THE IMPACT OF DIGITAL INCLUSIVE FINANCE DEVELOPMENT ON THE INCOME GAP BETWEEN URBAN AND RURAL RESIDENTS: AN EMPIRICAL EVIDENCE FROM GUANGDONG PROVINCE, CHINA

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by

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LIST OF ABBREVIATIONS

DIF	Digital Inclusion Finance
IS	Industrial structure
FAI	Fixed Asset Investment
GC	Government competition
AP	Agricultural Policy
TF	Traditional Finance Level
OW	Degree of openness to the outside world

KESAN PEMBANGUNAN KEWANGAN INKLUSIF DIGITAL TERHADAP JURANG PENDAPATAN ANTARA PENDUDUK BANDAR DAN LUAR BANDAR: BUKTI EMPIRIKAL DARI WILAYAH GUANGDONG, CHINA

ABSTRAK

Kajian ini meneliti hubungan antara penduduk di bandar dan luar bandar dengan melihat kesan perkembangan kewangan inklusif digital terhadap jurang pendapatan di Guangdong, China. Kajian ini juga menyelidiki kesan jurang pendapatan bandar-luar bandar di antara kota-kota tetangga dan kesan kewangan inklusi digital ke atas mengurangi jurang pendapatan antara kota-kota tetangga tersebut, melibatkan 20 kota di Guangdong, China, bagi tempoh 2010-2020. Kajian ini menggunakan Indeks Kewangan Inklusif Digital untuk mengkaji samada jurang pendapatan antara bandar dan luar bandar dapat dikurangi. Kajian ini menggunakan Indeks Kewangan Inklusif Digital dan tiga sub-indeksnya sebagai pembolehubah bebas. Sub-indeks tersebut adalah the coverage index, the depth of use index dan the degree of digitalization support index. Enam dimensi iaitu industrial structure, level of fixed asset investment, government competition, agricultural policy, level of traditional finance, dan the degree of openness to the world digunakan sebagai pembolehubah kawalan untuk melihat kesan kewangan inklusif digital dalam mengurangi jurang pendapatan antara bandar dan luar bandar. Selain itu, kesan kewangan inklusi digital terhadap pengurangan jurang pendapatan bandar-luar bandar di antara kota-kota tetangga secara spasial juga dikaji. Penemuan menunjukkan, dari segi kesan keseluruhan, semakin tinggi tahap pembangunan kewangan inklusif digital, semakin kuat kesan penumpuan ke atas jurang pendapatan bandar-luar bandar. Dengan meneliti ketiga-tiga sub-indeks kewangan inklusif digital, keputusan menunjukkan bahawa ia menyumbang kepada penyempitan keseluruhan jurang pendapatan bandar-luar bandar di Wilayah Guangdong. Indeks liputan mempunyai sumbangan terbesar, menunjukkan bahawa penduduk luar bandar mempunyai akses kepada rangkaian perkhidmatan kewangan yang lebih luas melalui peningkatan liputan akaun kewangan.

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ABSTRACT

This study examines the relationship between urban and rural residents by looking at the impact of digital inclusive finance development on the income gap in GuangDong, China. This study also investigates the impact of the urban-rural income gap between neighboring cities and the impact of digital financial inclusion on reducing the income gap between neighboring cities, for 20 cities in Guangdong, China, over the period of 2010-2020. The study applies the Digital Inclusive Finance Index to examine whether the urban-rural income gap can be reduced. The study uses the Digital Inclusive Finance Index and its three sub-indices as independent variables. The sub-indices are the coverage index, the depth of use index and the degree of digitalization support index. The six dimensions of industrial structure, level of fixed asset investment, government competition, agricultural policy, level of traditional finance, the degree of openness to the world are used as control variables to observe effect of digital inclusive finance on reducing the urban-rural income gap. In addition, the impact of digital inclusion finance on reducing the urban-rural income gap between spatially adjacent cities was also studied. The findings show, in terms of the overall effect, the higher the development level of digital inclusive finance, the stronger the convergence effect on the urban-rural income gap. By examining the all three subindices of digital inclusive finance, results reveal that it contributes to the narrowing of the overall urban-rural income gap in Guangdong Province. The coverage index has the greatest contribution, indicating that rural residents have access to a wider range of financial services through increased coverage of financial accounts.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The world is moving into a fully digital society and the digital economy finance is the focus of future global economic competition and cooperation. The benefits of financial inclusion are many. Today, 60% of Kenyans reportedly trust M-Pesa (M-PESA is Africa's most successful mobile money service and the region's largest fintech platform) more than they trust cash. Crime rates have fallen, and savings rates have risen, but the more interesting impact has been in response to poverty, access to credit and employment. For example, the use of mobile money has lifted 2% of Kenyan households (194,000 households) out of extreme poverty, enabled 185,000 women to move out of subsistence farming and into business, and increased access to basic credit facilities for starting a business or dealing with emergencies (McBride & Liyala, 2021).

