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Digital Transformation of Market Cooperatives and Micro-Business Resilience: A Cross-Border Comparative Study between Indonesia and Southern Thailand

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ABSTRACT

This study aims to examine the relationship between the regulatory environment, the digital capabilities of sharia cooperatives, and their impact on the resilience of micro-businesses in Central Java (Indonesia) and Southern Thailand (Yala). Utilizing a cross-border qualitative comparative study design, data were collected through in-depth interviews, direct observation of digital payment instruments (QRIS in Semarang and PromptPay in Yala), and documentary studies of the Ibnu Affan Islamic Cooperative in Southern Thailand and sharia market cooperatives in Central Java. Purposive sampling was applied under the qualitative data saturation principle, incorporating cooperative management and traditional micro-traders in both regions. The results reveal distinct internal resource reconfiguration patterns aligned with Dynamic Capabilities Theory. Cooperatives in Indonesia demonstrate strong adaptive capabilities in aligning with mobile banking regulatory frameworks. Meanwhile, cooperatives in Southern Thailand (Yala) exhibit high flexibility in integrating the PromptPay system into their internal murabahah and qardh sharia contracts. The study concludes that successful digital financial inclusion is not merely about advanced technology, but rather about aligning digital instruments with the socio-cultural characteristics of local traders, supply chains, and national regulations.

Keywords : *Digital Microfinance Inclusion, Dynamic Capability, Micro-Business Resilience, Sharia Cooperatives, Cross-Border Studies.*

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Introduction

Sharia-compliant cooperatives in Southeast Asia play a crucial role as pillars of microfinance, bridging financial inclusion for small traders and Micro, Small, and Medium Enterprises (MSMEs) (Elfaki & Embi, 2023; Faisal, 2026). Through their unique institutional structure, Sharia-compliant savings and loan cooperatives, or Baitul Maal wat Tamwil (BMT), contribute significantly to empowering the lower-class economy in a fair and sustainable manner through a profit-sharing scheme free from interest. (Sakai, 2014; Selim & Farooq, 2020)In today's era of digital disruption, the operational ability of

cooperatives to maintain the resilience of their members' businesses is largely determined by the dynamic capabilities of their management in adopting information technology to optimize the efficiency of daily transactions (Haj Mohammadi et al., 2026; Putritamara et al., 2023). In Indonesia, particularly in Central Java, the acceleration of digital transformation is supported by progressive government regulations, although oversight still faces challenges of institutional diversity (Baroto, 2026). The integration of payment instruments such as the Quick Response Code Indonesian Standard (QRIS) is strongly encouraged through synergy between monetary authorities, supervisory boards, and managers of sharia cooperatives (Alam et al., 2025; Ascarya & Sakti, 2022).

In contrast, in countries with minority Muslim populations such as Thailand, Islamic savings and loan institutions have developed under the pressure of secular law without a specific national regulatory umbrella (Hama et al., 2024). As a result, Muslim communities in Southern Thailand rely heavily on social capital and community-based Islamic cooperatives to access interest-free financial products (Safira et al., 2025; Thippayana & Thinnam, 2023). These stark differences in regulatory landscapes, political stability, and cross-border religious capital differentiate the economic resilience pathways between Indonesia, a "Integrated Islamic Economic Ecosystem," and Thailand, which embodies a "Governance-Oriented Community Resilience Model (Maeenuddin et al., 2026; Safira et al., 2025). "

The literature review on Islamic microfinance is broadly divided into two research focuses. The first research focus evaluates the digitalization of Islamic microfinance institutions, demonstrating that the adoption of appropriate information technology significantly accelerates knowledge sharing, simplifies liquidity, and enhances the institutions' operational competitiveness (Salama et al., 2025). However, the success of this technology penetration is significantly influenced by the level of literacy and perception of Sharia compliance among cooperative managers and members (Qadri & Ali, 2024; Salama et al., 2025; Wiwoho et al., 2024). The second research focus is on the resilience of micro-enterprises of traditional market traders, where the flexibility of working capital distribution and the quality of internal cooperative governance play an important role as a protective buffer for small traders from the economic crisis. (Ispriyahadi et al., 2025). In addition, the presence of entrepreneurial Muslim leadership and strengthening the integration of the halal supply chain has proven crucial in guiding the reconfiguration of cooperative resources during difficult times (Ariatin et al., 2024; Sari & bin Mislan Cokrohadisumarto, 2019).

