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Financial Literacy Intervention for Rural Farmers: A Qualitative Study on Collective Wealth Building through Simulation-Based Learning in Mekarmanik Village, Indonesia

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ABSTRACT

The purpose of this study was to investigate the phenomenon of financial hardship experienced by coffee farmers in Mekarmanik Village. The study was conducted using a qualitative method with in-depth interviews with 50 farmers who are members of a cooperative over a 40-day research period. The research also uncovered the significant role of dealers and Ijon practices in worsening farmers' economic situation. Most of the informants were involved in transactions with bookies who offered high-interest capital loans or the detrimental ijon system. Results show that despite earning income from the coffee harvest, the majority of informants have difficulty allocating income appropriately for living needs. The main factors identified include low financial literacy, the absence of a financial recording system, and the inability to manage seasonal income. Limited access to formal financial institutions and the need for capital for the next cropping cycle traps many farmers in a continuous cycle of debt. Farmers ensnared in bonded labor practices lose a significant portion of the potential value of their crops. As an intervention, this study implemented a simulation-based learning program focusing on income management, and the development of access to microfinance institutions to build financial independence and reduce dependence on the exploitative ijon system.

INTRODUCTION

In recent decades, rural communities in developing countries have faced recurring challenges related to poverty, limited financial access, and low economic resilience. In Indonesia, where the majority of the population lives in rural areas, the gap in financial literacy between rural and urban areas remains substantial. According to the most recent survey by the Financial Services Authority (OJK) in 2022, Indonesia's national financial literacy index reached 49.68%, with urban communities scoring significantly higher than rural areas. This indicates that more than half of rural residents still lack adequate financial knowledge to make informed economic decisions. Although this figure shows progress compared to earlier years and has exceeded the target set by the government in Presidential Regulation No. 82 of 2016 concerning the National Financial Inclusion Strategy (SNKI) of 35%, disparities persist and must be addressed to enhance rural livelihoods. Mekarmanik Village, located in Bandung Regency, reflects this condition with a community predominantly engaged in agriculture but lacking sufficient financial capacity to develop assets or businesses sustainably.

Various efforts have been made by the government and private institutions to improve financial literacy in rural areas. However, existing programs often rely on one-directional delivery methods and overlook the socio-cultural realities of rural communities. Effective financial literacy initiatives should be adapted to local characteristics and encourage active community participation to foster sustainable behavioral change (Wardhono et al., 2022). These approaches tend to focus on individuals, without exploring the potential of collective strategies in financial management such as group savings circles

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(arisan), cooperatives, or joint savings systems—mechanisms that are deeply rooted in the lives of Indonesian village communities.

In global literature, simulation-based learning is increasingly recognized as an effective method for improving financial understanding, particularly because it engages participants actively and mirrors real-life situations. However, research on the effectiveness of this method remains limited in rural agricultural communities in Southeast Asia, especially Indonesia. Furthermore, few studies have examined the integration between simulation-based learning and collective wealth-building approaches at the community level. This highlights a critical research gap concerning the development and evaluation of participatory, contextual financial literacy interventions that promote collective economic strengthening in rural settings.

This research draws on the Human Capital Theory framework, which emphasizes that improving individual skills and knowledge through educational processes, including financial education, can have a positive long-term impact on economic conditions (Becker, 1993). Financial literacy is positioned as a form of investment that enhances individuals' capacity to make more informed and profitable financial decisions. In addition, this research adopts the Empowerment Theory perspective, which underscores the importance of increasing both individual and group control over economic resources as a key driver of sustainable social transformation (Zimmerman, 2000).

By integrating both theories, this study underscores the importance of designing financial literacy programs that involve active participation, are tailored to local contexts, and support sustainable collective economic strategies. This approach is expected to help communities manage income more effectively, increase financial independence, and reduce dependence on exploitative ijon practices. Therefore, the research proposes a simulation-based financial literacy program for income management while promoting improved access to microfinance institutions suited to village communities' needs.

The challenge of achieving inclusive and sustainable economic development necessitates a comprehensive measurement approach. Developing a composite index to assess environmentally conscious inclusive economic development is carried out by analyzing economic, social, and environmental factors. Inclusive and sustainable economic development aims to strengthen a region's economy by maximizing local potential while still considering long-term sustainability. Similar efforts are also implemented in archipelagic regions to maximize local wealth with the goal of improving the economic welfare of the community (Zahrah & Rahayu, 2024).

RESEARCH METHODS

This research uses a descriptive qualitative approach to explore financial literacy problems faced by coffee farmers in Mekarmanik Village and design simulation-based financial learning interventions. This approach was chosen to deeply explore social dynamics, financial habits, and the impact of ijon practices on farmers' economic welfare. The main focus lies on understanding local context as the basis for developing simulation-based learning models that are relevant and applicable.

