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STRATEGIC MODEL DIGITAL FINANCIAL INCLUSION FOR RURAL WOMEN BASED ON MANAGEMENT ACCOUNTING: A MIXED METHODS APPROACH IN GARUT REGENCY

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Abstract: This study highlights digital financial inclusion gap among unbanked rural women by integrating simple management accounting practices (recordkeeping, business-household cash separation, budgeting) into a fintech adoption framework. The study employed a sequential explanatory mixed-methods design: survey of 250 respondents in Garut Regency was analyzed using SEM-PLS, followed by interviews and focus group discussions (FGDs) that were analyzed thematically. Results indicate that main barriers are unstable income, the dominance of informal financial channels, and low digital adoption, resulting in financial resilience relying on community networks. Empirically, financial literacy improves digital inclusion, but its impact is influenced by trust, infrastructure, policies, and socio-cultural norms. Simple accounting practices serve as a control mechanism that makes implementation more sustainable. Research implications emphasize the role of accounting as an operational link between digital adoption and improved financial performance, while emphasizing the need for community-based literacy, strengthening trust, consumer protection, and supporting local infrastructure and regulations.

Keywords: Digital Financial Inclusion, Rural Women, Management Accounting, Fintech Adoption, Financial Literacy

INTRODUCTION:

Digital financial inclusion is a crucial element in sustainable economic development. Financial inclusion means that individuals and businesses have access to useful and affordable financial services products [1] that meet their needs, such as transactions, payments, savings, credit, and insurance, delivered responsibly and sustainably [2]. Financial inclusion involves providing affordable financial services to all segments of society [3], especially the financially vulnerable and marginalized [4]. Affordable costs are expected to boost economic activity [2].

However, despite the crucial role of financial inclusion in economic development, significant challenges remain in its implementation, particularly in Indonesia. One key challenge is the high number of *unbanked individuals* (individuals of legal age who do not have a bank account). A key dimension of the challenge of financial inclusion in Indonesia is the unequal access across social groups. This inequality is not only evident geographically but also in terms of gender and social status, resulting in some groups, particularly vulnerable ones, remaining excluded from the formal financial system [5].

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Rural women often lack digital literacy and financial knowledge, making it difficult to adopt technology effectively. Women often have limited access to mobile phones, the internet, and financial identity, but lack confidence in using digital services [6] due to fear of fraud, perceived complexity, or lack of knowledge. Without context-appropriate education and interventions, the digital divide can exacerbate gender disparities.

To address these challenges, innovation in the financial sector is key to driving broader financial inclusion. In this regard, financial technology (*fintech*), which refers to digital technologies that have the potential to transform the provision of financial services by spurring the development of new business models, applications, processes, and products [7], plays a role as a solution capable of reaching the *unbanked* through digital-based financial services. Digital transactions have been gradually increasing worldwide [8], with the digital era playing a crucial role in efficiency and effectiveness [9], one example of which is the increasing use of *fintech.* [10]. The emergence of *fintech* was triggered by the rapid development of information technology, changes in consumer needs for easy access to financial services [11], with various innovations presented, such as digital wallets that help manage payment information and view user transactions and provide a pleasant shopping experience [12], *mobile banking , peer-to-peer Fintech , combined with lending* and *blockchain technology* , enables people to transact, save, and obtain loans without having to have a conventional bank account. *Fintech's presence* is increasingly relevant as a means of exploring the financial market in Indonesia, particularly for groups that have been underserved by formal financial institutions [13].

Currently, specifically in Garut Regency, many women are still involved in informal sectors such as agriculture, small trade, and home industries, but lack access to formal financial services. Key barriers include limited financial literacy, limited access to digital infrastructure, and socio-cultural norms that limit women's financial autonomy. This situation underscores the need for a digital financial inclusion strategy that emphasizes not only technology but also integrates simple management accounting principles, such as expense recording, separating business and household finances, and cash flow planning, to empower women in managing household and business finances.

Financial inclusion encompasses important characteristics such as financial literacy [14], which increases the likelihood of using digital financial products, which is essential for improving financial inclusion [15]. Financial literacy is one of the most important determinants of financial well-being [16] and economic inclusion, given the increasing responsibility of individuals in making financial decisions and the increasing complexity of financial products [17]. In the context of modern economic development, financial literacy not only plays a role in improving individual well-being but also serves as a driver of financial inclusion.

This aligns with the development of research on digital-based financial inclusion, which also shows an increasing trend with the emergence of *fintech, blockchain*- based financial services, and *digital banking*. Several previous studies [18] and [19] revealed that *fintech* has a positive impact on increasing financial literacy and inclusion. In fact, the higher the community's digital literacy, the greater the utilization of digital financial products to promote financial inclusion [15]. In line with these findings, research [20] confirms that digital finance plays a crucial role in strengthening access to financial services, especially for individuals who are not yet covered by conventional banking. Furthermore, research by [12], shows that Various psychological and social

factors such as habits, perceived security, hedonic motivation, facilitating conditions, performance expectations, social influence, price value, and risk perception also influence the use of digital wallets as a fintech product. This finding reinforces the view that financial digitalization has a multifaceted dimension. significant psychological and behavioral to individual financial management. Furthermore , research conducted by [21] stated that digital banking has an impact on financial inclusion. Researchers also highlighted the need for an evolving regulatory framework or model to balance innovation and comprehensive risk management [22].

Most of the studies digital financial inclusion is still focus on aspects technology and regulation in general, so that not yet many offer comprehensive and operational strategic models for areas with service banking limited. This article presents novelty in the form of development of a digital financial inclusion strategy model for Woman non-bankable rural based principle accountancy management simple that is budgeting, tracking costs and planning adapted cash flow with context local to empower Woman manage income, monitoring performance business, and access digital services with more confidence. This research aims develop a strategic model the at a time map obstacle financial challenges faced Woman village, assess their financial literacy in recording and retrieval decision household economics, measuring contribution use digital services such as QRIS and wallets electronic to household/ business financial performance, as well as analyze factor determinant implementation covering literacy, trust and security, digital infrastructure, policy public, and dynamics socio-cultural to accelerate equitable digital financial inclusion.

LITERATURE REVIEW

Digital financial inclusion is an integral part of sustainable economic development, with significant potential to empower vulnerable groups [5]. Open access to financial services is a key driver of development in the digital era [13]. In this context, the financial technology (fintech) sector has emerged as a crucial strategy for expanding financial inclusion and improving public welfare. In general, financial inclusion can be defined as the process of ensuring easy access, availability, and use of the formal financial system by all economic actors. In developing regions, digital financial inclusion is a key strategy for addressing financial inequality. However, its implementation faces several key challenges, such as low digital literacy, lack of trust in digital systems, limited technological infrastructure, and a lack of comprehensive policy support.