However, there is a profound research gap *in* the existing literature. Previous research is still dominated by single case studies in Indonesia, and ignores the dynamics of integrating national secular payment systems (such as PromptPay in Thailand) into the daily financing contract mechanisms of cooperatives ((Hama et al., 2024; Kusno et al., 2026). Moreover, there is still not much comparative research that examines how the social capital of mosque communities can replace the absence of formal regulations in maintaining compliance with digital transactions of cooperative members in border areas (Kusno et al., 2026; Savirani et al., 2024).

To fill this academic gap, this article presents a cross-country comparative analysis of the effectiveness of hybrid technology adaptation and its impact on the resilience of traditional traders in Central Java and Southern Thailand (Yala). The scientific merit and theoretical novelty of this research lies in the development of a sustainable model of Islamic microfinance inclusion.(Ascarya, 2026; Sari & Widiyanto, 2019) which integrates the digital capabilities of technology with the strength of local socio-cultural ties for the effectiveness of poverty alleviation (Purwanto et al., 2020; Wasiaturrahma et al., 2020). This approach analyzes cooperative financial technology adoption through a synthesis of dynamic capabilities and technology acceptance models aligned with Sharia values (hybrid models) (Faisal, 2026). Based on this framework, this study aims to:

1. Comparatively examine the adoption strategies of digital financial instruments

(QRIS in Central Java and PromptPay in Yala) by Islamic cooperatives;
2. Analyzing the direct contribution of digital adaptation of Islamic cooperatives to the resilience of traditional micro-trader businesses; and
3. Formulating a comparative model of adaptive cross-border digital microfinance inclusion to strengthen local economies in the ASEAN border region

Literature Review

Dynamic Capability Theory and Cooperative Technology Adaptation

Dynamic Capabilities Theory *explains* how an organization is able to integrate, build, and reconfigure internal and external competencies to respond to a rapidly changing business environment (Teece et al., 1997). In the context of Islamic cooperatives, dynamic capabilities are manifested in the capacity of transformational leadership and management in mobilizing information technology to optimize organizational performance and the efficiency of members' daily transactions (Ariatin et al., 2024; Wibowo et al., 2020). The success of this resource reconfiguration is largely determined by the management's ability to develop accounting information systems and strengthen sharia social capital for the effectiveness of the internal control system (Yanti et al., 2026). The digitalization of Islamic savings and loan cooperatives is not merely an upstream to downstream technical modernization, but rather a strategy for creating shared value (value co-creation) through the adoption of digital technology that involves participatory upstream-downstream business partnerships between members (Utami et al., 2024).

To understand the acceptance of technology at the grassroots level, these dynamic capabilities are synthesized with the Technology Acceptance Model (*TAM*). TAM emphasizes that perceived usefulness *and* perceived ease of use are the main variables that drive micro-traders' interest in using cooperative transaction technology (Wibowo et al., 2020). Ease of operational access through digital payment standardization (such as QRIS in Indonesia and PromptPay in Thailand) accelerates behavioral intention to adopt cooperative digital financial services (Wibowo et al., 2020). In order to maintain transparency and member trust in the long term, the adoption of this technology must be accompanied by the development of a digital financial reporting monitoring system that is reliable and easily accessible to both the supervisory board and members (Martiana et al., 2023; Safitri et al., 2019).

Theory of Micro-Business Resilience and Financial Capital

The resilience of micro-enterprises in traditional markets is defined as the capacity of small traders to survive, adapt and recover from economic shocks *and* market fluctuations (Masngudi et al., 2026; Said et al., 2019). Based on *the Resource-Based View (RBV)* theory , the resilience of micro-enterprises is highly dependent on the availability of daily financial capital that is liquid, competitive, and free from the trap of exploitative interest (Hapsari et al., 2026; Sakai, 2014). Sharia savings and loan cooperatives (KSPPS/BMT) play an important role as a protective buffer by providing inclusive financing schemes for small traders who have not been reached by general commercial banking (*un-bankable*) (Masngudi et al., 2026). This sharia-based financing has proven effective in reducing poverty levels and increasing the financial resilience of trading households in traditional markets (Selim & Farooq, 2020).