Digital inclusive finance is the convergence of data and financial inclusion. The development of digital finance relies on technological advances in big data as well as artificial intelligence. In the course of continuous iterative progress, applications such as mobile payments, internet insurance, online finance and online loans have gradually matured, offering significant advantages over traditional tools in terms of user experience and accuracy of service. Inclusive finance originated from the United Nation (UN) initiative and has developed in various countries(Wang, 2018). Inclusive finance allows more people to use financial tools such as insurance and loans to fulfil

their needs faster and more easily, while also enhancing market dynamics and promoting high-quality development of the real economy (Chen & Song, 2022).

By 2030, more than 95% of the world's population is expected to access the internet via smartphones. Smartphones are becoming cheaper to manufacture and deploy. By 2030, such devices are expected to be available largely with free of charge, with basic internet access subscription services. By 2050, access to basic internet infrastructure will be ubiquitous across the globe, meaning that everyone will participate in the digital economy and financial inclusion will become the norm (Tang et al., 2020).

In recent years, China has continued to accelerate the construction of new infrastructure such as 5G, artificial intelligence, industrial internet and the Internet of Things. Currently, 993,000 5G base stations have been opened and built, covering all prefecture-level cities, more than 95% of counties and 35% of townships nationwide, with more than 392 million mobile phone connections to 5G terminals. In terms of application innovation, China has more than 10,000 5G application cases, covering 22 important industries and related fields of the national economy, such as steel, electricity and mining, forming a large number of colorful application scenarios. In particular, China's rural areas also have a more complete digital infrastructure, with Internet penetration reaching 59.2% and the proportion of Chinese administrative villages connected to optical fiber and 4G both exceeding 99%. This is both a good condition for the financial development of the digital economy.

1.2 The Background of the Study

1.2.1 The Background of Guangdong

Guangdong Province covers an area of approximately 180,000 square kilometers (Figure 1.1) and has a population density of approximately 641/km². The capital city of Guangdong Province is Guangzhou. The Pearl River Delta includes Guangzhou, Shenzhen, Zhuhai, Foshan, Huizhou, Dongguan, Zhongshan, Jiangmen, and Zhaoqing. The eastern flank of Guangdong refers to Shantou, Shanwei, Chaozhou, and Jieyang. The east and west wings of Guangdong refer to Yangjiang, Zhanjiang, and Maoming. The mountainous region refers to Shaoguan, Heyuan, Meizhou, Qingyuan, and Yunfu.



Figure 1.1 Map of Guangdong Province Source: Chinadiscovery.com (2023)

The best development in all aspects is in the Pearl River Delta region, while the more underdeveloped is in the mountainous areas.

As a coastal economic region, adjacent to the Hong Kong and Macao Special Economic Zones, and with the establishment of the powerful Guangdong-Hong Kong-Macao Greater Bay Area in recent years, Guangdong has always been at the forefront of China's economic development. In order to achieve common prosperity and meet people's aspirations for a good life, China has put forward task of poverty eradication and building a well-off society in all respects, and no county in Guangdong is listed as a national poverty-stricken county in the list of national poverty-stricken counties. But this does not mean that Guangdong has achieved common prosperity in the true sense of the word and that the income gap between urban and rural residents is not large (He, 2019).

On the contrary, due to the rapid economic development of Guangdong Province, the gap between urban and rural areas is widening behind impressive economic figures. The first-tier (The first-tier cities in Guangdong Province are: Shenzhen, Guangzhou and Dongguan) and second-tier cities(Second-tier cities in Guangdong Province include: Foshan, Huizhou and Zhongshan) have better resources, huge financial support, highly educated and skilled human resources, and the rapid advancement of technology, and the towns are growing faster and faster.

