An Empirical Analysis of the Impact of Digital Inclusive Finance on the Income Gap between Urban and Rural Residents

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Abstract

Digital Inclusive Finance was born by the combination of digital technology and Inclusive Finance. Its digitization and inclusive nature not only broke through the limitations of geography and time, but also made it easier for finance to enter rural areas, alleviate rural financial exclusion, reduce financial service costs, improve information asymmetry, and reduce the threshold effect Alleviate the exclusion effect and give play to the indirect poverty reduction effect to narrow the income gap between urban and rural areas. This paper selects the relevant national data from 2011 to 2020, selects the appropriate variables, and uses the econometric model to empirically analyze the impact of digital Inclusive Finance on the Urban-rural income gap. Research shows that the development of digital inclusive finance can significantly narrow the income gap between urban and rural residents. Therefore, China should establish the development strategy and general idea of digital Inclusive Finance, reshape the development path, build a digital inclusive finance ecosystem with multi-party cooperation and mutual support, and actively give full play to the joint role of other factors and digital Inclusive Finance, so as to promote the development of digital Inclusive Finance and narrow the income gap between urban and rural areas.

Keywords

Digital Inclusive Finance; Income Gap between Urban and Rural Areas; Threshold Effect; Exclusion Effect; Indirect Poverty Reduction Effect.

1. Introduction

Over the past 70 years since the founding of new China, China's economic scale has been expanding, the national economy has continued to grow rapidly, and earth shaking changes have taken place in people's living standards. According to the data of the National Bureau of statistics, the per capita disposable income of Chinese residents has increased from 49.7 yuan in 1949 to 32188.8 yuan in 2020, and the per capita consumption expenditure has increased from 88.2 yuan in 1956 to 21209.9 yuan in 2020, It can be seen that China's economy has experienced rapid development. However, during this period, the development mode of China's Urban-rural dual economy has greatly promoted the flow of resources to urban areas with greater economic potential, resulting in the continuous expansion of the Urban-rural income gap, in which the ratio of Urban-rural per capita income reached a peak of 3.28 times in 2009, and then declined, but still hovered at a high level. The Fifth Plenary Session of the 19th CPC Central Committee clearly put forward the long-term goal of significantly narrowing the gap between urban and rural regional development and residents' living standards.

The development of the real economy needs the support of the financial industry. The existence of the income gap between urban and rural areas is largely due to the financial gap between the two. China's financial structure has obvious Urban-rural dual characteristics, which is embodied in that financial resources mainly flow to urban areas, while the financial supply in rural areas is obviously insufficient. The needs of rural residents for financing, financial

management and other businesses are difficult to be met, and there is a serious financial exclusion. Therefore, to narrow the income gap between urban and rural areas, we must change the current Urban-rural dual financial structure. The development process over the years shows that only relying on the improvement of traditional financial measures can not fundamentally change the Urban-rural dual financial structure. In the traditional financial industry, the profit-making mode of financial institutions is mostly to arrange offline outlets and provide financial services to demanders. However, due to the limitations of geographical environment and talent scarcity, it is often difficult for more remote rural areas to obtain complete and comprehensive financial services. In 2006, the concept of Inclusive Finance was introduced into China and officially became China's top-level system concept at the Third Plenary Session of the 18th CPC Central Committee in 2013, putting forward the practical proposition of "developing Inclusive Finance, encouraging innovation and enriching financial market levels and products". In 2016, the State Council issued the development plan for promoting Inclusive Finance (2016-2020), which incorporated inclusive finance into the national financial development strategy. Although the concept of Inclusive Finance strongly advocated by the state at all levels in recent years has solved the contradiction of insufficient supply of rural financial services to a certain extent, the financing cost in rural areas is so high that the effect of Inclusive Finance on improving the Urban-rural dual economy is greatly discounted. In the same year, at the G20 summit, digital Inclusive Finance was listed as one of the important topics, which indicates that Inclusive Finance has opened a new chapter in the development of informatization, gradually moving from offline manual to online digital technology processing. In November 2020, "digital Inclusive Finance, new finance - the third China inclusive financial innovation and Development Summit" held and released the China inclusive financial innovation report (2020). The report pointed out that digital Inclusive Finance has become the mainstream of the current inclusive financial development; On December 17, 2020, Zhongguancun Internet Finance Research Institute released the development report of China's financial technology and digital Inclusive Finance (2020), which pointed out that China's digital inclusive finance practice is becoming richer and richer, and new services and products are emerging. China's digital inclusive finance system is taking shape, with banking financial institutions as the center and Internet enterprises as the support, It is an all-round development pattern supplemented by non bank financial institutions, empowered by financial technology enterprises, continuously improved infrastructure and continuously improved institutional guarantee. Digital Inclusive Finance Based on digital technology also provides more and more effective financial services for rural areas on the basis of reducing existing costs, and makes it possible to narrow the income gap between urban and rural areas. Therefore, the development of digital Inclusive Finance has greatly increased the availability of financial services for rural residents in China, made up for the shortcomings of traditional financial services while providing financial support for rural residents, reduced operating costs and service thresholds by relying on digital technology, and alleviated the risks caused by information asymmetry, It is of great practical significance for low-income groups to achieve wealth growth and narrow the income gap between urban and rural areas.

