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Rethinking Financial Inclusion in the Digital Age: Determinants of Fintech Adoption in Indonesian Households

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ABSTRACT

This study examines the determinants of fintech adoption among Indonesian households using nationally representative microdata from SUSENAS 2022 and binary logistic regression analysis. The findings reveal that fintech adoption remains limited, with only 5.48% of households reporting the use of digital financial services such as mobile banking. Among the determinants, savings ownership emerges as the strongest predictor, associated with a 12% higher probability of adopting fintech, underscoring the importance of prior financial engagement. Other significant factors include educational attainment, ICT experience, and formal employment. The analysis also highlights notable geographic variation. Education increases the probability of fintech use by 1.37% in urban areas but only 0.27% in rural areas. Similarly, ICT experience is associated with a 4.72% increase in adoption probability in urban areas, compared to 1.28% in rural settings, reflecting unequal returns to human capital across region. Formal employment and land ownership play a more influential role in rural areas. In contrast, participation in government assistance programs such as PKH and BPNT is negatively associated with fintech use across both settings, indicating that digital transfers alone are insufficient to foster sustained financial inclusion. These results highlight the urgency of designing context-sensitive fintech policies that address digital literacy, institutional trust, and inclusive program integration.

Keywords: Financial inclusion, Fintech, Household financial literacy, SUSENAS

1. INTRODUCTION

The rapid transformation of the global financial landscape through digital innovation has ushered in a new era of financial inclusion, in which technology, particularly financial technology (fintech), plays a pivotal role in bridging traditional gaps in financial access (Miah, 2023; Jam'an, 2024). In emerging economies such as Indonesia, fintech has emerged as a disruptive yet enabling force that expands the reach of formal financial services to previously underserved populations (Safitri, 2020). The proliferation of mobile banking, e-wallets, peer-to-peer lending, and digital payment platforms has redefined the nature of financial access and created new opportunities for economic

participation, especially among lower-income and rural households (Agarwal & Zhang, 2020; Minarni, 2025).

Indonesia's digital economy is rapidly expanding, driven by innovations across key sectors including fintech, e-commerce, and MSME digitalization, and supported by evolving government policies and regulatory frameworks. This growth is underpinned by a massive digital user base, with 221 million internet users and 233 million smartphone users, offering fertile ground for fintech development. Millennials and Gen Z, together accounting for over 53% of the population, dominate fintech usage, comprising 68.7% of total users according to the 2024 AFTECH survey. The Gross Merchandise Value (GMV) of Indonesia's internet economy reached USD 82 billion and is projected to grow to USD 109 billion by 2025, with long-term estimates as high as USD 360 billion by 2030 (OJK, 2024).

However, this rapid growth masks deep structural inequalities. Although Indonesia's financial inclusion index reached 75.02%, the financial literacy index lags behind at 65.43%, indicating a substantial gap between access and understanding (OJK, 2024). This uneven trajectory raises critical concerns: while fintech promises inclusion, it may inadvertently reinforce exclusion among digitally disadvantaged groups. Without sufficient digital skills, institutional trust, and enabling infrastructure, many remain unable to translate access into meaningful use. This tension calls for a rethinking of digital finance not only as a matter of technological diffusion but also of socioeconomic capability and equity.

The determinants of fintech adoption have been widely examined in behavioral and development economics literature. Foundational models such as the Technology Acceptance Model (TAM) by Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2016) emphasize individual perceptions, perceived usefulness, ease of use, and facilitating conditions. These models intersect with socioeconomic factors such as education, income, and digital literacy (Sharma et al., 2024; Sultana et al., 2023). However, in the context of developing countries, scholars increasingly note that such models may fall short of capturing structural realities. Adaptations have been proposed to account for variables like institutional trust, financial literacy, and access to infrastructure (Kas-Hanna et al., 2022; Adel, 2024). Dewi (2023) further illustrates that financial literacy positively influences business sustainability, highlighting the relevance of foundational capabilities in digital environments.

In Indonesia, fintech adoption is shaped by multidimensional factors. Education plays a crucial role by enhancing digital and financial literacy, which in turn fosters trust and navigational skills for digital platforms. Household income, asset ownership, and formal employment also correlate positively with digital finance uptake (Ardini et al., 2024). Yet, spatial inequality remains a persistent constraint: limited access to reliable internet, electricity, and institutional services in rural areas continues to hinder digital inclusion (Kartiasih et al., 2023).

At the same time, the digitization of social protection programs, such as *Program Keluarga Harapan* (PKH) and *Bantuan Pangan Non-Tunai* (BPNT), presents a critical lens for understanding the intersection between welfare and fintech. These initiatives have introduced millions of households to digital payments and formal banking (Firmansyah et al., 2021). However, it remains unclear whether such exposure leads to sustained engagement with broader digital financial services or whether the adoption remains shallow and transactional.

