

Regional Development of China's Inclusive Finance Through Financial Technology

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Abstract

Financial technology, commonly used the term as FinTech, is a key emerging driver of inclusive finance. This is also one of the emerging issues of finance as well as financial research. This research is done with the purpose of showing the present status of China's FinTech in inclusive finance development. In addition, the study raises regional disparity and critical issues related to the inclusive development. A secondary data analysis methods are systematically carried out to demonstrate the present situation of internet finance in the development of inclusive finance in China, as well as the developing status of different provinces through internet finance. The ultimate finding of this research is that, despite significant development in China's financial system, there is still a development inequality between the most and least developed regions. This study also identifies some important issues that should be taken care of by the policy makers. This research is done from authentic data also sources with appropriate explanations, which help the readers, academicians, researchers, and others to get comprehensive understanding of China's FinTech and its influence on inclusive development.

Keywords

internet finance, FinTech, inclusive finance, financial inclusion, Chinese economy, mobile payment, inclusive development

Introduction

It is important to reduce the financial crisis, improve the financial equity, reduce financial exclusion, and build a sustainable inclusive finance to develop the economy of a country (Gomber et al., 2018a; Salampasis & Mention, 2018; Zhou et al., 2018). It is also essential to reduce the economic disparity between the rich and the poor. In this context, inclusive finance plays crucial roles in stimulating economic expansion. All core financial forces need be developed to achieve the sustainability of the financial system. This means that both rural finance and urban finance need to be developed on an equal footing (Anagnostopoulos, 2018; Ding et al., 2018). In addition to the development of the urban economy, a well-developed inclusive finance is one of the most critical issues in balancing economic and financial development (Fan, 2018; Zhou et al., 2018). Also, the developed inclusive finance can increase gross domestic product (GDP) and maximize the country's long-term social welfare (Hao, 2017). However, the development of inclusive finance has come with different success factors that differ from country to country, and is seen as a broader factor in national and global development. That is why different international organizations, including the World Bank Group (WBG), the Alliance for Financial Inclusion (AFI), and the Global

Partnership for Financial Inclusion (GPMI), are helping to develop the inclusive finance in different ways. In this prospect, internet finance is regarded to be one of the most influential tools in the development of inclusive finance. In a few years, China's inclusive finance has changed rapidly and they are regarded as to be the global FinTech leader of the world. Even though the revolutionary change started since 2004, the massive development occurred after 2013. By developing the rural economy, it is growing day by day. It also contributes to the sustainability and strength of China's economy.

Economic development is well linked to inclusive finance (Long, 2016; Mitra & Das, 2018; Zhou et al., 2015, 2018), and inclusive finance is deeply connected to inclusive growth (Siddik & Kabiraj, 2020). Therefore, inclusive growth plays important roles in developing the economy. More specifically, China's inclusive finance is one of the

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most prominent examples in the last two decades. China's rapid growth of FinTech significantly influences its development of inclusive finance. All over the countryside, people use Fintech, which creates massive opportunity to financial access to rural people. It has been working as strong helping hand as their inclusive development. Easy access of financial products and services makes the rural life much easier than the earlier days. People from countryside easily start their business, develop family business, small- and medium-sized enterprises (SMEs), and involve in rural investment. These lead China's inclusive finance toward a stable rural development. As the economic development and financial inclusion are directly related, most of the studies are focused on the individual factors of financial inclusion. Few studies have addressed the FinTech or internet finance context in the development of inclusive finance; specifically, emphasizing the inclusive development through FinTech is very rare. Even a small number of researches illustrated the inclusive developing status of all provinces of China. Researchers have found this research gap. After exploring the research gap and the literature of FinTech elements on both the development of inclusive finance and the rural development, the subsequent stages of the development of China's inclusive finance and rural development through FinTech are presented in this research. The view of different authors, researcher, fellows, and others has been gathered and considered here to accomplish the research objectives. This research aims to provide an essential discussion from the understanding of FinTech and inclusive finance. However, after studying the related literature of this research, specific objectives are specified. The objectives are to identify the present circumstances of related forces of FinTech in inclusive finance (Objective 1), to illustrate the dispersion of regional inclusive development of all provinces through FinTech (Objective 2), and to identify the critical issues existing in the development of inclusive finance through FinTech (Objective 3).

All the three objectives are accomplished here sequentially. The discussion on Objective 1 is presented in the section "Present Status of FinTech and Inclusive Finance." The second objective is set out in the section "Developing Status by Region." Finally, the third objective is introduced in both the finding sections with a remark of *Critical Issue*. In total, eight critical issues are identified in these studies.

Literature Review

Most previous studies have focused on internet finance, FinTech, and inclusive finance. Most of the researchers highlight the online payment systems as one of the most influential forces of inclusive development. China's online shopping marketplace is also remarkable part of their rural development. Based on these studies, Table 1 shows a comprehensive overview of the literature. This overview includes the content of this study, the author's information, the findings

of past studies, the shortcomings or challenges of these studies, and future research directions.

Method

We conducted this research based on some studies conducted by Guo et al. (2016), Huang et al. (2016), J. Wang et al. (2016), Long (2016), Lee and Shin (2018), and Xie et al. (2016). Also, a number of studies related to inclusive finance and FinTech have been analyzed as based on articles such as research done by Zhou et al. (2018) and Tam and Hanh (2018). Whatever, internet finance is associated with the existing financial institution in China, such as banks, insurance, securities, and investments companies, and provides innovative financial solutions (Hung & Luo, 2016; Thompson, 2017). In this prospect, different phenomena, changing effects, and the relationship among the technologies to explore the influence of internet finance on inclusive finance are analyzed here from different perspectives (Cukier et al., 2009). A systematic literature review analysis is followed to accomplish the goal of this study.

Data Collection and Content Analysis

Database for FinTech or internet finance is not as rich as other financial topics, and inclusive finance database is not so widespread. That is why the data used in this article is collected from variety of sources using multiple methods (D. H. Shin & Park, 2017). When using content analysis, most articles were collected from secondary sources (Hasan et al., 2018; Hasan & Mahmud, 2017a, 2017b; Nekmahmud & Rahman, 2018; D. H. Shin & Park, 2017). This study mostly based on finding out the critical phenomenon of FinTech and inclusive finance with an interpretative approach from the secondary data (Majedul Huq et al., 2016; Zavolokina et al., 2016). Many research articles, review articles, case studies, and conference paper have identified and collected from secondary sources. Following the research done by Hasan et al. (2019), data were collected in a systematic process. At first, the two best-indexed databases Scopus® by Elsevier B.V and Web of Science Core™ were selected to maintain the quality of the collected articles. After that, we emphasized the search options of some reputed journal publishers such as Elsevier, Emerald, Springer, Taylor & Francis, Wiley, Sage, and so forth. These publishers usually publish most of the prominent journals of business, finance, and economics. Also, data were collected from Google Scholar and ResearchGate, which are the platforms of the researchers and academician to collect the related research articles. Different studies based on FinTech, internet finance, digital finance, inclusive finance, rural finance, and financial inclusion are centralized here. In addition, some articles were collected from the World Bank database, which is regarded as one of the best databases for financial inclusion research. Whatever, all variables are

Table I. A Comprehensive Overview of the Key Aspects of This Research.