Based on the existing literature on the impact of financial inclusion on the development of Urban-rural income gap, this paper summarizes the impact of financial inclusion on the development of Urban-rural income gap.

2. Journals Reviewed

2.1. Finance and Digital Inclusive Finance

As for Inclusive Finance, it can be defined as a financial system that can effectively and comprehensively provide services to all sectors and groups of society. Its original intention is

to emphasize the continuous improvement of financial infrastructure and improve the availability of financial services. Now it provides more convenient financial services to people from all walks of life, especially those in underdeveloped areas and low-income people at a lower cost. Foreign scholar bruhn and love (2014) [1] proposed that inclusive digital finance increases the number of poor people who can access financial services, and countries implementing inclusive finance can achieve poverty reduction and economic growth. Domestic scholar Li Tao (2021) [2] believes that Inclusive Finance indirectly drives the development and prosperity of vulnerable groups and poor areas through pro poor growth, and improves the pattern of income distribution. Zhang Ping (2011) [3] believes that microfinance is an important part of the inclusive financial system and plays an important role in poverty reduction.

In recent years, as a new business form of China's financial development, digital finance has become an important tool to promote the development of rural Inclusive Finance, narrow the income gap between urban and rural areas and alleviate poverty by virtue of its advantages such as convenient transaction and low cost (mookerjee and kalipioni, Suri and Jack, 2016) [4,5]. Some scholars have further explored the mechanism of digital finance to reduce poverty, and believe that it can improve poverty by directly broadening credit access and increasing credit availability (Zhou Li et al., 2021) [6], and can also play a role through indirect channels such as increasing employment and entrepreneurship opportunities, promoting economic growth and narrowing the income gap (Liu Jinyi and Liu Chunyang, 2020) [7], By combing the existing literature, Liu Ziqiang (2021) [8] found that the role of digital finance development in promoting absolute poverty alleviation has been confirmed. Yin yingkai and Hou Rui (2017) [9] sorted out the development logic, international experience and "China's contribution" of digital Inclusive Finance, put forward an innovative "new wild goose model" for the development of digital Inclusive Finance in China in combination with national strategic planning, and believed that China could become an international "leader" in this field by giving full play to its advantages; Qiu Zhaoxiang and Xiang Xiaojian (2018) [10] analyzed that the characteristics, advantages and main problems of developing digital Inclusive Finance provide five ways to develop digital Inclusive Finance.

Income Gap between Urban and Rural Areas 2.2.

In terms of the influencing factors of Urban-rural income gap, domestic scholars have done a lot of research to find out many factors that can affect the Urban-rural income gap. Through empirical analysis, Chen Xiaokun and Feng Shijie (2021) [11] found that fiscal expenditure structure is an important factor affecting residents' income gap, and agriculture and forestry, education, medical treatment and transportation in fiscal expenditure structure have played a convergent role in Urban-rural income gap, while administrative expenditure, social security and employment, energy conservation and environmental protection and public safety expenditure have played a widening role in Urban-rural income gap. Lu Ming and Chen Zhao (2004) [12] through empirical analysis, they believe that urbanization plays a significant role in reducing the income gap between urban and rural areas, and the structure of government fiscal expenditure also has a significant impact on the income gap between urban and rural areas; Feng Yun (2014) [13] found through empirical research that due to the gap between urban and rural education levels, fewer people in rural areas can receive higher education than in urban areas, resulting in a large Urban-rural income gap. The classical Kuznets "inverted U curve" hypothesis holds that the income gap between urban and rural areas will first increase and then decrease with the development of economy. Many scholars have found that financial development also has the same effect on income gap. Li Zhijun and Xi junyang (2012) [14] analyzed that financial development is indeed expected to narrow the income gap between all

levels in the long term, but it depends on which side of the top of the inverted U curve the financial development in the region is on.

