



Digital Inclusive Finance, Application Ability of Digital Technology and Consumption Upgrade

Yijie Jiang

School of Finance and Economics, Jiangsu University, Zhenjiang, China

jiangyijiemail@126.com

Abstract. Digital economy is a new economic form which can promote a more unified fairness and efficiency. It is also an important means to promote the consumption upgrade of residents, and digital inclusive finance is the key link of it. This research analyzes the impact of the development of digital financial inclusion on consumption upgrading. It is found that the development of digital inclusive finance can promote consumption upgrades; secondly, the development of digital inclusive finance can improve residents' ability to use digital technology; third, the development of digital inclusive finance can improve residents' ability to use digital technology, so as to realize the consumption upgrading.

Keywords: digital economy; digital financial inclusion; consumption upgrade; the ability to use digital technology

1 Introduction

China's economy has turned from a high-speed growth stage to a high-quality development stage, and it is in the crucial period of changing the development mode, optimizing the economic structure and changing the growth power. Under the new development pattern, consumption is the final demand, the goal and motive force of production, and the direct embodiment of people's need for a better life. Digital economy is a powerful driving force to promote economic growth, has become the most dynamic and innovative economic form at present, and is one of the core growth poles of the national economy. As a key link in the development of digital economy, digital inclusive finance can reduce information asymmetry, improve the availability and convenience of financial services, effectively optimize residents' consumption structure. Influenced by COVID-19, the easy-to-operate digital economy improves the consumption utility. Enhances the residents' application ability of digital technology, and smoothes the channels for residents to participate in the digital economy, which can meet the people's increasingly diverse needs while realizing the consumption upgrade.

2 Theoretical analysis and research hypotheses

2.1 Digital inclusive finance and consumption upgrading

Scholars analyzed the impact of digital economy, especially digital inclusive finance, on consumption upgrading. Yi and Zhou (2018), Yang et al. (2021), Long et al. (2022) found that digital inclusive finance can improve the consumption level and optimize the consumption structure^[1-3]. Li et al. (2020) and Song et al. (2022) found that digital economy especially digital inclusive finance can promote consumption upgrading by facilitating payment, easing credit constraints, stimulating online consumption and other mechanisms^[4,5]. Therefore, this research puts forward hypothesis 1:

H1: The development of digital inclusive finance can promote consumption upgrading.

2.2 Digital inclusive finance and the ability to use digital technology

In order to participate in the digital economy smoothly, residents need to improve their digital technology ability. Scholars analyzed the influence of digital economy, especially digital inclusive finance, on the application ability of digital technology. Guo and Wang (2020) pointed out that the digital economy requires residents to have internet skills^[6]. Zhang and Xiang (2016) found that the improvement of residents' internet application ability is brought by consumption upgrading^[7]. Zhang and Han (2021) found that digital inclusive finance can increase residents' access to information^[8]. Therefore, this research puts forward hypothesis 2:

H2: The development of digital inclusive finance can enhance residents' ability to use digital technology.

2.3 Application ability of digital technology and consumption upgrade

Scholars analyzed the digital economy, especially the digital inclusive finance, upgrade consumption by improving the application ability of digital technology. Chen et al. (2022) proposed that the use of digital credit is improving residents' consumption level and realizing consumption upgrading^[9]. Torpey (2000), Ritzer (2001) and Lin (2022) found that technological innovation was closely related to consumption upgrading, and the improvement of digital technology and the progress of consumption tools were conducive to consumption upgrading^[10-12]. Therefore, This research puts forward hypothesis 3:

H3: Digital inclusive finance can upgrade consumption by improving residents' digital technology application ability.

