

Research on the Impact of China's Digital Inclusive Finance Development on Residents' Consumption Structure

Fumin Ban

School of Economics and Management, Nanjing University of Science and Technology, Nanjing 210094, China

Abstract: With the continuous deepening of digital economy construction, the importance of digital inclusive finance in economic development has become increasingly prominent. Consumption is the endogenous driving force for building a new development pattern, and expanding domestic demand is the strategic basis for realizing the "dual circulation." To achieve high-quality development of China's economy, we must pay attention to the upgrading of residents consumption structure while promoting the improvement of their consumption level. Based on panel data from 31 provinces, autonomous regions, and municipalities in mainland China from 2011 to 2021, this paper constructs a two-way fixed effect model and an intermediary effect model for empirical research. The results show that the development of digital inclusive finance in China can promote the upgrading of residents consumption structure. This promotion effect has a heterogeneous impact on urban and rural residents, being more pronounced in urban areas. Furthermore, digital inclusive finance promotes the upgrading of residents consumption structure through both direct and indirect channels. Directly, it has revolutionized payment methods, facilitating consumer payments. Indirectly, it has increased residents net property income. These findings provide empirical evidence and policy references for leveraging digital inclusive finance to expand domestic demand and achieve high-quality economic development.

Keywords: Digital inclusive finance; Residents consumption structure; Mesomeric effect; Urban-rural heterogeneity.

1. Introduction

All manuscripts must be in English, also the table and figure texts, otherwise we cannot publish your paper. In the context of the rapid development of the digital economy, digital inclusive finance, as a product of the deep integration of finance and technology, is increasingly becoming a key force in promoting economic and social development. In February 2023, the Central Committee of the Communist Party of China and the State Council issued the "Overall Layout Plan for the Construction of Digital China," pointing out that building a digital China is an important engine for promoting Chinese-style modernization in the digital age. Finance, as a vital force driving economic and social progress, faces the critical question of how to use financial technology to achieve digital development.

Simultaneously, China's economic growth is transforming from an investment-driven model to a consumption-driven one. However, impacted by events like the COVID-19 pandemic, residents preventive savings have increased, leading to sustained low consumption, which restricts economic transformation. Therefore, restoring and expanding consumption and optimizing the consumption structure are crucial for the overall development situation. This paper aims to explore the impact of China's digital inclusive finance development on the upgrading of residents consumption structure and its underlying mechanisms.

2. Organization of the Text

2.1. Literature Review and Research Gap

2.1.1. Research on Digital Inclusive Finance

Research on digital inclusive finance mostly focuses on its development process and definition. Hu Bin et al. (2020) believed that inclusive finance has evolved from

microfinance in its infancy to mature inclusive finance, and finally to digital inclusive finance, which thrives with the help of digital technology. Hua Shuhong (2020) interpreted digital inclusive finance from the three aspects of digital + inclusive + finance, considering it as using modern digital technology to provide convenient and fast financial products. Zhou Luyao (2022) argued that China's inclusive finance has gone through four periods: offline inclusive finance, the post-financial crisis era, "Internet + inclusive finance," and the new era of digital inclusive finance.

2.1.2. Research on Consumption Structure Upgrading

With China's rapid economic development, residents consumption structure has also been optimized and upgraded. Huang Weiting (2013) divided consumption structure into two levels: consumption content and consumption quality, believing that consumption upgrading is a multi-dimensional complex issue. Liu Hui and Wang Hainan (2015) found that the upgrading of residents consumption structure promotes the survival of the fittest among industries, eliminating backward industries and stimulating the emergence of industries that meet development needs. Ma Xiaoyu et al. (2022) found through empirical research that the upgrading of consumption structures in urban and rural areas has different positive effects on the transformation and upgrading of the industrial structure.

