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The Impact of Internet Device Preference on Household Participation in Risk Financial Markets

Xinzhe Xu[1,a,*], Jianyang Yi[1,b]

[1]*School of International Business and Management, Sichuan International Studies University, Chongqing, China*
[a]*koisalieshi@foxmail.com*, [b]*asdzxcsalyir@gmail.com*
[*]*Corresponding author*

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Abstract: This paper utilizes data from the China Household Finance Survey 2017 and employs Probit model, Ordered Logit model and Bootstrap method to investigate the impact of internet device preference on household participation in risk financial markets and the transmission mechanisms. The research reveals that using a computer as the primary internet device has a significantly positive effect on the probability and extent of household participation in risk financial markets. This conclusion remains robust after conducting robustness tests by replacing the explained variable and endogenous treatment. Furthermore, financial information plays a significant mediating role in the effect of internet device preferences on household participation in risk financial markets. These conclusions elucidate how internet devices impact household financial behaviors through information acquisition, providing insights for pertinent institutions to formulate policies aimed at guiding households in utilizing digital technologies for economic activities.

1. Introduction

Classical portfolio theory posits that irrespective of investors' risk proclivities, participation in risk financial markets and portfolio construction are imperative. However, the prevailing reality in households reflects a pervasive phenomenon of limited participation in risk financial markets, with the majority households only holding risk-free financial assets such as bank deposits, thus resulting in a highly homogeneous asset structure. This limited participation in risk financial markets by households has garnered extensive attention across literatures. Scholars try to explore it from diverse perspectives encompassing participation costs, subjective attitudes and background risks. However, the phenomenon of limited participation remains inadequately elucidated.

As pivotal microeconomic agents in economic activities, households' financial behaviour wield profound implications for economy and social development. The rational allocation of household financial assets assumes critical significance, not only for the further accumulation of household wealth but also exerts an influence on the scale and dynamism of financial markets. Meanwhile, alongside the advancement of digital information technologies, disparities in digital application proficiency have gradually become apparent following discrepancies in internet access levels.

Varied demographic groups, due to differences in internet application skills, access devices, and utilization purposes, exhibit notable discrepancies in their capacity to leverage the internet for income enhancement. On one hand, the internet can mitigate market frictions and transaction costs for residents engaged in economic activities, with users' proficiency in internet applications directly impacting their information gathering efficiency. On the other hand, residents exhibit distinct purposes for internet usage, with some groups primarily utilizing the internet for entertainment activities, thus failing to fully capitalize on the dividends brought forth by information technology. Building on the background, this paper utilizes the data from China Household Finance Survey 2017 to elucidate the impact mechanism of internet devices preferences on household risk financial market participation.

2. Literature review and hypotheses

Currently, research on the households' participation in risk financial market primarily unfolds from three perspectives: investment capability, background risk and risk attitude. Some studies find that household participation in risk asset markets entails transaction costs, which encompass not only the time costs incurred by households in searching for information, acquiring knowledge and making decisions, but also the transaction fees paid by households when actually engaging in the financial market[1,2]. Widespread differences in financial knowledge, income levels and financial accessibility among households result in varying capacities among them to bear investment losses and pay investment costs[3,4,5]. When households clearly recognize their lack of capability to participate in the risk financial market, they selectively avoid investment activities beyond their capacity, thus leading to differences in the final decisions regarding participation in the risk financial market among households[6].

The participation decisions of households in the risk financial markets are subjective determinations made by household members based on their personal and familial characteristics. Consequently, whether the subjective attitudes of household members play a role in the decision-making process of household participation in risk financial markets has sparked a lot of discussion. Some studies have directly delved into the factor of risk attitude, positing that risk aversion tends to inhibit households from engaging in risk investments[7]. Conversely, other research has examined the impact of social interactions, levels of trust and overconfidence on household risk financial markets participation, suggesting that these factors may alter households' risk asset investment decisions through information effects and subjective risk perceptions[8,9,10].