This study aims to fill a critical empirical and conceptual gap by systematically analyzing the determinants of fintech adoption at the household level in Indonesia. Using nationally representative microdata from SUSENAS 2022, the study investigates how a

range of socioeconomic, demographic, and institutional variables influence the likelihood of households adopting digital financial services. Unlike previous research that often centers on urban consumers or firm-level innovations, this study focuses on household heterogeneity across rural and urban contexts. Specifically, it examines how educational attainment, ICT experience, savings behavior, employment status, welfare program participation, and household characteristics interact to shape fintech engagement. By doing so, the study seeks to understand not only who adopts fintech and under what conditions, but also why structural inequalities persist in digital financial inclusion despite widespread access to mobile technologies.

The contribution of this research is threefold. First, it advances the theoretical discourse on digital inclusion in the Global South by situating household decisions within broader behavioral, structural, and institutional contexts, thereby challenging the universality of technology acceptance frameworks. Second, it offers robust empirical insights for policymakers, especially in designing inclusive digital finance ecosystems and bridging the last-mile gap for vulnerable populations. Third, by leveraging granular SUSENAS microdata, this study enables disaggregated analysis across gender, region, and income groups, providing a nuanced understanding of inequality in fintech adoption. As Indonesia moves toward its goal of 90% financial inclusion by 2025 under the National Strategy for Financial Inclusion (SNKI), understanding who adopts fintech, under what conditions, and why is vital. This study reconceptualizes digital finance not merely as an instrument of efficiency, but as a platform for inclusive development and equitable participation in the digital economy.

2. LITERATUR REVIEW

a. Theoretical Foundation of Fintech Adoption

Understanding fintech adoption at the household level requires revisiting established models of technology acceptance while recognizing their limitations in low- and middle-income country contexts. The Technology Acceptance Model (TAM) by Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2016) are widely applied to explain user behavior based on perceived usefulness, ease of use, social influence, and facilitating conditions. These models have informed studies on digital banking and mobile finance in developing countries, where external supports, such as internet access and regulatory backing, play essential roles in uptake (Noreen et al., 2022).

However, these frameworks often focus on individual cognitive evaluations, and may understate the influence of structural and contextual constraints, such as digital literacy gaps, employment informality, and institutional trust. Particularly in rural or informal settings, household adoption decisions are influenced not only by perceived utility but also by access limitations and behavioral norms.

Complementing these models, Rogers' Diffusion of Innovations Theory emphasizes peer effects and community-based trust as pathways for spreading fintech adoption, which is particularly relevant in rural Indonesia (Frei-Landau et al., 2022). Additionally, recent studies highlight institutional trust and digital literacy as critical enablers of sustained fintech use, suggesting that behavioral constructs must be linked to broader systemic conditions (Roh et al., 2024). This study builds on these theories but moves beyond individual-level perceptions, adopting a household-level lens that

incorporates economic position, gender roles, infrastructure access, and program participation, factors often overlooked in classical adoption models.

b. Household-level Determinants of Fintech Adoption

Fintech adoption at the household level reflects more than just access to technology; it is shaped by intersecting social, economic, and institutional conditions. Among the most influential factors is educational attainment, which enables individuals to understand digital interfaces, evaluate financial products, and build confidence in navigating mobile platforms (Lim et al., 2023; Lin & Bates, 2022). This foundational capability is often accompanied by differences in economic position. Households with greater income or asset ownership are typically better equipped to afford smartphones and internet access, which serve as gateways to digital financial tools (Young & Young, 2022). They are also more likely to perceive fintech services as convenient and beneficial for saving, transferring funds, or accessing credit.

Opportunities to engage with formal finance are further influenced by employment conditions. Those in formal jobs often receive salaries through bank accounts, providing exposure to institutional financial systems and familiarizing them with digital transactions (Nguyen, 2022). In contrast, workers in the informal sector tend to operate in cash-based environments, with limited institutional touchpoints and lower likelihood of fintech uptake.

Household characteristics, such as gender and geographic location, also play a defining role. Female-headed households often experience greater barriers to digital inclusion due to limited control over financial decisions, reduced access to technology, or lower participation in financial education programs (Chakradhar & Choudhary, 2023; Omego, 2024). However, there is evidence that targeted interventions, such as community-based training or inclusive digital campaigns, can improve fintech engagement among women (Debbarma & Chinnadurai, 2023).