2.3. Digital Inclusive Finance and Urban-rural Income Gap

Many scholars have studied the relationship between China's digital Inclusive Finance and Urban-rural income gap, and the relevant research results have repeatedly proved that digital inclusive finance can help narrow the Urban-rural income gap. Xu Min and Zhang Xiaolin (2014) [15] empirically studied the impact of traditional Inclusive Finance on Urban-rural income gap by using vector autoregressive model. The results show that there is a long-term equilibrium relationship between the development of Inclusive Finance and Urban-rural income gap. The development of Inclusive Finance can reduce Urban-rural income gap, but this effect is not very obvious. Song Xiaoling (2017) [16] used the Theil index to measure the income gap between urban and rural areas, and used the digital inclusive finance index of Peking University to measure the development degree of China's digital Inclusive Finance. The empirical analysis results show that digital inclusive finance can significantly converge the latter. Chen Xiao and Chen Xin (2018) [17] through the construction of spatial panel model, the empirical analysis also found that it also has a positive impact on the reduction of Urban-rural income gap in adjacent areas, and the spatial spillover effect mainly depends on its digital service support. Zhang Zihao and Tan Yanzhi (2018) [18] concluded by building a spatial panel model that there is a negative correlation between digital Inclusive Finance and Urban-rural income gap. Among the decomposition indicators of digital Inclusive Finance, coverage plays a greater role in narrowing the Urban-rural income gap. Zhang Xun et al. (2019) [19] found through empirical research that the development of digital finance has increased household income, and the benefits of rural low-income groups are more significant. The development of digital finance is more conducive to the entrepreneurship of rural residents rather than urban residents. Liu Jinquan and Bi Zhenyu (2019) [20] put forward the hypothesis that "the development of Inclusive Finance can reduce the Urban-rural income gap by promoting economic growth and poverty alleviation", and analyzed the impact mechanism of the development of Inclusive Finance on the Urban-rural income gap.

3. Influence Mechanism of Digital Inclusive Finance on Urban-rural Income Gap in China

At present, there are great differences in the availability of financial services between urban and rural groups and rich and poor groups in China. The emergence of digital Inclusive Finance may reverse this situation, mainly by expanding the coverage of financial services, enhancing the penetration of Inclusive Finance and the diversity of products, providing new channels and means for customers to obtain financial services, reducing the threshold effect Alleviate the exclusion effect and give play to the indirect poverty reduction effect to have an impact on the Urban-rural income gap.

3.1. Threshold Effect

A certain cost is the premise of enjoying financial services. Low-income people often fail to reach the access threshold of financial services due to their insufficient economic strength and lack of corresponding payment ability. Moreover, in rural areas, the credit environment is relatively poor, residents have less assets to mortgage, and the loan risk is high, which can not meet the conditions for general banks to provide credit services, so the "threshold" is relatively high. This threshold leads to a large difference in returns enjoyed by urban and rural residents in investment, insurance, credit and other businesses, and there is also a significant difference in income, which will gradually widen the income gap. The application of digital technology makes financial institutions and Internet platforms perfectly integrated, realizes cashless

transactions by relying on mobile payment, expands the scope of financial services and enhances the civilian attribute of financial services. Especially for rural residents, the use of digital technology can make them enjoy equal financial services as urban residents, and the corresponding financial costs have been reduced, so as to realize the real "lowering the threshold".

3.2. Mitigation Exclusion Effect

There is a dual structure model between urban and rural areas in China's economic development, which inevitably brings some problems in the process of development, one of which is financial exclusion. First, in order to reduce costs, control risks and expand profits, many banks have closed their branches in remote and backward areas, leaving more and more poor people excluded from financial services, which is geographical exclusion; Secondly, when providing services, traditional financial institutions have different requirements for urban residents and rural residents. They have stricter requirements for rural residents with lower income to apply for loans, and the relevant review process is also more complex, which is the exclusion of evaluation; Finally, the financial products provided by financial institutions in rural areas are lack of diversity, while the types of financial products available in urban areas are rich, and the demand has been better met, virtually excluding rural residents, which is product exclusion. Relying on digital inclusive financial services, financial institutions in rural areas will strengthen infrastructure construction, optimize the financial ecological environment, and effectively alleviate the negative impact of financial exclusion.