Indeed, the risks encountered by a household in engaging in economic activities extend beyond mere investment risks in financial markets. Factors such as macroeconomic conditions, the health status of household members and the stability of household income are also significant determinants of the risks faced by households. Consequently, the impact of background risk on household investment decisions has garnered increasing attention from scholars. Income volatility, health conditions, and changes in the background economic environment will affect the extent of residents' risk aversion, compelling households to reduce portfolio risks to maintain overall risk controllability[11,12,13]. Furthermore, from a risk mitigation perspective, insurance and marriage elevate households' preferences for investing in risk assets[14,15].

As a significant informational tool, the internet plays a crucial role in aiding households in asset information gathering and assisting investment decision-making. Thus, the utilization of the internet is expected to reduce transaction costs for households engaging in risk financial investments, thereby promoting their participation in the risk financial market[16]. However, research on the digital divide among households and the differences in economic dividends has found that the characteristics of different hosueholds in terms of internet access, application abilities, application

purposes and internet devices result in disparities in their ability to derive economic benefits from the internet[17]. Due to limitations in operational methods and usage habits, computers possess advantages over other internet devices such as smartphones in terms of their capability to gather information from the internet, potentially affecting household risk asset investment participation. Hence, the following hypotheses are formulated:

Hypothesis 1: The utilization of computers as the primary internet device exerts a positive influence on household participation in the risk financial market.

Hypothesis 2: The financial information mediates the effect of internet device preference on household participation in the risk financial market.

To further elucidate households' decision in risk financial markets participation, examine the influence of internet device preference on household participation in risk financial markets, and verify the hypotheses. This study will utilize data from the China Household Finance Survey 2017 to investigate whether internet device preferences alter household participation decisions in risk financial markets by affecting the financial information access.

3. Method

3.1. Data and variables

Table 1: Variable description and descriptive statistics

Variable	N	mean	sd	min	max	Description
Risk	11,883	0.210	0.407	0	1	If household holds risk financial assets (stock, fund, financial management products), assign 1; otherwise, assign 0.
Stock	11,883	0.135	0.342	0	1	If household holds stock, assign 1; otherwise, assign 0.
Risk_p	11,883	0.109	0.249	0	1	Risk financial assets/total financial assets
Stock_p	11,883	0.062	0.190	0	1	Stock/total financial assets
Device	11,883	0.131	0.338	0	1	If household uses a computer as the primary device for internet access, assign 1; otherwise, assign 0.
Information	4,738	2.164	1.150	1	5	The level of attention to financial information, assign values from 1 to 5 respectively to the answers "Never pay attention" to "Pay very close attention".
Marriage	11,883	0.857	0.350	0	1	marital status
Edu	11,883	11.80	3.523	0	22	Years of education
Age	11,883	0.482	0.135	0.180	1.170	Age recorded in 2017
Age2	11,883	0.251	0.138	0.032	1.369	Square of age
Gender	11,883	0.752	0.432	0	1	Assign 1 to males and 0 to females.
Payment	11,883	0.553	0.497	0	1	Assign a value of 1 for household usage of mobile payments, and 0 for non-usage of mobile payments
Shopping	11,883	0.710	0.454	0	1	Assign a value of 1 for household usage of internet shopping, and 0 for non-usage of internet shopping.
Purpose	11,883	0.505	0.500	0	1	If the purpose of household internet usage involves economic activities, assign a value of 1; otherwise, assign 0.
Health	11,883	2.299	0.892	1	5	Self-assessment of health status ranges from "very good" to "very poor" with values assigned from 1 to 5.
House	11,883	0.784	0.411	0	1	If household owns a house, assign a value of 1; otherwise, assign 0.
Income	11,883	11.18	1.514	0	15.42	The natural logarithm of household income.
Size	11,883	3.055	1.265	1	15	Number of household members
Literacy	11,883	0.579	0.494	0	1	If all responses from the household to questions regarding financial literacy are correct, assign a value of 1; otherwise, assign 0
Child	11,883	0.467	0.684	0	4	Number of underage members
Wealth	11,883	13.46	1.609	0	17.22	The natural logarithm of household net asset.

The data utilized in this paper are from the China Household Finance Survey 2017 (CHFS 2017), conducted by the Chinese Household Finance Survey and Research Center of Southwestern

University of Finance and Economics in 2017 (the China Household Finance Survey 2019 did not include pertinent data of the internet device). The survey collecting relevant information on population characteristics, assets and liabilities, insurance and protection, expenditures and income from 40,011 households. According to research requirements, this paper select the urban households using the internet as the research sample. After removing outliers and samples with missing key variables, a total of 11,883 valid household samples were obtained.