Location-based disparities compound these challenges. Urban households tend to benefit from stronger infrastructure, better connectivity, and greater exposure to digital financial ecosystems. Meanwhile, rural households frequently face "double exclusion", from both reliable internet and the presence of formal financial institutions, making digital finance less accessible (Lamia, 2024).

Although the expansion of social assistance programs like PKH and BPNT has introduced many low-income households to digital payment systems, adoption is not always sustained. Without follow-up support such as user training, trust-building mechanisms, or product integration, fintech use often remains limited to the act of receiving transfers (Natile, 2020; Cosma & Rimo, 2023). These layered findings suggest that fintech adoption is not simply a matter of technology diffusion but is shaped by a household's structural position within broader systems of opportunity and exclusion.

c. Hypotheses Development

Educational attainment is a key enabling factor in the adoption of digital financial services. Higher education enhances cognitive skills, financial literacy, and digital competence, that are critical for understanding and trusting fintech platforms. Educated individuals are more likely to understand the benefits and risks associated with mobile banking, better interpret financial terms, and navigate user interfaces, especially in resource-constrained settings (Lin & Bates, 2022). Prior studies have shown that education positively correlates with ownership of bank accounts, participation in e-commerce, and uptake of cashless payment systems (Lim et al., 2023). These insights suggest that fintech platforms may disproportionately benefit those with greater human capital. Therefore:

H1: Higher educational attainment of the household head is positively associated with

the likelihood of adopting fintech.

Familiarity with information and communication technologies (ICT) is fundamental to fintech engagement. ICT literacy, often acquired through formal or non-formal learning, reduces the psychological barriers and perceived complexity that hinder fintech use. Households headed by individuals with prior ICT experience are more likely to use smartphones, internet applications, and secure authentication protocols, all of which are essential for mobile banking. Low digital literacy, particularly in rural areas, has been identified as a key obstacle to the inclusive adoption of fintech platforms (Salleh et al., 2024). Moreover, Kanga et al. (2022) found that digital competence significantly influenced fintech engagement across income groups. Based on this, the following hypothesis is proposed:

H2: Household heads with ICT experience are positively associated with the likelihood of adopting fintech.

Economic capacity plays a dual role as both a facilitator and motivator for fintech use. Wealthier households are more likely to possess smartphones, maintain internet subscriptions, and have the financial literacy necessary for adopting fintech services. Additionally, these households have more diverse financial needs, including savings, remittances, and investments which align well with the functionalities of mobile financial platforms (Yang et al., 2020). In Kenya, Van Hove & Dubus (2019) showed that households with higher income levels had greater participation in M-Pesa, a mobile money service. In Indonesia, household income has been associated with e-wallet usage and digital banking penetration (Nabila et al., 2018). Thus, the following hypothesis is posited:

H3: Higher household per capita expenditure is positively associated with the likelihood of adopting fintech.

Employment in the formal sector is often linked to greater financial inclusion through mandatory banking for salary payments, access to insurance, and eligibility for credit products. These touchpoints frequently serve as gateways to fintech services, including mobile banking and digital wallets (Farazi, 2014). In contrast, informal sector workers often operate in cash economies and lack consistent interaction with formal financial institutions. Labor informality is strongly associated lower income with financial exclusion and reduced trust in institutional systems (Cama et al., 2024). Formal workers are more likely to be targeted by digital financial services due to stable income and verifiable credit history. Hence:

H4: Households headed by formal workers are positively associated with the likelihood of adopting fintech.

Asset ownership, particularly in the form of land and housing, is indicative of economic security and long-term financial planning. Households with real estate assets often have higher financial literacy and more interaction with banks, thus improving their likelihood of engaging in fintech (Cox et al., 2015; Seay et al., 2017). Land ownership can serve as collateral for loans and be associated with access to government financial programs, further promoting trust in formal institutions. Households owning land or housing are more likely to use formal financial services, suggesting a positive correlation between asset ownership and fintech engagement. Therefore:

H5: House ownership is positively associated with the likelihood of adopting fintech.
H6: Land ownership is positively associated with the likelihood of adopting fintech.

Households that already participate in the formal financial system, such as those with savings in a bank are more likely to adopt fintech due to habit formation and existing trust in institutional mechanisms (Becker, 2017; Moenjak et al., 2020). Savings behavior indicates financial planning, which aligns well with the budgeting and tracking features of mobile banking applications. Prior engagement with savings accounts also suggests a level of financial literacy and documentation necessary for account opening.

H7: Having household savings is positively associated with the likelihood of adopting fintech.

