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MICRO-EVIDENCE OF CHINA THE RELATIONSHIP BETWEEN INTERNET PROFICIENCY, DIGITAL FINANCIAL AND RURAL HOUSEHOLD EXPENDITURE

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Abstract
Digital financial inclusion is becoming widely acknowledged as one of the tools to ensure socioeconomic sustainability and minimize rural-urban differences. The study has used the micro data of Peking University Digital Financial Inclusion Index comprised of 11,596 rural families in 28 Chinese provinces to test the effect of digital financial inclusion on rural family spending and upgrading with the focus on the constraining effects of Internet skills. The methodology has employed ordinary least squares, Quantile regression, 2SLS methods to address heterogeneity and Endogeneity. The results reveal that the digital financial inclusion has a substantial positive effect on the rural household consumption and is found to drive consumption. Digital financial inclusion has positive consumption impacts, which are enhanced by internet skills in low-income, low-consumption and older families and reduce the digital divide. Nonetheless, the Internet skills do not directly enhance consumption upgrading. Digital financial inclusion increases rural consumption by improving credit, household income, and financial market participation, which are boosted by Internet skills. The findings suggested that both inclusive financial policy development and digital capability development are required to achieve sustainable and equitable rural development.
Keywords: Financial distress, digital finance, rural household business, Quantile regression, 2SLS model, China

1. INTRODUCTION

Exports, investments, and consumption have long been referred to be China's "three drivers" of economic development. Financial inclusion is a feature that should be encouraged and enhanced to stimulate household consumption demand. It may alleviate the liquidity restrictions of families by efficiently allocating resources (Anand & Chhikara, 2013). Residents might benefit from online credit, online protection, Web assistance, and flexible installment plans through computerized monetary incorporation. Alipay online consumer lending services "Huabei" and "Jiebei" made advances totaling USD 95 billion in the first quarter of 2018, which is about 3.7 times the amount China Development Bank handed out (Lai et al., 2020). The phrase "monetary consideration" is well-known and often used because to its association with other current terms that are associated with improvement, such as "microfinance," "computerized finance," "comprehensive money," "monetary rejection," and "Fintech." Compared to industrialized countries, the phrase "monetary consideration" is more common in non-industrialized countries (Ozili & Mhlanga, 2024). A study found that digital financial inclusion significantly affects household spending (Jiang et al., 2024). Digital inclusion might boost household spending (Xu et al., 2024). Digital financial inclusion significantly increases rural household consumption and consumption improvements (He et al., 2022). Digital finance was favorably connected with housing, medical, education, entertainment, apparel, and food spending, according to Li et al. (2020). Huang et al. (2022) found that digital banking has increased spending in urban and rural families. Technology like big data, cloud computing, and artificial intelligence has made digital knowledge and information vital to the economy

(Gao et al., 2023). The results showed that internet skills positively impacted the transformation of consumption structure from basic survival to development and enjoyment (Zhao, 2024). The expression "monetary consideration" is more predominant in non-industrial nations than in industrialized nations (Zhang & Sun, 2024). Female-headed households consumed more bread and cereals, fish, oils and fats, vegetables, and confectionary than MHHs (Lufuke & Tian, 2024). The money affects a household's consumption, especially in low-income groups (Nicklaus, 2015). In the paper, mechanism variables include: Credit card, entrepreneurial, and rural household income. The findings show that rural families led by educated and healthy people also had facilities of digital finance usage, rural household head education, and digital infrastructure (Zou & Luo, 2019). Male and female household heads' education affects food intake differently (Bhandari & Smith, 2000). Education, employment, and geography affect food consumption (Han et al., 1997). The number of people eating at home, education level, and access to food nutritional and medical knowledge all affect rural residents' animal product intake (Chen et al., 2023). Research shows that digital infrastructure boosts home consumption, and digital infrastructure is a modernized system of telecommunications, networking, data, computing, and technologically integrated infrastructure (Zhang et al., 2024). The current technology revolution updates industrial tools, improving consumption efficiency (Chen and Niu, 2023). The instrumental variable method showed that mobile payment technology has a statistically significant and enabling influence on rural Chinese families' consumption (Zhang et al., 2022). The study aims to address the following issues such as: 1. Can digital financial inclusion and Internet skills increase rural household spending and upgrading, leading to 'digital dividends'? 2. Do Internet skills enhance digital financial inclusion for rural household consumption? 3. Do Internet skills improve digital financial inclusion for disadvantaged rural communities, particularly low-consumption and low-level groups? 4. Digital financial inclusion may increase rural household income by decreasing mobility and credit limitations. Three main strategies cover substantial information gaps in the work. The study has examined China's 28 provinces separately to see how dynamic natural factors like digital financial inclusion and Internet abilities affect rural household spending unique focus of the investigation. The study will also examine online skills' unacknowledged mediating function in analysis.

2. LITERATURE REVIEW

Financial inclusion reduces traditional finance's exclusivity (Klapper et al., 2019). Increased regional DFI can reduce poverty vulnerability. Sub indicator coverage and use depth matter (Wang & Fu, 2022). A study shows that digital financial inclusion strongly affects household spending (Jiang et al., 2024). A 1% increase in digital financial inclusion in nearby provinces decreases local household spending by 0.1289% (Li et al., 2022). Digital banking boosts consumer spending by increasing incomes, investment opportunities, financial transaction friction, and liquidity reduction (Alwahidin et al., 2023). Digital financial inclusion boosts rural household consumption (He et al., 2022). Rural dwellers in well-developed DIFs consume more subsistence (Yang et al., 2022). The household's consumption could be enhanced through digital inclusion (Xu et al., 2024). In addition to fostering entrepreneurship among urban households, digital financial inclusion also enhances their involvement in the financial market (Peng & Mao, 2023). The Digital Financial Inclusion (DFI) has nonlinear characteristics in the process of fostering URCS, with the threshold variables of income level and family sizes (Liu & Yao, 2024). Digital inclusive finance has a substantial impact on the developmental consumption of rural households, but it has no impact on their survival-type and hedonistic consumption (Yu et al., 2022). Digital knowledge and information have become indispensable to the economy as a result of technologies such as artificial intelligence, cloud computing, and big data (Gao et al., 2023). The results demonstrated a notable and favorable influence of internet skills on the transition of consumption structure from basic survival to higher levels of growth and pleasure (Zhao, 2024). The variety of family use is not influenced by the method of accessing the Internet, whether through smart phones and laptops (Vatsa et al., 2023). Research discovers that the digital gap has resulted in a substantial decrease in family spending (Wang et al., 2023). The ETR findings point out a substantial rise in family income and spending as a consequence of Internet use (Ma et al., 2020). Ye and Yue (2024) found that having internet skills might result in increased overall consumption and consumption in many categories. The study elucidates the micro-level mechanism via which the digital village impacts the enhancement of consumption among rural people (Zhang & Ma, 2022). While keeping other factors constant, internet use has significantly enhanced the standard of living for rural inhabitants (Tian et al., 2023). Acemoglu and Linn (2004) found that the technological innovation has a substantial and beneficial effect on the sustained development of inhabitants' consumption levels in the long run. The gender imbalance has a significant impact on the likelihood of married women living apart from their parents-in-law (Zhang & Sun, 2024). Female-headed households had a higher consumption of bread and cereals, fish, oils and fats, vegetables, compared to male-headed households (Lufuke & Tian, 2024). Therefore, by empowering women and giving them more authority in families, they may have a significant impact on the consumption (Wei et al., 2021). The Higher percentage of elderly individuals has a notable impact on reducing the consumption (Li et al., 2024). According to Koivula et al. (2017), the political party identification influences purchase decisions as much as lifestyle and social network. Increased access to local and overseas markets boosts per capita spending (Emran & Hou, 2008). (Han et al., 1997). The number of people dining