3 Models, variables and data

3.1 Model specification

In order to explore the impact of digital inclusive finance on consumption upgrading and residents' digital technology utilization ability, and verify whether digital inclusive finance can upgrade consumption by improving residents' digital technology application ability. This research constructs the empirical model as follows:

$$COU_{jt} = \alpha_0 + \alpha_1 DIF_{jt} + \alpha_2 Controls_{ijt} + \lambda_i + \varphi_t + \varepsilon_{ijt} \quad (1)$$

$$DTA_{ijt} = \beta_0 + \beta_1 DIF_{jt} + \beta_2 Controls_{ijt} + \psi_i + \phi_t + v_{ijt} \quad (2)$$

$$COU_{jt} = \xi_0 + \xi_1 DIF_{ijt} + \xi_2 DTA_{ijt} + \xi_3 Controls_{ijt} + \kappa_i + o_t + \omega_{ijt} \quad (3)$$

COU_{jt} indicates the consumption upgrade level of j region in t year; DIF_{jt} indicates the development level of digital inclusive finance of j area in t year; DTA_{ijt} indicates the residents' ability to use digital technology of j region in t year; α_1 measures the impact of digital inclusive finance development on consumption upgrading; β_1 measures the impact of digital inclusive finance development on residents' ability to use digital technology; $\beta_1 * \xi_2$ is the influence of intermediary effect; $Controls_{ijt}$ indicates the residents and local control variables in j area in t year; λ_i , ψ_i and κ_i indicates individual fixed effect; φ_t , ϕ_t and o_t indicates the year fixed effect; ε_{ijt} , v_{ijt} and ω_{ijt} are random disturbance terms.

3.2 Variables and data

The explained variable in this research is consumption upgrading (COU_{jt}). It is expressed by the ratio of per capita consumption expenditure on education, culture and entertainment to per capita consumption expenditure. The core explanatory variable is the development level of digital inclusive finance (DIF_{jt}), which includes three dimensions: the coverage breadth of digital finance ($COVER_{jt}$), the depth of the use of digital finance (USE_{jt}) and the digitalization degree of inclusive finance ($DIGI_{jt}$). Dividing the number inclusive finance index and its three dimensional indexes by 100 as explanatory variables. The mediating variable is the ability to use digital technology (DTA_{ijt}). Van Dijk (2002) pointed out that there is a gap in the use of digital technology due to different purposes^[13], the value ranges from 0 to 25. Panel data covering the four years of 2014, 2016, 2018 and 2020, with a total of 13772 samples.

4 Empirical analysis

Based on Model (1), the regression results are shown in Table 1. According to Table 1, the development of DIF can promote consumption upgrading, thus verifying

Hypothesis 1. And the coverage breadth of digital finance, the depth of digital finance use and the digitalization degree of inclusive finance can promote consumption upgrading.

Table 1. Digital inclusive finance and consumption upgrade

Variable	COU					
	(1)	(2)	(3)	(4)	(5)	(6)
<i>DIF</i>	0.00579*** (7.60)	0.00586*** (7.69)	0.01741*** (19.87)			
<i>COVER</i>				0.02987*** (23.89)		
<i>USE</i>					0.00469*** (8.69)	
<i>DIGI</i>						0.00524*** (15.51)
<i>Individual Controls</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Regional Controls</i>	<i>NO</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>number</i>	13772	13772	13772	13772	13772	13772
R ²	0.3478	0.3484	0.4397	0.4403	0.4422	0.4426

Note: The figures in parentheses are t-value statistics, and ***, ** and * indicate significance at the confidence levels of 1%, 5% and 10%. Data source: Statistical Yearbook of China, CFPS, the Peking University Digital Inclusive Finance Index and Wind database. The same below.

Based on Model (2), adding control variables of individual residents and regional development in turn, the regression results are shown in Table 2. The development of DIF can improve residents' ability to use digital technology, thus verifying Hypothesis 2.

Table 2. Digital inclusive finance and the ability to use digital technology

Variable	DTA		
	(1)	(2)	(3)
<i>DIF</i>	0.29899*** (4.32)	0.27315*** (3.93)	0.37909** (2.25)
<i>Individual Controls</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>
<i>Regional Controls</i>	<i>NO</i>	<i>NO</i>	<i>YES</i>
<i>number</i>	13772	13772	13772
R ²	0.5928	0.5952	0.5964

This research explores the transmission mechanism of "DIF → DTA → COU" using Model (1) to Model (3). The results are shown in Table 3. The development of DIF can

promote consumption upgrading by improving residents' ability to use digital technology, thus verifying Hypothesis 3.