Government programs such as *Program Keluarga Harapan* (PKH) and *Bantuan Pangan Non Tunai* (BPNT) increasingly rely on digital platforms to distribute assistance, thereby introducing low-income households to formal financial systems. These digital transfers often involve opening bank accounts or e-wallets, which may foster familiarity with fintech tools. However, studies have shown mixed outcomes: while some beneficiaries continue using digital tools after receiving aid, others revert to cash-based transactions due to low trust or digital illiteracy (Natile, 2020; Cosma & Rimo, 2023). As such, participation in these programs may act as a conditional catalyst for fintech adoption.

H8: Participation in the PKH program is positively associated with the likelihood of adopting fintech.
H9: Participation in the BPNT program is positively associated with the likelihood of adopting fintech.

Larger households tend to have more complex and diverse financial needs, such as school fees, medical expenses, and utility payments. These needs may incentivize the use of digital platforms for convenience, transparency, and cost savings. Additionally, larger households may have more digitally active members, such as youth or working-age adults, who encourage or assist in the use of fintech applications (Piatak et al., 2019). Thus:

H10: Larger household size is positively associated with the likelihood of adopting fintech.

Age is a commonly studied barrier to technology adoption. Older individuals may exhibit lower levels of digital literacy, higher risk aversion, and resistance to technological change (Kärnä et al., 2022). Conversely, younger household heads are more likely to be familiar with smartphones and have more exposure to digital financial campaigns. Empirical studies confirm that younger age correlates positively with mobile banking use. Therefore:

H11: Older household heads are negatively associated with the likelihood of adopting fintech.

Gender-based differences in financial access remain prevalent across developing economies. Male-headed households may have greater access to mobile phones, ID cards, and labor force participation, all of which facilitate fintech adoption (Chakradhar & Choudhary, 2023; Omego, 2024). However, targeted digital literacy initiatives and conditional cash transfer programs for women have improved female financial inclusion in some contexts (Debbarma & Chinnadurai, 2023). Therefore:

H12: Being a male-headed household is positively associated with the likelihood of adopting fintech compared to female-headed households.

3. RESEARCH METHOD

a. Research Design and Analytical Approach

This study adopts a quantitative approach using cross-sectional microdata to examine the determinants of fintech adoption among Indonesian households. Given that the dependent variable, fintech adoption is binary (1 = adopted mobile banking; 0 = not adopted), a logistic regression (logit) model is employed as the main estimation technique. Logit regression is widely used in empirical social science and behavioral finance research to analyze the probability of a binary outcome as a function of several independent variables

The logit model is preferred over the linear probability model due to its ability to constrain predicted values between 0 and 1 and to model the nonlinear relationship between the independent variables and the log-odds of the outcome. This technique is particularly useful in digital finance studies, where adoption behavior does not follow a linear trend and is influenced by multiple socioeconomic and behavioral dimensions.

b. Data and Variable Operationalization

The empirical analysis utilizes household-level data from the *Survei Sosial Ekonomi Nasional* (SUSENAS) 2022, conducted by Badan Pusat Statistik (BPS). SUSENAS is one of the most comprehensive and nationally representative socio-economic surveys in Indonesia, designed to capture detailed information on household demographics, consumption patterns, housing conditions, social protection programs, access to technology, and financial behavior. The 2022 survey cycle is particularly relevant due to its inclusion of digital finance indicators, such as household use of mobile banking, reflecting the country's post-pandemic transition toward a digital economy.

This study analyzes a sample of 300,056 households spread across 34 provinces, ensuring geographic and socioeconomic diversity in the findings. The large sample size enhances the robustness of the statistical analysis and allows for disaggregation by key demographic groups such as gender, employment type, and urban-rural residence. The operationalization of each variable used is presented in Table 1.

Table 1. Operational Definition of Variables

Variables	Definition	Category
Fintech Adoption *(Fintech)*	Use of any digital financial service in form of mobile banking by household	1 = Yes 0 = No
Educational Attainment *(Edu)*	Number of years of formal education completed by the household head	Continuous (in year)
ICT Experience *(ICT)*	Household head's experience in learning ICT formally/non-formally	1 = Yes 0 = No
Per Capita Expenditure *(Expenditure)*	Household per capita expenditure, used as a measurement for economic capacity	Continuous (in Rupiah)
Employment Status *(Employment)*	Type of employment of the household head	1 = Formal 0 = Informal
House Ownership *(House)*	Ownership of the house where the household resides	1 = Own 0 = Rent/others
Land Ownership *(Land)*	Ownership of agricultural or non-agricultural land	1 = Own 0 = Not own