Content	Authors	Findings	Shortcomings/challenges	Future research direction
Financial technology	Ashta & Biot-Paquerot (2018); Chiu (2017); Davis et al. (2017); Gabor & Brooks (2017); Gai et al. (2018); Gomber et al. (2018a); Greenspan (2000); Huang et al. (2016); G. Li et al. (2017); Long (2016); Puschmann (2017); Salampasis & Menton (2018); Shim & Shin (2016); G-24 (2018)	<ul style="list-style-type: none"> • FinTech has five technologies such as security and privacy, hardware and infrastructure, data technology, applications and management, and service models • The exploration of FinTech interactions is related to social and political context • The successful development of China's FinTech industry is directly related to its technological development and the policies of the Chinese government • There are some reasons behind the growth of FinTech: cheap communication (mobile, internet), big data analysis allows efficient targeting, people are comfortable with online money, bank staff lose interest in being locked inside a megabank, low-interest rate, and banking regulation side-stepped • Digitization of the financial services industry, changing role of IT, and changing consumer behavior • Online payment boosted Chinese online shopping. It motives to increase GDP and maximize China's social welfare • Financial transparency for all sector has developed • Branches and ATM both are still lower than Brazil (another country moving with financial inclusion) • Some encouraging factors of mobile payment are socioeconomic conditions, cost efficiency, diffusion of mobile phones, convenience, new initiatives, and so on • Requirements for mobile payment project deployment: usability and simplicity, universality, interoperability, cost and speed, integrity, security, trust, and privacy, local market understanding, and cross-border payments • Digital finance business functions include digital financing, investment, digital currency, payment, insurance, financial advice, and so on • Even if the internet influences the systems of organizations and financial transactions, the basic functions of financial activities remain unchanged • The IoT is currently emerging as the next megatrend in technology, with repercussions across the spectrum of society and business • Infrastructure have removed different challenges with the appearance of convergence services; changes are beginning to occur • Advanced technology is drastically revolutionizing industry and society and is becoming an integral part of everyday life 	<ul style="list-style-type: none"> • The challenges within the financial services sector are market participants, global interoperability, consolidation activity, collaboration models, technological development, and tech-company disruptions • After 2015, almost 1,263 P2P failing platforms closed, and every 3 P2P companies became a problem platform • The entry barriers of P2P company in the market are low because they just need to register as ordinary commercial enterprises. In this case, they have no strict restrictions on the business scope, ratio of registered capital, risk monitoring, evaluation capacity, and so on • Sometimes FinTech service companies face different difficulties in meeting the demand for a large number of customers • Lack of information usages limit the risk warning functions and the evaluation of the credit reporting system • Sometimes it faces problems in efficient operations • Financial exclusion is the major problem • Inclusive finance research in all over China is still not developed; even there is a lack of comprehensive representation of those researches. • Massive numbers of people are excluded in accessing financial services in all form of the economy—macro, micro, and meso • Some challenges are heavy regulations and restrictions, limited collaboration, underdeveloped ecosystem, security problems, and so on • In some area, the crowdfunding still is in the initial stage of its development 	<ul style="list-style-type: none"> • Data-Driven FinTech Framework (DF2) has proposed to facilitate and standardize future FinTech researches as well as technical deployments • A comparison should be made in the future of Chinese FinTech industries to other countries. • Sustainability of inclusive financial systems will be explored • Each part of digital finance business functions should be explored in future research • What will be the performance, and the side effects of digital finance under diverse market situations in the entire economic cycle? • The justifications and variability (e.g., accessible financial service, profitability, funding costs, effectively and prudently, and commercial sustainability) of different finance will be explored • The relationship between digital finance or FinTech and systemic risks shall be explored • "First-mover advantages," financial safety, and stability shall be explored

(continued)

Table I. (continued)

Content	Authors	Findings	Shortcomings/challenges	Future research direction
Inclusive finance/financial inclusion	Aggarwal (2014); Chakravarty & Pal (2013); Gabor & Brooks (2017); Hao (2017); Helms (2006); Huang et al. (2016); Patwardhan (2017); Sharma et al. (2013)			
Rural development/microfinance in China	Ding et al. (2018); Long (2016); S. Wang & Richter (2009)			
Online/mobile banking/online payment	Chen et al. (2017); Inan (2018); Jun & Yeo (2016); Thompson (2017); Yoon & Jun (2018)			
Internet finance/digital finance	Boyes & Stone (2003); Claessens et al. (2002); Gomber et al. (2017); Guo et al. (2016); Helms (2006); Huang et al. (2016); Hung & Luo (2001); Khraisha & Arthur (2018); Shen & Huang (2016); J. Wang et al. (2016); Wonglimpiyarat (2018); Xie et al. (2016); Gomber et al. (2018a); Gomber et al. (2018b); Gomber et al. (2017)			
FinTech and others	Anagnostopoulos (2018); Buchak et al. (2017); Cumming & Schwienbacher (2018); Fan (2018); Gimpel et al. (2018); Gomber et al. (2018a); Gozman et al. (2018); Hornuf & Haddad (2016); Hung & Luo (2016); Jagtiani & Lemieux (2018); Jakšić & Marinč (2018); Lee & Shin (2018); Leong et al. (2017); Y. Li et al. (2017); Ma & Liu (2017); Nakashima (2018); Ohdoi (2018); Shim & Shin (2016); D. H. Shin (2016b, 2016a); D. D. Shin (2019); D. H. Shin & Lee (2017); D. H. Shin & Park (2017); Todorof (2018); Zavalokina et al. (2016)			

Note. IT = information technology; GDP = gross domestic product; IoT = Internet of Things.

selected by relating to internet finance, FinTech, and inclusive finance. Here, the working population and nonworking population, and constant population and moving population have characterized as parts of the population. From this aspect, we have just considered the population by citizenship. For instance, total population by province to province is selected according to the citizenship criteria.

Data Analysis and Interpretation

This study shows the developing status of inclusive finance development through internet finance. According to the China Internet Network Information Center (CNNIC), almost 97% of people who use internet use internet on their mobile phone. That is why smartphones and the internet are the two most important variables for the development of inclusive finance through internet finance, and here we related internet use with the developing status. However, Table 2 shows ranking and percentile calculation to show the state of developing of all provinces based on internet finance assumptions. To show a more accurate result, the APU percentage calculation method is used here (*in this case, A for Area, P for Population, and U for User*). This method is used here because the areas of all provinces are not the same.