2.1.3. Research on the Impact of Digital Inclusive Finance on Consumption Structure

Scholars generally agree that digital inclusive finance can promote the optimization of the consumption structure. Yan Fulei et al. (2021) found that digital inclusive finance affects the consumption structure through financial development. Ma Ming (2022) found that the consumption gap acts as a bridge between digital inclusive finance and the consumption structure. Cui Yuxin (2022) found through empirical research that digital inclusive finance not only increases residents

consumption levels but also increases their expenditure on development and enjoyment-oriented consumption. Some scholars have also focused on rural areas, finding that digital inclusive finance significantly promotes the upgrading of rural residents consumption (Xiao Yuanfei et al., 2020; Dong Zhankui and Guan Dongli, 2021).

2.1.4. Literature Review

In summary, although the research methods, models, and mediating variables differ, scholars consistently conclude that digital inclusive finance can optimize residents consumption structure. However, most studies either examine urban and rural areas as a whole or focus unilaterally on one. Few scholars conduct comparative studies by separating rural and urban areas. In view of this, this paper will focus on urban-rural heterogeneity, which is also significant for narrowing the development gap and achieving coordinated development between urban and rural areas.

2.2. Research Hypotheses

2.2.1. Theoretical Basis

Precautionary Savings Theory. This theory explains consumers intertemporal consumption decisions. To prevent welfare losses caused by uncertainty in future income or expenditure, consumers become more cautious in allocating current versus future consumption, strengthening their precautionary savings motive and thus reducing current consumption.

Liquidity Constraint Theory. This theory suggests that lending institutions restrict loans to individual consumers without collateral or with low-value collateral. Due to liquidity constraints and low income, many consumers have to forgo some current consumption demand. The development of digital inclusive finance gradually lowers the threshold for loans and insurance, effectively alleviating liquidity constraints.

Long Tail Theory. In China, cities and rural areas play the roles of the "head" and "tail" of the long tail curve, respectively. Cities receive significant policy and resource, while rural areas are neglected. With the rural revitalization strategy and the rapid development of digital information technology, rural areas are gradually gaining attention from digital inclusive finance.

2.2.2. Hypothesis Development

Impact of Digital Inclusive Finance on Consumption Structure Upgrading. Digital inclusive finance possesses the advantages of both "inclusiveness" and "convenience." By utilizing the interconnectedness of "Internet +" and big data, it alleviates the budget constraints on residents high-level consumption, releasing constrained consumption potential and facilitating development and enjoyment-oriented consumption. Therefore, we propose Hypothesis H1: The development of digital inclusive finance can promote the upgrading of residents consumption structure.

Heterogeneous Impact on Urban and Rural Residents Consumption Structure Upgrading. Due to China's long-standing urban-rural dual economic structure, the urban-rural digital divide has not narrowed but has widened with the advancement of digital economy construction. This divide exacerbates the urban-rural economic development gap, affecting the consumption of urban and rural residents. Therefore, we propose Hypothesis H2: The impact of digital inclusive finance development on the upgrading of residents consumption structure exhibits urban-rural heterogeneity.

Mechanism Analysis: Direct Impact. The development of

digital inclusive finance has revolutionized payment methods, directly affecting consumer behavior. Digital payments overcome spatial and temporal limitations, reduce transaction costs, and weaken the psychological perception of wealth loss compared to cash payments, potentially leading to more purchases. Therefore, we propose Hypothesis H3: The development of digital inclusive finance facilitates residents payment methods, directly promoting the upgrading of the consumption structure.

Mechanism Analysis: Indirect Impact. With the development of digital inclusive finance, the traditional financial investment and wealth management market breaks its "rich" attribute. Residents can access convenient and low-cost internet investment and wealth management services through various platforms like Alipay, thereby increasing their income and alleviating liquidity constraints. Therefore, we propose Hypothesis H4: The development of digital inclusive finance indirectly promotes the upgrading of residents consumption structure, with net property income serving as the mediating variable.