Variables	Definition	Category
Saving Ownership *(Saving)*	Whether the household has savings in a bank account	1 = Yes 0 = No
Involvement in Program Keluarga Harapan *(PKH)*	Whether the household is a recipient of the PKH cash transfer program	1 = Yes 0 = No
Involvement in Bantuan Pangan Non Tunai *(BPNT)*	Whether the household receives food assistance under BPNT	1 = Yes 0 = No
Household Size *(HH Size)*	Total number of individuals living in the household	Continuous (in person)
Household-head Age *(Age)*	Age of the household head	Continuous (in year)
Household-head Gender *(Gender)*	Gender of the household head	1 = Male 0 = Female

Source: SUSENAS 2022, modified

c. Model Specification

To examine the determinants of fintech adoption among Indonesian households, this study employs a binary logistic regression model, appropriate for modeling dichotomous dependent variables. The dependent variable, fintech adoption, is coded as 1 if the household uses mobile banking services and 0 otherwise. The logistic model estimates the probability that a household adopts fintech services as a function of various socioeconomic, demographic, and institutional variables. The model is based on the assumption that the log-odds of the probability of adopting fintech can be expressed as a linear combination of the explanatory variables. The logistic regression model is specified as follows:

$$logit(P_i) = ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \beta_1 Edu_i + \beta_2 ICT_i + \beta_3 Expenditure_i + \beta_4 Employment_i + \beta_5 House_i + \beta_6 Land_i + \beta_7 Saving_i + \beta_8 PKH_i + \beta_9 BPNT_i + \beta_{10} HHSize_i + \beta_{11} Age_i + \beta_{12} Gender_i + \epsilon_i \quad (1)$$

Where P_i is the probability that household i adopts fintech, β_0 is the intercept, $\beta_k (k = 1, ...12)$ are the regression coefficients for each explanatory variable, and ϵ_i is the error term capturing unobserved influences. While the logit coefficients (β_k) are useful for understanding the direction and significance of relationships, their direct interpretation is in terms of log-odds, which may not be intuitive for policymakers or general readers. To address this, the study also computes marginal effects to evaluate the partial change in the predicted probability of fintech adoption with respect to a unit change in each independent variable, holding all other variables constant. The marginal effect for a continuous independent variable X_k in a logit model is given by:

$$\frac{\partial P_i}{\partial X_k} = \beta_k . P_i . (1 - P_i) \quad (2)$$

This formula captures the rate of change in the probability of fintech adoption with respect to a one-unit increase in X_k. For binary independent variables, marginal effects are calculated as the discrete change in predicted probability when the variable changes from 0 to 1. These marginal effects are reported at the sample means (average marginal effects) and offer more interpretable insights into the practical significance of each determinant in influencing household behavior toward fintech adoption.

4. RESULTS AND ANALYSIS

The descriptive statistics from the dataset reveal notable patterns in fintech adoption and the socioeconomic profile of Indonesian households, as presented in Table 2.

Table 2. Descriptive Statistics

Variables	Frequency	Percentage
Fintech Adoption		
Yes	16,431	5.48
No	283,625	94.52
Household-head Education/ Year of Schooling		
No schooling / Did not complete primary school	46,511	15.50
Primary school or equivalent	85,734	28.57
Junior secondary school or equivalent	50,618	16.87
Senior secondary school or equivalent	85,432	28.47
Diploma I / II	1,386	0.46
Diploma III	3,681	1.23
Diploma IV / Bachelor's Degree (S1)	24,504	8.17
Professional Degree / Master's Degree (S2)	2,038	0.68
Doctoral Degree (S3)	152	0.05
ICT Experience		
Yes	43,029	14.34
No	257,027	85.66
Employment Status		
Formal	112,171	37.38
Informal	187,885	62.62
House Ownership		
Yes	250,299	83.42
No	49,757	16.58
Land Ownership		
Yes	227,870	75.94
No	72,186	24.06
Saving Ownership		
Yes	153,634	51.20
No	146,422	48.80
PKH Involvement		
Yes	48,349	16.11
No	251,707	83.89
BPNT Involvement		
Yes	55,661	18.55
No	244,395	81.45

Variables	Mean	Std. Deviation	Min	Max
Household Expenditure	988814.5	658268.9	138983.3	52000000
Household Size	3.75	1.56	1	18
Household-head Age	45.65	10.60	15	65

Source: Analysis from SUSENAS 2022

Out of the total households analyzed, only 5.48% reported using mobile banking services, while the vast majority (94.52%) have not yet adopted fintech tools. This low adoption rate highlights a significant gap in digital financial inclusion, suggesting that despite the growing availability of digital platforms, household engagement with fintech remains limited. The educational profile of household heads suggests a relatively low

average level of education: nearly 44% of household heads have only completed primary education or less, while only about 9% have a university degree or higher. This educational divide is likely a major barrier to understanding and trusting digital finance systems. Moreover, ICT experience is relatively scarce, with only 14.34% of household heads reporting any formal or informal ICT learning. This limited digital literacy may explain both the low fintech penetration and the difficulty of scaling digital financial services in Indonesia.