One of the biggest barriers to implementing fintech in unbanked communities is limited understanding of the technology. Especially in underdeveloped regions, low digital literacy hinders access to technology-based financial services. Fintech, which combines technology and financial services, has revolutionized the traditional financial system with more efficient, faster, and affordable processes [18]. However, the success of fintech adoption is heavily influenced by the community's level of financial and digital literacy. These limitations include a lack of mobile phone ownership, limited internet connectivity, and low digital financial literacy [6];[23]. Even when access is available, women are often reluctant to use digital services due to concerns about security, unfamiliarity, and technological complexity [24]. Recent studies also confirm that the gender gap in mobile money usage remains significant, particularly for women in rural areas [25]; [26].

However, fintech acts not only as a technological innovation but also as a driver of broader

financial inclusion. Research shows that fintech makes a positive contribution to the national economy, particularly in expanding access to financing to communities previously excluded from formal financial institutions [27]. In this regard, improving financial literacy is key to the success of digital financial inclusion. [28] emphasized that digital and financial literacy simultaneously influence the intention to use fintech services, particularly through an understanding of the benefits, risks, and how to use financial technology. The findings of the 2025 study also underscored that digital financial literacy is a key prerequisite for female entrepreneurs to utilize fintech.

Besides literacy, a lack of trust in digital systems is also a significant barrier. Many consumers hesitate to entrust their data and funds to digital platforms due to concerns about security, privacy, and potential fraud. [29]stated that security and privacy issues are major barriers to fintech growth, so service providers need to implement strong and transparent protections. This is reinforced by findings [30], which confirm that trust in fintech and perceptions of digital security significantly influence digital financial inclusion. Further research indicates a gender gap in fintech adoption due to differences in trust levels, with women being more skeptical of digital services [31].

This trust aspect is even more complex for women, especially in rural and low-income communities. Women tend to be more skeptical about using digital financial services due to concerns about personal data misuse, consumer protection, and a lack of education specific to their needs [32]. Fintech has also proven effective in reaching unbanked communities through lower costs and faster processes compared to conventional financial services [33]. However, without the support of a local agent network and adequate technological infrastructure, fintech adoption is difficult to sustain at the grassroots level.

Nurkhalimah (2025) [29] shows that digital technology transformations such as mobile banking, digital wallets, AI, and blockchain can significantly increase financial inclusion, especially for the unbanked. However, infrastructure gaps, such as weak internet networks and limited access to digital devices, remain major challenges in rural and 3T (underdeveloped, frontier, and outermost) areas. [35] also highlight that there are still gaps in technological readiness, including in terms of device adaptation and integration of new innovations into old ecosystems. The report [36] also emphasizes that the gap in smartphone ownership and internet access among women is a major structural barrier to the implementation of digital inclusion. Therefore, accelerating digital financial inclusion needs to be accompanied by increasing infrastructure readiness and technological adaptability across all levels of society.

In this context, the technology acceptance model (TAM) approach can be used to understand how rural women accept and use digital financial services. TAM highlights two main factors: *perceived usefulness* and *perceived* ease of use [37]. If women perceive digital services as beneficial in their daily lives and easy to use, they are more likely to accept them.

However, trust and risk perception also play a crucial role, particularly in the context of digital finance. Trust encompasses the belief that digital services are safe to use, protect privacy, and are reliable. A recent study by [30] Research shows that the level of trust in fintech significantly influences individuals' decisions to adopt digital financial services. Without trust, perceived benefits and ease of use alone are insufficient to drive technology adoption. Therefore, building trust through data security, transparency, and user support is a crucial part of a digital

financial inclusion strategy.

Beyond technology, local partnerships and public policy play a crucial role in driving digital financial inclusion. Whether this is necessary or not is unclear. Fintech is more effective in reaching unbanked communities when supported by local financial agents, who serve as liaisons between communities and digital service providers. A study by [38] showed that interactions between agents and mobile money users resulted in informal solutions that strengthened local trust in digital services. In the context of women, local agents known and trusted by women in the community also play a crucial role in increasing women's participation in fintech services, as this approach is more sensitive to cultural and security needs.

On the other hand, the government plays a strategic role in promoting digital financial inclusion by providing a supportive policy framework, digital infrastructure, and regulations. Research [38] and [17] show that policies such as zero-fee account opening, easing administrative paperwork, and channeling government assistance through bank accounts can increase financial inclusion in rural areas. Coordination between regulators, financial institutions, and telecommunications operators is also necessary to create an inclusive and resilient fintech ecosystem [39].

Furthermore, findings [40] indicate that government support in the form of regulatory simplification and promotion of digital inclusion programs also influences increased fintech adoption among women. This influence is indirect, namely through increased digital literacy and trust in fintech services. This means that public policy interventions that favor vulnerable groups, including women, play a crucial role in accelerating equitable digital financial inclusion.

Socio-cultural aspects have also been shown to influence the adoption of digital technology. An ethnographic study in West Kalimantan (2025) showed that local cultural values act as moderators in the relationship between financial literacy, inclusion, and digital financial adoption by women. This confirms that digital financial inclusion programs need to consider local social and cultural norms to be more effective.

Thus, supportive public policy support and collaboration between stakeholders are essential prerequisites for building an inclusive digital financial ecosystem. However, the effectiveness of these initiatives ultimately depends heavily on the level of public participation as end users.

Despite the rollout of various financial inclusion programs, disparities in implementation remain a problem. Many communities in rural and remote areas face barriers such as limited digital infrastructure, low literacy rates, and minimal trust in financial institutions.

In this context, it's crucial to view digital financial inclusion not simply as a technology project or policy, but as an integral part of broader community economic empowerment efforts. This is particularly relevant given the significant role financial inclusion plays in supporting the achievement of long-term development goals. The design of financial inclusion policies and programs needs to be tailored to the social and economic context of each region for optimal and sustainable impact.

Based on the theoretical basis and literature review, the hypothesis proposed in this study is as follows:

H_1: Financial literacy has a positive influence on the success of implementing digital financial

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inclusion.

H $_2$: Trust and security have a positive influence on the success of digital financial inclusion implementation.

H $_3$: Digital infrastructure for fintech services has a positive influence on the success of implementing digital financial inclusion.

H $_4$: Public policy support has a positive influence on the success of digital financial inclusion implementation.

H $_5$: Socio-cultural factors moderate the relationship between financial/digital literacy and the success of digital financial inclusion implementation.