If we count only internet user, Shanghai stands first rather than Beijing, because the number of internet users in Shanghai is bigger than in Beijing. However, Beijing is standing here as first because the ranking is calculated considering not only the users but also the area and total population of the respective provinces. Therefore, inaccurate ranking may arise only by user ranking. However, the percentage calculated by the APU method shows that the percentage in Beijing is higher than that of Shanghai. In this sense, the percentage of per km² internet user from per km² population is calculated here to show a more accurate developing status. The APU formula is given below:

$$\text{Area - Population - User (APU) unit} = \frac{\frac{\text{Internet User}}{\text{Total Area (km}^2)}}{\frac{\text{Total Population}}{\text{Total Area (km}^2)}} \times 100$$

After identifying the percentage of internet users per km² from the per km² population, we ranked it according to rank and percentile calculation methods from MS Excel. Whatever, digital finance or FinTech are the technological innovations and applications that make the financial services and processes more efficient (Thompson, 2017). For that reason, this study interprets the data sequentially in a user-friendly way relating to finance. All the data are manually categorized by its nature. The central theme of this research is also extracted from the reviewed articles, books, and other documents. The sequential relationships between all variables are interpreted in a reader-friendly way. Some direct

quotations are quoted to make the readers understand better. Here, we have used content analysis, infographic presentation (Lankow et al., 2012; Siricharoen & Siricharoen, 2015; Smiciklas, 2012), and exploratory research method to achieve the goal of this study (Stoekli et al., 2018; Zavolokina et al., 2016). The relationships between the data are presented in different infographic tools, such as graphs, charts, and tables (Siricharoen & Siricharoen, 2015).

Research Framework

A systematic research process is followed here. The concept of a research framework is taken from Hasan et al. (2019) to finish this article. A systematic presentation of the entire research process for the study is presented in Figure 1.

Theoretical Framework

Inclusive finance is directly related to the accessibility of financial services that comprise a wide range of financial products and services accessible to low-income and unbanked people, mainly living in rural area. Also, it means that all the adults should have access to appropriate financial product and services. Typically, this process starts with opening a bank account or a financial transaction account (Demirguc-Kunt et al., 2017). In most cases, traditional financial products and services overlook rural people because of their meager income. That is why the innovative and updated financial services are working to provide better access opportunity to those financially excluded people. It helps them to save money, support their business and families, hedge against every day's risks, and promote their financial activities. These new and innovative financial services fully undergo through the technological innovations. These technological innovations play very important roles in providing better financial access to rural people. These services are referred as FinTech, which is very popular in the present times as the financial market, and its rapid development is an emerging issue of the finance world (Casanova et al., 2018; Gai et al., 2018; Gimpel et al., 2018). It is the combined form of "Finance" and "Technology" (Zavolokina et al., 2016). The terms "Internet finance," "FinTech," and "digital finance" are almost similar in meaning and are used interchangeably in China as well as all over the world (Shen & Huang, 2016; WBG, 2018; Xie et al., 2016). Beyond the traditional financial systems, the involvement of FinTech in the inclusive financial sector is reflected by the emerging issue FinTech that considers the fastest growing innovations in the technology industry and financial markets (Long, 2016). The FinTech services comprise wide range of financial services such as online banking, third-party payment, direct sales of funds, online insurance, crowdfunding, online banking, and so on (Claessens et al., 2002; Hill & Hill, 2018; Salamspasis & Mention, 2018). Whatever, the implications of FinTech on

Table 2. Inclusive Finance Forces in China by Province (In Ten Thousand).

Inclusive Finance Forces in China by Province (in Ten Thousand).Province name	Area (per ten thousand km ²)	Population (per ten thousand km ²)	Internet user (per km ²)	% of internet users according to ten thousand population	Rank	%
Beijing-BJ	1.68	1,293.45	1,005.95	77.77	1	100.00
Shanghai-SH	0.62	3,903.23	2,888.71	74.01	2	96.60
Guangdong-GD	19.71	558.04	407.1	72.95	3	93.30
Fujian-FJ	12.31	314.7	217.55	69.13	4	90.00
Zhejiang-ZJ	10.18	549.12	356.78	64.97	5	86.60
Tianjin-TJ	1.13	1,382.3	884.07	63.96	6	83.30
Liaoning-LN	15.1	289.93	181.52	62.61	7	80.00
Jiangsu-JS	10.26	779.63	439.86	56.42	8	76.60
Shanxi-SX	15.71	234.37	129.54	55.27	9	73.30
Xinjiang-XJ	164.69	14.56	7.87	54.05	10	70.00
Qinghai-QH	72.1	8.22	4.44	54.01	11	66.60
Hebei-HB	20.27	368.52	195.17	52.96	12	63.30
Shandong-SD	15.33	648.86	339.66	52.35	13	60.00
Shaanxi-SA	19.58	194.74	101.58	52.16	14	56.60
Nei Menggu-NM	117.75	21.4	11.13	52.01	15	53.30
Jilin-JL	18.7	146.15	74.97	51.3	16	50.00
Hainan-HN	3.43	267.35	137.03	51.25	17	46.60
Hubei-HU	18.75	313.87	160.48	51.13	18	43.30
Chongqing-CQ	8.2	371.71	189.76	51.05	19	40.00
Ningxia-NX	6.64	101.66	51.05	50.22	20	36.60
Heilongjiang-HL	46.36	81.95	39.58	48.3	21	33.30
Guangxi-GX	22.04	219.51	100.41	45.74	22	30.00
Xizang [Tibet]-XZ	122.16	2.71	1.22	45.02	23	26.60
Jiangxi-JX	16.48	278.64	123.48	44.32	24	23.30
Hunan-HN	21.05	324.09	143.14	44.17	25	20.00
Anhui-AH	13.99	442.89	194.5	43.92	26	16.60
Sichuan-SC	48.7	169.65	73.41	43.27	27	13.30
Henan-HE	16.7	570.78	246.11	43.12	28	10.00
Guizhou-GZ	17.4	204.31	87.59	42.87	29	6.60
Gansu-GS	36.65	71.21	30.04	42.19	30	3.30
Yunnan-YN	43.62	109.38	43.37	39.65	31	0.00

Source. Authors' explanation.

Note. Table 2 presents data for the area, population, and internet users of all the provinces of China in 2018. The percentage of internet users is a key finding of this figure based on data per ten thousand people. According to the internet user data, a list with ranking is made here. The ranking includes all 31 provinces and shows the present developing status according to internet finance.

inclusive finance pushes forward significant rural growth. Sometimes, FinTech is regarded as the blessing of the development of inclusive finance and rural development. In addition, the development of inclusive finance promotes the growth of the economy, standard of living, poverty reduction, disparity reduction, and agriculture growth. The development of these forces brings ultimately the inclusive development, which promotes the development to sustainable long-term economic growth (Salathia, 2014). The rise of new technology allows financial products and services access to the bank premise without physical presence. The concept of automated teller machines (ATMs), agent banking, mobile banking, and mobile money are the best examples. Mostly, these services help provide better financial

access opportunity to the rural people which leads to the development of rural business, SMEs, and rural investment. These developments ultimately lead the rural development. Figure 2 presents the theoretical framework of inclusive development.