3.3. Give Play to the Indirect Poverty Reduction Effect

Digital inclusive finance can promote the overall economic development level of a region, provide a better environment for investors, promote economic development and bring more jobs to low-income people. When the income of the poor increases, it will directly reduce the income gap between urban and rural areas. Of course, social and economic development will also bring about the improvement of government income and promote the increase of government expenditure. Government expenditure is mainly distributed in health care, education and public infrastructure, which provides good soft and hard conditions for the low-income population to improve their living conditions and narrow the income gap between urban and rural areas. In short, the threshold reduction effect and mitigation exclusion effect of digital inclusive finance are a direct effect, while the poverty reduction effect is an indirect way to narrow the income gap between urban and rural areas with the help of economic growth.

4. Variable Selection and Data Description

4.1. Variable Selection

4.1.1. Explained Variable: Urban-rural Income Gap(GAP)

The income gap between urban and rural residents can be divided into absolute income gap and relative income gap. The former only considers the absolute difference between the per capita income of urban residents and the per capita income of rural residents at the monetary level, while the latter is judged by calculating indexes such as Gini coefficient and Theil index. At this stage, the income level of urban and rural residents in China continues to expand, and the absolute income gap is increasing year by year. This paper uses the relative income gap and calculates the income gap ratio based on the per capita disposable income of urban and rural residents, so as to calculate the income gap between urban and rural residents. The calculation formula is: gap = PIU / PIR, where PIU is the per capita disposable income of urban residents and PIR is the per capita disposable income of rural residents. The larger the result, the greater the income gap between urban and rural areas.

4.1.2. Explanatory Variable: Digital Inclusive Financial Index(DIFI)

The digital finance research center of Peking University uses the massive data of ant group on digital Inclusive Finance, A set of "Peking University Digital inclusive financial index" has been compiled "Based on the existing literature and the traditional inclusive financial indicators proposed by international organizations, the index constructs a digital inclusive financial indicator system from three dimensions: the coverage of digital finance, the depth of digital finance and the digitization of Inclusive Finance. It also has 33 specific indicators to quantify the current development of digital Inclusive Finance in various regions of China, which is the basis of digital Inclusive Finance Relevant research provides a reference basis. In order to investigate the impact of digital Inclusive Finance on the Urban-rural income gap, this paper selects the provincial data of China from 2011 to 2020 for analysis. The greater the value of variable difi, the higher the development degree of digital Inclusive Finance, and vice versa.

4.1.3. Control Variable

Industrial structure (IS): China's single agricultural economic structure is an important reason to expand the income gap between urban and rural residents. Farmers cannot improve their economic benefits by improving agricultural productivity and agricultural output. In addition to urbanization, the labor force will also shift with the change of industrial structure. Tang Lizhi et al. (2008) [21] concluded through empirical analysis that the higher the proportion of non-agricultural, the smaller the income gap between urban and rural areas. Through empirical analysis, Wang Yafei et al. (2014) [22] concluded that with the continuous adjustment and optimization of industrial structure, the Urban-rural income gap has a changing trend of expanding first and then converging. Therefore, this paper selects the proportion of the added value of the secondary and tertiary industries in GDP to represent the industrial structure. The larger the is value, the smaller the proportion of the primary industry and the larger the proportion of the secondary and tertiary industries.

Economic development level (RGDP): some scholars believe that there is an inverted U-shaped relationship between economic development and income gap. Relevant studies show that the income situation of the poor can be greatly improved from economic growth, so as to narrow the Urban-rural income gap. Some scholars also believe that economic growth and the balanced distribution of Urban-rural income can be realized simultaneously. It can be seen that the impact of economic development level on Urban-rural income gap is positive, but the direction of action remains to be verified. This paper selects per capita GNP RGDP to represent the level of economic development.