METHODOLOGY:

Research Design

This study employed a sequential explanatory mixed-methods design [41], integrating quantitative and qualitative data to gain a comprehensive understanding of digital financial inclusion for rural women without access to banking services. The quantitative phase aimed to identify patterns of financial literacy, use of digital financial services, and management accounting behavior. Furthermore, the qualitative phase was used to in-depth explore the participants' lived experiences, motivations, and perceived barriers.

The choice of this approach was based on the complexity, contextual nature, and behavioral aspects of the research issue. Quantitative surveys provide quantifiable data from a broader population, while in-depth interviews and focus group discussions allow for the uncovering of subtle yet significant sociocultural dimensions. The combination of these two methods is considered essential for designing an inclusive and contextually relevant strategic model.

Population and Sample

1. Quantitative Phase

This study was conducted in Garut Regency, West Java, Indonesia – a region characterized by a combination of rural and semi-urban villages, a high level of informal employment, and relatively low banking penetration among women. Three sub-districts were purposively selected: Cisurupan, Banyuresmi, and Pamengpeuk, based on the following criteria:

a. The agricultural and trade workforce is dominated by women
b. Limited access to digital banking infrastructure
c. The existence of informal groups (e.g. PKK, social gatherings, women's cooperatives).

The target population consists of women aged 20-55 years who are involved in informal economic activities such as farming, trading, food processing, sewing, or home services, and who do not have a bank account, or have never used QRIS or an electronic wallet platform.

A total of 250 respondents were selected using stratified random sampling, where the population is first divided into homogeneous subgroups or strata, then random sampling is taken from each strata [42]. The following is the percentage sample;

1) 30% of agriculture,
2) 25% small trade,
3) 20% of home industry (sewing, food),
4) 15% of household work,
5) 10% of the role of Education or community (PAUD, PKK cadres).

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2. Qualitative Phase

A total of 30 respondents were purposively selected from the survey sample for in-depth interviews, based on the following criteria:

1. Variations in the use of digital finance
2. Differences in financial literacy levels
3. Willingness to share experiences in detail.

In addition, an FGD (Focus Group Discussion) was conducted involving 6-8 people from community organizations (women's cooperatives, social gathering groups, PKK).

Data Collection

1. Quantitative Data Collection

Data collection was carried out by filling out a questionnaire, with the data obtained as follows:

1. Demographics and socio-economic background,
2. Financial literacy (budgeting, saving habits, record keeping),
3. Management accounting practices,
4. Access and use of digital financial services (QRIS, electronic wallets),
5. Perceived benefits, risks, and barriers.

This questionnaire was pilot tested on 30 respondents to ensure clarity and validity, resulting in minor revisions in wording and order.

2. Qualitative Data Collection

Semi-structured interviews were conducted to explore respondents' perceptions regarding access to financial services, coping strategies used to address financial constraints, utilization of financial instruments, and their level of readiness to adopt digital financial services. The following questions were asked:

1) How do you usually manage your household or business finances?
2) Have you ever used QRIS or an e-wallet? If so, why? If not, what was your reason?
3) What do you think can help increase confidence in using digital financial services?

All interviews and focus group discussions (FGDs) were audio-recorded after obtaining consent from the participants and then transcribed into Indonesian. Transcribed data were analyzed using a thematic approach, using a coding process to identify key themes relevant to the research objectives.

Research Variables and Instruments

Qualitative Variable

Table 1. Qualitative Variable

Variables	Indicator
Demographics & Socioeconomics	Age, retirement, income, type of employment, number of household members
Financial Literacy	Understanding budgeting, saving, credit, informal finance
Digital Financial Access	QRIS/e-wallet ownership, frequency of use, type of transaction
Management Accounting	Use of simple records, expense tracking, cash flow planning
Outcome	Improvements in self-reported financial behavior, frequency of saving, use of income

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The questionnaire used in this study was constructed using a Likert scale with five levels of assessment, ranging from "Strongly Disagree" to "Strongly Agree." The instrument was tested for validity and reliability to ensure measurement accuracy and consistency.

Qualitative

Qualitative data analysis yielded several key themes reflecting participants' experiences and perspectives on digital financial inclusion. These themes include:

a. Trust and risk perceptions towards digital financial services.
b. Ease of use and digital barriers, including limited access and technology skills;
c. Relevance of financial instruments to the daily needs of participants;
d. Peer influence and preferences in learning , especially regarding the adoption of new technologies; and
e. Cultural norms that limit women's financial autonomy , particularly in the context of financial decision-making at the household level.

Data Analysis

1. Quantitative Analysis

SPSS and SmartPLS software . The analysis includes:

1. Descriptive statistics , such as frequencies, means, and cross-tabulations;
2. Correlation analysis to test the relationship between financial literacy levels and the use of digital financial services; and
3. Structural Equation Modeling (SEM-PLS) to test several causal relationships, namely:
   - The influence of financial literacy and management accounting practices on financial behavior; and
   - The mediating role of the use of digital financial tools in the relationship.

Evaluation to the model includes testing goodness-of-fit **,** GFI, AGFI, TLI, NFI, and RMSEA values , as well as coefficient path coefficients , with referring to the criteria set by [43].

2. Qualitative Analysis

Qualitative data analyzed using the device NVivo 12 software, with approach combinative between inductive and deductive in the coding process. Analysis thematic carried out based on the stages developed by [44], which include:

1. Understanding beginning to data (familiarization),
2. Systematic initial coding,
3. Identification and development of key themes, and
4. Analysis and interpretation of themes in the research context.

To increase the validity of the findings, member checking was conducted on several participants, as well as peer debriefing to obtain critical feedback on the analysis process and results.

RESULTS AND DISCUSSION:

Respondent Profile

This study involved 250 female respondents residing in Garut Regency, covering three sub-districts: Cisurupan, Banyuresmi, and Pameungpeuk. Respondents ranged in age from 20 to 55, encompassing the productive age group actively involved in economic activities. Most respondents worked in the informal sector, with varying distributions. The informal trade sector was the most dominant, involving 35% of the total respondents. Furthermore, the agricultural sector comprised

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28% of respondents, followed by home industries such as sewing and food production at 20%. The household services sector contributed 15% of the total respondents, while the remaining 10% worked in education and as community cadres. These findings indicate that women's economic activities in the study area were largely focused on informal sectors based on skills and local social networks.