Referring to the questionnaire of China Household Finance Survey 2017 and literatures' research experiences[18], this paper selected "Risk financial market participation (Risk)", "Stock market participation (Stock)", "Degree of risk financial market participation (Risk_p)" and "Degree of stock market participation (Stock_p)" as the core dependent variables to explore the influencing factors of the probability and degree of household financial markets participation. Financial assets in the China Household Finance Survey 2017 encompassed current deposits, fixed deposits, stocks, funds, financial wealth management products, bonds, financial derivatives, non-RMB assets and gold. Since financial bonds, corporate bonds, non-RMB assets, financial derivatives and gold are not representative in the data, risk financial assets in this paper will mainly include stocks, funds and financial wealth management products, and the stock asset only include stocks. The setting of the explanatory variable "internet device preference" is measured based on the household's response to the question "What is your primary internet access device at present?" For control variables, following the experiences of relevant literature, the control variables selected in this paper mainly include investor characteristic variables (gender, health status, marital status, years of education, financial knowledge, internet application ability, purpose of internet application, information attention, etc.), household characteristic variables (household size, household income, number of children, household wealth, etc.), and provincial dummy variables. Table 1 reports the variable description and descriptive statistics of the variables used in this paper:

3.2. Method

Due to the binary nature of the explained variables "Risk" and "Stock", in order to address the estimation bias resulting from the characteristics of these variables, this paper will use the Probit model in the baseline regression to analysis the factors influencing the probability of household participation in risk financial markets. The specific model is setting as follow:

$$\begin{aligned} \text{risk}^* &= \beta_0 + \beta_1 \text{Device} + \beta_2 \text{X} + \mu \\ \Pr(\text{Risk} = 1) &= \Pr(\text{risk}^* > 0) \\ &= \Phi(\beta_0 + \beta_1 \text{Device} + \beta_2 \text{X}) \end{aligned} \tag{1}$$

In the model, where Risk=1 indicates household participation in the risk financial market. Device stands as the core explanatory variable, used to gauge household preferences for internet device. X represents the set of control variables.

Due to the truncated nature of "Risk_p" variable and "Stock_p" variable, referencing literatures' research experience, this paper uses the Tobit model that more suitable for truncated samples, to analysis the relationship between internet device preference and household's participation degree in risk financial market. The specific model is setting as follow:

$$\begin{aligned} risk_{\text{p}} * &= \beta_0 + \beta_1 \text{Device} + \beta_2 \text{X} + \mu \\ Risk_p &= max(0, risk\_p^*) \end{aligned} \tag{2}$$

In the model, risk_p* is a latent variable represents the true value of the proportion of risk financial assets to total financial assets. Risk_p represents the sample observation value of the

proportion of risk financial assets to total financial assets. Other variables are set as equation 1. In the mechanism part and robustness test part, this paper will use the Bootstrap method, Ordered Logit model, two-stage IV Probit model and two-stage IV Tobit model to discuss the intermediary effects and endogeneity. The control variables are setting consistent with the Probit model.