Table 3. DIF, DTA and consumption upgrade

Variable	<i>COU</i>		<i>DTA</i>
	(1)	(2)	(3)
<i>DIF</i>	0.01741*** (19.87)	0.01692*** (19.36)	0.37909** (2.25)
<i>DTA</i>		0.00010*** (9.22)	
<i>Individual Controls</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Regional Controls</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>number</i>	13772	13772	13772
<i>R</i> ²	0.4397	0.4433	0.5964

5 Robustness test

In this research, while changing the sample or doing tail shrinking treatment, the promotion effect of the development of DIF on consumption upgrading is significant and robust, and Hypothesis 1 is further verified. While changing method or doing tail shrinking treatment, the development of DIF has a significant effect on improving residents' ability to use digital technology, and Hypothesis 2 is further verified.

Table 4. Robustness tests

Variable	<i>COU</i>		<i>DTA</i>	
	Change sample	Tail shrinking	Change method	Tail shrinking
	(1)	(2)	(3)	(4)
<i>DIF</i>	0.02605*** (25.21)	0.01992*** (22.97)	2.11913*** (3.44)	0.42014*** (2.46)
<i>Individual Controls</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Regional Controls</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>number</i>	11977	13772	13772	13772
<i>R</i> ²	0.4146	0.4411	0.5964	0.5964

6 Conclusions and Suggestions

It is showed that: first, the development of DIF can promote consumption upgrading; Second, the development of DIF can enhance residents' ability to use digital technology; Third, the development of DIF can promote consumption upgrading by improving residents' ability to use digital technology. The suggestions are as followed.

First, strengthen the construction of digital infrastructure, accelerate the implementation of the "Broadband China" strategic deployment, lay a solid hardware foundation for the development of DIF.

Second, optimize the mobile payment environment, promote the aging of digital life, encourage peers to support "digital feedback" with their families, strengthen the education and training of digital skills.

Third, strengthen financial supervision, popularize financial legal knowledge, raise the awareness and ability of fraud prevention, and encourage saving moderate, green, low-carbon, civilized and healthy modern lifestyles and consumption patterns, so as to achieve consumption upgrading.

References

1. YI X.J.,ZHOU L..Does the development of digital inclusive finance significantly affect residents' consumption-micro-evidence from families in China [J]. *Financial research*, 2018(11): 47-67.
2. YANG W.M.,LI L.,SUN R.L. et al. Does digital finance promote consumption upgrading? —— Evidence based on panel data [J]. *International Finance Research*,2021(04):13-22.
3. LONG H.M.,LI Y.,WU D.. Research on the Influence of Digital inclusive finance on Residents' Consumption: Digital Divide or Digital Divide? [J]. *International financial research*,2022(05):3-12.
4. LI J,WU Y,XIAO J J,et al. The impact of digital finance on household consumption: evidence from China[J]. *Economic Modelling*, 2020,86:317-326.
5. SONG M.Y.,ZHOU B.W.,ZANG X.H.. Research on Family Internet Consumption Behavior Based on the Development of inclusive finance [J]. *Economic Theory and Economic Management*,2022,42(02):24-40.
6. GUO F.,WANG Y.P.. Traditional financial foundation, knowledge threshold and digital finance going to the countryside [J]. *Financial research*,2020,46(01):19-33.
7. ZHANG H.W.,XIANG Y.B.. Research on the influence of online shopping on the total consumption of residents-based on the data analysis of the total consumption level [J]. *Shanghai Economic Research*,2016(11):36-45.
8. ZHANG H.Y.,HAN X.. Research on the Poverty Reduction Effect of Digital Finance —— Based on the Perspective of Poverty Vulnerability [J]. *Financial Review*,2021,13(06):57-77+119.
9. CHEN X.J.,HE G.W.,CHEN Y.. Digital Divide and Farmers' Digital Credit Behavior —— Based on the survey data of rural inclusive finance in underdeveloped areas in 2019 [J]. *Financial Essays*,2022(01):46-56.
10. John Torpey,"A Sociological Agenda for the Tech Age," *Theory and Society*,col.49,no.17 (2000), pp.749-769.

11. George Ritzer, Explorations in the Sociology of Consumption, London: SAGE Publications Ltd,2001,pp.164,164.
12. LIN X.S.. New consumption and digital life: the perspective of consumption revolution [J]. Social Science Magazine,2022(01):36-45+209.
13. van Dijk, J.(2002). A framework for digital divide research. Electronic Journal of Communication, 12(1-2).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