at home, food health and nutrition information, and age structure strongly impact rural residents' animal product consumption (Chen et al., 2023). As their families grew, low-income families consumed less beef and dairy (Haq et al., 2020). In the middle-income group, both the expansion of household survival needs and the upgrading of consumption have led to a loss in consumption efficiency (Zhang et al., 2024). According to Li et al. (2020), digital finance showed a favorable correlation with spending on food, clothes, medical care, education and entertainment. According to Huang et al. (2022), the growth of digital finance has had a substantial effect on the consumption levels of both urban and rural families. Digital economy hurts subsistence homes and impoverished persons, especially destitute families (Zhang & Qu, 2024). The spillover impact is stronger for family income and consumption pairings (Lin & Zhang, 2023). Hu et al. (2023) found that digital finance improves household spending. Rural households led by educated and healthy people consume less (Zou & Luo, 2019). Male and female household heads' education affects food intake differently (Bhandari & Smith, 2000). The number of people eating at home, education level, and access to nutritious food all affect rural residents' consumption patterns (Chen et al., 2023). Building digital infrastructure boosts family consumption (Zhang et al., 2024). Mobile payment technology boosts rural Chinese family spending statistically (Zhang et al., 2022). The current technology revolution updates industrial tools, improving consumption efficiency (Chen and Niu, 2023). According to the above studies preferences the study has developed the following hypotheses:

3. RESEARCH METHODOLOGY

The paper's dependent variables are rural household consumption variables like total (Lnc), upgrading (Cu), subsistence (Lncs1), and enjoyment and development (Lncs2). Dong et al. (2019) constructed a rural household consumption upgrading index with two tiers. The study integrates food, clothes, and housing spending into subsistence consumption, domestic equipment, and supplies utilizing Qi and Liu (2020) and Chen et al. (2020) definitions and CHFS2019's eight consumer expenditure subcategories. The paper's independent variable is Digital Financial Inclusion Index (DFII), which picks the 2019 Peking University DFII. The Chinese province digital financial inclusion index tracks progress. Digital Financial Inclusion Index comprises 33 indicators in the three dimensions mentioned. The study moderates by Internet skills. The paper uses two questionnaire questions to assess rural households' Internet skills: 'whether the household owns a computer' and 'whether the household uses smart phones and can use online shopping, social chatting and other functions' based on the above definition and CHFS2019 data. If no, assign '0', else '1'. Based on rural household consumption research, the following control variables are chosen for the article. (1) Personal characteristics include gender, age, education, marital status, health, and party affiliation. (2) Household characteristics include location, number of members, income, and assets. Rural families' total income (Lnincome), credit card uses, and entrepreneurial activity are research mechanism factors. Digital finance depth is measured by credit, investment, payment, and insurance indices. (3) The 2019 China Digital Economy Development Index showed rural household head education and digital infrastructure creation.

3.1 Research Design

Using ordinary least squares (OLS) model, the study has investigated in the benchmark regression the effect of digital financial inclusion and Internet literacy on household expenditure in rural areas. The study accounts for heteroscedasticity by using a logarithmic processing on the household consumption, income, and assets that are dependent and control variables. Models (1) and (2) test hypotheses H_{01} and H_{02}, whereas models (3), and (4) test hypothesis H_{03}:

$$Lnc = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (1)$$

$$Cu = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (2)$$

$$Lncs1 = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (3)$$

$$Lncs2 = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (4)$$

Lnc is the logarithm of rural households' total consumption, Cu is their consumption upgrading index, Lncs1 is their subsistence consumption, Lncs2 is their enjoyment and developmental consumption, and DFII is their digital financial inclusion index. DFII*Internet signifies digital financial inclusion index-rural household internet skills interaction. Using internet skills, Z represents control variables and ε is the error term. OLS model for rural family total income, credit, investment, payment, and insurance index correlation regression tests Hypothesis H04. Credit card use, entrepreneurship, and Internet skills are dichotomous, hence correlation regression uses Probit model. Models (5), (7), (8), (10) and (11) test income growth, whereas (6) and (9) test consumption propensity promotion, and the OLS model is as follows:

$$Lnincome = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (5)$$

$$Lnc = \beta_0 + \beta_1 Payment + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (6)$$

$$Lnc = \beta_0 + \beta_1 Credit + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (7)$$

$$Lnc = \beta_0 + \beta_1 Investment + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon \quad (8)$$

Lnincomes the logarithm of total household income, Payment is the payment index, Credit is the credit index, Investment is the investment index, and Insurance is the insurance index. The Probit model is set as follows:

$Card = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon$ (9)

$Entrep = \beta_0 + \beta_1 DFII + \beta_2 Internet + \beta_3 DFII*Internet + \beta_4 *Z + \varepsilon$ (10)

$Internet = \beta_0 + \beta_1 Edu + \beta_2 Diginfra + \beta_3 Edu*Diginfra + \beta_4 *Z + \varepsilon$ (11)

Card is the use of credit cards, Entrep is entrepreneurial behavior, Edu is education level, and Diginfra is digital infrastructure index.

