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Can Digital Inclusive Finance Narrow the Urban-Rural Income Gap?

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Abstract: This study utilizes panel data from 280 prefecture-level and above cities between 2011 and 2022, along with three waves of the China Household Finance Survey (CHFS), to examine the role and mechanisms of digital inclusive finance in narrowing urban-rural income disparities. It further analyzes synergistic effects with talent agglomeration. Findings reveal that digital inclusive finance significantly narrows urban-rural income disparities, a conclusion that holds up after rigorous robustness tests. Heterogeneity analysis indicates the most pronounced impact occurs in western regions. Considering its pro-poor characteristics, digital inclusive finance reduces income gaps by increasing rural households' output distribution share and financial asset proportion.

Keywords: Digital Inclusive Finance; Urban-Rural Income Gap; Rural Households.

1. Introduction

General Secretary Xi Jinping has pointed out: “Common prosperity is an essential requirement of socialism and a defining feature of Chinese modernization.” In recent years, China's national economy has accelerated its growth pace and optimized its structure, with both urban and rural residents experiencing significant income growth and steadily improving living standards. However, income inequality and the income gap remain severe and complex challenges facing China today. Among the various issues of income inequality, the urban-rural income gap constitutes the most significant component of China's overall income disparity [1]. In 2023, China's urban-rural income ratio reached 2.39:1. Although this ratio has narrowed over the past decade, scholars generally agree that an acceptable urban-rural income ratio should be below 1.7. Financial services support is one of the core pathways to alleviate the urban-rural income gap, which is difficult to fundamentally resolve under the traditional financial system. Digital finance that bridges the Hu Huanyong Line can leverage big data and other technologies to effectively reduce financial institutions' operational costs and service access barriers, significantly boosting rural residents' income [2], diversifying rural household asset allocation, and enhancing access to formal financial services. Consequently, studying the relationship between digital inclusive finance and the urban-rural income gap holds dual theoretical and practical significance.

Digital inclusive finance represents a new model of digital finance delivering inclusive financial services [3]. Existing research highlights its social value. On one hand, it promotes inclusive economic growth, advances common prosperity, and stimulates green innovation among relevant entities [4-6], and narrowing the urban-rural income gap [7]. On the other hand, it may also generate issues such as credit discrimination and platform monopolies [8-9]. Focusing on the urban-rural income gap, most scholars affirm the role of digital inclusive finance in narrowing this gap. Specifically, from the consumer perspective, digital inclusive finance leverages technological advantages to mitigate uncontrollable natural risks in agricultural production, alleviate financial exclusion among agricultural operators [10], lower financial service barriers in rural areas, and promote farmer income growth and improved income distribution [12]. On the other hand, digital inclusive finance broadens the channels for disseminating financial services [11], enabling knowledge spillover effects to be transmitted through online platforms. This facilitates rural residents' understanding and gradual adoption of online financial services, thereby generating wealth effects. From the producer perspective, digital inclusive finance broadens capital raising channels for financial institutions, overcomes the temporal and spatial constraints of traditional economic activities [13], reduces labor costs while alleviating the funding pressures hindering sustainable development, provides technological support for institutional innovation and upgrading, and more precisely addresses the mismatch between financial supply and financing demand.

In summary, existing literature provides a crucial foundation for this study. Potential innovations include: first, decomposing micro-level household income to deeply analyze rural household income structures, examining the role of digital inclusive finance in narrowing urban-rural income gaps through household output distribution rates and financial asset shares as transmission channels; second, investigating the heterogeneous effects of digital inclusive finance on urban-rural income disparities from the perspectives of urban population size and regional context, thereby broadening the scope of related research.

2. Theoretical Analysis and Research Hypotheses

Digital inclusive finance, by integrating digital technology, injects fresh vitality into addressing the urban-rural income disparity. For a long time, one of the core reasons for the significant income gap between urban and rural areas has been the lack of comprehensive financial services supporting the development of the real economy in rural regions. Financial institutions in rural areas often lack robust risk control and information collection capabilities, resulting in low satisfaction of financial needs. In the traditional financial environment, relying solely on manual processes combined with offline promotional models has proven ineffective in improving the current state of financial exclusion.