4. Results

4.1. Internet device preference and risk financial market participation

Table 2: Internet device preference and risk financial market participation

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Risk	Risk	Risk	Stock	Stock	Stock
Device	0.127***	0.069***	0.064***	0.105***	0.067***	0.063***
	(0.010)	(0.010)	(0.009)	(0.008)	(0.008)	(0.008)
Age		1.327***	1.027***		1.292***	1.081***
		(0.170)	(0.170)		(0.153)	(0.153)
Age2		-0.678***	-0.529***		-0.890***	-0.768***
		(0.161)	(0.159)		(0.146)	(0.145)
Edu		0.024***	0.014***		0.017***	0.011***
		(0.001)	(0.001)		(0.001)	(0.001)
Gender		-0.019**	-0.015*		-0.009	-0.007
		(0.008)	(0.008)		(0.007)	(0.007)
Marriage		0.068***	0.031***		0.035***	0.012
		(0.012)	(0.012)		(0.010)	(0.010)
Health		-0.000	0.010**		0.003	0.009***
		(0.004)	(0.004)		(0.003)	(0.003)
Size		-0.022***	-0.034***		-0.015***	-0.023***
		(0.004)	(0.004)		(0.003)	(0.003)
Child		0.007	0.014**		0.007	0.012**
		(0.007)	(0.006)		(0.006)	(0.005)
Payment		0.086***	0.061***		0.049***	0.034***
		(0.009)	(0.009)		(0.008)	(0.007)
Shopping		0.058***	0.039***		0.050***	0.038***
		(0.011)	(0.010)		(0.009)	(0.009)
Purpose		0.057***	0.038***		0.041***	0.029***
		(0.009)	(0.008)		(0.007)	(0.007)
Literacy			0.061***			0.034***
			(0.007)			(0.006)
House			-0.062***			-0.046***
			(0.010)			(0.009)
Income			0.029***			0.014***
			(0.004)			(0.003)
Wealth			0.070***			0.049***
			(0.003)			(0.003)
Prov	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,883	11,883	11,883	11,883	11,883	11,883
Pseudo R2	0.034	0.149	0.215	0.040	0.144	0.192

Note: The Probit model reports marginal effects, with standard errors in parentheses using the delta method. *, **, *** indicate significance at the 10%, 5% and 1%.

To examine the influence of internet device preference on household participation in the risk financial market, this paper uses the Probit models for regression. Table 2 presents the

corresponding results of internet device preference and household participation in the risk financial market. In columns 1, 2 and 3, the dependent variable is the "Risk" variable, while in columns 4, 5 and 6, it is the "Stock" variable. This paper gradually incorporate control variables into the regression. From the regression results in Table 2, it is evident that the marginal effects of the "Device" variable are significantly greater than zero at the 1% level in each column. Taking the results of the third column as an example, households uses computer as the primary internet device exhibit a 6.4% higher probability of participating in the risk financial market compared to other households.

Regarding other traditional explanatory factors: household with higher householder's education level tend to have a greater probability of participating in the risk financial market investments; an increase in household size has a restraining effect on household's risk financial market participation; households with higher income and wealth tend to invest in risk financial assets; marriage promotes household participation in risk financial markets; preferences for housing investment in may crowd out households' participation in the risk financial market. Overall, the regression results of most control variables are consistent with existing research in literatures.

4.2. Internet device preference and degree of in risk financial market participation

Table 3 presents the Tobit model regression results of the association between internet device preference and the degree of household participation in the risk financial market. In table 3, the dependent variable for columns 1, 2 and 3 is "Risk_p" variable, while for columns 4, 5 and 6 is "Stock_p" variable. Apart from the dependent variable, the variable settings in each column are consistent with the corresponding columns in Table 2.

Form the results in Table 3, it can be finds that the coefficient of "Device" variable is significantly greater than zero at the 1% level in each column. This result indicates that use computer as the primary internet device has a significant positive impact on the degree of household participation in the risk financial market. Furthermore, the direction and significance level of "Device" variable' coefficients are consistent with the Probit model. This consistency aligns with the perspective in literatures that factors influencing household's risk financial market participation decision will further impact the degree of household participation in risk financial market.

Table 3: Internet device preference and degree of risk financial market participation

	(1)	(2)	(3)	(4)	(5)	(6)
Variable	Risk_p	Risk_p	Risk_p	Stock_p	Stock_p	Stock_p
Device	0.359***	0.191***	0.176***	0.395***	0.253***	0.240***
	(0.027)	(0.026)	(0.025)	(0.031)	(0.030)	(0.029)
Control Variable		Yes	Yes		Yes	Yes
Observations	11,883	11,883	11,883	11,883	11,883	11,883
Pseudo R2	0.028	0.136	0.192	0.034	0.128	0.168

Note: The Tobit model reports regression coefficients, with robust standard errors in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1%.

4.3. Mechanism analysis

In this part, this paper will analysis whether internet device preference will impact the participation decisions in the risk financial market by influencing the level of household financial information access. This paper will use the Bootstrap method, which has a high testing power for examining mediating effect. Subsequently, referring to the research experience of Iacobucci (2012)[19], this paper will also use the Ordered Logit model to analysis the mediating effect.