3.2 Data Collection

The article utilizes 3 data sources. (1) The China Household Finance Survey and Research Center of Southwestern University of Finance and Economics' nationwide sample survey project (CHFS2019) questionnaire data includes rural household Internet skills, consumption, mechanism, household head characteristics, and household characteristics variables. The survey covers 33,274 households from 28 provinces, 165 cities, 328 districts and counties, and 1,285 village committees. Province and nation data are representative. The paper surveys 33,274 homes. After eliminating individuals with poor information and high values, 11,596 rural families remain. (2) Peking University's Digital Finance Research Center and Ant Financial Services Group publish provincial China Digital Financial Inclusion Development Index statistics (Guo et al., 2020). Due to its reliability and representativeness, China's annual data on provinces, cities, and counties has been widely used in digital financial inclusion research. The 2019 China Digital Economy Development Index White paper includes Digital Infrastructure Index data.

3.3 Descriptive Statistics

Table 1 shows that rural households consumed 34,000 Yuan on average in 2019, with more subsistence consumption, lower consumption, a large difference between minimum and maximum value, and a large standard deviation, indicating large inequality and room for improvement. Digital financial inclusion index shows increasing digitalization in Chinese digital finance but insufficient coverage. Credit cards are rarely used by rural households, entrepreneurship is rare, and internet infrastructure is lacking throughout regions.

Table 1. Descriptive statistics and description of variables

Variables	Mean	Std. Dev.	Min	Max	Variable specification
Lnc	10.4446	0.87	7.2123	14.2285	Total Household consumption expenditure in the past year (logarithm)
Cu	0.3197	0.1987	0	0.9875	Service consumption expenditure/total consumption expenditure
Lncs1	9.754	0.8328	6.1738	14.1824	Total Household subsistence expenditure in the past year (logarithm)
Lncs2	9.4823	1.2139	0	13.6048	Total Household enjoyment and development expenditure in the past Year (logarithm)
DFII	3.2285	0.2728	2.8265	4.1028	Digital Financial Inclusion Index /100
Coverage_breadth index	3.0602	0.2433	2.728	3.8466	Digital Financial coverage Index /100
Usage_depth index	3.1251	0.4141	2.1455	4.3991	Digital Finance Usage Depth Index /100
Digitization_level index	3.9724	0.195	3.6235	4.6223	Digital Finance Digitization Level Index/100
Credit	2.0812	0.2682	1.6649	2.8223	Digital Finance credit Business Index /100
Investment	2.8895	0.571	1.5988	4.8011	Digital Financial Investment Business Index/100
Payment	2.7914	0.3641	2.22	3.6522	Digital Finance payment business Index/100
Insurance	6.9214	0.8226	6.3543	9.3226	Digital Finance Insurance Business Index/100
Credit card	0.0614	0.2401	0	1	0= no credit card used, 1= credit card used

Entrep	0.0776	0.2676	0	1	0 = no entrepreneurial behavior, 1 = entrepreneurial behavior 2019 China Provincial Digital Infrastructure
Diginfra	3.2867	1.0171	1.71	5.91	Index /10
Internet	0.5801	0.4936	0	1	0= not mastered Internet skills, 1= mastered Internet skills
Gender	0.849	0.3581	0	1	0= female, 1= male
Age	58.4021	11.6925	21	97	Age of head of household
Age^2	3545.18	1354.446	441	9409	Age^2 of head of household
Edu	2.5271	0.9857	1	8	1= illiterate, 2= primary school, 3= junior high school, 4= senior high school, 5= technical secondary school/vocational high school, 6= junior college/vocational high school, 7= university undergraduate, 8=postgraduate, 9= doctoral
Mar	2.4128	1.2315	1	6	1= unmarried, 2= married, 3= cohabiting, 4= separated, 5= divorced, 6= widowed
Health	3.0538	1.0435	1	5	1= very bad, 2= bad, 3= fair, 4= good, 5= very good
Party	0.1281	0.3343	0	1	0= the head of the household is not a party member, 1= the head of the household is a party member
Location	2.2181	0.9805	1	4	household region (Eastern region =1, central region =2, western region =3, Northeast region =4)
Num	3.2369	1.6696	1	12	The number of members
Lnincome	9.6486	2.3131	0	15.8777	Total household income in the past year (logarithm)
Lnassets	11.9254	1.5451	0	17.315	Total household assets in the past year (logarithm)

Every variable gives an alternate proportion of family qualities, including computerized finance lists, segment pointers, monetary way of behaving, and financial measurements. The expressive measurements sum up the focal propensity and scattering, featuring changeability across families in monetary consideration, territorial turn of events, and advanced proficiency.

4. RESULTS AND DISCUSSIONS

Table 2 shows the regression of digital financial inclusion, Internet skills, rural household consumption, total rural household consumption, and upgrading. Control variables and Internet skills improve the adjusted R^2, indicating model explanatory power. Thus, columns (3)–(6) regression results are most important.

Table 2. Digital financial inclusion and internet literacy affect rural family spending

Independent Variables	**Total rural household consumption (Lnc)**				**Rural household consumption upgrading (Cu)**	
	-1	**-2**	**-3**	**-4**	**-5**	**-6**