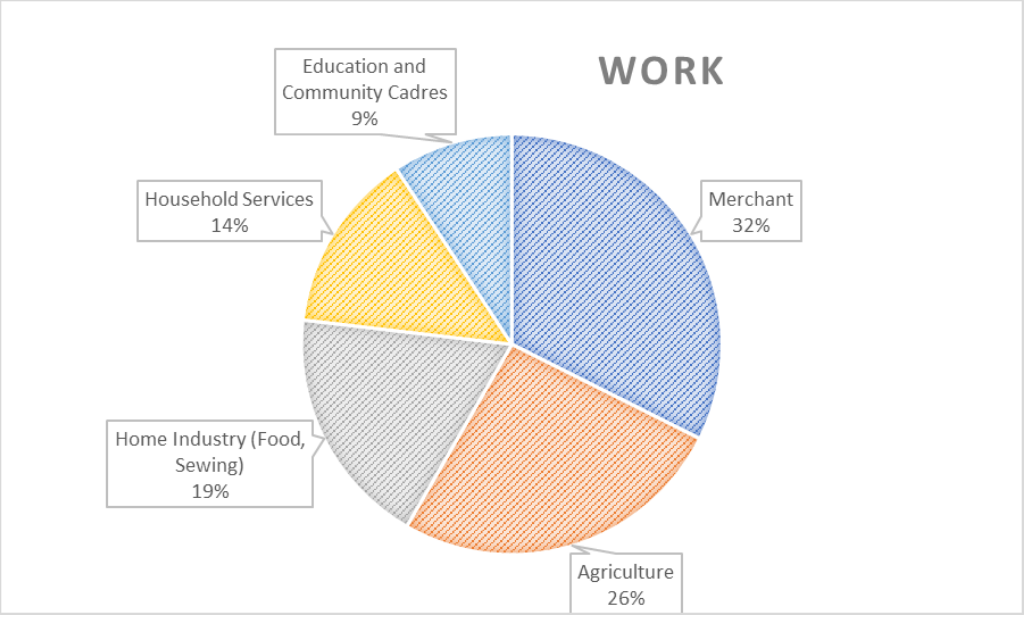

Figure 1. Respondent Charecteristics

The socio-economic characteristics of respondents indicate limited access to formal financial services. Only around 21% of respondents have an active bank account, while the remainder are not fully connected to the banking system. Utilization of digital payment technologies, such as QRIS or e-wallets, is also low, at less than 15% of respondents. This indicates that the adoption of digital financial services among women in the informal sector is still in its infancy.

Furthermore, the majority of respondents had irregular incomes that were not formally documented. This instability led them to rely more heavily on informal financial mechanisms to meet daily needs and capital for businesses. These mechanisms included social savings and credit associations (arisan), local cooperatives, and support from family members. These findings indicate that the economic sustainability of respondents' households is highly dependent on social networks and community solidarity, which also serve as financial safeguards when access to formal financial institutions is limited.

Characteristics of Respondents Interviewed

The general characteristics of the respondents interviewed in this study included 30 women from various villages. The majority had an educational level ranging from elementary school (SD) to high school (SMA), with primary occupations in the informal sector, such as farm laborers, small traders, tailors, and domestic helpers. Respondents' incomes were variable, with an average weekly income ranging from Rp 200,000 to Rp 500,000, and a family size of two to four dependents.

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This profile depicts a complex situation for the unbankable, characterized by informal employment, fluctuating and undocumented income, and low levels of digital literacy. By identifying these characteristics, analyzed using user personas and occupational segmentation, this study builds a strong foundation for formulating a digital financial inclusion strategy model that is relevant to the local context and supported by management accounting principles.

Analysis of Finding

a. Financial Barriers for Non-Bankable Rural Women

Findings indicate that key barriers include irregular and undocumented income, reliance on informal financial mechanisms (arisan, local cooperatives, family support), and low adoption of digital services. Respondents' socioeconomic characteristics indicate limited access to formal banking (relatively few active accounts) and early adoption of QRIS/e-wallet, resulting in household financial resilience relying heavily on community networks. In terms of implementation, limited digital literacy and cash transaction habits also hinder the transition to modern financial services, while adoption increases with community support (cooperative/PKK/arisan agents). This overall picture highlights the fragile financial position of households and the need for community-based interventions to increase access to and use of financial services (both formal and digital).

b. Financial Literacy in Household Economic Recording and Decision Making

In general, the questionnaire results indicate that basic financial literacy exists but has not been consistently implemented. Most record-keeping is done in simple notebooks or even by memory; a small number have begun to experiment with applications. Budget planning is generally simple and contextual (daily/weekly), not yet standardized. Separation of business and household cash remains inconsistent. Some respondents are disciplined about separating wallets, but the majority still mix them, increasing the risk of cash leakage. Periodic financial evaluations are rarely conducted; only a few respondents review weekly performance or involve their spouses in the assessment. This situation indicates the need for a practical management accounting package that includes cash separation, a one-page cash book, a weekly budget, and a short evaluation taught in an applicable, community-based manner so that literacy transforms into a daily financial management habit.

c. The Contribution of Digital Financial Technology to Household Financial Performance

Quantitative analysis shows a positive and significant influence of strategic factors on the successful implementation of digital financial inclusion, reflected in the acceptance of all hypotheses with path coefficients in the range of 0.36–0.51. Mechanistically, the benefits of QRIS/e-wallet use on financial behavior/performance increase when accompanied by simple accounting practices (record-keeping, expense tracking, cash flow planning) and adequate trust/security. In the field, digital adoption is still limited by low literacy and cash habits, but the potential for improvement is strong with accessible education and community support. Thus, the contribution of technology is positive but conditional most effective when operational literacy, consumer security assurance, and local ecosystem support are present simultaneously.

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d. Factors Influencing the Implementation of Digital Financial Inclusion

This model illustrates the relationships between the constructs of digital financial literacy, trust and security, digital infrastructure, government policies and programs, local partnerships and support, and successful adoption with their indicators. Through SEM-PLS, the direct and indirect influences between the variables that shape digital financial inclusion in the unbanked community can be seen.

1. Validity and Reliability Test

This study used a purposive sampling technique to select 250 individuals. The study was designed to focus on women aged 20-55 years old engaged in informal economic activities such as farming, trading, food processing, sewing, or home services. Those who do not have a bank account or have never used QRIS or an electronic wallet platform.