Under the digital inclusive finance system, financial institutions leverage digital technology innovations to enhance financial service identification and prediction mechanisms. This approach lowers user access thresholds, breaks down capital barriers, boosts talent attraction, and stabilizes financial market conditions, thereby providing robust support for rural economic development and alleviating financial exclusion. Specifically, financial institutions can utilize technologies like artificial intelligence large language model algorithms to forecast market sentiment and predict asset prices [14]. This enables more precise characterization of user risk profiles, reduces information asymmetry risks, and provides low-cost, low-threshold capital support for small and micro enterprises and agricultural production [15], thereby boosting the operational confidence of small businesses.

Based on this, Hypothesis H1 is proposed: Digital inclusive finance can narrow the urban-rural income gap.

With advances in deep learning technology, increased computing power, and accumulated data, the technological upgrading of financial institutions has a greater positive impact on raising the output distribution rate for rural households than for urban areas. First, digital inclusive finance integrates cutting-edge digital technologies and leverages massive data to innovate services and develop new products. This enables financial institutions to transcend geographical boundaries, cover the entire industrial chain, reduce capital bottlenecks in supply chain operations while controlling systemic risks, provide funding guarantees for enterprise production, and drive economic development. Second, financial institutions can integrate structured financial market data with unstructured financial text data. By leveraging digital technology to establish databases and create comprehensive customer profiles [16], they can precisely address the "MacMillan Gap" for small and micro enterprises. Precise capital allocation stimulates structural innovation, optimizes corporate financial structures, and enhances employee benefits. In regions with weaker financial development endowments, digital finance demonstrates even stronger effects in driving enterprise technological innovation [17]. Thus, digital inclusive finance can provide comprehensive financial services to support local SME innovation and upgrading while enhancing their overall competitiveness. This drives rapid local economic growth, stabilizes the job market, increases labor income for rural residents, and narrows the urban-rural income gap.

Based on this, Hypothesis H2 is proposed: Digital inclusive finance can reduce the urban-rural income gap by increasing the output distribution rate of rural households.

Growth in rural residents' income serves as a crucial visible indicator of narrowing urban-rural income disparities, while heightened wealth awareness among rural residents constitutes an intrinsic driver of this narrowing [18]. Constrained by geographical factors and financial literacy, rural residents exhibit relatively monolithic income structures with low proportions of asset-based income. Idle funds are predominantly concentrated in time deposits to generate interest income, failing to fully leverage wealth effects. Digital inclusive finance can effectively address the issue of monolithic income structures among rural residents. On one hand, it provides more convenient and comprehensive access to financial information. Frequent exposure to online wealth management, stocks, bonds, funds, and other financial products subtly enhances residents' financial literacy, broadens avenues for growing idle funds, and enriches the layers of their income structure. On the other hand, digital inclusive finance lowers the cognitive barriers to product investment. By upgrading services and strengthening risk control, digital inclusive finance lowers entry barriers and enables individuals to freely select financial products aligned with their subjective preferences at lower transaction costs. These characteristics may alter the current low participation rate of Chinese households in risk-bearing financial investment markets [19], thereby increasing residents' asset income and intertemporal total utility.

Based on this, Hypothesis H3 is proposed: Digital inclusive finance can narrow the urban-rural income gap by increasing the proportion of financial assets in rural household income.

3. Research Design

3.1. Model Construction

This paper constructs a panel data two-way fixed effects model within a benchmark regression framework to examine the impact of digital inclusive finance on the urban-rural income gap, as detailed below:

$$Income_gap_{it} = \alpha + \beta DFI_{it} + \gamma Control_{it} + \theta_i + \mu_t + \varepsilon_{it} \quad (1)$$

In equation (1), the dependent variable $Income_gap_{it}$ denotes the urban-rural income gap in the i-th prefecture-level city during year t. The core explanatory DFI_{it} variable represents the level of digital financial inclusion development and its sub-items. $Control_{it}$ refers to control variables at the prefecture-level city tier, encompassing economic development levels, government fiscal expenditures, industrial structures, degrees of openness to the outside world, and urbanization levels.

To examine the intermediary mechanisms through which digital inclusive finance narrows the urban-rural income gap, this paper employs a micro-macro data matching approach to construct the following model:

$$M_{it} = \alpha + \beta_1 DFI_{it} + \gamma_1 \delta_{it} + \theta_i + \mu_t + \varepsilon_{it} \quad (2)$$

In equation (2), the mediating mechanism variables include the household output distribution rate ($Output_rate_{it}$) and the proportion of financial assets (Fin_rate_{it}). Specifically, $Output_rate_{it}$ denotes the ratio of labor income to total income for household i in year t; Fin_rate_{it} represents the proportion of financial assets to total assets for household i in year t. The core explanatory variable DFI_{it} represents the level of digital financial inclusion development and its subcomponents. $Rural_{it}$ indicates whether a household is rural, taking a value of 1 if rural and 0 otherwise. ε_{it} denotes household-level control variables.