In terms of economic characteristics, household per capita expenditure averages IDR 988,814.5, with substantial variation (ranging from IDR 138,983.3 to IDR 52 million), indicating wide disparities in economic capacity across the sample. About 51.2% of households report having savings, suggesting that financial planning behavior is moderately present but far from universal. Regarding employment, only 37.38% of household heads work in the formal sector, while the remaining 62.62% are informally employed. Additionally, 83.42% of households own their home, and 75.94% own land, indicating that asset ownership is relatively high despite income inequality. Notably, around 16.11% and 18.55% of households participate in social protection programs such as PKH and BPNT, which may serve as important policy entry points to encourage digital financial inclusion. Overall, these statistics underscore the critical role of education, employment formality, digital literacy, and program participation in influencing the diffusion of fintech in Indonesia.

Table 3. Logit Regression Estimation Results

Variables	Coefficient	Marginal Effect
Educational Attainment	0.1882***	0.0081***
	(0.0030)	(0.0001)
ICT Experience	0.7019***	0.0303***
	(0.0190)	(0.0008)
Per Capita Expenditure	0.0580**	0.0025**
	(0.0273)	(0.0011)
Employment Status	0.6878***	0.0297***
	(0.0204)	(0.0008)
House Ownership	-0.1919***	-0.0083***
	(0.0259)	(0.0011)
Land Ownership	0.1337***	0.0057***
	(0.0255)	(0.0011)
Saving Ownership	2.7540***	0.1192***
	(0.0541)	(0.0024)
PKH Involvement	-0.7692***	-0.0333***
	(0.0580)	(0.0025)
BPNT Involvement	-0.6335***	-0.0274***
	(0.0464)	(0.0020)
Household Size	-0.0487***	-0.0021***
	(0.0082)	(0.0003)
Household-head Age	-0.0136***	-0.0005***
	(0.0009)	(0.00003)
Household-head Gender	0.1070***	0.0046***
	(0.0308)	(0.0013)
Constant	-7.7800***	
	(0.4024)	
Observations	300,056	
LR chi2	36795.24	
Prob > chi2	0.0000	

Source: Analysis from SUSENAS 2022
Standard errors (in parentheses)
*** p<0,01, ** p<0,05, * p<0,1

The results from the logit regression analysis provide a detailed picture of the household-level factors influencing fintech adoption in Indonesia. One of the most consistent findings in financial inclusion literature, the role of education is confirmed in Table 3. The coefficient for educational attainment is 0.1882 and statistically significant at the 1% level. The marginal effect of 0.0081 indicates that each additional year of schooling increases the probability of fintech adoption by approximately 0.81 percentage points. While the marginal effect is modest, the cumulative impact over the spectrum of educational levels is substantial. This supports the view that education enhances not only financial literacy but also digital skills and confidence in navigating technology-driven services, even opening digital career-path (Lim et al., 2023; Junaedi et al., 2024). Education likely equips individuals to assess risks and benefits more accurately, decode complex financial terms, and utilize the features of mobile banking platforms effectively.

Another critical enabler is ICT experience, which shows a strong positive coefficient of 0.7019 and a marginal effect of 0.0303, suggesting that households whose heads have any form of ICT training or learning are 3 percentage points more likely to adopt fintech. This finding reflects the importance of digital capabilities as a gateway to digital financial inclusion, particularly in contexts where user interfaces, security concerns, and transaction errors can deter less digitally literate individuals. This result is consistent with Adel (2024) and Sreenu (2025), who emphasize digital literacy as a threshold condition for successful fintech diffusion in developing economies.

The role of economic capacity, captured through household per capita expenditure, is statistically significant with a coefficient of 0.0580 and a marginal effect of 0.0025. Although the effect is relatively small, it confirms that better-off households are more likely to use fintech, consistent with their greater access to smartphones, data packages, and financial service needs (Agarwal & Chua, 2020). However, the modest magnitude implies that economic capacity alone is not sufficient, non-material barriers such as trust, digital knowledge, and institutional access likely remain major constraints.

Employment status also plays a critical role, with formally employed household heads being more likely to adopt fintech (coefficient = 0.6878; marginal effect = 0.0297). Formal employment typically involves salary transfers through bank accounts, providing not only exposure to financial systems but also a necessity to engage with mobile financial platforms. These findings align with Becker (2017) and Moenjak et al. (2020) who found that formal sector integration facilitates greater financial engagement.