Table 2. Validity and Reliability Test

Variable	Outer Loading	r table	Variable	Outer Loading	Cronbach's Alpha
Digital financial literacy	0,415	0,104	Digital financial literacy	0,867	0,70
Digital financial literacy	0,187	0,104			
Digital financial literacy	0,112	0,104			
Trust and Security	0,451	0,104	Trust and Security	0,902	0,70
Trust and Security	0,410	0,104			
Digital Infrastructure	0,511	0,104	Digital Infrastructure	0,781	0,70
Digital Infrastructure	0,491	0,104			
Government Policies and Programs	0,177	0,104	Government Policies and Programs	0,887	0,70
Government Policies and Programs	0,197	0,104			
Local Partnerships and Support	0,375	0,104	Local Partnerships and Support	0,789	0,70
Local Partnerships and Support	0,301	0,104			
implementation of digital financial inclusion	0,293	0,104	implementation of digital financial inclusion	0,889	0,70
implementation of digital financial inclusion	0,157	0,104			
implementation of digital financial inclusion	0,168	0,104			

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Table 2 shows the results of the validity test in the measurement model evaluation, which showed an r value of greater than 0.104, thus declaring the data valid. Furthermore, the reliability test results showed that each variable had a Cronbach's alpha > 0.70, thus declaring it reliable.

2. Goodness of Fit

The Goodness-of-Fit Index (GFI) is an index used to evaluate the fit or appropriateness of a model in structural analysis or structural equation modeling (SEM). In practice, the GFI is used in conjunction with other fit indices to provide a more comprehensive picture of model fit. Some other fit indices frequently used in SEM analysis include:

1) AGFI (Adjusted Goodness-of-Fit Index): This is a version of the GFI adjusted for the number of parameters in the model.
2) CFI (Comparative Fit Index): Compares the hypothesized model with the null model.
3) RMSEA (Root Mean Square Error of Approximation): Measures the goodness of fit based on the approximation error.
4) NFI (Normed Fit Index): Compares the hypothesized model with the null model based on normalized indices.

Table 3. Goodness of Fit

Goodness of Fit Indices	Cut-off value	Result	Remarks
GFI	>0,900	0,899	Marginal
AGFI	>0,900	1,09	Good
TLI	>0,900	0,952	Good
NFI	>0,900	0,888	Marginal
RMSEA	>0,800	0,697	Good

Based on Table 3 above, the model feasibility test was conducted using the goodness of fit indices test by looking at the GFI, AGFI, TLI, NFI, and RMSEA values. Based on the test results, it was found that there were three criteria that were declared good, namely AGFI with a value of 1.09 > (0.900), TLI with a value of 0.952 > (0.900) and RMSEA with a value of 0.697 > (0.900), while the other two were marginal, namely GFI with a value of 0.899 (limit > 0.900) and NFI with a value of 0.888 (limit > 0.900). Thus, this research model is accepted and worthy of further testing.

3. Hypothesis Test Result

Table 4. Hypothesis Result

	Estimate	S.E.	P	Result
H1	0,511	0,08	0,026	Accepted
H2	0,427	0,037	0,013	Accepted
H3	0,440	0,071	0,032	Accepted
H4	0,361	0,065	0,029	Accepted
H5	0,432	0,042	0,004	Accepted

The results of the hypothesis testing can be seen in Table 3, which indicates that all proposed strategic factors significantly influence the successful implementation of digital financial inclusion in unbanked areas.

Based on the questionnaire distribution, several important findings were obtained. First, digital financial literacy remains limited, as demonstrated by respondents' limited understanding of QRIS, e-wallet, and digital banking features. This underscores the need for community-based education with easier-to-understand visual and audio approaches. Second, reliance on cash systems remains high; the majority of women are not accustomed to recording transactions, making it difficult to evaluate the financial condition of their households and businesses. Third, there is potential for digital intervention, with respondents expressing interest in using technology if there is community support, such as through women's cooperative agents, PKK cadres, or arisan forums. Fourth, the implementation of simple management accounting is necessary, given that most respondents lack a basic understanding of bookkeeping. Therefore, training related to budgeting and separating personal and business cash is highly relevant.

Furthermore results study show that financial literacy has great influence to success implementation digital financial inclusion. This confirms findings [28] which states that financial literacy directly improves intention use fintech in Indonesia. Similarly [15] emphasize that the higher digital literacy , the greater the utilization digital financial products . This finding confirms that digital financial inclusion strategies must focuses on integrated financial literacy and digital literacy programs, especially for women in rural areas who have limitations access to information.

Trust and security influential to success implementation digital financial inclusion , aligned with research conducted [29] that perceived trust is a key variable in fintech adoption. Concerns to privacy and data security are often barriers main for rural women to use digital financial services, fintech providers must address transparency, data security, and consumer protection.

The research also shows that digital infrastructure has a significant impact. This aligns with a McKinsey & Gates Foundation report, which emphasized that robust digital infrastructure is a key prerequisite for successful digital financial inclusion. Without equitable internet access and affordable digital devices, even high levels of literacy cannot be optimized. The research conducted [45];[46] strengthen this statement, with find that availability internet infrastructure is key factors in increase coverage and usage of financial services in rural areas.

Public policy support also influences the successful implementation of digital financial inclusion. This finding supports the argument [47] that pro-inclusion regulations, such as easing administrative requirements and channeling aid through bank accounts, can improve financial access in rural areas. This means that the role of government the area is very important, not only in regulations but educational programs, subsidies internet access, and incentives for provider Fintech services. Research conducted by [48] find that support government - such as policy supporters, initiatives technology, and digital financial programs–in a significant speed up fintech adoption and services financial inclusion, in particular for the area rural .

Socio-cultural factors proven as the moderator pointed out that context social influence connection between literacy with digital financial inclusion. The study conducted [24] also emphasized that gender norms and limitations social becomes an obstacle main Women's access to formal financial services. Therefore, financial inclusion programs must customized with mark local culture, for example through agent a community trusted by village women.

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Thematic Analysis

This approach aims to delve deeper into how management accounting practices are understood and applied in the context of digital financial services. Management accounting, which focuses on financial planning, control, and decision-making, is a crucial tool in promoting healthier financial behavior. In the context of digital financial inclusion, management accounting plays a role in helping individuals manage cash flow, develop budgets, and evaluate the benefits of fintech use on daily economic activities.

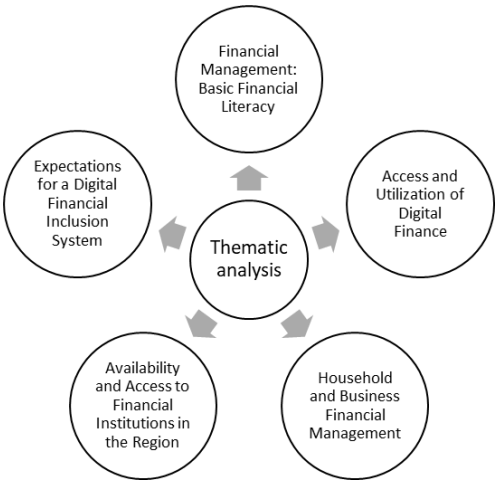

Figure 2. Thematic Analysis

Based on the patterns found based on respondents' answers, 5 main themes were obtained, namely: financial management: basic financial literacy, access and utilization of digital finance, household and business financial management, availability and access to financial institutions in the region, and expectations regarding the digital financial inclusion system.