3.2. Variable Specifications

Urban-rural income gap (Income_gapit). Most existing literature employs the following indicators to measure the urban-rural income gap: the ratio of per capita disposable income between urban and rural residents, the difference in per capita disposable income between urban and rural residents, and the Gini coefficient. The Theil index, however, can account for the impact of changes in urban and rural population structures on these indicators. Therefore, the Theil index is selected as the measurement metric. The relevant formula for the Theil index is as follows:

$$Theil_{it} = \sum_{i=1}^{2}\left(\frac{y_{it}}{y_t}\right)\times \ln\left[\frac{y_{it}}{y_t}\Big/\frac{x_{it}}{x_t}\right] \quad (3)$$

In equation (3), i=1 represents urban areas, and i=2 represents rural areas; y_{1t} denotes the total income of urban residents in period t, y_{2t} denotes the total income of rural residents in period t, and y_t denotes the total income of both urban and rural residents in period t; x_{1t} denotes the population of urban residents in period t, x_{2t} denotes the population of rural residents in period t, and x_t denotes the total population of both urban and rural residents in period t.

Digital Financial Inclusion Development Index (DFI). This paper adopts Guo Feng et al.'s approach, utilizing the Peking University Digital Financial Inclusion Index to measure the development level of digital financial inclusion at the municipal level [3]. This index comprehensively analyzes and constructs the digital financial inclusion index from three dimensions: coverage breadth (lncover), usage depth (lnuse), and digitalization level (lndigtail), effectively reflecting the development level of China's digital financial inclusion.

Mediating variables. Output distribution rate ($Output_rate_{it}$), financial asset share (Fin_rate_{it}). Based on an examination of the composition of income drivers, the causes of per capita income disparities between urban and rural residents consist of disparities in per capita labor income, per capita asset income, and per capita transfer income [20]. Among these, the primary factors influencing labor income and asset income disparities are the output distribution rate and the financial asset share, respectively.

Control variables. This paper references [21-22] to control for variables that may influence macroeconomic growth and income inequality. Economic development level (pgdp) is measured using per capita GDP (in billions of yuan per person) for each city; Government fiscal expenditure (gov) is represented by the ratio of local general budget expenditure to GDP; Degree of openness (open) is measured by the proportion of trade exports to GDP, with nominal values converted using the average annual RMB-USD exchange rate during calculations. Industrial structure (inds) is assessed by the share of tertiary industry value-added in GDP. Urbanization level (urban) is measured by the proportion of urban population to the year-end permanent resident population. All data sources are municipal statistical yearbooks. Furthermore, when examining the mechanism through which digital inclusive finance affects urban and rural incomes, this paper follows Yin Zhichao et al. (2015) and Zhang Zhongxiang and Hu Yahui (2024) by controlling for a series of household head-related variables such as age, household registration status, gender, and marital status [23-24]. It also controls for household-level variables including total household consumption and household risk preference.

3.3. Sample Selection

This study uses data from 280 prefecture-level cities in China (2011–2022). After excluding Tibet and cities with severely missing data, the macro-level data come from the China Digital Inclusive Finance Index and various statistical yearbooks; the micro-level data are drawn from the China Household Finance Survey (CHFS) for 2015, 2017, and 2019, with samples excluded where the household head was under 16 years old or had severely missing variables. To ensure continuity, tracked samples from 2015–2019 were matched with macro-level data, resulting in 15,373 valid observations (5,124 per year). Since CHFS reflects household conditions from the previous year or the first half of the survey year, the macro-level matching uses the Digital Inclusive Finance Index for 2014, 2016, and 2018. Variable construction and descriptive statistics are shown in the figure below.