Present Status of FinTech and Inclusive Finance

China has the largest number of mobile phone users. It is easy to know account balance, billing payments, transaction alerts, security alerts, account details, account modification, and money transfer. Therefore, the mobile phone is the most essential device of technological communications. A few years ago,

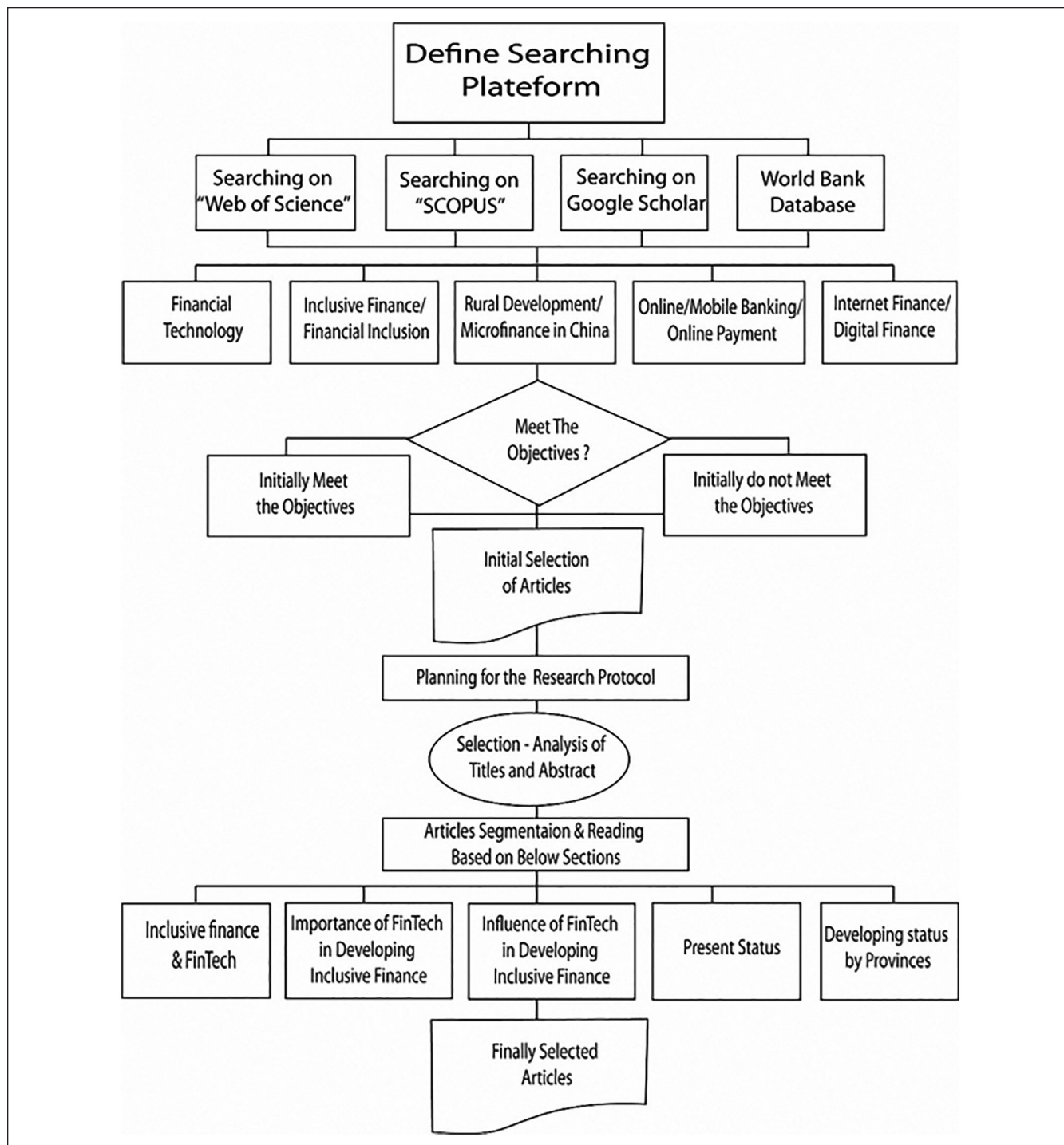


Figure 1. A framework for the systematic research process (Hasan et al., 2019).
 Source. Authors' explanation.

people were not used to using smartphones, the internet, and mobile payment. They were just used to using the internet on personal computers. However, nowadays, most people, especially young people, use smartphones and the internet for daily social and financial communication. However, according to Figure 3, nearly 41% (almost 600 million) out of the total

populations are not using smartphone and the internet. These people are out of the modern financial facility such as online payment, mobile payment, internet banking, POS (point-of-sale) device using, ATM card using, and some other services.

Most of China's cities have already developed with various modern and technological facilities. That is why most

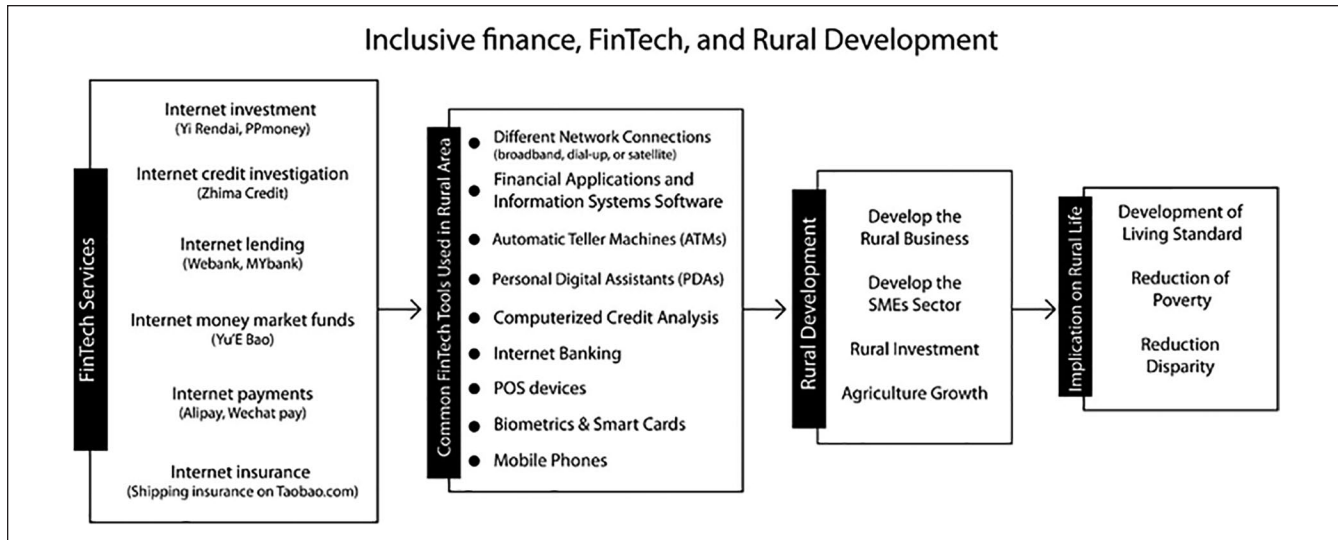


Figure 2. Theoretical framework of inclusive development through FinTech.