1. Financial Management: Basic Financial Literacy

Based on interviews with 30 female micro-entrepreneurs in areas not yet fully covered by banking services, five main sub-themes related to financial management practices were found, namely: savings practices, financial recording, budget planning, financial separation, and financial evaluation.

1. Saving practice

   The majority of respondents saved traditionally, such as keeping money at home in cash. Ms. Sari stated, "I save at home in cash when I have any leftovers." Some also used social savings (arisan) as a savings tool, while a small number used bank accounts or digital apps. For example, Ms. Wati said, "I save by setting aside Rp 20,000 every day and depositing it into my BRI account." There are even more modern ones, like Mrs. Yanti, "Use the digital savings application (Bibit)."

2. Financial records

   Financial record-keeping practices vary and have not yet become universally accepted. Ms. Ina stated, "I record in a simple notebook." A small number have begun trying financial apps, such as Ms. Siti, "I use a book and also a financial app on my phone." However, many

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respondents still rely on memory. Ms. Enok said, "I don't keep daily records, but I memorize the approximate income and expenses each week."

3. Budget planning

Budget planning is done simply and contextually according to needs. Ms. Rina said, "Make a monthly budget for school and food." Meanwhile, business owners like Ms. Indah are more focused, "Making a budget for dyes, fabrics, and electricity costs." Others, like Ms. Wati, create a weekly budget, saying, "The budget is made for weekly raw materials." However, some respondents don't create a formal budget, only making rough calculations based on daily conditions.

4. Financial separation

The separation of business and household funds is not yet evenly distributed. Some respondents, like Ms. Tatik, asserted, "Separate business and household funds 100%." Others, like Ms. Ani, follow a more practical approach: "Separate business and household funds in separate wallets." However, most still mix the two. Ms. Lina, for example, said, "Business and household funds are mixed."

5. Financial evaluation

Business evaluations are conducted in a variety of ways. More structured respondents, like Ms. Wati, said, "Weekly evaluations using graphical reports from the app." Meanwhile, Ms. Lilis said, "Evaluations are conducted every weekend, and then I report them to my husband." However, many respondents don't conduct formal evaluations at all. Ms. Sari admitted, "I never calculate profit and loss."

Although respondents have a basic awareness of the importance of saving, recording, and managing finances, their practices remain rudimentary and traditional. Limited literacy, tools, and habits for conducting financial evaluations are suboptimal, resulting in a high risk of commingling business and household cash and weak financial controls. The findings indicate that most respondents implement informal but consistent financial management practices, such as manual record-keeping and separation of business and household finances. This aligns with the Management Accounting Theory framework, which emphasizes the importance of financial information for strategic decision-making, even in informal contexts. Policy support could include community-based financial literacy training.

2. Access and Utilization of Digital Finance

Based on interviews A study of 30 female micro-entrepreneurs revealed variations in understanding and practices regarding access to and utilization of digital financial technology. The findings were grouped into four sub-themes:

1. Understanding and access to e-wallets and QRIS

Some respondents were already actively using e-wallets (DANA, GoPay, ShopeePay) and QRIS, while others had limited or no knowledge of them. Ms. Yanti said, "*I use DANA and QRIS*," while Ms. Nur added, "*Customers often pay via QR*." However, some were also unfamiliar with them. Ms. Sari admitted, "I don't know about QRIS or e-wallets," and Ms. Eti said, "*I don't know at all*." This indicates a digital literacy gap among business owners.

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2. Use ATMs and Mobile Banking

Some respondents were accustomed to ATM and mobile banking transactions. Ms. Tatik said, *"I use mobile banking and marketplaces for distribution."* However, some had never tried them. Ms. Lina said, *"Never,"* and Ms. Yani confirmed, *"Never."* Others relied on family, such as Ms. Ani, who said, *"I'm always accompanied by my children; I'm afraid of pressing the wrong button."*

3. Bank Account ownership and activation

The majority of respondents have accounts, although they don't always actively use them. Some maintain structured accounts (operational, personal, and emergency), while others don't have accounts due to administrative constraints or a lack of trust in banking.

Ms. Wati manages it well, "*There are 3 accounts: operational, personal, and emergency*." On the other hand, Ms. Dedeh said, "*There is an account but it is not active yet*." There are also those who do not have one due to administrative problems, such as Ms. Sari, "*I don't have an account because I don't have an active card*."

4. Barriers and potential for strengthening digital literacy

The main obstacles are limited literacy, devices, and fear of using technology. Mrs. Dedeh said, "*I'm not used to it yet, but my child taught me about e-wallets*." Mrs. Ros added, "*I haven't used them yet, I only heard about them from my neighbors*." However, there are also motivations to learn. Mrs. Tini said, "*I haven't used them yet, but I'm interested in learning*," and Mrs. Imah said, "*My child said he can sell through Shopee and receive money via DANA*."

Interview results showed that many respondents were still unfamiliar with digital banking features such as QRIS or mobile banking. This reinforces the concept of the Technology Acceptance Model (TAM), particularly regarding perceived ease of use and perceived usefulness. For some who already use digital financial applications, the main obstacles lie in limited signal strength and skills in operating the applications. Furthermore, not all respondents own smartphones, so access to digital financial services is unequal among female micro-entrepreneurs. Digital financial inclusion policies need to consider practical training and infrastructure provision in marginalized areas.

3. Household and Business Financial Management

From interviews with 30 non-bankable women, it was clear that household and business financial management was greatly influenced by fluctuating income, limited access to formal financial institutions, and financial management skills.

1. Informal and formal saving patterns

One of the main patterns is conventional saving at home, such as using piggy banks, envelopes, or storing cash in cupboards, jars, or cans. Approximately 18 respondents chose this method. Ms. Sari said, "*I save at home in cash when I have spare money*," while Ms. Murni added, "*I save by keeping cash in a jar*."

Additionally, many respondents relied on informal schemes like arisan (social savings) or village cooperatives. Ms. Ina said, "*I've participated in arisan*," while Ms. Lina said, "*I join the neighborhood association (RT) arisan to save money*." This method is considered more flexible and familiar than formal banking services.