However, rural areas are in a very different situation, with an aging population, poor retention of quality human resources, poor infrastructure, a single economic development model and industrial structure, and insufficient support funds, resulting in a growing the income gap between this two areas (Cha, 2020). Therefore, financial development and the income gap between urban residents, as two of the current hotspots in the field of economic and social development, it is necessary to study whether there is some kind of connection between them and the path of mutual influence.

1.2.2 The Background of the Chinese Internet

At present, the achievements of China's industrial and information technology development are world-renowned, the Internet industry is developing at a rapid pace, and the industrial Internet is promoting the deep integration of digital technology with the real economy.

In 2021, Internet-related technologies such as big data, cloud computing and artificial intelligence will accelerate innovation and become more quickly and better integrated into the entire field and process of developing the lives of Internet users. First, China's network capacity continues to improve. By the end of 2021, a total of 1.425 million 5G base stations had been built, and there were 355 million 5G mobile phone users16; it continued to promote network speed and quality, improve the end-to-end IPv6 penetration capacity, and promote the comprehensive development of the mobile Internet of Things.

Secondly, the Internet will continue to unleash its universal effect. In 2021, China's Internet industry will continue to demonstrate its vitality and resilience, and new business models such as telecommuting, online medical care and community group buying will continue to develop. Third, the construction of information accessibility will be accelerated. The Ministry of Industry and Information Technology continues to focus on the characteristics and needs of the elderly, and guided the first

batch of 227 websites and mobile phone applications (APPs) to complete the evaluation of ageing-appropriate and barrier-free modifications on schedule (Xu,







According to statistics from the National Bureau of Statistics (Figure 1.2), by the end of December 2020, the scale of internet users rose year on year in the decade from 2011 to 2020, and internet broadband access ports, mobile internet users, and internet broadband access users are all rising year on year, which means that the rapid development of the internet has made internet plus financial inclusion in all regions a reality.

1.2.3 The Background of Digital Economy

With the rapid changes on the Internet plus economy, which aims to combine the Internet with traditional industries to drive economic growth, the popularity of the Internet, the updating and iteration of smart devices, and the continuous upgrading breakthroughs in cloud computing, big data, artificial intelligence, mobile payment, and blockchain, digital inclusive finance has injected new vitality into traditional inclusive finance. By using new data centers to deal with the drawbacks that arise in traditional inclusive finance, enabling financial services to spread across the vast rural land and allowing more farmers to enjoy Financial services are expected to fundamentally solve the problem of inadequate financial supply in less economically developed areas, making it possible for digital inclusive finance to enter thousands of households, mountains, and villages(Zhang, 2022).



Figure 1.3 Internet infrastructure to support the development of digital inclusive finance Source: Li (2021).

The new data center refers to a new infrastructure that is oriented to support the digital transformation, intelligent upgrading and convergence and innovation of the economy and society and is drawn by the needs of applications such as 5G, industrial internet, cloud computing, artificial intelligence, etc. (Chen, 2020). It brings together the diversified data resources, uses green and low-carbon technologies, has safe and reliable capabilities, provides efficient computing services, empowers applications in thousands of industries, and integrates with networks and cloud computing (as shown in Figure1.3). Comparing with traditional data centers, the new data center has the following features which the new data centers are characterized by high technology, high computing power, high energy efficiency and high security (Li, 2019).

The demand for data resource storage, computing, and application has increased significantly. Data centers are the physical carriers for the operation of information systems in various industries and are the key infrastructure for promoting the development of the digital economy. Accelerating the layout of new data centers can better provide arithmetic support, support the accelerated innovation of new-generation information technology in Guangdong Province, promote the construction of the Guangdong-Hong Kong-Macao Greater Bay Area hub and advance the digital transformation process of Guangdong's economy and society(Zhang, 2021).