Table 1. Descriptive Statistics of Variables

Variable Name	Observed Value	Mean	Standard Deviation	Minimum	Median	Maximum
Theil	3360	0.1048	0.3252	3.91e-08	0.0465	5.4132
Output_rate	13960	0.6031	0.4705	-6.3382	0.7922	4.8303
Fin_rate	15365	0.1005	0.1738	5.85E-06	0.0251	1.0000
DFI	3360	5.1524	0.5242	2.8344	5.3310	5.8891
lncover	3360	5.0998	0.5908	0.6206	5.2487	5.9732
lnuse	3360	5.1150	0.5108	1.4563	5.3173	5.8702
lndigtail	3360	5.3019	0.5880	0.9933	5.5600	6.3651
lnpgdp	3360	10.7065	0.7729	1.1878	10.7227	12.4565
gov	3360	0.2104	0.1118	0.0000	0.1804	0.9940
inds	3360	0.4365	0.0945	0.1346	0.4340	0.8050
open	3360	0.1044	0.1734	0.0033	0.0112	1.8821
urban	3360	0.5631	0.1467	0.1815	0.5463	1.0000

4. Empirical Findings and Analysis

4.1. Benchmark Regression Results

Table 2 presents the benchmark results for Equation (1). Overall, the benchmark regression findings indicate that digital inclusive finance leverages its technological advantages to effectively narrow the urban-rural income gap. This outcome aligns with most scholarly research, confirming Hypothesis H1. The first column shows that the impact of the digital inclusive finance composite index on the urban-rural income gap is statistically significant at the 1% level. A 1% increase in the digital inclusive finance index leads to a significant 0.339% reduction in the urban-rural income gap. At the urban level, digital inclusive finance enhances financial institutions' capabilities across various dimensions, such as risk resilience and information gathering. Through network effects, cost efficiencies, and reduced educational barriers, it effectively integrates “inclusiveness” and “benefits,” injecting “new vitality” into rural areas. This drives the development of the real economy, increases residents' income, strengthens the talent base, and narrows the

urban-rural income gap.

Table 2. Benchmark Regression

Variable		Dependent variable: Urban-rural income gap (Theil)		
	(1)	(2)	(3)	(4)
DFI	-0.3383***			
	(0.0889)			
lncover		-0.1953***		
		(0.0642)		
lnuse			-0.1132***	
			(0.0249)	
lndigtail				0.0497***
				(0.0147)
lnpgdp	-0.1125***	-0.0851***	-0.1692***	-0.1612***
	(0.0230)	(0.0261)	(0.0307)	(0.0298)
gov	0.0078	0.0363	-0.0777	-0.0610
	(0.0773)	(0.0841)	(0.0806)	(0.0810)
inds	-0.1296*	-0.1151	-0.2225***	-0.2352***
	(0.0664)	(0.0715)	(0.0638)	(0.0647)
open	-0.2069*	-0.1949	-0.2863**	-0.2947**
	(0.1177)	(0.1221)	(0.1200)	(0.1248)
urban	-0.0790	-0.1058	-0.1274	-0.1328
	(0.1868)	(0.1639)	(0.1907)	(0.1910)
City fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Sample size	3186	3186	3186	3186
R^2	0.9671	0.9696	0.9636	0.9630

Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively. Standard errors are shown in parentheses; the same applies below.

Regarding control variables, the regression coefficients for per capita GDP, industrial structure, and foreign investment levels were significantly negative. This indicates that economic growth, industrial structure optimization, and increased openness to the outside world significantly promote the convergence of urban-rural income disparities.

4.2. Robustness Test

Endogeneity Analysis. While the previous regression controlled for city-level and time-period fixed effects, mitigating the impact of omitted variables to some extent, residual biases may persist due to factors like reciprocal causality. This study adopts the instrumental variable approach proposed by [25], employing the share transfer method to construct the instrument variable “number of prefecture-level city post offices in 1984 × internet broadband users per 100 people.” Since postal offices primarily handled telephone line installations in earlier years, and telephone line quantities positively correlate with regional communication demand, this meets the relevance condition for instrumental variables. Furthermore, the extended time span between 1984 and 2011 provides inherent exogeneity advantages. Thus, this instrumental variable theoretically serves as an effective tool for measuring digital financial inclusion development. Table 3 shows that all stage-one regression results are statistically significant at the 1% level, confirming the instrument's validity. Stage-two regression results align with the benchmark regression, further validating that expanding the coverage and usage depth of digital inclusive finance narrows the urban-rural income gap. Regarding the instrumental variable test results, the F-value in the first stage is significantly greater than 10, essentially ruling out the issue of weak instruments. The endogeneity test results show a p-value significantly less than 0.5, indicating that this instrumental variable is valid. Since the number of instrumental variables equals the number of endogenous explanatory variables, an over-identification test is unnecessary. Thus, “number of prefecture-level city post offices in 1984 × internet broadband users per 100 people” is an effective instrumental variable.