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2. Emergency fund strategies: traditional and adaptive

For emergencies, the majority of respondents (26 out of 30) relied on social assistance or the sale of small assets**.** Ms. Enok admitted, *"In an emergency, I usually sell the small amounts of gold I've saved from my business."* Ms. Ani echoed this sentiment, *"I usually borrow from neighbors or take it from my savings account."*

However, saving regularly remains a challenge, especially for those with irregular incomes. Ms. Sari said, *"It's very difficult to save regularly,"* and Ms. Umi added, *"If there's no event, saving becomes irregular."*

While most still use conventional methods, some respondents are starting to adapt to digital services. Ms. Yanti, for example, said, *"I use the digital savings app (Bibit)... because there's a community, so it's stable."*

3. Income instability and its impact on financial behavior

In terms of stability, the majority of respondents (around 20 people) admitted that their financial condition was unstable and affected by the season or customer orders . Ms. Murni said, "*It's unstable, it depends on the melinjo harvest and the weather*," while Ms. Rina said, "It depends on the season and vegetable prices." Financial emergencies most often occurred when children started school or a family member was sick. Ms. Tini said, "*Often when the children started school*," while Ms. Rahma said, "*Once when a family member was sick, I was forced to borrow from a neighbor*."

4. Difficulty in saving regularly

Many respondents stated they couldn't save consistently due to pressing basic needs and limited income. Saving is usually only done when there's excess income. Ms. Rina said, " *If there's anything left over, then I save it*."

5. The influence of social support on financial stability

Respondents with access to community, cooperative, or family support demonstrated better financial management skills. Ms. Umi admitted, " *I often borrow from cooperatives because it's quicker and I'm already familiar with them*."

6. Digital adaptation in financial management

Several respondents have begun using digital apps, digital banking, or e-wallets to save and set aside emergency funds. For example, Ms. Wati said, " *I have a target of saving 15% of my income... I monitor it on my phone*." This demonstrates the transition toward digital financial inclusion.

Findings indicate that unbanked women rely on financial strategies based on informal methods and social networks. They demonstrate high resilience through simple innovations in managing household finances, but still need capacity building and more inclusive access to formal and digital financial services. This indicates the need to strengthen community-based microfinance systems. From the perspective of behavioral household financial theory, this behavior reflects an adaptive strategy to economic uncertainty. Policy interventions could include the provision of formal microsavings products with flexible schemes

4. Availability and Access to Financial Institutions in the Region

Cooperatives and bank agents, such as BRI Link, were the institutions most frequently mentioned by respondents, although their level of activity remains limited. Distance and

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transportation costs are often barriers, compounded by a lack of information about available services. Most respondents had also never accessed formal loan products due to a lack of collateral or concerns about perceived high interest rates. These findings identified three important sub-themes:

1. Availability and proximity of access to financial institutions

   The majority of respondents stated that financial institutions such as cooperatives and BRILink agents exist near their homes. However, access is not always equitable. Ms. Sari said, "*There are BRILink agents, but they're far away*." In contrast, Ms. Yanti, who lives in the village center, said, "*Access to institutions is complete*." On the other hand, some respondents were unaware of the services, such as Ms. Eti, who admitted, "*I don't know what's in the village*," and Ms. Yayah, who added, "*I don't know where it is*." These findings suggest that despite physical access, not all business owners feel connected or understand the financial services they can utilize.
2. Experience and perception of loans

   Respondents' experiences with loans varied. Some had borrowed from cooperatives for business or household needs. Ms. Rina shared, "*I once borrowed from a cooperative to buy a machine*," while Ms. Umi added, "*I once borrowed to buy a large stove, and I could pay in monthly installments*." However, some chose to avoid loans due to concerns about being unable to repay. Ms. Ina emphasized, "*I was afraid of defaulting, so I've never done so*," and Ms. Enok said, "*I've never borrowed, I was afraid I wouldn't be able to*." This highlights the need for education about safe, affordable, and affordable loan products.
3. Tendency to use known nearby institutions

   Respondents tended to trust and utilize institutions they knew or were close to. Ms. Umi said, "*I go to the cooperative more often because I'm familiar with it*," while Ms. Imah admitted, "*The bank agent is close to my house, so I can make deposits and withdrawals without having to go to town*." Emotional and geographic proximity factors have been shown to significantly influence decisions about accessing financial services. Institutions that build good relationships with the community are more likely to be trusted and utilized regularly.

5. Expectations for the Digital Financial Inclusion System

Respondents expressed their hope for in-person training in villages on how to use digital financial applications. They also desired the presence of permanent financial agents in villages who could offer simple and friendly services to the community. Furthermore, respondents suggested that digital platforms be adapted to local contexts, including the use of regional languages, to make them easier to understand and use for all groups.

1. The desire to improve financial digital literacy and skills

   The majority of respondents expressed great enthusiasm for training and guidance, particularly regarding the use of financial technology. They felt they still had limitations in understanding and operating digital applications, but were very open to learning. Ms. Dedeh frankly stated, "*Want to get digital finance training?*" while Mrs. Eti said, "*If someone teaches you, you want to learn*." This is in line with Mrs. Yanti's statement which emphasized, "*More training and digital access*," and Mrs. Enok's hopes, "*There is training for mothers so they can manage their money better*."

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This desire to learn also relates to the practical needs of mothers in managing their daily finances. Mrs. Ani added, "I want training on how to save and record money easily for mothers like me." Their aspirations underscore the importance of financial literacy interventions tailored to local capabilities and contexts.

2. Hope for easy, safe, and inclusive financial access

   Respondents want a simpler, less complicated, and more user-friendly financial system, especially in the form of an app. Ms. Rina hopes there will be "*easy financial application and uses local language*," while Mrs. Rahma said, "*I want a simple financial application that can help me record my business income and expenses*." Mrs. Nur expressed similar hopes, saying that she wanted "*application for customer and small business financial recap*."

   Furthermore, many respondents complained about challenges in accessing formal financial services, either due to fee deductions or remote bank locations. Ms. Sari hopes "*I want savings without deductions and easy access*," while Mrs. Ina stated, "*I want to be able to save money via my cell phone without having to go to the bank*." Some others, such as Mrs. Murni, expressed their desire to get "*training to be able to save in a safer way*."

3. Aspiration strengthening and expanding businesses through technology and capital support

   Respondents also expressed high hopes for technology as a means to strengthen and expand their businesses. Ms. Umi explained, "*I want to learn how to use a cell phone to help me calculate and save my business money*." while Mrs. Imah said, "*I want to learn how to use the app so I can sell more widely and safely*." Mrs. Indah hopes "digital application for marketing batik online," and Mrs. Ros added, "*I want to learn how to use a cellphone for business and selling via WhatsApp*."