Interestingly, asset ownership shows mixed effects. Land ownership has a positive and significant coefficient of 0.1337 and marginal effect of 0.0057, possibly reflecting that landholders are more likely to require and use formal financial services (e.g., for agricultural inputs, credit access, or land-related transactions). In contrast, house ownership shows a negative and significant association with fintech use (coefficient = –0.1919; marginal effect = –0.0083). This unexpected result could suggest that households owning their homes, especially in rural or less dynamic urban areas, may feel less financial pressure or be less exposed to institutional touchpoints that encourage fintech use. Alternatively, homeowners might have lower exposure to market-based financial services

or remain embedded in traditional, cash-based economies. These findings suggest a need to further explore how fixed assets relate to digital behavior.

The strongest positive determinant in the model is saving ownership, with a large coefficient of 2.7540 and a marginal effect of 0.1192. This implies that households already engaged in saving are 11.92 percentage points more likely to use fintech services. This result reinforces the idea that fintech adoption is an extension, not a substitute of formal financial behavior (Bajunaied et al., 2023). Households that already save likely perceive value in mobile banking as a tool for managing, accessing, and transferring savings, which increases trust and regular usage.

Contrary to policy expectations, households participating in government social assistance programs, such as PKH and BPNT, are significantly less likely to adopt fintech. The coefficients for PKH and BPNT are –0.7692 and –0.6335, with marginal effects of –0.0333 and –0.0274, respectively. While these programs have been digitized to some extent, especially in payment disbursement, this does not appear to translate into broader digital financial engagement. This result suggests that participation in such programs may be associated with vulnerability and exclusion rather than empowerment, particularly if beneficiaries lack the literacy, autonomy, or incentives to continue using fintech beyond receiving aid. This inlined concerns raised by Aamer & Milani (2023), who highlight the importance of pairing digital transfers with financial education and user-friendly onboarding processes.

Demographic variables also reveal important patterns. Household size is negatively associated with fintech adoption (coefficient = –0.0487), with each additional household member decreasing the likelihood of adoption by 0.21 percentage points. This could reflect financial strain or divided attention among members, limiting digital engagement. Similarly, age of the household head has a negative coefficient of –0.0136 and a marginal effect of –0.0005, confirming the digital generation gap where older individuals are less inclined to adopt new financial technologies (Harris et al., 2016). Lastly, gender is positively significant, with male-headed households being slightly more likely to adopt fintech (coefficient = 0.1070; marginal effect = 0.0046), a finding consistent with persistent gender gaps in financial and digital access in developing contexts (Chakradhar & Choudhary, 2023; Omego, 2024).

Next, based on the rural-urban classification of the logit regression results in Table 4, this study finds meaningful differences in the factors that influence household decisions to adopt fintech services. These findings highlight that where a household is located, whether in a rural or urban area, plays a key role in shaping their access to and use of digital financial tools. Differences in education levels, income, digital skills, and exposure to formal financial systems between rural and urban households contribute to these patterns.

Table 4. Logit Regression Estimation Classified by Rural - Urban

Variables	Rural		Urban	
	Coefficient	Marginal Effect	Coefficient	Marginal Effect
Educational Attainment	0.1509***	0.0027***	0.1807***	0.0137***
	(0.0056)	(0.0001)	(0.0037)	(0.0002)
ICT Experience	0.7179***	0.0128***	0.6202***	0.0472***
	(0.0404)	(0.0007)	(0.0217)	(0.0016)
Percapita Expenditure	-0.0615	-0.0011	0.0913***	0.0069***
	(0.0568)	(0.0010)	(0.0319)	(0.0024)
Employment Status	0.8993***	0.0161***	0.5203***	0.0396***
	(0.0415)	(0.0007)	(0.0238)	(0.0018)

House Ownership	-0.1867*** (0.0537)	-0.0033*** (0.0009)	-0.0898*** (0.0308)	-0.0068*** (0.0023)
Land Ownership	0.3692*** (0.0553)	0.0066*** (0.0009)	0.2269*** (0.0302)	0.0172*** (0.0023)
Saving Ownership	2.3904*** (0.0832)	0.0428*** (0.0016)	2.8615*** (0.0719)	0.2178*** (0.0055)
PKH Involvement	-0.6107*** (0.0907)	-0.0109*** (0.0016)	-0.6947*** (0.0771)	-0.0528*** (0.0058)
BPNT Involvement	-0.5743*** (0.0791)	-0.0102*** (0.0014)	-0.5587*** (0.0585)	-0.0425*** (0.0044)
Household Size	-0.0474*** (0.0163)	-0.0008*** (0.0002)	-0.0430*** (0.0098)	-0.0032*** (0.0007)
Household-head Age	-0.0155*** (0.0019)	-0.0002*** (0.00003)	-0.0201*** (0.0010)	-0.0015*** (0.00008)
Household-head Gender	0.1165* (0.0702)	0.0020* (0.0012)	0.1822*** (0.0346)	0.0138*** (0.0026)
Constant	-6.2666*** (0.8269)		-7.7439*** (0.4739)	
Observations	173,854		126,202	
LR chi2	8709.22		20763.24	
Prob > chi2	0.0000		0.0000	