Table 3. Instrument Variables

Variable	Theil		Theil		Theil		Theil	
	OLS	2OLS	OLS	2OLS	OLS	2OLS	OLS	2OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI		-0.6199***						
		(0.0867)						
lncover				-0.3232***				
				(0.0445)				
lnuse						-0.5552***		
						(0.0802)		
lndigtail								0.4095***
								(0.0673)
Instrumental Variables	-0.0000***		-0.0000***		-0.0000***		0.0000***	
	(0.0000)		(0.0000)		(0.0000)		(0.0000)	
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	3199	3199	3199	3199	3199	3199	3199	3199
R^2		0.9638		0.9665		0.9451		0.9276
Phase 1 F-value		113.787		109.777		115.972		67.4097
Wald test **(**p-value**)**		0.0015		0.0306		0.0000		0.0000

Replacing the dependent variable. To test the robustness of empirical results, this paper replaces the dependent variable's measurement indicator—the urban-rural income gap—with the "urban-rural income ratio" to examine how changing the dependent variable affects estimation outcomes. As shown in columns (1), (3), (5), and (7) of Table 4, the urban-rural income ratio has narrowed significantly alongside the development of digital inclusive finance. Removing control variables. Given the simultaneous control of time effects and multiple related macroeconomic variables, the regression results may exhibit multicollinearity issues. Therefore, the macroeconomic variables were removed and the regression was rerun. As shown in columns (2), (4), (6), and (8) of Table 4, after removing the control variables, digital inclusive finance still narrows the urban-rural income gap, consistent with the benchmark results, indicating that the main conclusions remain robust.

Table 4. Robustness Tests

Variable	Theil		Theil		Theil		Theil	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI	-0.3508***	-0.0702***						
	(0.1109)	(0.0074)						
lncover			-0.3001***	-0.0704***				
			(0.0774)	(0.0089)				
lnuse					-0.1100***	-0.0689***		
					(0.0410)	(0.0072)		
lndigtail							0.0728***	-0.0462***
							(0.0260)	(0.0051)
Control variables	Yes	No	Yes	No	Yes	No	Yes	No
City fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	No	Yes	No	Yes	No	Yes	No
Sample size	2734	3186	2734	3186	2734	3186	2734	3186
R^2	0.9491	0.9590	0.9501	0.9619	0.9481	0.9576	0.9481	0.9537

4.3. Heterogeneity Analysis

Based on regional heterogeneity. China's vast territory exhibits significant regional variations, with differences in economic foundations, development strategies, and infrastructure across regions. These disparities may influence the impact of digital inclusive finance on narrowing the urban-rural income gap. Therefore, this section conducts heterogeneity tests by dividing the sample cities into four regions—Eastern, Central, Western, and Northeast—according to the classification method of the National Bureau of Statistics.

Table 5. Regional Heterogeneity Analysis

Variable	Eastern Region	Central Region	Western Region	Northeast Region
	(1)	(2)	(3)	(4)
DFI	-0.2542***	-0.2643***	-0.4115***	-0.0874**
	(0.0583)	(0.0430)	(0.1536)	(0.0340)
Control variables	Yes	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Sample size	948	947	912	379
R^2	0.5019	0.8916	0.8085	0.9986

Table 5 presents the results of a heterogeneous analysis examining the impact of digital inclusive finance on urban-rural income disparities across four regions. Findings indicate that digital inclusive finance exerts the most pronounced effect on narrowing income gaps in the western region, followed by the central and eastern regions, with the northeastern region showing the least impact. A 1% increase in the digital inclusive finance index leads to a significant 0.09% reduction in urban-rural income disparities. This may stem from the historically underdeveloped economy in the western region, where severe spatial agglomeration of digital inclusive finance has left rural areas unable to access effective financial services. With the continuous improvement of infrastructure in recent years, the positive marginal utility of digital inclusive finance development for the western region's economic growth now exceeds that of other regions.

5. Mechanism Analysis

The preceding section employed regional-level data to conduct empirical research, examining the impact of digital inclusive finance on urban-rural income disparities from a macro perspective. This section utilizes three-period panel data from the China Household Finance Survey (CHFS) 2015-2019 to investigate the operational mechanisms of digital inclusive finance from a micro perspective. By focusing on rural households' output distribution ratio and financial asset share, it analyzes the underlying causes of narrowing urban-rural income gaps.