DFII	0.2906***	0.3699***	0.3725***	0.2971***	0.1800**	0.0242*
	-10.8	-11.4	-11.61	-6.87	-1.96	-1.95
Internet	0.7203***		0.2505***	-0.1443	0.0036	0.0362
	-48.43		-16.1	(-0.95)	-0.82	-0.83
DFII*Internet				0.1226***		-0.0101
				-2.6		(-0.75)
Gender		-0.0460**	-0.0481**	-0.0482**	-0.0258***	-0.0258***
		(-2.4)	(-2.54)	(-2.55)	(-4.75)	(-4.75)
Age		-0.0039	-0.005	-0.0058	-0.0068***	-0.0067***
		(-0.91)	(-1.18)	(-1.37)	(-5.6)	(-5.54)
Age^2		-0.0001*	-0.0001	-0.0001	0.0001***	0.0001***
		(-1.9)	(-0.68)	(-0.49)	-6.09	-6.02
Edu		0.0629***	0.0480***	0.0474***	0.0054***	0.0055***
		-8.77	-6.71	-6.62	-2.56	-2.68
Mar		-0.0181***	-0.0220***	-0.0217***	-0.0077***	-0.0077
		(-3.17)	(-3.88)	(-3.84)	(-4.76)	(-4.77)
Health		-0.0258***	-0.0310***	-0.0313***	-0.0326***	-0.0326***
		-4.06	-4.92	-4.96	(-18.06)	(-18.05)
Party		0.1032***	0.0905***	0.0908***	-0.0019	-0.002
		-5.29	-4.69	-4.7	(-0.35)	(-0.35)
Num		-3.87	-3.97	-4.01	-8.13	-8.3
		0.1824***	0.1771***	0.1768***	0.0197***	0.0197***
Lnincome		-42.3	-41.41	-41.33	-16.08	-16.1
		0.0202***	0.0177***	0.0175***	0.0036***	0.0036***
Lnassets		-7.02	-6.21	-6.14	-4.4	-4.38
		0.1453***	0.1304***	0.1306***	0.0058***	0.0058***
Observations		-30.85	-27.46	-27.5	-4.23	-4.24
	11596	11596	11596	11596	11596	11596

AdjR^2	0.1744	0.3952	0.4084	0.4087	0.1683	0.1685

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

Six relapse models inspect what free factors mean for *Lnc* and utilization redesigning. The *DFII* decidedly influences *Lnc* and *Cu* in all models, showing that more computerized monetary incorporation increments provincial family utilization and utilization quality. *DFII* normally has huge positive coefficients, with the best impact in models zeroing in on all out utilization (Models - 1 to - 3) and an unobtrusive however impressive effect on utilization redesigning (Models - 4 to - 6). Model - 4 shows a positive and huge communication term among *DFII* and Web access, showing that computerized monetary incorporation and web access increment utilization. It well influences *Lnc* in Models - 1 and - 3 however minor affects *Cu* in Models - 4 and - 6. Orientation, age, and conjugal status likewise influence utilization. Male reactions and more seasoned age related with lower utilization and updating, proposing customary shoppers. More taught rustic families consume more and better, further developing *Lnc* and *Cu* across all models. Wellbeing status adversely influences utilization and redesigning, which might demonstrate monetary limitations in families with medical problems. Party enrollment has a major ideal impact in early models however turns out to be little in $_{Cu}$ centered ones. Higher family pay (*Lnincome*) and resources (*Lnassets*) are consistently valuable, affirming that monetary assets are fundamental for consuming and updating. Early models (Models - 2 and - 3) evaluating *Lnc* had the best changed R^2 values, showing more grounded logical power in all out-utilization models than utilization updating models. Each model purposes 11,596 perceptions.

4.1 Digital financial inclusion and Rural Household Consumption Structure

The study intends to partially validate hypothesis 3 and analyze how digital financial inclusion and Internet skills affect rural families and consumer groups' consumption structures. Table 3 represents the categorized rural household consumption into subsistence consumption and development consumption for regression analysis.

Table 3. DFII and Internet skills regression on rural family consumption structure

Independent Variables	**Rural household subsistence consumption (Lncs1)**				**Rural household enjoyment and development Consumption (Lncs2)**			
	-1	**-2**	**-3**	**-4**	**-5**	**-6**	**-7**	**-8**
DFII	0.4287***	0.3535***	0.3555***	0.2840***	0.0684*	0.3635***	0.3671***	0.2892***
	-16.29	-10.53	-10.65	-6.31	-1.79	-7.74	-7.89	-4.61
Internet	0.5925***		0.1912***	-0.1834	0.9335***		0.3447***	-0.0635
	-40.72		-11.81	(-1.15)	-44.17		-15.28	(-0.29)
DFII*Internet				0.1163**				0.1268*
				-2.37				-1.85
Gender		0.0001	-0.0014	-0.0016		-0.1170***	-0.1198***	-0.1200***
		-0.01	(-0.07)	(-0.08)		(-4.22)	(-4.36)	(-4.37)
Age		0.0107**	0.0099**	0.0092**		-0.0116*	-0.0132**	-0.0140**
		-2.42	-2.24	-2.07		(-1.87)	(-2,14)	(-2.27)
Age^2		-0.0002***	-0.0001***	-0.0001***		-0.0001	0.0001	0.0001
		(-4.83)	(-3.94)	(-3.76)		(-0.58)	-0.6	-0.73
Edu		0.0330***	0.0216***	0.0210***		0.1019***	0.0812***	0.0808***
		-4.44	-2.91	-2.82		-9.82	-7.86	-7.79
Mar		-0.0108*	-0.0138**	-0.0135**		-0.0359***	-0.0412***	-0.0410***
		(-1.83)	(-2.34)	(-2.3)		(-4.34)	(-5.02)	(-4.99)
Health		0.0255***	0.0215***	0.0213***		-0.0881***	-0.0953***	-0.0956***
		(-3.86)	(-3.27)	(-3.24)		(-9.56)	(-10.43)	(-10.46)
Party		0.0574***	0.0477**	0.0480**		0.1559***	0.1384***	0.1387***
		-2.84	-2.37	-2.39		-5.52	-4.94	-4.96
Location		-0.0190**	-0.0186**	-0.0183**		0.1082***	0.1089***	0.1092***

		(-2.06)	(-2.03)	(-2)		-8.41	-8.55	-8.57
Num		0.1271***	0.1231***	0.1228***		0.2601***	0.2530***	0.2526***
		-28.48	-27.66	-27.59		-41.67	-40.79	-40.73
Lnincome		0.0216***	0.0197***	0.0195***		0.0206***	0.0171***	0.0169***
		-7.26	-6.65	-6.58		-4.95	-4.15	-4.1
Lnassets		0.1254***	0.1140***	0.1142***		0.1756***	0.1552***	0.1553***
		-25.72	-23.07	-23.11		-25.76	-22.54	-22.57
Observations	11596	11596	11596	11596	11596	11596	11596	11596
AdjR^2	0.1413	0.2856	0.304	0.3042	0.144	0.3488	0.3617	0.3618

Note: ***, **, and * mean significant at the level of 1%, 5%, and10%, respectively.