Based on its strong Internet infrastructure, Guangdong's digital economy has had promising results, with the province's digital economy ranking first in the country for four consecutive years. Therefore, 5.2 trillion yuan of added value will be added to Guangdong's digital economy in 2020, and in terms of industrial digitalization, the scale of Guangdong's digital industrialization added value will be about 1.73 trillion yuan, with 22,000 high-tech enterprises in the digital economy, ranking first in the country. In terms of industrial digitalization, the scale of value added to Guangdong's industrial digitalization is about RMB 3.47 trillion, also the first in the country. Data shows that the market size of data centers in Guangdong Province will reach 16.41 billion yuan in 2021, with a compound growth rate of over 20% (Zhang, 2022).

1.2.4 The Background of Digital Inclusive Finance

The development of digital inclusive finance has benefited from the continuous integration between inclusive finance and innovative internet finance. Inclusive

finance was first proposed by the United Nations (UN) during the International Year of Microcredit in 2005 and introduced to China in the same year. In 2006, the UN drafted the "Blue Book on Inclusive Financial Systems", which painted a picture of the future of inclusive financial systems as follows: every developing country should establish, through policy, legislation, and regulatory support, a sustainable financial system that can provide people with appropriate products and services (Chen, 2021).

Since 2013, the development of inclusive finance has been one of the country's strategic plans in the financial sector. The development of digital finance in China can be traced back to as early as 2004 when the launch of Alipay had a major impact on traditional finance, but subjectively people prefer to regard the creation of BalancePay in 2013 as the first year of digital finance development in China. The concept of inclusive finance is highly compatible with China's goal of "common prosperity" and has a deep "growing soil" in China. After several years of development, inclusive finance has made great progress in China (Wang & Cheng, 2022).

The development of digital inclusion takes four specific forms.

(a) Digital Inclusive Finance Index

In 2015, China provided an official definition of inclusive finance: inclusive finance refers to the provision of appropriate and effective financial services at an affordable cost to all social strata and groups in need of financial services by increasing policy guidance and support, strengthening the construction of the financial system and improving financial infrastructure. It aims to serve farmers, small and micro enterprises, urban low-income people and people with disabilities, the elderly, and

other special groups. The Global Financial Inclusion Index Report released by the World Bank in 2018 shows that China ranks among the top developing countries in most financial inclusion indicators(He, 2019).

According to the 2020 China Inclusive Finance Development Report released by the China Banking and Insurance Regulatory Commission and the People's Bank of China in 2021, by the end of 2020, the number of bank accounts and card holdings per capita in China was among the leading levels in developing countries, the national bank branch coverage rate in townships was 97.13%, banking financial institutions handled 14,223 million mobile payment transactions in rural areas, and the inclusive small and micro. The balance of loans was RMB 1,510 billion, showing year-on-year growth, the institutional mechanism and legal framework for inclusive finance were more sound, and the protection of financial consumer rights and interests was increasing(Weifan Chen, 2022).

Since its development in the 1990s, China's inclusive financial system has roughly gone through four stages: the nascent stage, the development stage, the maturity stage, and the innovation stage. Today, China's inclusive finance is in the innovation stage, which is characterized by digital inclusive finance.

(b) The Level of Coverage of Digital Inclusive Finance

In the course of the practice of inclusive finance, the financial industry has gradually reduced the operating costs of traditional financial institutions with the advancement of Internet technology and mobile communication technology, and practice of inclusive finance in China has developed from public welfare micro-credit to a stage of comprehensive financial services including payments, credit, and other multi-businesses.



Figure 1.4 Routes of cooperation between some financial institutions and Internet

companies

At this stage, traditional financial services have become networked and mobile, and various financial institutions have started to lay out their online businesses as can be seen in Figure 1.4. Online financial services can meet the service requirements of most groups, while offline channels can deeply expand the scope of financial services, greatly expanding the service scope of financial institutions and improving the efficiency of financial services through the dual channels of online and offline. The dual online and offline channels have greatly expanded the reach of financial institutions and improved the efficiency of financial services, thus reflecting the characteristics of the early stages of digital financial inclusion, namely, broad reach and low cost of service (Dong, 2020).

(c) Depth of Use of Digital Inclusive Finance

Payment models continue to improve and innovate with technology companies playing a crucial role. For people in remote areas that are hard to reach by traditional financial institutions or for those who lack financial literacy, payment, and money transfer are the most basic and high-frequency financial needs. When internet finance emerged and online payment and money transfer became popular, these needs were effectively addressed, allowing more people to receive basic financial services and feel the convenience of digital financial inclusion.