Digital Inclusive Finance and Household Output Distribution Ratio. Table 6 reports the impact of digital inclusive finance on household output distribution ratios. Column (1) shows that the regression coefficient for digital inclusive finance is significantly positive, indicating that the development of digital inclusive finance can increase household output distribution ratios. After adding the interaction term between digital inclusive finance and rural location in Column (2), the interaction coefficient is significantly positive. This indicates that the development of digital inclusive finance is more beneficial for rural households in increasing wage income, reducing commercial borrowing costs, and enhancing household labor income. Economically speaking, a 1% increase in the overall index of digital inclusive finance in rural areas leads to a 0.19% increase in household labor income. In columns (3) to (8), the interaction terms for coverage breadth, usage depth, and digitalization level are significantly positive. Therefore, hypothesis H2 is validated.

Table 6. Impact of Digital Inclusive Finance on Household Output Distribution Ratio

Variable	Output_rateit		Output_rateit		Output_rateit		Output_rateit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI	0.3487*	0.1783						
	(0.2089)	(0.2137)						
lncover			0.2890	0.1094				
			(0.2322)	(0.2361)				
lnuse					0.1177	0.0232		
					(0.0894)	(0.0938)		
lndigtail							-0.0938	-0.1570
							(0.1113)	(0.1118)
Rural	-0.0307	-1.0314***	-0.0298	-1.0340***	-0.0366	-0.8290***	-0.0388	-1.2400***
	(0.0416)	(0.3011)	(0.0418)	(0.3261)	(0.0414)	(0.2329)	(0.0416)	(0.3269)
DFI*Rural		0.1857***		0.1891***		0.1496***		0.2103***
		(0.0553)		(0.0609)		(0.0433)		(0.0567)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	8223	8223	8223	8223	8223	8223	8223	8223
R^2	0.6894	0.6903	0.6894	0.6901	0.6894	0.6903	0.6893	0.6903

Digital Inclusive Finance and Household Financial Asset Share. Table 7 reports the impact of digital inclusive finance on the share of household financial assets. Column (1) results show that the overall digital inclusive finance index is

significantly positive, indicating that the development of digital inclusive finance contributes to increasing the share of household financial assets. Column (2), which adds interaction terms between the overall and sub-indices of digital inclusive finance and whether households are rural, shows that the interaction coefficients are also significantly positive. This indicates that as digital inclusive finance develops, the expansion of rural households' share of financial assets becomes more pronounced. Furthermore, results from columns (3) to (8) reveal that increasing coverage, usage depth, and digitalization of digital inclusive finance similarly boost the share of financial assets held by rural households. Economically speaking, a 1% increase in the development level of digital inclusive finance leads to a 0.28% increase in the proportion of rural household financial assets relative to urban household financial assets. Therefore, digital inclusive finance can narrow the urban-rural income gap by increasing the proportion of rural household financial assets, validating Hypothesis H3.

Table 7. Digital Inclusive Finance Impact on Financial Asset Proportion

Variable	Fin_rateit		Fin_rateit		Fin_rateit		Fin_rateit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DFI	0.1719**	0.1460*						
	(0.0752)	(0.0761)						
lncover			0.0996*	0.0703				
			(0.0564)	(0.0576)				
lnuse					0.0845**	0.0713*		
					(0.0365)	(0.0378)		
lndigtail							-0.0229	-0.0278
							(0.0286)	(0.0287)
Rural	0.0304*	-0.1242*	0.0295	-0.1483**	0.0276	-0.0748	0.0267	-0.1516*
	(0.0181)	(0.0702)	(0.0181)	(0.0699)	(0.0181)	(0.0584)	(0.0180)	(0.0894)
DFI*Rural		0.0283**		0.0331***		0.0190*		0.0295*
		(0.0124)		(0.0125)		(0.0103)		(0.0153)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
City fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	13583	13583	13583	13583	13583	13583	13583	13583
R^2	0.5546	0.5548	0.5545	0.5548	0.5546	0.5548	0.5544	0.5546