In columns (3) and (7) of Table 3, digital financial inclusion and Internet skills have a significant positive impact on subsistence consumption and enjoyment and development consumption of rural households at the1% confidence level. The interaction term shows that Internet skills effectively enhanced the role of digital financial inclusion in promoting these two types of consumption of rural households. The significance of the interaction term indicates that the enhancement of the promotion effect of Internet skills on digital financial inclusion is higher in subsistence consumption than in enjoyment and development consumption, which enhances the inclusion play of digital financial inclusion in the consumption structure of rural households. Table 4 shows a regression of total rural household consumption at 5%, 25%, 50%, 75% and 95% consumption levels. The coefficients of digital financial inclusion and Internet skills in columns (1) to (10) show that after removing regressions at the extreme quantiles of 5% and 95%, with the increase of consumption level, the promoting effect of digital financial inclusion on consumption will be weakened. Table 4 shows the results of quantile regression to examine the impact of digital financial inclusion and the enhancement of this inclusion through Internet skills.

Table 4. Internet skills and digital financial inclusion quantile regression on rural household total consumption

Independent variables	**Total rural household consumption (Lnc)**									
	q05		**q25**		**q50**		**q75**		**q95**	
	-1	**-2**	**-3**	**-4**	**-5**	**-6**	**-7**	**-8**	**-9**	**-10**
DFII	0.3298***	0.2014*	0.3926***	0.3195***	0.3561***	0.2996***	0.3182***	0.2059***	0.3417***	0.2783***
	-4.99	-1.82	-9.78	-5.32	-8.52	-5.9	-7.46	-2.76	-6.35	-3.08
Internet	0.2564***	-0.39997	0.2470***	-0.1904	0.2553***	-0.0073	0.2435***	-0.1936	0.2254***	-0.0592
	-9.58	(-1.31)	-14.64	(-1)	-11.4	(-0.05)	-10.05	(-0.86)	-8.11	(-0.24)
DFII*Internet		0.1995**		0.1353**		0.0827**		0.1266*		0.0874
		-2.2		-2.35		-1.76		-1.93		-1.07
Control variables	Control	Control	Control	Control	Control	Control	Control	Control	Control	Control
Observations	11596	11596	11596	11596	11596	11596	11596	11596	11596	11596
AdjR^2	0.2327	0.2335	0.2545	0.2547	0.2567	0.2568	0.2309	0.2311	0.1852	0.1853
Note: ***, **, and *mean significant at the level of 1%, 5%, and 10%, respectively.										

The quantile relapse results uncover that *DFII* decidedly influences rustic family utilization across all quantiles, demonstrating that more elevated levels of *DFII* are related with expanded all out utilization. The impact is genuinely huge at the 1% level generally speaking, highlighting the hearty effect of *DFII*. Web abilities alone have a positive and critical impact at the 5th, 50th, and 75th quantiles, yet are marginally negative at other quantiles, recommending that web utilizes immediate impact might fluctuate across utilization levels. The collaboration term among *DFII* and Web is positive and critical, particularly at lower and middle quantiles, suggesting that web abilities enhance the constructive outcomes of *DFII* on family utilization, especially for families in the lower utilization sections. It

proposes that families with higher advanced abilities use *DFII* all the more really to upgrade their financial prosperity, particularly in lower and center utilization gatherings. It indicates that Internet skills play a greater role in moderating the consumption of low consumer groups, so that the inclusion of digital financial inclusion in low consumption groups can be better played and the 'digital divide' can be narrowed, which partly verifies hypothesis H_{03}.

4.2 Importance of Internet Skills

The preceding section merely shown that Internet skills boost digital financial inclusion's involvement in vulnerable consumer groups' spends. The sample households are divided into age and income groups for heterogeneity analysis to test hypothesis H03, whether Internet skills promote the promotion effect of digital financial inclusion on the consumption of other vulnerable groups, and explore the impact of Internet skills on digital financial inclusion in such vulnerable groups. According to the World Health Organization (WHO), households with a head under 45 years old are classified as youth, households with a head between 45 and 60 years old are middle-aged, and households with a head over 60 years old are elderly. Table 5 represents the Internet skills effects on rural household total consumption by age group regression.

Table 5. Internet skills effect on rural household total consumption by age group regression

	Total rural household consumption (Lnc)					
	Youth group		**Middle-aged group**		**Elderly group**	
Mean of Internet skills	0.8924		0.7829		0.3227	
Independent Variables	-1	-2	-3	-4	-5	-6
DFII	0.4524***	0.076	0.3369***	0.1909**	0.3807***	0.3386***
	-4.46	-0.29	-6.56	-2.03	-8.5	-6.56
Internet	0.2430***	-1.0198	0.2450***	-0.3161	0.2766***	-0.0826
	-3.96	(-1.26)	-9.89	(-1.04)	-13.07	(-0.38)
DFI*Internet		0.4047		0.1752*		0.1103*
		-1.57		-1.86		-1.64
Control variables	Control	Control	Control	Control	Control	Control
Observations	1273	1273	4910	4910	5413	5413
AdjR^2	0.2197	0.2206	0.2857	0.2861	0.3743	0.3745

Note: The significance levels are ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Columns (1) (3) (5) results show that digital financial inclusion and Internet skills are still at the 1% confidence level and have a significant positive relationship with rural household consumption in three age groups. Columns (2), (4) and (6) of the added interaction item show that Internet skills can significantly improve the promotion effect of digital financial inclusion on the consumption of rural households in the middle-aged group and the elderly group, indicating that Internet skills can narrow the' digital divide' of the use of digital financial inclusion by the elderly. From the mean value of Internet skills of all age groups, it can be seen that the elderly group's mastery of Internet skills is much lower than that of the other two sample groups, and the youth group even reaches a mastery rate of nearly 90%. The also explains why the moderating effect to Internet skills on the youth group is not significant. The reason is that the youth group may have basically reached the effective use of digital financial inclusion, and it is difficult for Internet skills to improve the promoting effect of digital financial inclusion on the consumption of the group. Thus, from the perspective of age groups, Internet skills have made digital financial inclusion more effective in promoting consumption by 'digitally' vulnerable groups, enhancing its inclusion. Table 6 divides the sample rural households into three income groups according to their total household income.