Source: Analysis from SUSENAS 2022

Standard errors (in parentheses)

*** p<0,01, ** p<0,05, * p<0,1

The rural–urban comparison of fintech adoption determinants reveals clear contextual differences in how Indonesian households engage with digital financial services. While education and ICT experience positively influence fintech use in both settings, their effects are stronger in urban areas. This suggests that urban households are better positioned to convert human capital into digital financial engagement, likely due to more developed infrastructure, greater fintech availability, and targeted digital marketing. In contrast, rural households, despite similar education or digital skills, may still face barriers such as poor connectivity, limited service providers, or lack of institutional trust (Gwaka et al., 2023; Lamia, 2024).

Economic capacity appears to be a more relevant predictor in urban areas, where higher-spending households are more likely to engage with fintech tools, reflecting their active involvement in online shopping, investment, and bill payments. However, in rural contexts, even wealthier households do not exhibit significantly higher adoption, suggesting that non-economic constraints such as digital exclusion or entrenched informal financial practices may limit uptake. Similarly, formal employment significantly influences adoption across both areas, but with stronger effects in rural settings, likely because it provides rare access to formal financial systems, such as salary-linked banking, which are otherwise less accessible in rural economies.

When examining asset ownership, land ownership positively contributes to fintech adoption, especially in rural areas where land may be used for economic activities and

linked to credit access or rural banking interactions (Missiame et al., 2021). However, house ownership has a mild but consistent negative association in both areas, possibly indicating conservative financial behavior or a reduced incentive to explore alternative financial tools among settled households. These findings suggest that not all assets play the same role in shaping digital financial behavior, with their significance varying by geographic and socioeconomic context.

Across both rural and urban settings, savings ownership emerges as the most powerful determinant of fintech adoption, confirming that digital finance tends to deepen rather than initiate financial inclusion (Arner et al., 2018). Households already engaged in saving are more likely to perceive mobile banking as an extension of their financial habits, with urban savers showing much higher engagement, likely due to broader fintech ecosystems that include features like e-wallets, digital investments, or online credit scoring tools (Bajunaied et al., 2023). This emphasizes the importance of strengthening basic financial inclusion as a foundation for digital innovation.

Lastly, participation in government assistance programs such as PKH and BPNT is negatively associated with fintech use in both settings, with the effect more pronounced in urban areas. While these programs are increasingly digitized, they often fail to promote sustained engagement with fintech, possibly due to low digital literacy, lack of trust, or limited control over financial decisions. In addition, demographic characteristics such as age and household size reduce adoption likelihood, consistent with global patterns of digital exclusion among older and larger households. The persistent gender gap, especially in urban contexts, highlights the need for fintech policies that explicitly address the barriers faced by women in accessing and benefiting from digital finance.

5. CONCLUSION

This study demonstrates that fintech adoption among Indonesian households is shaped by a combination of human capital (education and ICT experience), economic participation (savings ownership and employment formality), and institutional inclusion. Yet, these influences are not uniform across space. Urban households benefit more from education, digital skills, and financial capacity, whereas rural households rely more on structural factors such as formal employment and land ownership. Among all predictors, savings ownership emerges as the most robust and consistent factor, suggesting that fintech adoption tends to reinforce existing financial engagement rather than broaden access to the unbanked. In contrast, the negative association between participation in social assistance programs like PKH and BPNT and fintech use, particularly in urban areas, raises concerns about the unintended exclusionary effects of digital welfare delivery mechanisms when not supported by adequate literacy or institutional integration.

The findings underscore the need for differentiated policy responses. In rural areas, expanding digital infrastructure, building trust in financial institutions, and embedding financial education within social protection programs could improve adoption outcomes. In urban settings, efforts should focus on underserved groups, particularly female-headed households and low-income digital transfer recipients, through targeted outreach, simplified onboarding, and inclusive digital literacy programs. Future research should address several limitations of this study. The use of cross-sectional data constrains the ability to assess fintech usage over time. Longitudinal studies or mixed-method approaches could offer deeper insights into adoption trajectories, behavioral persistence, and the role of evolving digital ecosystems across different regions of Indonesia.

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