Note. This concept of the theoretical framework of this study is taken from D. H. Shin (2016b), D. H. Shin and Park (2017), and Hasan et al. (2019). The figure illustrates the step-by-step process of inclusive development through FinTech.

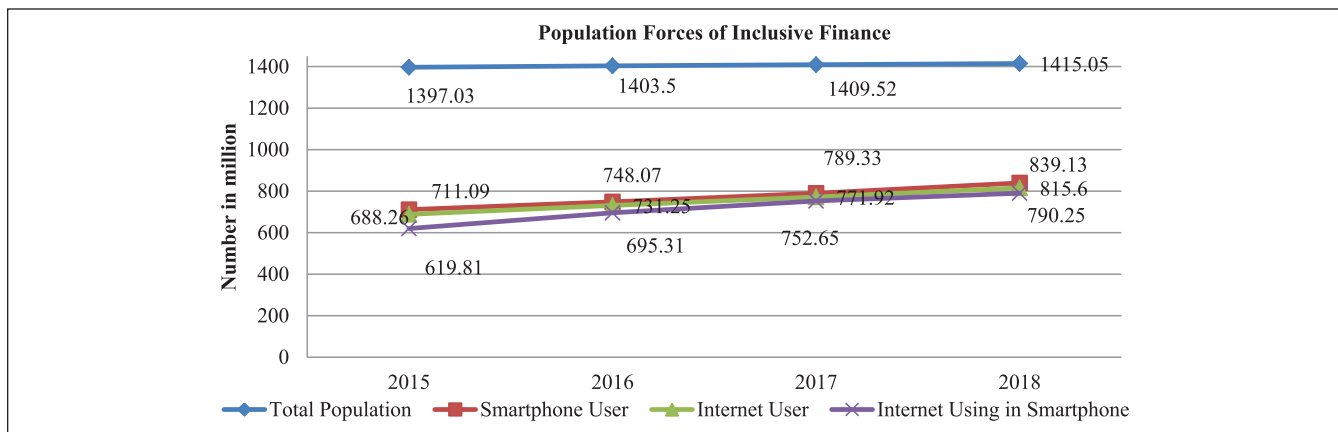


Figure 3. Forces related to inclusive finance.

Source. Statista, Worldometers, China Internet Watch, and Knoema.

Note. The figure shows the relationship between China's total populations, smartphone users, and internet usage. Currently, from the total 1,415-million populations, nearly 834-million users use smartphones. From the total number of smartphone users, nearly 815-million people are using the internet on their mobile phones. Therefore, almost half of the population does not use the internet and smartphones [Critical Issue 1].

people prefer to live in urban areas. However, a large portion of the China's population still lives in rural areas. As shown in Figure 4, nearly 40% of the rural residents use the internet for different purposes. Internet use in urban areas is even more unpleasant than the rate of internet use in urban areas, where nearly 332-million rural people do not use the internet for any purpose. In each case, these rural people lag behind the use of the internet, especially in financial communications. This lag use of the Internet in every cases is considered to be one of the most challenging factors in developing inclusive finance in China through financial technologies [Critical Issue 2].

Here, the number of internet users and the number of online and mobile payment users are directly related, because

the number of these users depends on the number of internet users. Even transaction through the online or mobile payment services is only possible when smartphone and internet are available and accessible to those people. In China, usually Alipay and WeChat pay are the most used payment tools since 2004 and 2014 respectively. These two financial giants have been influencing the development of inclusive finance as well as the rural economy of China. According to the Alipay's official website, nearly 520-million people are using Alipay, and nearly 1,057-million people are using WeChat all around the world; from the total user, 986-million people are using WeChat in China with almost 14-million corporate accounts. Most important information is that

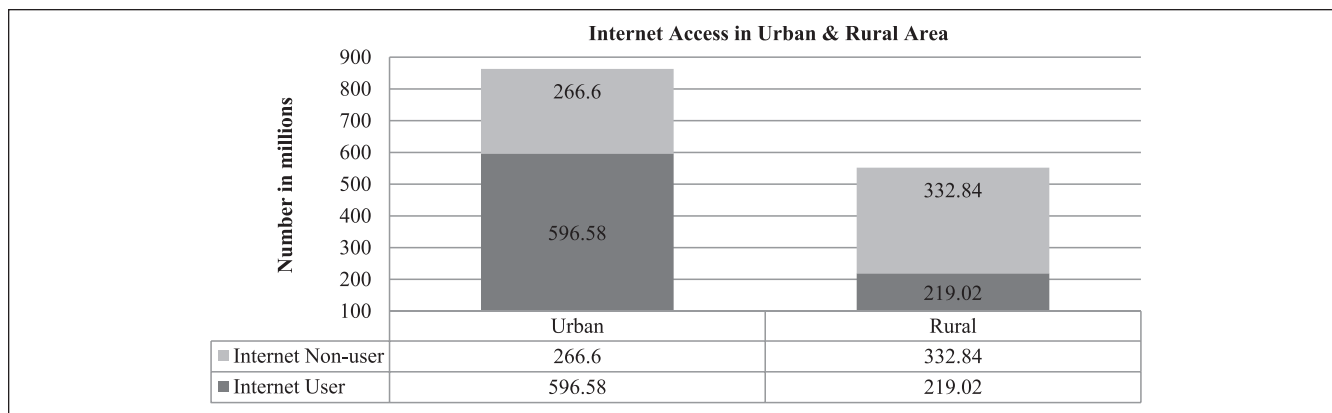


Figure 4. Internet access in inclusive finance.

Source. Statista and China Internet Watch.

Note. The urban–rural ratio in China is almost 60% to 40%. According to Wikipedia, World Bank data, Statista, and China Internet Watch, the urbanization rates in China were 53.72%, 57.77%, 56.09%, and 57.4% respectively, between 2014 and 2017. However, internet usage rate in both the urban and rural area is not pleasing comparing to the total populations. Figure 4 shows the present comparison and present status of the internet users of the people related to the development of inclusive finance. According to Figure 4, nearly 266-million people living in an urban area do not use the internet [Critical Issue 3].