Table 6. Represents the results of DFI and Internet skills on rural household total consumption

	Total rural household consumption (**Lnc**)					
	Low-income group		Middle income group		High income group	
Mean of Internet Skills	0.3763		0.568		0.7898	

Independent Variables	-1	-2	-3	-4	-5	-6
DFII	0.3413***	0.2788***	0.2674***	0.2508***	0.2388***	0.1627*
	-5.64	-4.03	-4.98	-3.64	-4.62	-1.85
Internet	0.2456***	-0.3084	0.1614***	0.0639	0.2268***	-0.0797
	-8.96	(-1.04)	-6.68	-0.25	-7.85	(-0.28)
DFII*Internet		0.1735*		0.0304		0.0939
		-1.88		-0.38		-1.07
Control variables	Control	Control	Control	Control	Control	Control
Observations	3827	3827	3826	3826	3943	3943
AdjR^2	0.3626	0.363	0.2648	0.2647	0.2507	0.2507

Note: ***, **, and * represent the significance at the 1%, 5%, and 10% levels, respectively.

The results reveal that the effect of *DFII* and Web abilities on the complete utilization of provincial families across various pays gatherings. In the low-pay bunch, *DFII* emphatically influences family utilization, with critical coefficients (0.3413***) across models, showing that higher advanced monetary consideration relates with expanded utilization. Likewise, for center and big-time salary gatherings, *DFII* stays positive and huge, however with lower coefficients, mirroring a decreasing impact across pay levels. Web abilities show positive coefficients much of the time, particularly for low and major league salary gatherings, however center pay coefficients are conflicting, for certain bad qualities. The cooperation term *DFII*Internet* is positive and critical just in low-pay models (0.1735), recommending that the mix of advanced monetary consideration and Web access supports utilization principally for low-pay families. Control factors are remembered for all models, and the changed R-squared values range from 0.2507 to 0.363, showing moderate informative power.

4.3 Endogeneity Analysis and Robustness test

4.3.1 Endogeneity Analysis

Endogeneity is inherent in digital financial inclusion and consumption studies. The 'positive' part of digital financial inclusion must be removed from interference items and utilized to evaluate rural family consumption to overcome the model's bias that does not account for endogeneity. Rural household micro data and provincial digital financial inclusion are the paper's dependent and independent variables. Reverse causality is greatly mitigated with two databases. Spending more leads rural families to use digital financial inclusion, unfortunately. Rural households spend more and demand more money, so they may spontaneously use financial services and adopt digital financial inclusion. Thus, the investigation should resolve endogenous reverse causality. To avoid reverse causality and missing variables, the article needs a 'clean' exogenous instrumental variable related to digital financial inclusion. Peking University and Ant Financial Services Group provided Alipay data for the paper's digital financial inclusion statistics. Alipay began in Hangzhou, China's digital financial inclusion leader. The regression model IV-2SLS and the instrumental variable spherical distance from Hangzhou are used for digital financial inclusion as the Table 7 represents the results of Endogeneity test.

Table 7. Endogeneity test 1

	The first stage of instrumental variable estimation	The second stage of instrumental variable estimation			
	DFII	Lnc	Cu	Lncs1	Lncs2
Independent Variables	-1	-2	-3	-4	-5
Instrumental Variable	-0.0253***	0.2251***	0.1037***	0.0258**	0.4860***
	(-59.13)	-3.38	(5.41)	-0.37	-5.03
Internet		0.2502***	0.0036	0.1904***	0.3280***
		-16.07	(0.86)	-11.72	-15.3
Control Variables	Control	Control	Control	Control	Control
Observations	11596	11596	11596	11596	11596
R^2	0.6128	0.408	0.0624	0.2889	0.362

F-value in the 1st stage	3496.18***				
Wald endogenous test	16.38**				

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

The results of the first stage in the column (1) of Table 7 show that the benchmark regression in the paper is endogenous. F value is greater than the critical value at the level of 10%, indicating that there is no weak instrumental variable problem, and the selection of instrumental variables is effective and reasonable. The second stage regression results in columns (2) to (5) show that, compared with the benchmark regression results, the significance of digital financial inclusion on rural household consumption upgrading has increased significantly from the confidence level of 5% to the level of 1%. The indicates that after controlling endogeneity, digital financial inclusion plays a higher role in rural household consumption upgrading, which further proves that digital financial inclusion can bring 'digital dividend' to rural household consumption. The results of the first stage in the columns (1) and (2) of Table 8 show that the benchmark regression in the paper is endogenous. Based on the consideration of interaction item, the interaction item of spherical distance from Hangzhou and Internet skills is constructed on the basis of Table 7 as the instrumental variable of digital financial inclusion and Internet skills interaction item for regression, and the results are shown in Table 8.

Table 8. Endogeneity test 2

	The first stage of instrumental variable estimation		Second stage of instrumental variable estimation			
	DFII	DFII*Internet	Lnc	Cu	Lncs1	Lncs2
Independent variables	-1	-2	-3	-4	-5	-6
Instrumental variable	-0.0234***		0.1178**	0.1150***	0.0873**	0.3835***
	(-41.47)		-1.48	（5.03）	-1.05	-3.33
*Internet		-0.0400***	0.1835***	-0.0193	0.1933***	0.1752*
		(-80.34)	-2.83	（-1.04）	-2.86	-1.87
Control variables	Control	Control	Control	Control	Control	Control
Observations	11596	11596	11596	11596	11596	11596
R2	0.6137	0.9928	0.4083	0.0625	0.2893	0.3621
F value in the 1st stage	1751.49***					
Wald endogenous test		7.03**				

Note: ***, **, and * mean significant at the level of 1%,5%, and 10%, respectively.

The results reveal that the F-value is greater than the critical value at the level of 10%, indicating that there is no weak instrumental variable problem, and the selection of instrumental variables is effective and reasonable. In columns (3) to (6), the results of the second stage show that Internet skills are still not significant in promoting rural household consumption upgrading by digital financial inclusion. In terms of consumption structure, the moderating effect of Internet skills on subsistence consumption of rural households' increases significantly, while the moderating effect on enjoyment and development is still consistent with the benchmark regression. it
indicates that after controlling Endogeneity, Internet skills can still promote the inclusion of digital financial inclusion and increase the 'digital dividend' brought by digital financial inclusion, which proves the robustness of the conclusions of the paper.

4.3.2 Robustness test

In order to test whether the model and the regression results in the paper are robust, the method of numerical correction of core variables and elimination of special samples are used to test robustness. Since the data of household consumption and income may be underestimated in the micro survey, the paper makes numerical correction for the.