3. Research Design

3.1. Variable Selection and Data Sources

The explained variable is the residents consumption structure, differentiated into rural and urban residents consumption structures, measured by the proportion of development and enjoyment-oriented consumption. The core explanatory variable is the Digital Inclusive Finance Index (In_DIF) and its three dimensions: coverage breadth (In_width), usage depth (In_depth), and digitization level (In_digitization). Control variables include per capita disposable income (In_RPCDI for rural, In_CPCDI for urban), social security level (SSL), urbanization level (UL), and gross dependency ratio (GDR). The mediating variable is per capita net property income (In_Rincome for rural, In_Cincome for urban). Data for the explained, control, and mediating variables come from the China Statistical Yearbook (2012-2022). Data for the explanatory variable come from the Peking University Digital Financial Inclusion Index of China (2011-2021).

3.2. Model Specification

3.2.1. Baseline Regression Model

This paper establishes the following two-way fixed effect model:

$$\text{Consumeit} = \alpha_0 + \alpha_1 \ln_EVit + \alpha_2 Xit + \theta_0 + \theta_1 + \varepsilon it \quad (1)$$

In equation (1), i and t represent province and year, respectively; Consumeit represents the urban or rural consumption structure; \ln_EVit represents the digital inclusive finance index or its dimensions; Xit represents a series of control variables; θ_0 and θ_1 represent province and year fixed effects, respectively; εit is the random disturbance term.

3.2.2. Mediation Effect Model

To test Hypothesis H4, this paper constructs a mediation effect model as follows:

$$\ln_incomeit = \beta_0 + \beta_1 \ln_DIFit + \beta_2 Xit + \delta_0 + \delta_1 + \varepsilon it \quad (2)$$

$$\text{Consumeit} = \gamma_0 + \gamma_1$$

$$\ln_incomeit + \gamma_2 \ln_DIFit + \gamma_3 Xit + \eta_0 + \eta_1 + \varepsilon it \quad (3)$$

Model (2) tests the impact of digital inclusive finance on net property income. Model (3) tests the impact of net property income on the consumption structure while controlling for digital inclusive finance.

4. Empirical Results and Analysis

4.1. Baseline Regression Results

Table 1 presents the baseline regression results using the two-way fixed effect model. The regression coefficients of the Digital Inclusive Finance Index (In_DIF) are significantly positive in both the rural (Renjoy) and urban (Cenjoy) consumption structure models, at 0.029 and 0.083, respectively. A 1% increase in In_DIF leads to a 2.9% and 8.3% increase in Renjoy and Cenjoy, respectively. This indicates

Table 1. Baseline Regression Results

Variable	Rsubsis	Renjoy	Csubsis	Cenjoy
ln_DIF	-0.029**(-2.462)	0.029**(2.462)	-0.083***(-7.177)	0.083***(7.176)
ln_RPCDI	0.005(0.500)	-0.005(-0.501)		
ln_CPCDI			0.008(0.227)	-0.007(-0.223)
SSL	0.067**(2.016)	-0.067**(-2.015)	0.071**(2.283)	-0.071**(-2.283)
UL	-0.251***(-2.976)	0.251***(-2.976)	-0.426***(-5.490)	0.426***(-5.492)
GDR	0.178***(-2.856)	-0.178***(-2.857)	0.097*(1.679)	-0.097*(-1.677)
Constant	0.758***(-7.406)	0.242**(-2.367)	1.122***(-3.357)	-0.123(-0.368)
Adjusted R2	0.824	0.824	0.764	0.764
Province FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes

Note: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively; t-statistics are in parentheses.

4.2. Mechanism Testing

4.2.1. Direct Impact: Facilitating Payment Methods

To test Hypothesis H3, the payment index (In_payment) is used as the explanatory variable. The results in Table 2 show that the coefficient of In_payment is significantly positive for both rural (0.0089) and urban (0.0201) consumption structure, indicating that convenient digital payment methods promote the upgrading of residents consumption structure, thus verifying Hypothesis H3. The larger coefficient for urban areas again supports Hypothesis H2.

Table 2. Direct Impact: Facilitating Payment Methods

Variable	(1) ln_Renjoy	(2) ln_Cenjoy
ln_payment	0.0089* (1.6775)	0.0201*** (3.8346)
ln_RPCDI	-0.0035 (-0.3806)	
ln_CPCDI		0.0431 (1.2613)
SSL	-0.0622* (-1.8701)	-0.0599* (-1.8364)
UL	0.3079*** (3.8635)	0.5954*** (7.7715)
GDR	-0.1948*** (-3.1407)	-0.1454** (-2.4008)
Constant	0.3128*** (3.2605)	-0.3943 (-1.1265)
Adjusted R2	0.8224	0.7361
Province FE	Yes	Yes
Time FE	Yes	Yes

Note: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively; t-statistics are in parentheses.