6. Conclusions and Implications

This study employs a two-way fixed effects model based on panel data from 280 prefecture-level and above cities nationwide (2011-2022) and three waves of the China Household Finance Survey (CHFS) to examine the impact and mechanisms of digital inclusive finance on urban-rural income disparities from both macro and micro perspectives. Findings reveal: At the macro level, digital inclusive finance effectively narrows the urban-rural income gap, with this narrowing effect grounded in expanded coverage and deepened usage. Conversely, increased digital convenience exacerbates the urban-rural income gap—a conclusion that holds after a series of robustness tests. (2) Heterogeneity results indicate that during the development of digital inclusive finance, its narrowing effect on the urban-rural income gap is strongest in the western region, followed by the central and eastern regions, with the lowest effect observed in the northeastern region. (3) Mechanism tests reveal that digital inclusive finance narrows the urban-rural income gap by increasing labor income for rural households and reducing the output distribution ratio between urban and rural households. Furthermore, the development of digital inclusive finance alleviates information barriers, expands the share of financial assets in household wealth, and thereby reduces the urban-rural income disparity.

Based on the above research findings, this paper draws the following policy implications:

First, further expand the breadth and depth of digital inclusive finance coverage while strengthening risk control over financial derivatives. Simultaneously enhance financial institutions' risk identification and response capabilities. Leverage online platforms to improve financial literacy dissemination systems, conducting targeted and differentiated financial education initiatives. This will prevent residents from “blindly” rejecting or trusting financial products, enhance their awareness of personal risk-bearing capacity, and mitigate the widening effect of digital inclusion on urban-rural income disparities. Provide tailored policy support for digital inclusive finance development based on local conditions, prioritizing its advancement in Northeast China and guiding its penetration into underserved areas.

Second, increase the output distribution rate and financial asset share for rural households. On one hand, precisely target financial institutions' funding support to small and micro enterprises, alleviating their operational capital pressures, creating more rural jobs, reducing agricultural loan interest costs, and boosting rural households' labor income from wages, commerce, and agriculture to narrow the urban-rural output distribution gap. On the other hand, leverage the resource allocation function of digital inclusive finance to inject fresh capital into rural areas, enhance residents' financial literacy, broaden their acceptance of financial products, accumulate customer feedback for product upgrades, cultivate wealth management awareness, and narrow the urban-rural income gap.

Third, appropriate policy Favoritism. The primary cause of

the urban-rural income gap lies in the long-standing underdevelopment of credit systems in rural areas, where farmers lack effective collateral assets, funding gaps remain difficult to bridge, economic growth momentum is insufficient, and diversified income pathways are scarce. Government policies favoring digital inclusive finance provide essential support for institutional reforms and infrastructure development, driving local financial sector growth. On the other hand, technological innovation by financial institutions requires substantial sunk costs and cannot be achieved overnight. During this transition period, governments can maximize support for financing needs through fiscal subsidies and tax incentives.

References

[1] Zhang Yanqun, Wan Haiyuan. Determinants and Trend Forecast of Income Disparity Among Urban and Rural Residents in China [J]. Journal of Quantitative Economics and Technical Economics, 2019, 36 (03): 59-75. (In Chinese)

[2] Zou Yang, Xu Jingwen, Jiang Muxi. Spatial Dynamic Impact Analysis of Digital Inclusive Finance on Common Prosperity [J]. China Soft Science, 2024 (05): 163-172. (In Chinese)

[3] Guo Feng, Wang Jingyi, Wang Fang, et al. Measuring China's Digital Inclusive Finance Development: Index Construction and Spatial Characteristics [J]. Economics (Quarterly), 2020, 19 (04): 1401-1418. (In Chinese)

[4] Zhang Xun, Wan Guanghua, Zhang Jiajia, et al. Digital Economy, Financial Inclusion and Inclusive Growth [J]. China Economist, 2020, 15 (03): 92-105.

[5] Zhang H, Wang Y, Li R, et al. Can green finance promote urban green development? Evidence from green finance reform and innovation pilot zone in China [J]. Environmental Science and Pollution Research, 2023, 30(5): 12041-12058.

[6] Wang Yizhong, Lin Xi, Li Zhenhua, et al. Digital Inclusive Finance Promotes Common Prosperity: A Perspective Based on Liquidity Constraints [J]. Economic Research Journal, 2024, 59 (06): 49-68. (In Chinese)

[7] Li Muchen, Feng Sixian. Digital Inclusive Finance, Digital Divide, and Urban-Rural Income Gap [J]. Management Review, 2023, 35 (06): 57-71. (In Chinese)

[8] Li Sanxi, Wu Yufan, Bao Renjie. Big Data, Personal Information Protection, and Price Discrimination: An Analysis Based on a Vertical Differentiation Duopoly Model [J]. Economic Research Journal, 2021, 56 (01): 43-57. (In Chinese)

[9] Bartlett R, Morse A, Stanton R, et al. Consumer-lending discrimination in the FinTech era [J]. Journal of Financial Economics, 2022, 143(1): 30-56.