Specifically, 1% tail reduction is carried out for total household consumption and total household income, and the combed at a is used for regression. Table 8 represents the results of Robustness test.

Table 9. Robustness test

	Lnc		Cu		Lncs1		Lncs2	
Independent variables	-1	-2	-3	-4	-5	-6	-7	-8
DFII	0.3653***	0.2820***	0.01800**	0.0242*	0.3286***	0.2777***	0.3659***	0.2867***
	-11.65	-6.91	-1.96	-1.95	-10.66	-6.36	-8.32	-4.89
Internet	0.2513***	-0.1331	0.0036	0.0362	0.1915***	-0.1643	0.3288***	-0.0538
	-16.52	(-0.89)	-0.82	-0.83	-12.18	(-1.07)	-16.21	(-0.26)
DFII*Internet		0.1194***		-0.0101		0.2105**		0.1241*
		-2.59		(-0.75)		-2.32		-1.92
Control variables	Control	Control	Control	Control	Control	Control	Control	Control
Observations	11596	11596	11596	11596	11596	11596	11596	11596
AdjR^2	0.4125	0.4127	0.1683	0.1684	0.3087	0.309	0.3755	0.3756

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

By comparing the regression results with the results in the benchmark regression, the direction and significance of each variable coefficient of the former is basically consistent with that of the latter. Therefore, it can be proved that the conclusion is robust. Table 10 compares regression results to benchmark regression findings. Total consumption, subsistence consumption, and pleasure and development consumption match the benchmark regression results. Digital financial inclusion and Internet skills do not promote consumer upgrading. The influence of digital financial inclusion and Internet skills on rural family consumption upgrading may be stronger in places with a robust digital economy than in others.

Table 10. Robust test after removing samples from five special areas

	Lnc		Cu		Lncs1		Lncs2	
Independent Variables	-1	-2	-3	-4	-5	-6	-7	-8
DFII	0.3424***	0.2527***	-0.0117	-0.0177	0.3953***	0.3431***	0.2671***	0.1687**
	-8.23	-4.39	(-0.99)	(-1.07)	-9.15	-5.74	-4.45	-2.03
Internet	0.2451***	-0.2039	0.0038	-0.0259	0.1879***	-0.1734	0.3433***	-0.149
	-15.02	(-1.02)	-0.81	(-0.45)	-11.09	(-0.35)	-14.6	(-0.52)
DFII*Internet		0.1415**		0.0093		0.0832**		0.1551*
		-2.25		-0.52		-1.26		-1.71
Control Variables	Control	Control	Control	Control	Control	Control	Control	Control
Observations	10371	10371	10371	10371	10371	10371	10371	10371
AdjR^2	0.4042	0.405	0.0704	0.0704	0.2882	0.2883	0.3613	0.3616

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

4.4 Mechanism Analysis

To test hypothesis 4, the research examines how digital financial inclusion and Internet skills affect rural household consumption by boosting income and consumption inclination. The research investigates the impact of education and digital infrastructure creation on rural household Internet skills to find effective ways to improve them. In the

theoretical analysis above, it is discussed that digital financial inclusion can increase rural household income by easing liquidity constraints, promoting entrepreneurship, easing credit constraints and participating in financial markets, thus promoting rural household consumption. In order to verify the effectiveness of the mechanism and the moderating role of Internet skills, the Probit model is used in the paper to conduct regression tests on whether rural households use credit cards and whether they have entrepreneurial behaviors respectively to alleviate liquidity constraints and promote entrepreneurial mechanisms, as shown in Table 11.

Table 11. Mechanism analysis of digital financial inclusion and Internet skills on rural family total consumption

	Credit card		Entrep		Lnincome	
Independent variables	-1	-2	-3	-4	-5	-6
DFII	0.0492	-0.2808	0.3810***	0.1595***	0.9227***	0.6461***
	-0.49	(-1.4)	-4.21	-2.01	-8.83	-4.58
Internet	0.4177***	-0.8321	0.5427***	-0.3191	0.3003***	-1.1453
	-7.11	(-1.29)	-10.55	(-0.56)	-5.92	(-2.3)
DFII*Internet		0.3884*		0.2656		0.4489***
		-1.94		-1.52		-2.91
Control variables	Control	Control	Control	Control	Control	Control
Observations	11596	11596	11596	11596	11596	11596
Adj-R^2	0.1332	0.1339	0.1133	0.1136	0.2065	0.2071

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

In columns (5) and (6), the results reveal that the digital financial inclusion and Internet skills enhance rural family income, whereas Internet skills increase income. The columns (1) and (2) indicate that digital financial inclusion cannot improve rural family mobility. The credit business in digital financial inclusion may not be recognized by issuing banks and cannot encourage credit card issuance, although Internet skills can reduce liquidity limits. Future digital financial inclusion should focus on credit business universality. Both digital financial inclusion and Internet skills promote rural household entrepreneurship, but Internet skills have a higher influence coefficient than digital financial inclusion, but their moderating effect is not significant. This may be because Internet skills affect entrepreneurial activity more. Internet skills will allow rural families with low digital financial inclusion to build their own enterprises; therefore they will not pursue digital financial inclusion through Internet skills. Table 12 shows how the OLS model regresses the three-level factors in the digital inclusive financial index—credit company, investment business, and rural family income.

Table 12. Mechanism analysis of digital financial inclusion and Internet skills on rural family total consumption

	Lnincome（Easing Credit constraints)		**Lnincome（Financial Market Participation)**	
Independent Variables	**-1**	**-2**	**-3**	**-4**
Credit	1.0991***	0.7827***		
	-9.99	-5.33		
Investment			0.4623***	0.3644***
			（10.52）	（5.87）
Internet	0.3041***	-0.752	0.3096***	-0.1711
	-6	(-2.29)	-6.11	(-0.79)
Index*Internet		0.5091***		0.1669**
		-3.25		-2.29
Control variables	Control	Control	Control	Control
Observations	11596	11596	11596	11596
AdjR^2	0.1082	0.1089	0.109	0.1094

Note: ***, **, and * mean significant at the level of 1%, 5%, and 10%, respectively.

