by such factors as the subjective nature of the surveyed farmers and their financial knowledge levels.

In order to reduce the impact of above limitations, this paper also cites the results of similar demand-side survey conducted in 2016-2017 in the contiguous impoverished areas of the Southern Region of Daxing'anling Mountain and surrounding impoverished counties (hereinafter referred to as the 2017 Daxing'anling Survey) for further analysis.<sup>15</sup>

## **II. The supply of financial inclusion services for poverty alleviation**

### **i. The access to and quality of financial services need to be optimized**

In the questionnaire survey, 68.65% of the survey respondents indicated that they did not have access to bankcard-withdrawal service points in rural area or integrated financial service stations, and 50.09% respondents indicated that they did not have access to (face-to-face) financial services in their respective villages, which is similar to the results of the 2017 Daxing'anling Survey. When asked about “Which areas do you want financial institutions to improve?”, the response with the highest proportion is the “simplified process”, which accounts for 64.05% of the survey

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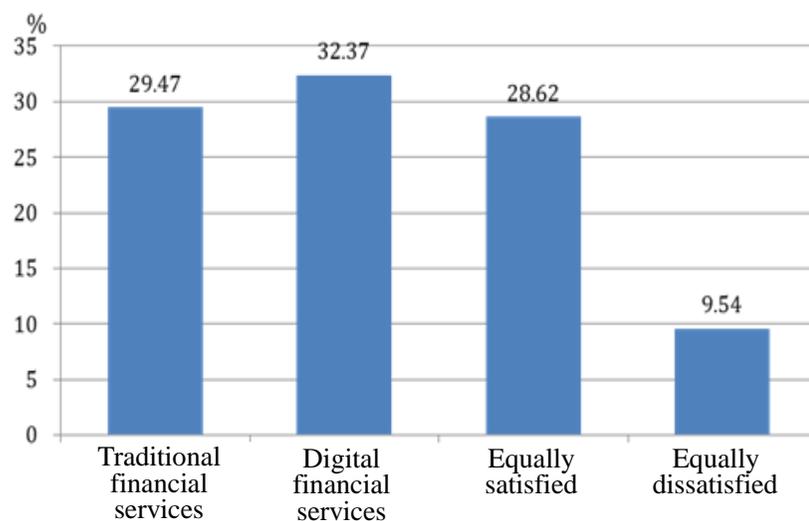
<sup>15</sup> In 2016, China Foundation for Development of Financial Education (CFDFE) and Visa jointly launched the “China Financial Inclusion and Education (Jinhui Project) International Demonstration Zone” project in the contiguous impoverished area of the Southern Region of Daxing'anling Mountain and surrounding impoverished counties. The project covers 41 state-level poverty-stricken counties in Jilin Province, Heilongjiang Province and Inner Mongolia Autonomous Region, with the goal of benefiting 5 million farmers and herdsmen within three years. The survey research team (organized by CFDFE and undertaken by Changchun Finance College) went to 8 counties in Jilin in June 2016 and went to 11 counties in Heilongjiang and Inner Mongolia in June 2017 to conduct a demand-side survey, and went deep into the natural village of poverty-stricken counties to conduct face-to-face interviews with farmers and herdsmen. 1,258 valid questionnaires from Jilin Province and 1752 valid questionnaires from Heilongjiang Province and Inner Mongolia Autonomous Region were obtained, totaling 3010 questionnaires. On this basis, the *Rural Financial Capability Analysis Report for the Contiguous Impoverished Areas of the Southern Region of Daxing'anling Mountain and Surrounding Impoverished Counties* was finally formed. When analyzing some of the questions in this chapter, the research team used the data findings from above mentioned research to conduct comparative analysis or used the results as supplementary arguments. Data source: China Foundation for Development of Financial Education (CFDFE), Changchun Finance College, Chinese Academy of Financial Inclusion at Renmin University of China (CAFI), Visa.: *Rural Financial Capability Analysis Report for the Contiguous Impoverished Areas of the Southern Region of Daxing'anling Mountain and Surrounding Impoverished Counties*, 2017.

respondents.

## ii. Fintech improves the delivery of financial services for poverty alleviation

In the survey, nearly 90% of the survey respondents indicated that they have used financial services of Internet companies (mainly provided by Internet companies such as Tencent, Alibaba, JD Digit). In addition, in the survey on customer satisfaction, farmers' satisfaction with digital financial services such as the Internet-based financial services has surpassed that with traditional face-to-face financial services (see Appendix Figure 4).

