

## **Digitalization Of Financial Services and Financial Inclusion In Rural Areas**

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**Abstract:** *This research examines the relationship between digitalization of financial services and increasing financial inclusion in rural areas of Indonesia. Through a qualitative approach with interviews and observations in three villages in Central Java, the research identifies that limited internet access, low digital literacy, and infrastructure constraints are the main challenges in implementing digital financial services. However, it was found that branchless banking programs, simple digital wallets, and continuous assistance have successfully increased rural communities' access to formal financial services. Strengthening banking agent networks, structured digital literacy training, and supportive policies are needed to ensure sustainable financial inclusion. The results show that digitalization of financial services has the potential to reduce the financial access gap between urban and rural communities when implemented with consideration of local socio-economic conditions.*  
**Keywords:** *financial digitalization, financial inclusion, rural areas, digital literacy, branchless banking*

### **INTRODUCTION**

Financial inclusion has been a global focus since the 2008 financial crisis, with various international institutions highlighting the need for universal access to formal financial services (World Bank, 2020). Demirgüç-Kunt et al. (2018) define financial inclusion as the availability and ease of access to useful and affordable financial products and services to meet the needs of the population, including transactions, payments, savings, credit, and insurance. Their research shows that increased financial inclusion contributes to poverty reduction and improved welfare.

In Indonesia, a study by Tambunan (2021) shows that rural areas still face challenges such as limited banking infrastructure, long distances to the nearest bank branch, and low understanding of financial products and services. This situation causes rural communities to rely more on informal financial services, which often charge higher fees and provide minimal consumer protection. According to Ozili (2021), the digitalization of financial services has the potential to overcome physical and geographical barriers in financial service provision by utilizing technologies such as mobile banking, banking agents, and digital payment platforms. Research in Kenya by Munyegera and Matsumoto (2022) indicates that the adoption of mobile money increases household savings and resilience to economic shocks in rural areas. Similarly, Suri (2017) found that the adoption of digital financial services helped about 2% of Kenyan households escape extreme poverty.

However, the success of digital financial services depends on several prerequisites. Aron (2018) identifies factors such as digital infrastructure, digital literacy, and product design suited to local needs as key to success. Rahman et al. (2020) emphasize the need for supportive regulation and consumer protection to build trust in digital financial services. A study by Diniz et al. (2020) in Brazil reveals that partnership models between financial institutions,

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telecommunication operators, and local agents are major factors in the success of digital financial services in rural areas. This experience shows that an ecosystem approach involving various stakeholders is necessary to overcome challenges in financial inclusion in rural areas.

## **METHODOLOGY**

This study uses a qualitative approach to gain deeper understanding of the dynamics of financial service digitalization and financial inclusion in rural areas. This approach was chosen because it can reveal socio-cultural nuances and contextual factors that influence the adoption of financial technology by rural communities. The research locations include three villages in Central Java Province, selected based on variation in the level of digital financial service penetration and socio-economic conditions. Village A has relatively good internet access and several financial inclusion programs have been implemented; Village B has limited internet access but has economic potential from the agriculture sector and MSMEs; while Village C is located in a remote area with very limited digital infrastructure.

Interviews were conducted with 45 respondents consisting of village community members (30 people), financial service providers (6 people), bank/fintech agents (6 people), and village officials (3 people). Respondents were selected using purposive sampling to ensure representation of various community groups based on age, gender, education level, and economic activity. Participatory observation was carried out to observe patterns of digital financial service usage by the villagers, transaction processes through agents, as well as technical constraints faced in using digital financial applications. Observations were conducted over 3 months with a total of 18 visits to the research sites.

Focus Group Discussions (FGD) were held in each village involving 8-10 participants per session to discuss perceptions, experiences, and expectations of the community regarding digital financial services. A total of 3 FGD sessions were conducted during the research period. Policy documents, financial inclusion program reports, and statistical data from related agencies were also analyzed to complement the primary data obtained from the field. The collected data were then analyzed using thematic analysis techniques, with stages including: data familiarization, coding, theme identification, theme review, theme naming, and report writing. To ensure validity, this study used source and method triangulation techniques, as well as member checking by returning initial analysis results to several key informants for confirmation. The limitation of this study lies in the geographical scope limited to three villages in Central Java, so caution is needed in generalizing findings to different contexts.