Columns (1) and (2) show that both credit business and Internet skills of digital financial inclusion have eased rural households' credit constraints and Internet skills moderate the income increase promoted by credit business. The shows that digital financial inclusion has alleviated credit limits for rural people, and Internet skills have expanded their usage of it. Columns (3) and (4) demonstrate that digital financial inclusion and Internet skills both increase rural family financial market involvement and Internet skills moderate this impact at 5% confidence. However, when analyzing the coefficients, it can be shown that removing credit limits increases income more than financial market involvement, and Internet skills moderate it more. The implies that eliminating credit limits is a key approach to raising income through digital financial inclusion and Internet skills to encourage rural family spending. Thus, digital financial inclusion increases income by eliminating credit limits, expanding financial market participation, and encouraging entrepreneurship. Internet skills have increased rural families' first two income channels and fostered digital financial inclusion. Income can be increased by easing credit limits, and partial proof of Hypothesis H_{04}.

Consumption Propensity Promotion Mechanism

The promotion mechanism of consumption propensity is mainly embodied in the two aspects of facilitating payment and reducing uncertainty of digital financial inclusion. The digital financial inclusion can promote rural households' consumption by promoting their consumption propensity. Table 13 represents` moderating effect of Internet skills, the paper uses the two three-level indicators of digital financial inclusion, namely, payment business and insurance business.

Table 13. Mechanism analysis of digital financial inclusion and Internet skills on rural family total consumption 3

	Facilitating payment		Reducing uncertainty	
	Lnc			
Independent Variables	-1	-2	-3	-4
Payment	0.2261***	0.1740***		
	-9.12	-5.29		
Insurance			0.1103***	0.0922***
			-11.36	-6.76
Internet	0.2514***	0.0151	0.2532***	0.049
	-16.12	-0.15	-16.27	-0.45
Index*Internet		0.0850**		0.0296*
		-2.4		-1.89
Control variables	Control	Control	Control	Control
Observations	11596	11596	11596	11596
AdjR^2	0.4058	0.406	0.4081	0.4083
Note: The symbols ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.				

The results in columns (1) and (2) reveal that digital financial inclusion's payment business promotes rural household consumption, and Internet skills enhance the promotion. Digital financial inclusion has increased rural families' spending through convenience payments, and Internet skills have expanded and enhanced their use. In columns (3) and (4), insurance business and Internet skills considerably boost rural home consumption and promotion mechanism. Through digital financial inclusion insurance, rural people have lowered their uncertain future expectations. Broadening the channel using internet capabilities has improved digital financial inclusion insurance. Internet skills improve digital financial inclusion promotion, showing Hypothesis 4. How to improve rural home Internet skills as mentioned above, digital financial inclusion can improve rural household consumption's 'digital dividend', and Internet skills can help that. Thus, rural families' Internet proficiency must be improved. Although digital infrastructure building in rural regions contributes to low Internet skills, the article contends that low rural household education is a more relevant factor. They will impede Internet and digital financial inclusion. Low education levels cause financial and digital self-exclusion, which prevents rural families from receiving the 'digital dividend' from digital financial inclusion. The article analyzes education level to suggest efficient Internet skills promotion techniques for rural families. Table 14 shows that regression is moderated by China Digital Economy Development Index's 2019 digital infrastructure index.

Table 14. Regression of rural household head education and regional digital infrastructure building on Internet skills

	Internet	
Independent Variables	-1	-2
Edu	0.2468***	0.1634***
	-14.78	-3.09
Diginfra	-0.0237	-0.0882
	(-1.35)	(-2.07)
Edu* Diginfra		0.0257*
		-1.66
Control Variables	Control	Control
Observations	11596	11596
R^2	0.3028	0.303
Note: The symbols ***, **, and * indicate significance at 1%, 5%, and 10%, respectively.		

Columns (1) and (2) reveal that rural household heads' education greatly increases Internet abilities at the 1% confidence level, whereas digital infrastructure cannot directly impact them. Education level promotes rural families' Internet abilities, and digital infrastructure may considerably increase this. Improve rural families' Internet abilities, not only develop digital infrastructure, which can only support it. Rural families must also improve their education to boost Internet skills through digital infrastructure.

4.5 DISCUSSIONS

Financial inclusion affects rural household consumption through internet skills, according to the study. The study found that digital financial inclusion boosts rural family spending and upgrading. The results are consistent with previous research showing that digital financial inclusion boosts rural household spending (He et al., 2022). Internet skills boost rural household total consumption but not upgrading. The literature shows that internet skills positively affect the shift of consumption structure from basic survival to higher degrees of growth and enjoyment (Zhao, 2024). Internet skills positively moderate the effect of digital financial inclusion on rural household total spending. Similar findings show that digital financial inclusion requires digital skills (Vik et al., 2024). Digital financial inclusion and Internet skills boost rural households' subsistence, leisure, and development consumption. Same results as in the literature. Digital financial inclusion significantly improves rural consumption structure in China (Liu & Yao, 2024). Digital financial inclusion's payment industry boosts rural home spending, and Internet skills enhance it.

5. CONCLUSIONS

This study found that digital financial inclusion increases rural household total consumption and consumption upgrading, while Internet skills only increase total consumption and do not improve consumption upgrading. The shows that digital financial inclusion has reached rural families' consumption levels enhanced their quantity and quality of spending and provided 'digital rewards'. Internet skills help rural families use information in the digital economy, increasing their spending. Moderate Internet abilities positively affect digital financial inclusion's promotion of rural family spending. Internet skills increase the 'digital dividend' brought by digital financial inclusion to rural households and the total consumption of rural households, but they do not improve consumption upgrading. Digital financial inclusion and Internet skills boost rural households' subsistence, leisure, and development consumption. It suggests that digital financial inclusion requires a threshold, and Internet skills are that barrier, as shown by their performance. First, extremely low- and medium-consumption groups are most affected by Internet skills. It also shows that Internet skills moderate poor consumer groups' spending, which can improve digital financial inclusion and decrease the 'digital divide'. Finally, digital financial inclusion's payment business supports rural home spending, and Internet skills enhance it. Digital financial inclusion has increased rural families' spending through convenience payments, and Internet skills have expanded and enhanced their use. The study has important consequences for policymakers, including the following. Digital financial inclusion may boost household expenditure and urban-rural

relations. Politicians should prioritize its driving force above promotion. As provinces become more integrated, local concerns are insufficient. Policies must include remote areas and provinces combined. Provinces should work with neighbors and share resources to build a coordinated development pattern for a win-win outcome.

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