(d) Digitalization Degree of Digital Inclusive Finance

Updates and iterations at the scientific and technological levels have become more rapid. On the one hand, based on financial technology (fintech) being widely used, the industrial scale of big data, artificial intelligence, cloud computing, and blockchain has expanded rapidly. Specifically, cloud computing technology applied in the financial industry can effectively reduce IT costs, improve stability and reliability, and eliminate information silos through a unified platform. The application of artificial intelligence technology has improved the efficiency of processing massive amounts of data and promoting the intelligent development of financial services(Chen, 2020).

Big data technology, on the other hand, improves the efficiency of financial institutions' decision-making and facilitates product or service innovation by collecting data on users' needs, as well as enhancing the institutions' risk control capabilities. Blockchain helps to ensure the authenticity and validity of participants in online transactions, protects personal privacy, facilitates information sharing in the industry, and promotes the improvement and reform of financial institutions' mechanisms (Guo,

2020). On the other hand, based on the above-mentioned background of Internet development, we understand that China's digital infrastructure conditions have matured and can support the deep development of digital inclusive finance in China.



Figure 1.5 Size of Internet users and Internet penetration rate Source: China Internet Network Information Center(2023)

According to statistics from the China Internet Network Information Centre (Figure 1.5), by June 2021, the number of Internet users in China reached 1.051 billion, with 293 million Internet users in rural areas, accounting for 27.9% of the overall number of Internet users, and 758 million Internet users in urban areas, accounting for 72.1% of the overall number of Internet users. The Internet penetration rate in urban areas in China was 82.9%, an increase of 1.6 percentage points from December 2021; the Internet penetration rate in rural areas was 58.8%. In addition, network infrastructure capacity was significantly improved. In April 2022, the Ministry of Industry and Information Technology and five other ministries and commissions

jointly issued the "Highlights of the Development of Digital Countryside in 2022", proposing that by the end of the year, 5G networks would achieve coverage in key towns and some key administrative villages. As of June 2022, the Ministry of Industry and Information Technology has organized the completion of age-appropriate and barrier-free renovation and evaluation of 452 websites and APPs, constantly getting closer to the application needs of the elderly and people with disabilities, helping special groups share the fruits of information technology (Tao, 2021).

1.2.5 Background of the Urban-Rural Income Gap

China began to pursue a strategy of prioritizing the development of heavy industry in the 1950s. In line with this, in the process of the initial distribution of national income, the "scissors difference" between the prices of industrial and agricultural products was formed through the policies of pricing industrial products and the unified purchase and distribution of agricultural products, and a large amount of agricultural surplus value was extracted; in the process of the redistribution of national income, the urban levy system was established as one element and the rural levy system as another. Scissors difference refers to the difference that occurs when industrial and agricultural products are exchanged, the price of industrial products is higher than the value and the price of agricultural products is lower than the value. Because the graphic representation of the scissors open form and named. It shows the unequal exchange of the value of industrial and agricultural products. If the price deviation from the value of the difference is getting bigger and bigger, it is called to expand the scissors gap; conversely, it is called to narrow the scissors gap(Xu, 2021). In the process of redistribution of national income, a "dual" tax structure was established, with the urban levy system as one element and the rural levy system as another, and the farmers were heavily taxed. The "scissors difference" between the prices of industrial and agricultural products and the "dualistic" structure of the urban-rural tax system has directly caused the income gap between urban and rural residents to widen (Chen, 2020).

Prior to 2015, China introduced a large number of policies favouring the eastern coastal regions and special economic zones, which objectively widened the gap between the level of economic development and the income level of residents in the east and the central and western regions.

In the early years, some administrative monopolies caused by government restrictions on market access, such as electricity, telecommunications, tobacco, finance, insurance, and civil aviation, reaped high monopoly profits by virtue of their monopoly privileges, and the income levels of their employees were incomparable to those of other industries.

At the beginning of the 21st century, due to the lack of tax regulation and inadequate social security mechanisms, excessive personal incomes were not effectively regulated and those with excessively low incomes were denied basic livelihood protection. In the prevailing environment, the transition of the economy, the failure of the legal system to keep pace with the construction and monitoring mechanisms, and the inadequacy of the legal system allowed a small number of people to "exploit the loopholes" of the policy and obtain a large amount of illegal income, thus widening the income gap.