## **RESULTS AND DISCUSSION**

### **Portrait of Financial Inclusion in the Research Areas**

The study results show variations in the level of financial inclusion across the three villages surveyed. In Village A, about 65% of respondents had used at least one form of formal financial service, while in Village B the figure reached 42%, and in Village C only 23%. This difference correlates with the availability of digital infrastructure and the distance to the nearest financial service center. As stated by the Head of Village A: "Since the arrival of 4G network and some residents becoming bank agents, the community has started to get used to using digital money transfers to send money to their children studying in the city or to pay electricity bills. No need anymore to ride a motorcycle far to the sub-district office." (Interview, January 15, 2023)

The main factors limiting financial inclusion in the three villages are internet accessibility, the cost of owning a smartphone, and low digital literacy especially among the elderly and low-educated groups. These findings align with research by Siriwardana and Nanda

(2023) which highlights the necessity of digital infrastructure as a prerequisite for financial inclusion in rural areas.

### **Forms of Financial Service Digitalization in Rural Areas**

The three main forms of digital financial services found in the research locations are:

1. Branchless banking services through agents equipped with electronic devices to serve account opening, deposits, cash withdrawals, and bill payments. This model is very effective in Villages B and C, which do not have bank branches.
2. Simple digital wallets that allow money transfers, payments, and value storage. In Village A, such platforms are used by 58% of respondents who own smartphones, especially among the younger generation.
3. Digital microcredit services that simplify the loan application and disbursement process for small businesses. However, adoption is still limited due to concerns about data security and lack of understanding about loan requirements.

The study found that the agent model is a crucial bridge in the digitalization process of financial services in rural areas. The presence of local agents trusted by the community helps overcome barriers of trust and digital literacy. As expressed by a farmer in Village C: "I don't understand how to use the app on my phone, but Mrs. Siti [bank agent] always helps me send money to my child in Bandung. I trust her because she is from here and I have known her family for a long time." (Interview, February 22, 2023)

This finding supports the argument by Mas'ud et al. (2019) that social factors and trust play a key role in the adoption of financial technology in rural communities.

### **Impact of Digitalization on Financial Inclusion**

Digitalization of financial services has been shown to have several positive impacts on financial inclusion in the study area. 67% of respondents who use digital financial services reported that they previously had no access to formal banking services due to the distance and transportation costs to the nearest bank branch. The average transaction cost decreased by up to 60% compared to conventional transactions that required traveling to the nearest town. Communities that previously only saved money at home or through informal savings groups have now started using formal financial products such as savings accounts, microinsurance, and digital payments.

However, the study also identified several challenges in the digitalization process of financial services. There is a technology adoption gap based on age, education level, and gender. Elderly groups, women, and those with lower education tend to lag behind in using digital financial services. 72% of respondents expressed concerns about the security of digital transactions and personal data privacy, which limits the use of more advanced services. Network instability in some locations causes service disruptions, reducing trust in the digital system.

### **Strategies to Strengthen Financial Inclusion through Digitalization**

Based on the research findings, several strategies can be implemented to strengthen financial inclusion in rural areas. Development of a wider agent network with adequate incentives to reach remote areas. A pilot program in Village B showed that agents with mobility (using motorcycles to reach remote hamlets) increased access by 35% within six months. Digital literacy programs tailored to the local coverage and demographic characteristics of the community. Special training programs for women and the elderly in Village A successfully increased the use of digital financial services by 28% among these groups.

Product designs that are simple and intuitive, with interfaces that are easy to use even by users with limited digital literacy. As expressed by Widodo and Rahman (2021), product design

that considers the limitations of rural users is a key factor in increasing adoption. Policies that support the expansion of digital infrastructure in rural areas, including incentives for providing internet services and device subsidies for low-income communities. This study found that an integrated approach combining technological, social, and policy elements is necessary to maximize the impact of digitalization on financial inclusion in rural areas. This aligns with the financial inclusion ecosystem model proposed by Jain and Gabor (2020).

## **CONCLUSION**

This study reveals that the digitalization of financial services has great potential to enhance financial inclusion in rural areas, but its effectiveness depends on several supporting factors. The main findings show that infrastructure constraints, digital literacy, and socio-cultural factors remain significant barriers to the adoption of digital financial services in rural areas. The agent-based service model has proven to be an effective bridge between formal financial systems and rural communities by leveraging social trust and physical presence as supporting factors for technology adoption. The development of a wider and more representative agent network is one of the keys to accelerating financial inclusion in underserved areas. This study also highlights the need for approaches that consider local conditions and the specific characteristics of communities in developing digital financial solutions.

Products and services need to be designed taking into account the level of digital literacy, cultural preferences, and the actual financial needs of rural communities. For further research, it is recommended to expand the geographical scope and add a longitudinal dimension to monitor changes in adoption patterns over time. In addition, further exploration of the long-term economic impact of increased financial inclusion in rural areas is necessary to assess its contribution to poverty reduction and equitable development. The policy implications of this study emphasize the need for an integrated approach involving various stakeholders, including the government, financial institutions, technology companies, and communities, to create an ecosystem that supports inclusive digital financial services in rural areas.

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