Education level (EDU): a region's education development largely determines its human capital accumulation, and then determines its future income. There are great differences in the level of human capital between urban and rural areas. Educational resources are relatively concentrated in cities and lack of educational resources in rural areas, which has a certain impact on the income gap. This paper uses the proportion of the number of ordinary colleges and universities in the total population to measure the education level edu.

4.2. Data Description

The data of the explanatory variable digital inclusive finance index in this paper comes from the report on the digital inclusive finance index of Peking University (2011-2020) prepared by the digital finance research center of Peking University. After taking the average value and logarithmically processing, the difi used in this paper is obtained. It should be noted that due to the late start of the research on digital Inclusive Finance, Therefore, the earliest available data on the digital inclusive financial index began in 2011, and so far there are only 10 years of data. The data of the explained variables and other control variables are from the China Statistical Yearbook and the database of China Economic Net.

5. Construction and Processing of Model

Referring to many research literatures on the relationship between the development of digital Inclusive Finance and Urban-rural income gap, and combined with the research ideas of this paper, this paper puts forward the following empirical research model:

GAP= $\beta_0+\beta_1$ DIFI+ β_2 IS+ β_3 RGDP+ β_4 EDU+ ϵ .

In the above equation, gap represents the Urban-rural income gap, difi represents the logarithmic form of the digital inclusive finance index, which is the core explanatory variable, is represents the industrial structure, RGDP represents the per capita GDP, and edu represents the education level.

6. Empirical Analysis

6.1. Goodness of Fit Test

The judgment coefficient is a measure of the goodness of fit of the estimated regression equation, which is used to express the closeness of the regression line to each observation point. The regression results show that the modified decisive coefficient R2 is 98.6%, indicating a high degree of fitting; From the change trend chart of actual value and estimated value, they are also close to each other. These two aspects show that the fitting effect of this model is good.

Table 1. Regression results				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
С	-6.6568	1.5178	-4.3858	0.0071
DIFI	01783	0.3333	-5.3531	0.0031
IS	10.7130	1.6777	6.3854	0.0014
RGDP	-0.9300	0.1027	-9.0526	0.0003
EDU	0.0941	0.0235	3.9990	0.0103

6.2. Regression Analysis

It can be seen from the regression results(Table 1) that for the Urban-rural income gap, the digital inclusive financial index shows a negative correlation at the level of 1%, and each unit increase in the digital inclusive financial index will reduce the Urban-rural income gap by an average of 0.18 units, indicating that without considering other control variables, The development of digital Inclusive Finance has indeed significantly reduced the income gap between urban and rural areas.

From the regression results of the control variables, the industrial structure is passed the significance level test of 1% in this model, and has a significant aggravating effect on the Urbanrural income gap, that is, for each increase of the added value of the secondary and tertiary industries in the proportion of GDP, the Urban-rural income gap increases by an average of 10.71 units, indicating that the optimization of the industrial structure expands the Urban-rural income gap. This paper analyzes the possible reasons: at present, the main force of domestic secondary and tertiary industries is urban residents, while the primary industry is mostly participated by rural residents. The optimization of industrial structure means the increase of the proportion of output value of secondary and tertiary industries, and the large difference in income between industries increases the income gap between urban and rural residents. The

indicator RGDP, which represents the level of economic development, passed the significance level test of 1% in the model and showed the convergence effect on the Urban-rural income gap. that is, for every increase of 1 unit of per capita GDP, the Urban-rural income gap will be significantly reduced by 0.93 units on average, which is consistent with the inverted U-shaped convergence stage effect of the level of economic development on the Urban-rural income gap mentioned above. Edu, the indicator representing the level of education, did not pass the significance test in the model, indicating that the impact of education on the Urban-rural income gap is complex and long-term, and the direct effect is not significant. However, education has shown the effect of expanding the income gap between urban and rural areas. For every one percentage point increase in the proportion of the number of ordinary colleges and universities in the total population, the income gap between urban and rural areas will expand significantly by 0.09 percentage points on average. Considering that the index is constructed with the number of ordinary colleges and universities, and most of these colleges and universities are distributed in urban areas, the educational resources in rural areas are relatively scarce and scattered, and the gap in educational level has virtually brought about the income gap between urban and rural areas. Therefore, with the improvement of edu, the educated groups tend to be concentrated in urban areas, and gap also increases.