In the development process of reform, a certain income disparity among members of society is unavoidable, but it should be kept within a reasonable range. If the disparity in income between members of society is left unresolved for a long period of time, it will not only dampen people's motivation but also affect social stability and unity.

As China's economic reforms continue to deepen, precise poverty alleviation and rural revitalization strategies have been proposed at the national level to ensure that the task of poverty eradication is completed on schedule by 2020 and that a moderately prosperous society is fully built.

In the past 40 years of reform and opening up, the economic development of Guangdong Province has achieved world-renowned results, with rapid economic growth and gradual improvement in people's livelihood. The urban-rural income gap is widening, and the coordination of urban-rural economic development has become a major problem in the economic development of Guangdong Province (Zhu, 2022).

1.3 Problem Statement

Although the achievements in the development of inclusive finance in China are evident to all, it should also be noted that the development of inclusive finance in China is still in its early stages and faces many difficulties and problems. Like many countries, China has long faced a series of global challenges in developing inclusive finance, including uneven services, high costs, low efficiency, and insufficient commercial sustainability. Uneven development within the region is one of the main problems facing Guangdong's economic take-off and how to narrow the excessive income gap between urban and rural areas may be answered by digital inclusion. Digital inclusion has received unprecedented attention in recent years, precisely because mainstream financial institutions, represented by commercial banks, have encountered these difficulties on the road to financial inclusion.

Despite the rapid development of inclusive finance in recent years, it still faces a series of global challenges, such as high costs, low efficiency, difficulty in breaking through the "last mile" and weak commercial sustainability. In general, challenges can be divided into the following two categories:

1.3.1 Structural Contradictions

Structural contradictions refer to contradictions arising from the incongruity between the economic structure and the social structure. Examples include an irrational industrial structure, a widening gap between urban and rural areas, and contradictions between growth and resources and the environment(Duan, 2021).

Structural contradictions involve many areas. One is the contradiction between economic development and social progress, for example, Guangdong Province has rapid economic development, but a series of social problems, such as unbalanced development between urban and rural areas and regions, have not been fundamentally solved. The second is within the economic structure. Investment, consumption and exports are the troika driving economic development, and the serious lack of domestic demand is also a structural contradiction.

Structural contradictions and problems in the development of inclusive finance remain prominent. For example, financial funds have been concentrated in cities, financial infrastructure in counties is weak, small and medium-sized enterprises and low-income people have less access to financial services, etc.

The lack of coordination between urban development and rural development has led to the emergence of a dualistic economic structure between these two areas even in Guangdong Province, which is a major economic province, with the income gap becoming more and more pronounced as the pace of urban development becomes faster and faster. On the one hand, the income of farmers is lower than that of urban residents, partly because of the low productivity of the countryside; partly because of the serious problem of ageing in the countryside, where the income of older farmers is much lower than the average income level of the countryside, which is also widening the income gap.

The development of the financial system in less economically developed areas is lagging behind. At the same time, due to the traditional way of operation of financial institutions and the uneven distribution of offline outlets of traditional financial institutions. In addition, in many remote rural areas, due to geography, scarcity of talent and other limitations, rural areas are largely unable to enjoy complete and comprehensive financial services, the coverage of digital inclusive finance is not deep, and the degree of digitisation is not comparable to that of the city, so it is difficult for villagers to satisfy their needs for financing and financial management. As a result, there is an imbalance in the allocation of financial resources between urban and rural residents. Therefore, the income gap between urban and rural areas continues to widen, seriously affecting the development of Guangdong's rural economy. As the income gap between urban and rural areas get poorer, and gradually the gap between the richer areas get richer and the poorer areas get poorer, and gradually the gap between the rich and the poor will grow wider. If polarization is serious, it is not conducive to social class mobility, tends to inhibit the productive initiative of farmers, and can affect social stability and bring about security problems (Huang et al., 2020).