Table 4 presents the results of the Bootstrap method, each model controls for all control variables, and the random sampling frequency is set to 5000. From the results of each row, it can be finds that consistent with the direct effect, the indirect effect of the "Device" variable is greater than 0, and its 95% confidence interval does not include 0. This result indicates that the "Information" variable plays a significant mediating role in the influence of internet device preference on household's participation in risk financial market.

Table 4: Bootstrap method

	indirect effect	95% confidence interval	direct effect	95% confidence interval
Device-Information-Risk	0.017	[0.010,0.026]	0.061	[0.028,0.094]
Device-Information-Stock	0.015	[0.008,0.022]	0.061	[0.029,0.092]

Table 5 presents the results of the mediation effect test by Ordered Logit model, and the control variables in each model are consistent with those in Table 2. Following the research experience of Iacobucci (2012) [19], this determine the significance of the mediation effect by testing whether the Z value exceeds the critical value of 1.96. The calculation of Z value is as follows:

$$Z = Z_a Z_b / \sqrt{Z_a{}^2 + Z_b{}^2 + 1} \tag{3}$$

Z_a represents the z-value of "Device" variable in the regression of the "Information" variable to the "Device" variable, while Z_b represents the z-value of "Information" variable in the regression of the "Risk" variable to the "Information" variable. From the regression results, it can be finds that the Z value in each column are significantly greater than 1.96. This result indicates the "Information" variable exerts a significant mediating effect in the influence of internet device preference on household risk financial market participation.

Table 5: Testing for mediation effects based on Ordered Logit model

	(1)	(2)	(3)	(4)	(5)	(6)
Step 1						
Variable	Information	Information	Information	Information	Information	Information
Device	0.606***	0.395***	0.377***	0.606***	0.395***	0.377***
	(7.42)	(4.74)	(4.51)	(7.42)	(4.74)	(4.51)
Step 2						
Variable	Risk	Risk	Risk	Stock	Stock	Stock
Information	0.641***	0.584***	0.519***	0.697***	0.655***	0.592***
	(19.67)	(16.10)	(13.88)	(18.68)	(15.39)	(13.78)
Device	0.640***	0.412***	0.410***	0.707***	0.522***	0.513***
	(6.19)	(3.65)	(3.54)	(6.15)	(4.15)	(4.00)
Control Variable		Yes	Yes		Yes	Yes
Observations	4,738	4,738	4,738	4,738	4,738	4,738
Z value						
Device	6.93	4.54	4.28	6.89	4.52	4.28

Note: The Ordered Logit model reports regression coefficients, with z-values in parentheses. *, **, *** indicate significance at the 10%, 5% and 1%.

4.4. Discussion on Robustness

In this part, this paper tris to discuss the potential endogeneity issue by using the two-stage IV Probit and two-stage IV Tobit models. This paper will utilize the "probability of households in the county using computer as the primary internet device" as the instrumental variable. This choice is

motivated by the fact that preferences for internet device usage among other households in the county may influence household's own internet device usage preferences, while the average internet device preference in the county is not directly related to household participation in the risk financial market. Table 6 reports the corresponding results, all control variables been control in each column. The first and second columns report the results of the two-stage IV Probit model, while the third and fourth columns report the results of the two-stage IV Tobit model. From the regression results of each column, it can be find, after using the instrumental variable, the coefficient of the "Device" variable remains great than 0 at the 1% significance level. AR test also reject the possibility of weak instrument variable. However, due to Just-identified of the model, this paper cannot precisely verify the exogeneity of the instrumental variable.

Table 6: Endogeneity discussion

	(1)	(2)	(3)	(4)
Variable	Risk	Stock	Risk_p	Stock _p
Device	2.895***	2.580***	1.973***	1.831***
	(0.537)	(0.572)	(0.353)	(0.402)
Wald test	0.000	0.000	0.000	0.000
AR test	6.93	4.54	4.28	6.89

Note: Report regression coefficients, with standard errors in parentheses, *, **, *** indicate significance at the 10%, 5% and 1%.