[10] Zhang Lin, Wen Tao. How Digital Inclusive Finance Impacts the Integrated Development of Rural Industries [J]. China Rural Economy, 2022, (07): 59-80. (In Chinese)

[11] Li X, He P, Liao H, et al. Does network infrastructure construction reduce urban–rural income inequality? Based on the “Broadband China” policy [J]. Technological Forecasting and Social Change, 2024, 205: 123486.

[12] Lee C C, Lou R, Wang F. Digital financial inclusion and poverty alleviation: Evidence from the sustainable development of China [J]. Economic Analysis and Policy, 2023, 77: 418-434.

[13] Nie C, Zhong Z, Feng Y. Can digital infrastructure induce urban green innovation? New insights from China [J]. Clean Technologies and Environmental Policy, 2023, 25(10): 3419-3436.

[14] Jiang Fuwei, Liu Yumin, Meng Lingchao. Large Language Models, Text Sentiment, and Financial Markets [J]. Management World, 2024, 40 (08): 42-64.

[15] Zhao Jiaqi, Jiang Hongyi, Hu Shiyun, et al. Microcredit and Risk in Digital Inclusive Finance: A Perspective from Bank Digital Transformation [J]. Economics (Quarterly), 2023, 23 (05): 1686-1703. (In Chinese)

[16] Wang Yiqiu, Yao Yue, He Liang. How Does Digital Inclusive Finance Affect Women's Economic Empowerment? Evidence from the China Household Finance Survey (CHFS) [J]. China Population Science, 2025, 39 (01): 23-39. (In Chinese)

[17] Tang Song, Wu Xuchuan, Zhu Jia. Digital Finance and Corporate Technological Innovation: Structural Characteristics, Mechanism Identification, and Effect Differences under Financial Regulation [J]. Management World, 2020, 36 (05): 52-66+9. (In Chinese)

[18] Cheng Mingwang, Jin Yanhong, Gai Qing'en, et al. Rural Poverty Reduction: Should Greater Emphasis Be Placed on Education or Health? An Empirical Study from the Dual Perspective of Income Growth and Gap Reduction [J]. Economic Research Journal, 2014, 49 (11): 130-144. (In Chinese)

[19] Yi Xingjian, Chen Jun, Zhou Cong, et al. Income Risk and Household Risk-Based Financial Asset Investment: Empirical Evidence from CHFS Data [J]. Journal of Management Sciences, 2023, 26 (10): 76-94. (In Chinese)

[20] Zhu Ziyun. Decomposition Analysis of Income Disparities Among Urban and Rural Residents in China [J]. Journal of Quantitative Economics and Technical Economics, 2014, 31 (02): 52-67. (In Chinese)

[21] Li Chengyou, Sun Tao, Wang Shuo. Demographic Dividend, Fiscal Expenditure Bias, and Urban-Rural Income Gap in China [J]. Economic Dynamics, 2021, (01): 105-124. (In Chinese)

[22] Yang Deyong, Dai Haichuan, Huang Fanfan. Threshold Effects of Digital Inclusive Finance on Urban-Rural Income Gaps: An Empirical Analysis Based on Different Development Dimensions [J]. Journal of Economics and Management Review, 2022, 38 (03): 89-101. (In Chinese)

[23] Yin Zhichao, Wu Yu, Gan Li. Financial Accessibility, Financial Market Participation, and Household Asset Choices [J]. Economic Research Journal, 2015, 50 (03): 87-99. (In Chinese)

[24] Zhang Zhongxiang, Hu Yahui. How Does Digital Inclusive Finance Affect Household Over-indebtedness? Micro Evidence from Dual Subjective and Objective Perspectives [J]. Economics (Quarterly), 2024, 24 (02): 643-660. (In Chinese)

[25] Bai Peiwen, Yu Li. Digital Economic Development and Corporate Price Markups: Theoretical Mechanisms and Empirical Evidence [J]. China Industrial Economics, 2021(11): 59-77. (In Chinese)