Figure 1.6 Operational Thinking of Traditional Financial Institutions

1.3.2 Lack of Boundaries in the Development of Digital Inclusive Finance.

The "boundary" between Internet finance and traditional finance is unclear, and digital inclusive finance should have a boundary, unlike government poverty alleviation. Internet finance and traditional financial "boundary" blurred, the formation of a number of " too big to fail " Internet financial giants. Too big to fail refers to a number of large-scale industries in the important position of the enterprise on the verge of bankruptcy, the government will not hesitate to invest in the rescue, in order to avoid the collapse of those enterprises caused by a huge chain reaction caused by the community as a whole even more serious harm.

Although the local government does not allow some enterprises to close down, but those enterprises are using this advantage to do illegal things. For example, in the past, heavy chemical and other polluting enterprises in some places, now the polluting enterprises have been remedied and better results have been achieved. But in the Internet financial industry, there are still a few "too big to fail" enterprises. It is not charity finance or poverty alleviation finance, it is real commercial finance, must fulfil the connotation of finance, and its operation must be based on commercial sustainability, not a one-shot deal. There is no way to develop the depth and breadth of digital inclusive finance, and the fact that only larger companies receive greater policy support limits the advantageous development of digital inclusive finance. In developing digital inclusive finance, Guangdong Province should make it clear that while commercial banks are making profits, they are driving economic development and using proven methods to narrow the income gap between urban and rural areas.

Although the per capita disposable income of urban residents and the per capita disposable income of rural residents decrease with each year, and although the urbanrural income gap in 2020 is lower than that of the same period, the ratio of urban and rural residents' income reached 2.5 times in 2020, indicating that the urban-rural income gap in Guangdong Province should not be underestimated. In this process, what role does digital inclusive finance play, and how does it achieve the maximum reduction of the urban-rural income gap while maintaining the commerciality of digital inclusive finance? Thus, this study aims to examine the above proposed realistic questions by analysing the data.

1.3.3 Variability among Regional Differences

There are large regional differences in the development of digital inclusive finance.



Figure 1.7 Per capita income of urban and rural residents and the Thiel Index by prefecture-level cities in 2020

Source: National Bureau of Statistics of China (2021).

According to Figure 1.7, the Thiel Index (For the purpose of measuring inequality or concentration) has been higher in Shaoguan, Jieyang, Qingyuan, and Heyuan, and

lower in Foshan, Zhongshan, Dongguan, Zhuhai, and Guangzhou, indicating that the regional differences within Guangdong Province are still relatively obvious. By referring to Figure 1.7, the study finds that the per capita income of these two area residents in the Pearl River Delta (Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Zhaoqing, Zhongshan and Zhuhai) is higher in Guangdong Province, while Dongguan in the Pearl River Delta has the lowest Thiel Index. The per capita income of urban and rural residents in the east wing of Guangdong (Maoming, Yangjiang, and Zhanjiang) and the east wing of Guangdong (Chaozhou, Jieyang, Shantou, and Shanwei) is a little higher overall compared to the mountainous areas (Heyuan, Meizhou, Qingyuan, Shaoguan, and Yunfu), and the Thiel index is higher overall in the mountainous areas than in the east and west wings of Guangdong, indicating a clear regional variation in income disparity in Guangdong.

1.4 Research Questions

- Is there any relationship between the digital inclusive finance index and urbanrural income gap index?
- 2. Is there any relationship between level of coverage of digital inclusive finance and the urban-rural income gap?
- 3. Is there any relationship between depth of use of digital inclusive finance and the urban-rural income gap?
- 4. Is there any relationship between digitalization degree of digital inclusive finance and the urban-rural income gap?

5. Is there any relationship between digital inclusive finance and the urban-rural income gap between neighbouring cities?

1.5 Research Objectives

- To examine the relationship between the digital inclusive finance index and urbanrural income gap index.
- To investigate the relationship between level of coverage of digital inclusive finance and the urban-rural income gap.
- To examine the relationship between depth of use of digital inclusive finance and the urban-rural income gap.
- 4. To examine the relationship between digitalization degree of digital inclusive finance and the urban-rural income gap.
- To analyse the relationship between digital inclusive finance and the urban-rural income gap between neighbouring cities.

1.6 Scope of the Study

The theme of this study is to investigate whether digital inclusive finance can curb the urban-rural income gap in the process of urban-rural development in Guangdong Province. This study aims to identify the role of digital inclusive finance within Guangdong Province through the development of inclusive finance and the Internet. The 20 cities in Guangdong Province are the main targets of the study, with