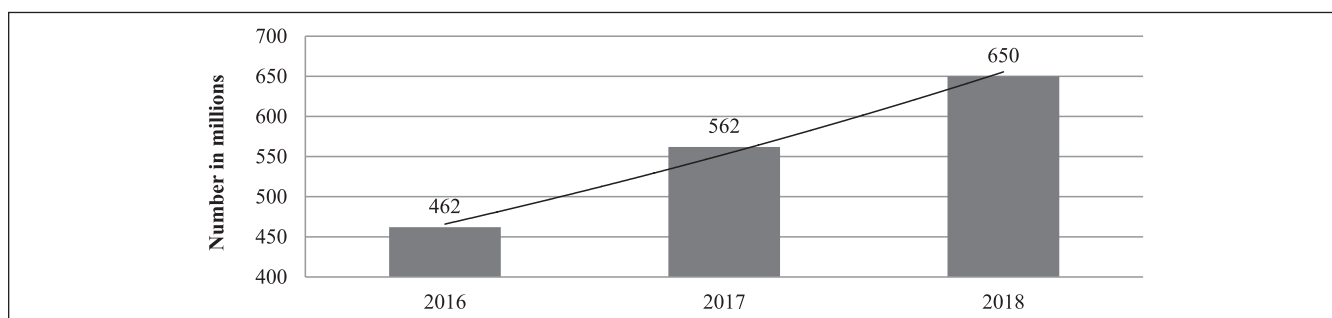


Figure 5. Mobile payment user.

Source. China Internet Watch.

Note. The figure shows the year-to-year mobile payment user in China. From the total 815-million internet users, nearly 21% of the total internet users (54% of the entire populations) are not using mobile payment systems and online payment systems [Critical Issue 4]. Here, almost 650-million people are using mobile payment regularly, and the rest of internet users may have payment options, but they do not use the mobile payment for frequent transactions. However, the pleasing matter is that the trend of this rate is increasing rapidly such as this number are increased by 21.6% and 15.66% from 2016 to 2017 and 2017 to 2018 respectively.

nearly 800-million WeChat account is active for commercial transaction purposes. However, according to Figure 5, nearly 650-million people are using mobile payment regularly for different purposes. Also, people are using government service through Alipay and WeChat pay. In this way, Alipay and WeChat pay are influencing in every day’s transaction in all over China. Even they have gathered the trust of the users and the institutions.

The previous section of this study discusses the increasing urbanization rate year by year. That is why it affects the number of bank accounts in rural areas. After 2015, the number of bank accounts in rural areas declined as a result of the increased urbanization rate. Moreover, China has not yet fully succeeded in dispersing its industrial areas to rural areas. However, there is hope that this number is growing

very fast. Therefore, this will create a great opportunity for the development of inclusive finance through technology.

China’s FinTech and Inclusive Development

Chinese inclusive finance is the blessed of the development of its FinTech. Chinese FinTech and their supportive policy from the government lead the development of its inclusive finance. In China, FinTech provides different opportunities by offering technological usage in diverse financial services to develop inclusive finance by persuading financial companies, credit companies, bank, and such (Zavolokina et al., 2016). Most of the financial institutions of China are delivering their financial services using different

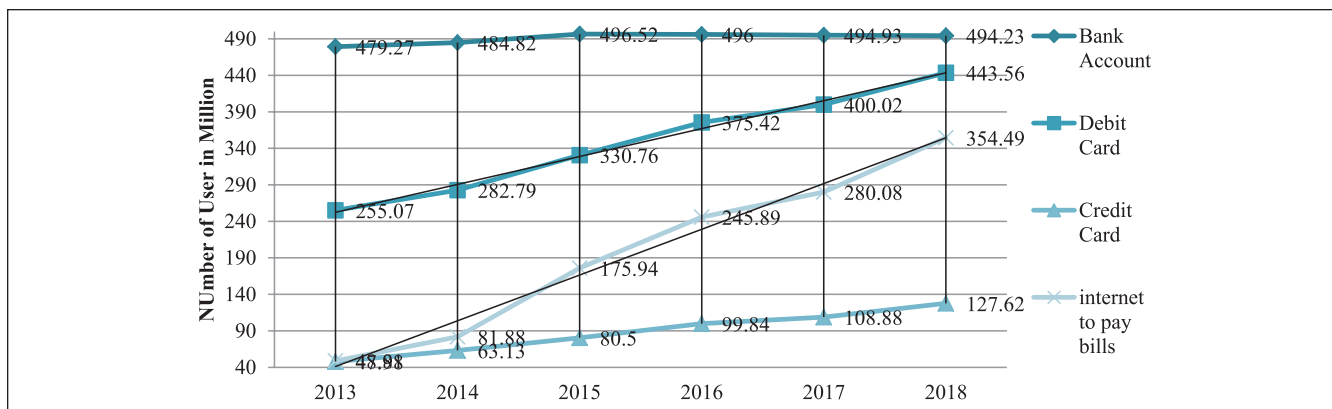


Figure 6. Technological forces of inclusive finance.

Source. Data extracted from Global Financial Inclusion database.

Note. The actual present scenario of the description of inclusive finance forces and technological forces are shown in this figure. The first indicator of inclusive finance is the number of bank account that means the access to financial product in the rural area. Although there are almost 494-million people have a bank account, still $494.23 - 443.56 = 50.67$ -million people do not have a debit card, and almost $494.23 - 354.49 = 139.74$ -million account owner do not use the internet to pay bills or to buy something online [Critical Issue 5].

technological functions such as ATMs, POS terminal, instant mobile applications, mobile networks, big data, trust management, mobile embedded systems, cloud computing, image processing, and data analytic techniques (Shen & Huang, 2016; WBG, 2016). Whatever, its FinTech push forward the inclusive finance by offering financial services by financial institutions to SMEs, micro-businesses, low-income population in urban areas, farmers, poor population, senior citizens, and the disabled people. In these ways, people are getting easy access of all financial products and services. Easy access push forward them to emphasize on SMEs and micro-business. Their online shopping is also another influential tool for their massive development of their SMEs and micro-business. More specifically, Taobao and JD.com are their two most commonly used online markets. People from all around can easily start their business in the online marketplace and ship their products across the country. This is also considered one of the most vital forces for their rapid development of the rural economy. Their digitalization of payment systems is working behind their rapid development. These are the most influential debate of China's inclusive finance. Moreover, all companies work in the rural China to develop inclusive finance in China. As most country people live in villages, providing these people with different financial services is very costly because their money is scarce and they usually live in sparsely populated areas with few credit histories. In this situation, FinTech has come with blessing in China to develop its inclusive finance. In this consideration, China has robust financial and advanced technological options for future financial growth with many FinTech tools. They are also active in their service delivery option with technological innovation such as large distribution outlet like ATM to provide service closer to the poor people even to the under-banked people to make them within the banking service

(Helms, 2006). Usually, FinTech provides six services in China such as internet payments (Alipay, Wechat pay), internet lending (Webank, MYbank), internet money market funds (Yu'E Bao), internet insurance (shipping insurance on Taobao.com), internet credit investigation (Zhima Credit), and internet investment (Yi Rendai, PPMoney) (Guo et al., 2016). These services are going with a rapid growth rate. Here, some technological tools commonly used in developing inclusive finance in China. These are information systems (financial applications and information systems software), connectivity (different network connections such as broadband, dial-up, or satellite), credit scoring (computerized analysis of credit), personal digital assistants (PDAs), ATMs, internet banking, POS devices, biometrics, smart cards, mobile phones, and so forth (Claessens et al., 2002; Gomber et al., 2018a; Helms, 2006). From these FinTech tools, internet finance, especially the mobile payment, is considered the most useful and influential in developing Chinese inclusive finance. Also, internet finance is one of the major media of using technological innovations for the financial transaction.