**Appendix Figure 4: Comparison of attitudes towards traditional face-to-face financial services and towards digital financial services (single choice from four options).**

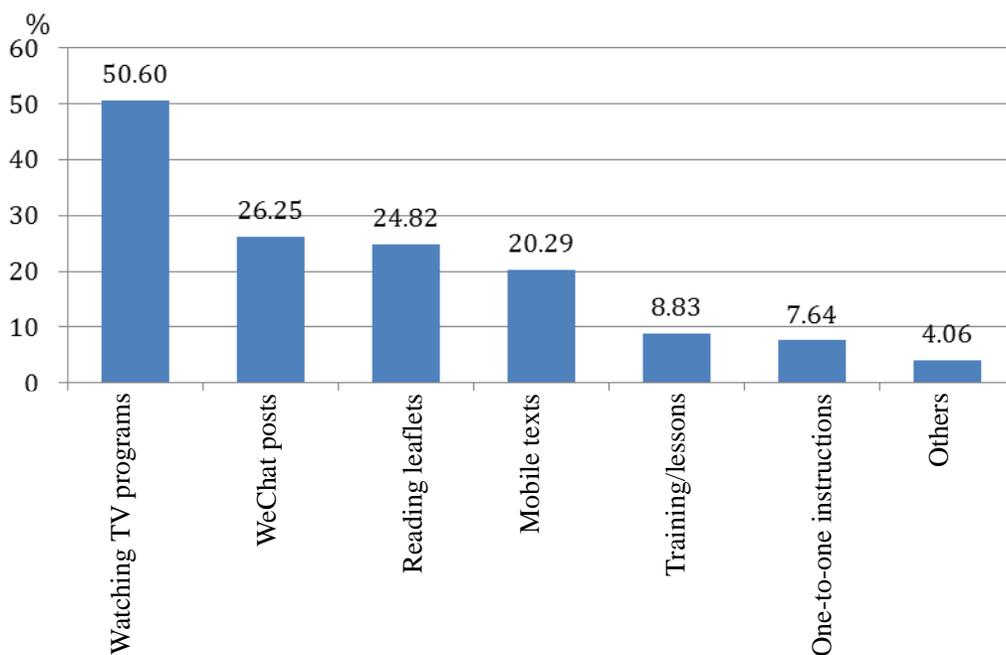


## iii. Insufficient supply of financial education

According to the survey, 28.5% of farmers participated in financial education and training in 2018, which is slightly higher than the proportion of about 10% in the

2017 Daxing'anling Survey and also has a large space for improvement. The main channels for obtaining financial knowledge are through watching TV, reading Wechat posts occasionally, lacking the channels to access the targeted and systematic financial knowledge (see Appendix Figure 5).

**Appendix Figure 5: The main channels for obtaining financial knowledge (unit: %)**



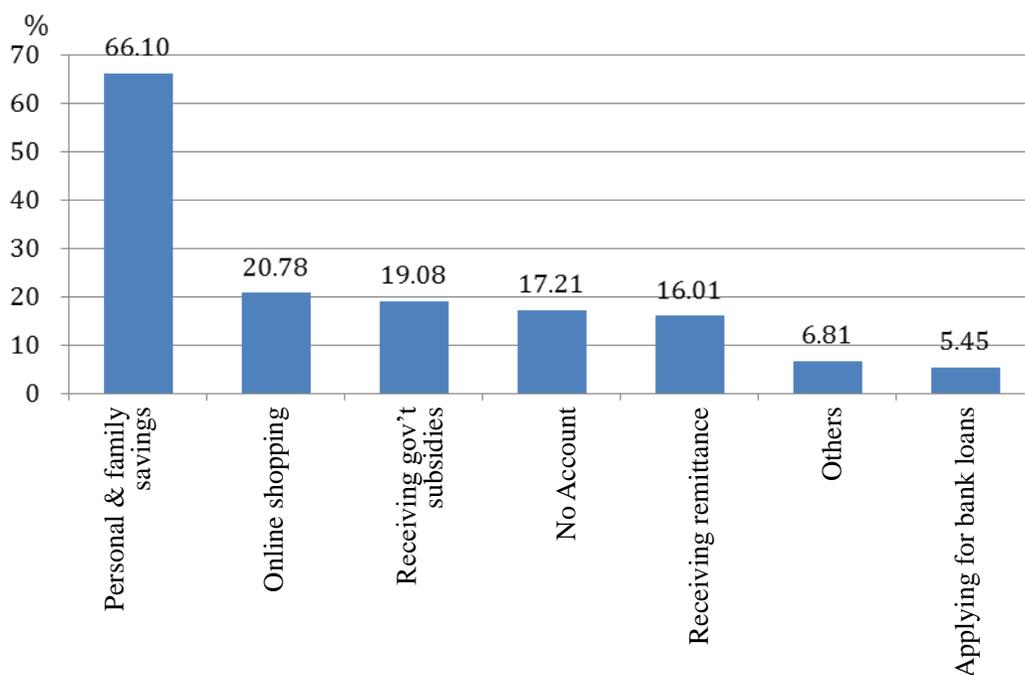
As for the question of “Did the banks or rural credit cooperatives you often visit provide you with financial knowledge?” 63.96% of the farmers indicated that they did not receive education or information from financial institutions, and 19.57% of the farmers indicated that they did not know whether there was financial education or information. The two responses combined accounted for more than 80% of the total responses.