4.2.2. Indirect Impact: Increasing Net Property Income

To test Hypothesis H4, net property income is used as the mediating variable. The results in Table 3 show that the coefficient of In_DIF is significantly positive for both rural (0.1565) and urban (0.3535) net property income. Furthermore, when controlling for In_DIF, the coefficient of net property income (ln_Rincom, ln_Cincom) is significantly positive for both rural (0.0123) and urban (0.0287)

that the development of digital inclusive finance can increase residents development and enjoyment-oriented consumption, thus upgrading the consumption structure, verifying Hypothesis H1.

Furthermore, the coefficient for urban areas (0.083) is nearly three times that for rural areas (0.029). This suggests that the promoting effect of digital inclusive finance on consumption structure upgrading is more pronounced for urban residents, thus verifying Hypothesis H2 on urban-rural heterogeneity.

consumption structures. This confirms that digital inclusive finance indirectly promotes the upgrading of residents consumption structure with net property income as the mediator, thus verifying Hypothesis H4.

Table 3. Mediating Effect of Net Property Income

	(1) ln_Rincom e	(2) Renjoy	(3) ln_Cincom e	(4) Cenjoy
ln_Rincom e		0.0123** (2.2379)		
ln_Cincom e				0.0287** * (4.9904)
ln_DIF	0.1565*** (4.1159)	0.0294** (2.4810)	0.3535*** (4.3422)	0.1207** * (3.3705)
ln_RPCDI	0.4209*** (4.5684)	-0.0063 (-0.6906)		
ln_CPCDI			3.2638*** (9.5552)	0.0261 (0.7333)
SSL	-0.5799* (-1.8746)	- 0.0708** (-2.1513)	0.3844 (0.7241)	0.0095 (0.5707)
UL	2.0194*** (2.8071)	0.2674** * (3.1803)	- 6.2443*** (-4.9561)	0.1207** * (3.3705)
GDR	0.4128 (0.7789)	- 0.1462** (-2.3004)	-1.4184 (-1.4728)	- 0.0258** * (-5.9029)
Constant	-0.2365 (-0.3718)	0.1694 (1.5876)	- 24.1414** * (-8.6818)	0.6698** * (4.8006)
Adjusted R2	0.9043	0.8267	0.8499	0.7650
Province FE	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes

Note: *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively; t-statistics are in parentheses.

5. Conclusion and Policy Recommendations

This paper investigates the impact of digital inclusive finance on residents consumption structure using panel data from 31 provinces in China from 2011 to 2021. The empirical results show that: (1) The development of digital inclusive finance in China significantly promotes the upgrading of residents consumption structure. (2) This promotion effect exhibits urban-rural heterogeneity, being more significant in urban areas. (3) Digital inclusive finance promotes consumption structure upgrading through two mechanisms: directly by facilitating payment methods and indirectly by increasing residents net property income.

Based on these findings, the following policy recommendations are proposed:

First, accelerate rural information construction and improve urban information construction effectively. Urban construction should focus on depth, while rural construction should balance both breadth and depth, ensuring effective usage and regular maintenance.

Second, lower the thresholds for loans, insurance, and investment to enhance their accessibility, thereby boosting residents consumption confidence. Strengthen publicity and education regarding insurance, especially in rural areas.

Third, accelerate the promotion of digital RMB to support the development of digital inclusive finance, as its usage temporal and spatial limitations highly aligns with the needs of digital inclusive finance.

Fourth, accelerate the pace of urbanization to stimulate domestic demand potential. Implement policies to properly address household registration issues, control housing prices, and ensure employment for migrant workers, thereby attracting more rural residents to move to cities and towns, releasing greater internal demand.

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