Developing Status by Region

Internet finance, digital finance, or FinTech entirely depends on the use of internet (Aggarwal, 2014). Thus, based on this dependence, this study identifies and demonstrates the developing status of all provinces according to APU proportions. In addition, a conclusion about the development of inclusive finance with the help of internet finance is drawn here. Table 2 presents here the information regarding the area–population–internet user.

All the provinces are categorized into four groups according to the rank and percent calculation. The first group belongs to 76% to 100%, the second group 51% to

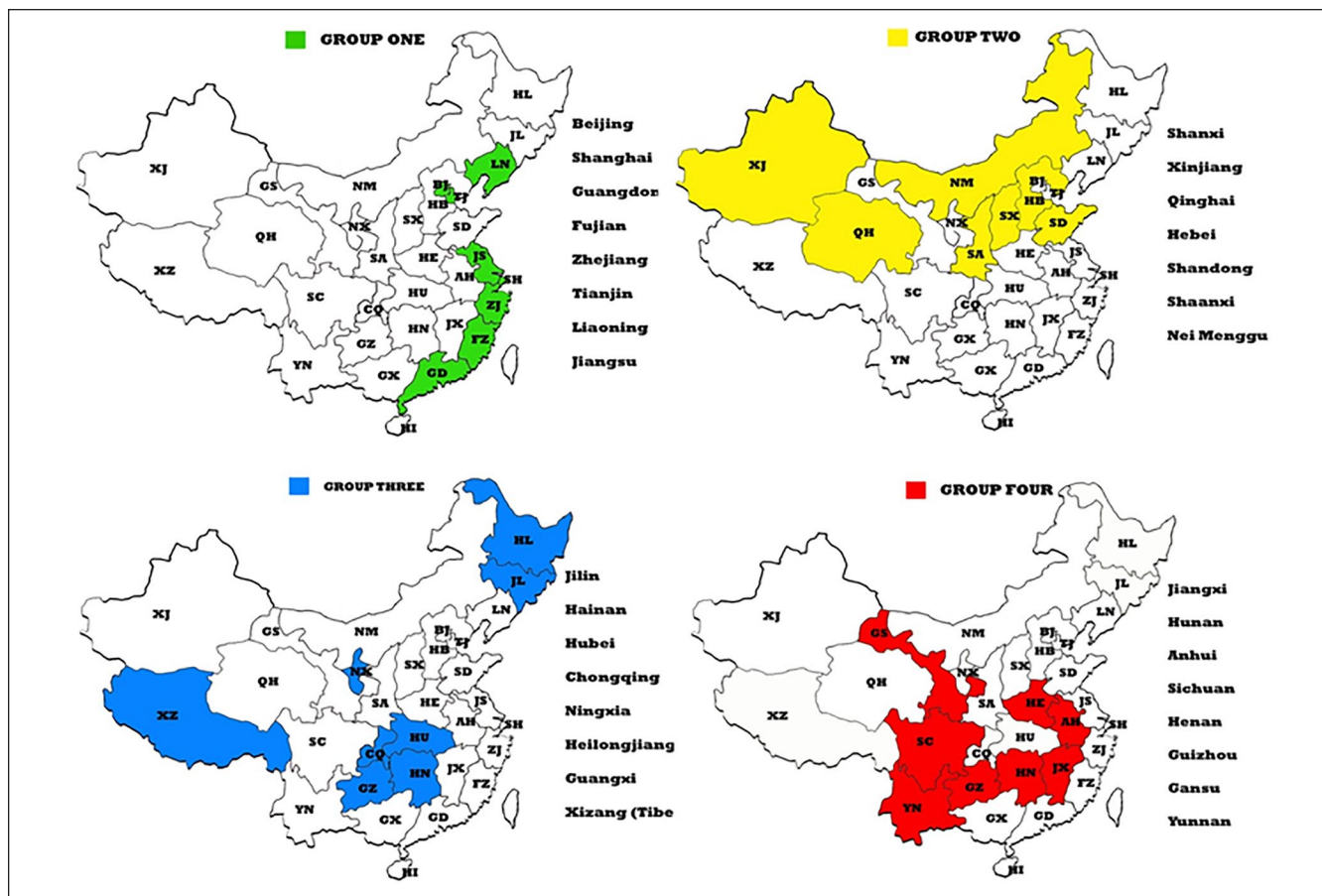


Figure 7. Developing status of inclusive finance in China.

Source. Author's explanation.

Note. Figure 7 shows the developing status of all provinces through FinTech use. Total four maps are presented here with four colors to identify each group. These four colors have no special meaning. These colors are used here just to make the map easy to understand. In addition, the province code is used here to easily identify the name of the provinces in the map.

75%, the third group 26% to 50%, and the fourth group belongs to below 25%. In this perspective, it is found that the group formation is 8-7-8-8. Here Groups 1 to 4 represent most developed to least developed provinces. According to the APU measurement, Group 1 members are Beijing, Shanghai, Guangdong, Fujian, Zhejiang, Tianjin, Liaoning, and Jiangsu. Group 2 members are Shanxi, Xinjiang, Qinghai, Hebei, Shandong, Shaanxi, and Nei Menggu. Group 3 members are Jilin, Hainan, Hubei, Chongqing, Ningxia, Heilongjiang, Guangxi, and Xizang (Tibet). To end with Group 4, the members are Jiangxi, Hunan, Anhui, Sichuan, Henan, Guizhou, Gansu, and Yunnan. However, except the provinces categorized in Groups 1 and 4, all are almost near to the mean value. Another view is that, as shown in Figure 7, the third and the fourth groups are not so developed, as millions of people still do not have the access of the internet and FinTech tools. Even these people are less aware of the use of smartphones, the internet, and FinTech. In some cases, they do

not have a better opportunity of using these FinTech tools. From this inductive thinking, it is clear that inclusive finance is not so developed in these provinces. On the contrary, inclusive finance in the eastern and the southern China has developed. Since 2004, people in these provinces have been utilizing the use of FinTech. However, in the era of FinTech, people who do not use the internet have not contributed to the development of inclusive finance and economic development. According to the above discussion, the developing status of inclusive finance in China is shown in Figure 7, with four infographics. The data in Figure 7 are linked to Table 2.

Therefore, according to Table 2 and Figure 7, the scattered position of all provinces is presented in Figure 8. The scattered position indicates the dispersion of the developing status among the provinces.