To sum up, the development of digital inclusive finance can indeed converge the income gap between urban and rural residents. The inclusive nature of domestic finance is constantly driving the "inclusive" nature of national wealth. Although we have not explored the specific impact mechanism, on the whole, it can reduce the income gap between urban and rural residents. The selected control variables: industrial structure and economic development level also have a significant impact on the expansion or narrowing of Urban-rural income gap.

7. Conclusions and Policy Implications

7.1. Research Conclusion

Technological progress is an important force to promote financial innovation. Inclusive finance can develop unprecedentedly all over the world, largely thanks to the coupling of science and technology and finance. It points out a new direction for the development of traditional Inclusive Finance, and digital inclusive finance came into being. With its advantages in permeability, availability and sustainability, digital Inclusive Finance has reduced the threshold and cost of financial services, greatly reduced the financial development difference between urban and rural areas, and promoted economic growth. Through empirical research, the main conclusions of this paper are as follows:

First, the development of digital Inclusive Finance in China plays a significant role in narrowing the income gap between urban and rural areas. From the overall national level, promoting digital Inclusive Finance is of great significance to reduce the income gap between urban and rural areas. This overall role suggests that when formulating strategic plans to narrow the income gap between urban and rural areas, the government should ensure that the development of digital technology and Internet technology is synchronized with the improvement of economic level.

Second, from the perspective of control variables, economic development also plays an obvious convergence role in the Urban-rural income gap, which shows that the relationship between China's economic development and the Urban-rural income gap is in the inverted U-shaped convergence stage, and then shows that the continued vigorous development of the economy will continue to promote the narrowing of the Urban-rural income gap. From the empirical results, the transformation of industrial structure is more beneficial to the income growth of urban residents, which will widen the income gap between urban and rural residents, and the force is large. Although the improvement of education level will expand the income gap

between urban and rural areas, the effect is not obvious. The possible reason is that education has a long-term and complex impact, and the direct effect is not obvious.

Policy Enlightenment 7.2.

First, government departments should improve the digital construction in rural areas, give full play to the role of digital Inclusive Finance in alleviating the income gap between urban and rural areas, promote the use of digital technologies such as big data and cloud computing in rural areas, expand the coverage of digital Inclusive Finance and enrich its services for rural poor groups, so as to meet the capital needs of poor groups; On the other hand, promote the construction of basic data platform in rural areas to understand the financial service needs of groups in poor areas, appropriately reduce the access threshold of financial institutions, and realize the adaptive matching of financial service supply and demand between financial institutions and poor groups. Improve the digital financial system, enrich the diversity of digital financial products, launch products with high acceptance and strong practicability by rural residents, and promote the development and innovation of digital technology.

Second, improve the distribution of educational resources. Improve the education level of residents in rural areas, so as to improve their financial literacy. According to the conclusion of this paper, the concentration of educational resources to urban areas will widen the income gap between urban and rural residents. Therefore, a measure to narrow the income gap is to increase the amount of educational resources available in rural areas, improve the level of compulsory education and vocational education, and help the population in poor areas accumulate human capital, Strengthen the role of digital Inclusive Finance in narrowing the income gap between urban and rural areas. In addition, the generally low financial literacy of rural residents is also one of the important factors limiting their participation in digital Inclusive Finance. Therefore, it is also necessary to strengthen the popularization of financial education for rural residents, pay attention to the education of basic and practical financial knowledge and financial skills, and provide targeted financial risk training for them to strengthen their awareness of risk prevention.

Third, clarify the development strategy and general idea of digital Inclusive Finance. Compared with traditional bank outlets, digital finance greatly reduces the operating cost of Inclusive Finance, expands the service scope, improves the service efficiency, and is easy to form economies of scale. The digital inclusive financial market has great development potential. Financial institutions should formulate the development strategy of digital Inclusive Finance as soon as possible, clarify the overall development idea, and actively explore market share, so as to gain the first mover advantage and obtain scale income. In the choice of customer groups, county "agriculture, rural areas and farmers", low-end community residents, small and micro enterprises and individual industrial and commercial households should be regarded as the main customer groups of digital Inclusive Finance; In terms of network layout, we should build a three-dimensional service channel combining online and offline, and give full play to the role of digital technology and agency network; In terms of product design and marketing planning, differentiated product design and targeted marketing planning are carried out for different target customer groups and network layout.

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