   In addition, the need for capital assistance is also prominent. Ms. Yayah hopes "*there is financial assistance from the village*," while Mrs. Lina stated, "*There is business capital assistance and savings training*." Several others, such as Mrs. Yani and Mrs. Tini, emphasized the importance of "*training small farmers to be more independent*" as well as "*a cooperative that can help buy raw materials*."

   The desire to expand market reach and strengthen MSMEs is also evident. Ms. Yuli mentioned the need "digital platform for service professions," and Mrs. Siti voiced the need for "*digital marketing training program and small shop development*." The hope of moving up to class was also conveyed by Mrs. Murni who said, "I want assistance with tools and training so that my business can move up a class."

Interview results suggest that the community expects training, mentoring, and easy access to capital. This expectation aligns with the basic principles of financial inclusion: accessibility, affordability, and understanding. The government needs to strengthen the digital financial literacy ecosystem through inter-agency synergy and the use of gender- and locally-friendly digital platforms.

Based on the results of the thematic analysis, this study developed a strategic model for digital financial inclusion for rural women based on management accounting. This model is designed to address the key challenges faced by unbanked women in rural areas, such as limited financial literacy, access to digital infrastructure, and lack of confidence in using technology-based financial services.

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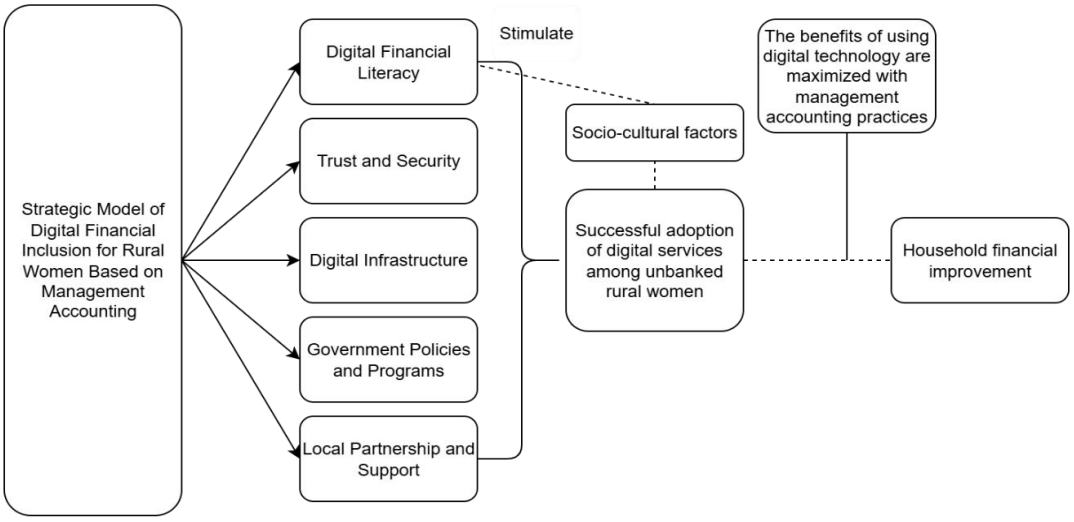

Figure 3. Model of Digital Financial Inclusion

This model emphasizes that increased digital financial literacy, trust and security, infrastructure support, government policies, and local partnerships are key drivers in driving the adoption of digital services. These factors, when combined with simple management accounting practices, will help rural women not only access digital financial services but also optimize their use to improve household and small business financial management.

Thus, this strategic model not only offers a framework for expanding financial access but also provides policy direction and practical interventions for governments, financial institutions, and local communities to strengthen sustainable and gender-sensitive digital financial inclusion.

CONCLUSIONS

Research confirms that the main financial barriers for unbanked rural women stem from unstable, rarely documented income, reliance on informal financial channels, and low adoption of digital services. This situation naturally makes household financial resilience dependent on local community networks. Survey findings also indicate limited financial/digital literacy (inconsistent record keeping, predominance of cash transactions), but adoption interest increases when community-based mentoring and training in simple accounting practices (cash separation, cash books, weekly budgets) are available.

This research demonstrates that financial literacy has a positive influence on the successful implementation of digital financial inclusion. Rural women with a better understanding of financial concepts have been shown to be more able to access, use, and utilize digital-based financial services. Furthermore, trust and security are crucial factors in increasing community participation, particularly for women. Concerns about personal data security and consumer protection remain key barriers to fintech adoption among rural women.

Digital infrastructure has also been shown to play a crucial role in expanding access to digital financial inclusion. Internet network availability, mobile device affordability, and technological readiness are key factors determining the adoption rate of fintech services in rural areas. Public policy support also contributes significantly through inclusive regulations, simplified administrative rules, and educational programs that favor vulnerable groups, including women.

Furthermore, this study confirms that socio-cultural factors moderate the relationship between financial and digital literacy and the successful implementation of digital financial inclusion. Gender norms, local cultural values, and the role of the community are important elements influencing women's behavior and attitudes in utilizing digital financial services. In this context, management accounting can be a supporting instrument, providing a mechanism for control, performance evaluation, and transparency in the sustainable implementation of digital financial inclusion programs.

1.1 Suggestion

Based on the findings of this study, several strategic recommendations can be made. First, the government needs to expand access to digital infrastructure in rural and underserved areas (3T) by developing more equitable and affordable internet networks. Furthermore, public policies need to be designed with a gender perspective, for example through the implementation of gender-responsive budgeting (GRB), so that digital inclusion programs can more optimally reach women. Involving local communities in financial and digital literacy outreach and education is also a crucial step in building public participation.

Second, financial institutions and fintech service providers need to strengthen security systems and user data protection to increase public trust, particularly among women. Fintech products should be designed with a simple, easy-to-understand interface that addresses the needs of rural women. Furthermore, involving local agents, particularly women, can be an effective strategy to increase trust and encourage the adoption of digital services. This study is limited by its scope within a single district (limited generalizability), cross-sectional design (impossible to assess causal inference or temporal dynamics), reliance on self-reporting (risking recall and social desirability bias), and the absence of real-world transaction data (QRIS/e-wallet logs), which makes behavioral indicators still perception-based. Furthermore, it also poses potential selection bias due to inequality in internet access and device ownership. Future research should be expanded to multiple sites, employing a longitudinal or quasi-experimental/small-scale RCT design to assess impact, integrating transaction logs and household ledgers and triangulating them with financial institution data, testing for heterogeneity through multigroup analysis and measurement invariance, and evaluating the cost-effectiveness of community-based mentoring interventions.

Finally, for local communities, it is crucial to raise awareness of the importance of financial and digital literacy through joint training programs. Furthermore, building a culture of trust among community members can be crucial social capital in strengthening the successful implementation of digital financial services at the grassroots level.

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