Data and Data Sources

The data collected includes primary and secondary data. Primary data was obtained through semi-structured, in-depth interviews guided by a pre-developed interview protocol, direct observation of daily financial management practices, and participation in farmer cooperative activities. The interview protocol included open-ended questions covering income management patterns, record-keeping habits, experiences with ijon transactions, and perceptions of simulation-based learning. Ethical approval for the study was obtained from the relevant institutional review board, and all participants provided informed consent prior to data collection. Interviews were conducted in Bahasa Indonesia, audio-recorded with permission, transcribed verbatim, and—where necessary—translated into English to facilitate analysis. Translation accuracy was ensured through back-translation procedures. Secondary data was collected from OJK Indonesia, including the most recent financial literacy statistics and relevant policy documents.

Population and Sample

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The population in this research consists of all coffee farmers in Mekarmanik Village who are members of cooperatives. The research sample consists of 50 farmers selected purposively based on criteria of involvement in coffee farming activities, experience in ijon transactions, and willingness to participate in interview sessions and learning simulations. The decision to stop at 50 participants was based on the principle of thematic saturation, where no new themes emerged after the 46th interview, indicating that the data collected was sufficiently rich and comprehensive to address the research objectives. This number also ensured representation of varying age groups, land sizes, and levels of cooperative involvement. Purposive sampling technique was thus used to ensure that the informants involved are truly representative of the issues being studied.

Analysis Method

Data was analysed using thematic analysis methods, which include familiarization with the data, generating initial codes, identifying patterns, clustering codes into themes, and refining thematic categories such as seasonal income management, financial recording, dependence on ijon, and readiness to receive financial simulations. Analysis was conducted iteratively to build a comprehensive understanding which was then used as the basis for designing simulation-based learning models. Researcher triangulation was applied through cross-reflection among team members, and member-checking was conducted with selected participants to verify interpretations, thereby enhancing the credibility and trustworthiness of the findings.

Operational Variables

Although this research does not use quantitative variables in a formal sense, in the context of concept operationalization, several main focuses were defined. Table 1 presents these operational variables, their definitions, and measurement techniques, which have been reformatted for clarity.

Table 1. Operational Variables in the Study

No.	Variable / Concept Focus	Operational Definition	Measurement Technique
1	Financial Literacy	Farmers' understanding of income management, financial recording, and seasonal financial planning.	▪ Qualitative assessment through interview narratives, observation notes, and document analysis.
2	Dependence on Ijon Practices	Frequency and intensity of transactions with middlemen, and the economic impact on farmers' livelihoods.	▪ Qualitative coding of interview data and cooperative transaction records.
3	Effectiveness of Simulative Learning	Level of participation in simulations, observed changes in financial mindset, and readiness to apply principles learned.	▪ Observation during simulation sessions, post-intervention interviews, and review of simulation outputs.

RESULTS AND DISCUSSION

Financial Literacy Level of Farmers in Mekarmanik Village

The financial literacy level of coffee farmers in Mekarmanik Village is relatively low, as evidenced by the habit of not recording income and expenses, and the absence of post-harvest financial planning. Many farmers spend their harvest income in a short time for household consumption and immediate needs, without setting aside funds for capital for the next planting season. This phenomenon is consistent with the study results of Safitri (2021) which show that farmers in rural areas generally only have moderate financial literacy, with financial attitude aspects as the most dominant indicator. This means that knowledge alone is not enough. It is important to form positive attitudes toward

financial management for behavioural change to occur. Low education levels and minimal access to information also exacerbate this situation.

Furthermore, field survey results show that most farmers do not yet understand basic concepts such as budgeting, emergency savings, and loan interest. According to the definition from OECD/INFE (2022), financial literacy includes not only knowledge, but also skills and confidence in managing personal finances effectively. As one participant expressed, "I have heard about saving for emergencies, but I never knew how much or when to start. We just use what we have until it runs out." The lack of familiarity with these concepts reflects a broader issue: financial decisions are often made instinctively rather than strategically. While this aligns with Nguyen (2022) who found similar impulsive decision-making patterns in rural Southeast Asia, other studies such as Lee & Carter (2023) note cases where traditional saving customs—like earmarking harvest proceeds for community ceremonies—actually serve as informal financial planning, challenging the view that all non-formal methods are detrimental. This suggests that interventions must critically evaluate local practices rather than wholly replacing them. Without programs that integrate practical training with behavior-oriented learning such as simulation-based workshops or peer-based financial mentoring, these farmers will continue to face challenges in building long-term financial resilience.

Problems Faced by Farmers in Managing Finances and Building Collective Wealth

Coffee farmers in Mekarmanik Village often experience difficulties in managing money from their harvest. One of the main problems is dependence on middlemen or external parties who lend money before harvest time. Because they don't have many options and are not yet accustomed to working together in financial groups, farmers are often forced to sell their harvest at low prices. As one farmer recounted, "We know the price is low, but if we don't take the money now, we can't buy fertilizer or pay school fees." This situation reflects the Resource Dependence Theory from Pfeffer & Salancik, which posits that lacking direct access to vital resources—such as money, information, or market networks—creates dependence on external actors.

According to Coşkun and Öztürk (2024), such dependence can, under certain conditions, be reframed as a strategic alliance if both parties negotiate equitable terms. However, our findings contrast with this optimistic view, as the Mekarmanik farmers' reliance on middlemen shows no signs of strategic leverage but rather entrenched vulnerability. Similarly, Fei et al. (2024) caution that excessive dependence without institutional safeguards can hinder long-term economic autonomy.