The development of inclusive finance through internet finance, particularly Groups 2 and 3, is almost identical. They are not highly dispersed, but the dispersion between

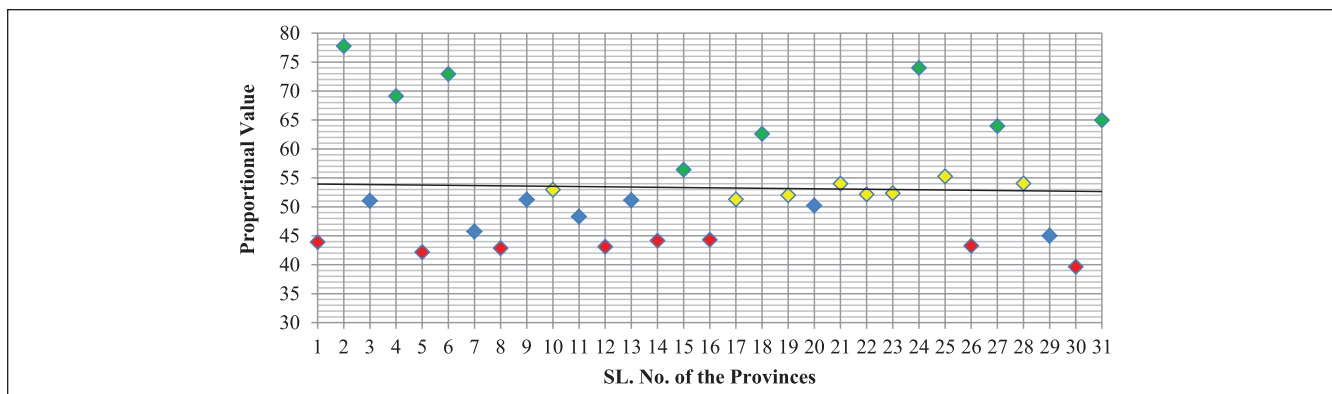


Figure 8. Scattered position of provinces.

Source. Author's explanation.

Note. Figure 8 presents the breakdown of the current developing position in the provinces based on the area–population–user unit base. The scattered positions are pointed by four colors (green, yellow, sky blue, and red). The color sequence green, yellow, sky blue, and red define the most developed to the lowest. These four colors do not have any special meaning. These colors are used here just to make the figures easy to understand.

Groups 1 and 4 is very high. This means that Group 1 is highly developed comparing to Group 4.

Discussion

Nowadays, every financial company is providing service with FinTech such as online payment, mobile payments, and so forth, therefore, in this case, a significant portion of rural as well as urban people goes out of the payment systems only just for not using the internet. Therefore, in this sense, these 600-million people are not contributing to expanding China's inclusive finance. Whatever, using Tencent and Ant Financial strategy, China made the development of inclusive finance very simple. At present, these are considered all over the world as the most potent instrument of developing China's inclusive finance. These services have the options to link users' bank account with their Alipay and WeChat pay account. In this way, a very user-friendly banking platform has established on the mobile phone. This mobile payment system creates the most important opportunities not only for urban people but also for rural people (Anagnostopoulos, 2018; Claessens et al., 2002). Notable changes occurred in people's lives especially getting banking services with branchless banking. However, the problem is that many services are not available in the rural areas [Critical Issue 6]. Even most people do not want to use smartphones and the internet. However, what is happening to rural areas? Alipay and WeChat pay have already started developing their service for the rural poor and underserved people. Almost 650-million people are using mobile payments. This is somewhat impressive comparing to mobile payment ratio in rural areas. Nearly half of the rural internet users are using mobile payment. In addition, e-commerce creates an influential incentive for rural users to purchase a smartphone. However, there is a good relationship among e-commerce,

smartphone use, internet use, and online payment. When rural people are more engaged in online shopping, then the need of using a smartphone, using the internet, and using mobile payment systems will arise. Therefore, in this way, rural people will participate more in financial transactions through FinTech. CNNIC also showed in a report that almost 47.7% of people use online payment from the total internet users in rural, comparing to 65.5% in urban areas. Nowadays, the rural people are being inspired by e-commerce systems, trying to build small industry. In this way, the rural people, especially the small and medium-sized business owners, are trying to sell their products in online marketplaces such as Taobao and JD.com.

This buying and selling process is a convenient system because both buyer and seller can transfer money through P2P systems in their personal Alipay/WeChat Pay wallet (Ding et al., 2018; Long, 2016). As the payment system is very friendly, rural people can develop micro industry around the countryside. Even the courier service within and outside China is excellent and affordable. That is why the small and medium business owners, especially micro-sectors, are involved in online systems. In addition, the use of innovative information and communication technologies in the large number of transactions in SMEs may also help microfinance institutions to make transactions more efficient and make commercial banks more interested in providing services to the poor. In addition, many unbanked and underserved rural people are gaining financial transaction access by them (Salampasis & Mention, 2018). Moreover, it can help people to manage their financial risks by providing transaction service to collect money from remote areas within a short time (Boyes & Stone, 2003). Even the branchless channels are profitable enough to provide service to low-income customers for a more extended period. However, sometimes it may create critical situations to deliver a wide range of service when the customer is not so aware of the service, and also

when financial literacy is a matter of concern [Critical Issue 7]. However, the development of FinTech companies faces different risks such as loss of funds, inadequate disclosure, data privacy violations, and false promotion [Critical Issue 8]. At the same time, a clear regulatory framework should be put in place to ensure the development of FinTech companies. That is why financial legislators should plan more about how FinTech will be more leveraged to serve the remaining underserved people, particularly in the rural and underdeveloped areas (IMF, 2017). The conscious movement including implanting regulatory sandboxes, taking a tiered approach to regulate and supervise, and making a legal and regulatory framework for financial client protection and reducing the risks is vital to develop FinTech for financial inclusion (Anagnostopoulos, 2018; Lee & Shin, 2018).

Conclusion

The use of FinTech has created more opportunities for rural life in China. The rural people are more familiar with different FinTech tools and preferring to use cashless transaction for daily financial communications. It makes the way to provide financial products and services to the countryside people easy for the financial institutions. Better financial access is connecting them with the formal financial system. Whatever, the results of this study is reasonable to conclude that the policymakers should emphasize all the critical issues already addressed in the preceding sections. These issues are working as drawbacks behind the balanced development of inclusive finance. In addition, the findings of this study show that there is still regional disparity in the inclusive development. Therefore, the emphasis on development policies in less developed regions is now particularly important. When rural people in less privileged areas get internet services, they will become familiar with internet financing, which leads them to open a bank account and start their journey with the formal financial system. In addition, getting transaction facility nearby their home, people will also be inspired to take the services of different financial products. However, this study will help policymakers to develop different policies considering the technological impacts of financial services. It is hoped that the development of China's inclusive finance will create a remarkable pathway toward the long-term financial growth and development.

Limitation of This Research and Future Research Direction

The historical secondary data on these issues are not available like other financial issues, because FinTech has started its journey in China after 2013. Therefore, empirical result from only these 5 years data will not give us so meaningful results. For this limitation, it is not possible to draw the empirical conclusion with any econometrics model. Whatever, this research is the first one, which moves with

these data. That is why we present the yearly comparison and trend of those forces. In future, empirical and scientific research on this issue will be needed when the data are sufficient to arrive at empirical decisions. In addition, research is important in exploring the impact of FinTech on inclusive growth in the provinces.

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