5. Conclusion

This paper uses the data from China Household Finance Survey 2017 to analysis the impact of household internet device preference on their decision-making regarding participation in the risk financial market. The research findings suggest: On the one hand, households using computers as their primary internet device exhibit a significant positive influence on both the probability and extent of their participation in the risk financial market. On the other hand, the financial information access plays a significant mediating role in the influence of household internet device preference on risk financial market participation. Based on the results, this paper proposes the following policy insights:

Firstly, the development of internet public services needs to take into account vulnerable groups. Efforts should be made to further promote internet accessibility among the elderly, low-income and low-education groups. This includes improving internet infrastructure, especially computer facilities in remote areas, and reducing internet access fees to lowering the economic barriers to using computers for internet access. Secondly, public interest courses on internet usage should be conducted in communities, focusing on basic internet usage and common financial software on computers, aims to increase residents' willingness to use computers for information gathering. Furthermore, internet companies, especially those in internet finance, should be encouraged to diversify and humanize their products, and reducing the difficulty of applying financial information technology in computers for the elderly. Lastly, leveraging platform advantages, financial knowledge and investment concepts should be disseminated through commonly used entertainment and social applications among residents to increase the likelihood of exposure to financial information.

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References

[1] Peress J. Information vs. entry costs: What explains us stock market evolution?[J]. Journal of Financial and Quantitative Analysis, 2005, 40(3): 563-594.
[2] Shum P, Faig M. What explains household stock holdings?[J]. Journal of Banking & Finance, 2006, 30(9): 2579-2597.
[3] Van Rooij M, Lusardi A, Alessie R. Financial literacy and stock market participation[J]. Journal of Financial economics, 2011, 101(2): 449-472.
[4] Christelis D, Jappelli T, Padula M. Cognitive abilities and portfolio choice[J]. European Economic Review, 2010, 54(1): 18-38.
[5] Grinblatt M, Keloharju M, Linnainmaa J. IQ and stock market participation[J]. The Journal of Finance, 2011, 66(6): 2121-2164.
[6] Campbell J Y. Household finance [J]. The journal of finance, 2006, 61(4): 1553-1604.
[7] Guiso L, Paiella M. Risk aversion, wealth, and background risk[J]. Journal of the European Economic association, 2008, 6(6): 1109-1150.
[8] Hong H, Kubik J D, Stein J C. Social interaction and stock-market participation[J]. The journal of finance, 2004, 59(1): 137-163.
[9] Liang P, Guo S. Social interaction, Internet access and stock market participation—An empirical study in China[J]. Journal of Comparative Economics, 2015, 43(4): 883-901.
[10] Bricker J, Li G. Credit scores, social capital, and stock market participation[J]. Social Capital, and Stock Market Participation (2017-02). FEDS Working Paper, 2017 (2017-008).
[11] Cardak B A, Martin V L, McAllister R. The effects of the Global Financial Crisis on the stock holding decisions of Australian households[J]. The North American Journal of Economics and Finance, 2019, 50: 100983.
[12] Berkowitz M K, Qiu J. A further look at household portfolio choice and health status[J]. Journal of Banking & Finance, 2006, 30(4): 1201-1217.
[13] Christelis D, Georgarakos D, Haliassos M. Differences in portfolios across countries: Economic environment versus household characteristics[J]. Review of Economics and Statistics, 2013, 95(1): 220-236.
[14] Bertocchi G, Brunetti M, Torricelli C. Marriage and other risky assets: A portfolio approach[J]. Journal of Banking & Finance, 2011, 35(11): 2902-2915.
[15] Christelis D, Georgarakos D, Sanz-de-Galdeano A. The impact of health insurance on stockholding: A regression discontinuity approach[J]. Journal of Health Economics, 2020, 69: 102246.
[16] Wang S, Li C, Wang Z, et al. Digital skills and household financial asset allocation[J]. Finance Research Letters, 2023, 58: 104566.
[17] Bonfadelli H. The Internet and knowledge gaps: A theoretical and empirical investigation[J]. European Journal of communication, 2002, 17(1): 65-84.
[18] Rao Y, Mei L, Zhu R. Happiness and stock-market participation: Empirical evidence from China[J]. Journal of Happiness Studies, 2016, 17(1): 271-293.
[19] Iacobucci D. Mediation analysis and categorical variables: The final frontier[J]. Journal of Consumer Psychology, 2012, 22(4): 582-594.