### **III. The demand for financial inclusion services for poverty alleviation**

### i. Increasingly diversified financial needs

In terms of the use of loans, in addition to agricultural production, the need for large-volume consumption and small daily consumption, medical treatment, and children's education all account for a certain proportion; and the purpose of open a bank account largely due to savings, online shopping, and receiving remittances (see Appendix Figure 6). In addition, with the increase of idle funds<sup>16</sup>, the demand for financial management among farmers has gradually increased.

**Appendix Figure 6: Objective 3 apply for bank accounts (Unit:%)**



<sup>16</sup> It was found in the survey that over 30% farmer households were in possession of idle funds.

## **ii. Inadequate effective financing demand**

In the survey on “Do you currently have financing needs?”, 74.28% of the surveyed farmers indicated that they did not have financing needs; in the survey on “the general use of idle funds in your home is”, nearly 80% of the surveyed farmers chose “save funds in the banks”. Among the surveyed farmers who applied for loans in 2018, 43.05% of the loan applications got rejected

## **iii. Digital finance has become a new channel for meeting financial needs**

Regarding the question of "which Internet companies' financial services have you used?", only 10.9% of the surveyed farmers chose the option of having never used Internet companies' financial services. The proportion of mobile banking users among the survey respondents was 42.61%, which exceeded the proportion of online banking users (33.22%).

The above results show that farmers in poverty-stricken areas who have access to E-commerce giants are more than eager to embrace digital finance.

## **iv. Financial knowledge and limited willingness to learn**

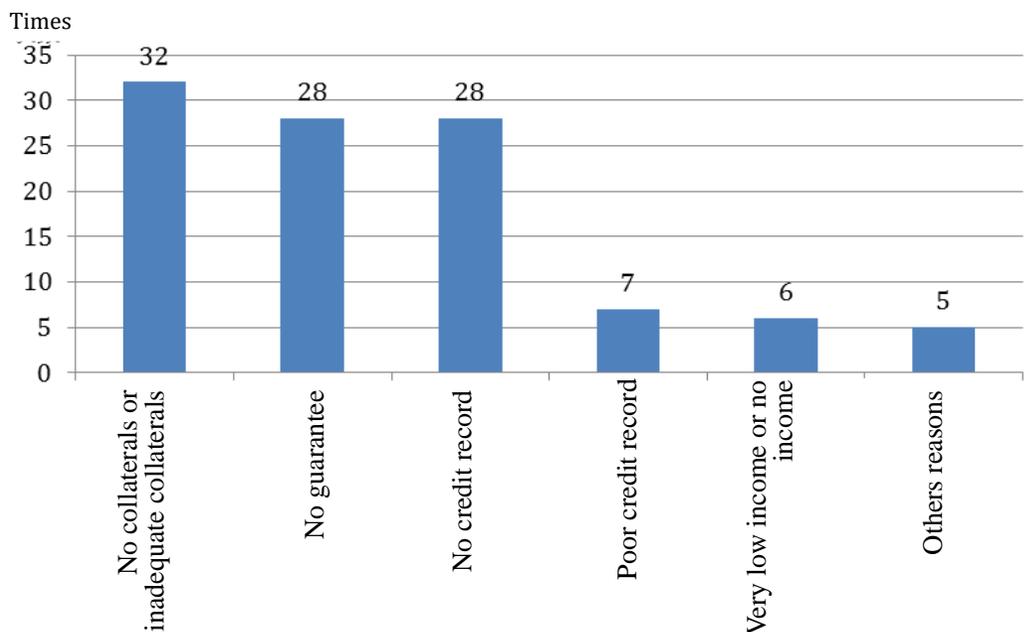
In the survey on “Do you have the following financial knowledge?”, the financial knowledge most acquired is how to distinguish counterfeit currency, and only 6.44% of the survey respondents understand the loan application procedures of banking financial institutions. The surveyed respondents expressed limited willingness to receive financial education. Only 36.28% indicated that they would participate in the education if there is “training on financial knowledge in the next 6 months”.

When asked "Did you take the initiative to ask relatives and friends to learn financial knowledge (how to apply for loans, how to deposit, how to use online banking and mobile banking) in the past year,?", the surveyed respondents who answered "no" and "don't know" accounted for 86.63% of the respondents.

#### IV. The obstacles facing the financial inclusion services for poverty alleviation

Survey respondents indicated the main reason for their failure to pass the loan review was the lack of collaterals and guarantee or credit record (see Appendix Figure 7).

**Appendix Figure 7: The main reasons for the failure to pass loan review**



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