Effectiveness of Financial Learning Through Simulation

To address the above problems, a simulation-based learning approach was implemented. In this simulation, farmers were invited to role-play as managers of their household and farming finances. They were faced with various choices, for example: whether to sell coffee to middlemen or cooperatives, whether to save or spend immediately for household needs, and how much to set aside for planting capital for the next season. This design was grounded in Experiential Learning theory (Kolb), which holds that learning deepens through direct engagement.

One participant reflected during the debrief, "When I saw on the simulation sheet how quickly the money disappeared, it was like a mirror. I realized I always repeat the same mistake after harvest." This aligns with Nguyen et al. (2023), who found that simulation methods in Southeast Asia improve farmers' capacity to visualize long-term impacts of short-term decisions. However, in contrast, Harris & Mbeki (2022) argue that simulations without sustained follow-up can lead to only temporary behavioral shifts, highlighting the need for post-training mentoring—a gap that remains in the Mekarmanik program's current design.

Supporting evidence from Jamleck et al. (2021) in Kenya and Onyesom et al. (2021) in Nigeria reinforces that experience-based financial training fosters not only knowledge acquisition but also improved decision-making confidence. The Mekarmanik case adds to this literature by demonstrating that simulations can also serve as a platform for initiating collective economic strategies, not just individual financial change—an aspect less emphasized in prior studies.

Impact of Simulation on the Ability to Build Collective Wealth

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Beyond personal finance improvements, the simulation fostered collective awareness of the benefits of working together. Farmers began proposing group savings schemes, rotating internal loan funds, and cooperative partnerships—steps toward reducing middlemen dependence. As one farmer noted, "If we save together, maybe next time we don't need the middleman's money at all."

This shift reflects "buffering strategies" in Resource Dependence Theory, which strengthen internal capacity to counter external power asymmetries (Pfeffer & Salancik, 2003). Hillman et al. (2009) and Karmel & Nguyen (2024) support this, showing that horizontal alliances reduce exploitation risks. However, some studies (e.g., Ito & Murakami, 2022) caution that poorly managed group funds can create internal conflicts, suggesting that governance structures must evolve alongside collective financial initiatives.

CONCLUSION

This research shows that coffee farmers in Mekarmanik Village face main obstacles in the form of low financial literacy and high dependence on informal lending systems such as ijon practices with middlemen. This condition causes difficulties in managing income effectively and hinders efforts to build sustainable collective wealth. Simulation-based financial literacy learning intervention proved effective in improving farmer understanding through contextual and applicable direct experience approaches. Through this simulation, farmers became increasingly aware of the importance of financial recording, budgeting, and saving, while being encouraged to build collective cooperation such as group savings and cooperative involvement. This collective approach has the potential to reduce dependence on exploitative middlemen and strengthen the economic resilience of village communities.

From a theoretical perspective, this study reinforces the applicability of Resource Dependence Theory in rural economic contexts, showing how internal capacity-building—through simulation-based financial literacy—can serve as a buffering strategy against exploitative external actors. It also extends the discourse on Experiential Learning Theory by demonstrating its relevance in shifting not only individual behavior but also collective economic practices in agrarian communities. On a practical level, the findings suggest that simulation-based learning, when adapted to local socio-cultural contexts, can enhance farmers' capacity to manage income, foster cooperative action, and reduce reliance on predatory lending. Policy-makers and rural development agencies could integrate similar participatory financial training into existing agricultural extension programs, ensuring sustained follow-up to reinforce new behaviors.

The simulation process also led to tangible behavioral changes among participants. Many farmers began organizing their household and farming budgets in a more structured manner, actively recording daily expenses, and setting aside funds for emergencies and future planting seasons. The learning sessions encouraged group discussions and the formation of informal savings groups, enabling mutual financial support within the community. In practice, several farmers took steps to sell their coffee harvest directly to local markets or through village cooperatives, thereby reducing reliance on middlemen. Farmers also initiated the drafting of seasonal financial calendars to better anticipate income and expenditure cycles. These outcomes demonstrate that experiential, simulation-based learning does not merely enhance financial knowledge, but also fosters new financial habits and collective initiatives that support long-term economic independence in rural farming communities.

This study has several limitations. First, the research was conducted in a single village with a specific commodity focus (coffee), which may limit the generalizability of the findings to other agricultural sectors or regions. Second, the intervention period was relatively short (40 days), so the long-term sustainability of behavioral changes remains uncertain. Third, the absence of a quantitative component restricts the ability to measure the magnitude of impact in numerical terms. Future studies could explore the longitudinal effects of simulation-based financial literacy training to assess the persistence of behavioral changes over multiple harvest cycles. Comparative studies across different commodities and regions would help determine the broader applicability of the intervention model. Additionally, integrating mixed-method approaches could provide richer insights by combining qualitative depth with quantitative measures of financial literacy improvement and collective wealth outcomes.

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CONFLICT OF INTEREST

The authors declare no conflict of interest in relation to this study.

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