The resilience of micro-enterprises is also significantly influenced by the flexibility of Islamic cooperative financing models in mitigating the risk of non-performing loans (NPF) (Wasiaturrahma et al., 2020). Islamic cooperatives strengthen merchant resilience by providing sustainable working capital financing, supported by strong religious social capital to ensure members' commitment to repayment (Yanti et al., 2026). The presence of entrepreneurial Muslim leadership *within* Islamic cooperatives is a key driver in formulating strategies to rescue members' businesses during the crisis, one of which is through the digitization of the cooperative's integrated halal supply chain (Ariatin et al., 2024; Siti Aminah Chaniago et al., 2024). Furthermore, the socio-economic hybridity of informal transactions based on mutual trust *and*

brotherhood strengthens the collective resilience of traditional markets (Masngudi et al., 2026).

Conceptual Framework: Technology Adoption Paths and Institutional Divergence

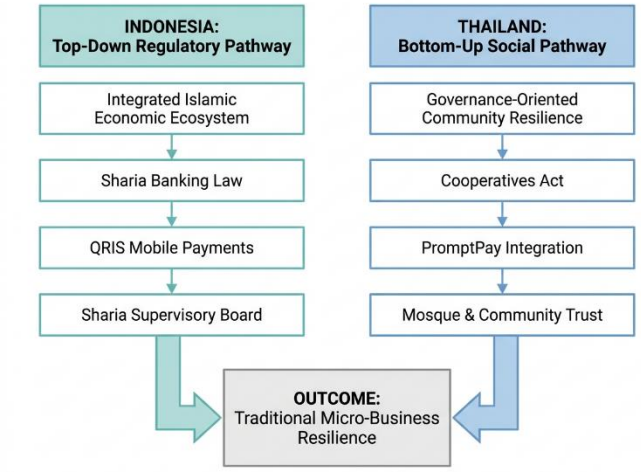
This research conceptual framework links the interaction between the national regulatory environment, the digital capabilities of Islamic cooperatives, and the resilience of traditional market micro-enterprises through a cross - *border comparative study* . In Indonesia, strong legal certainty through the Islamic Banking Law and Bank Indonesia's transaction standardization regulations (QRIS) provide established legal support for the digitalization of Islamic cooperatives, thus creating an "Integrated Islamic Economic Ecosystem (Ascarya, 2026; Kusno et al., 2026). " The role of the Islamic supervisory board and national legal compliance go hand in hand to encourage the expansion of digital microfinance inclusion (El Ashfahany et al., 2026; Jihad et al., 2024).

In contrast, in Southern Thailand (Yala), where the Muslim population is a minority, Islamic cooperatives thrive under the pressure of secular regulations under the Cooperatives Act *without* a specific national Islamic finance legal framework (Hama et al., 2024). This lack of formal regulation forces cooperatives in Southern Thailand to rely on the social capital of mosque communities and local religious adherence to navigate the digitalization of PromptPay instant payments, forming what has been termed a " *Governance-Oriented Community Resilience Model* . "(Kusno et al., 2026)

This comparative study analyzes how these two different technological adaptation pathways—a formal regulation-based (top-down) pathway in Central Java and a community social capital-based (bottom-up) pathway in Southern Thailand—equivalently contribute to the resilience building of micro-scale traditional traders in the ASEAN border region.

Figure 1.

Conceptual Framework of the Research



This comparative model maps two contrasting institutional adaptation pathways driving the digital transformation of Islamic market cooperatives in Southeast Asia. In the case of Indonesia (Central Java), the *top-down regulatory pathway* operates within *the Integrated Islamic Economic Ecosystem , relying on QRIS standardization, mobile banking, and formal compliance with the Sharia Supervisory Board. Meanwhile, in Southern Thailand (Yala), the bottom-up* social pathway applies *the Governance-Oriented Community Resilience Model* to navigate the secular legal framework *of the Cooperatives Act through a hybrid scheme of* instant payments. *PromptPay* and internal sharia contracts. The characteristics of formal legal certainty-based compliance enforcement in Indonesia are paralleled by the utilization of social capital, mosque networks, and mutual trust *within* the Patani Muslim minority community. Despite these structural divergences, both approaches have equally succeeded in achieving common ground in increasing digital financial inclusion, working capital efficiency, and strengthening the resilience of traditional market micro-enterprises to economic shocks.

Method

This study uses a cross -*border qualitative comparative study design* to evaluate and compare in depth the digital transformation strategies of Islamic market cooperatives in Central Java, Indonesia, and Southern Thailand (Yala) (Kusno et al., 2026). This descriptive qualitative approach was chosen because it is very effective for understanding socio-economic phenomena, technological adaptation behavior patterns, and institutional dynamics in depth under natural conditions without statistical manipulation (Sugiyono, 2016). By applying a cross-country comparative method, this study is able to capture differences in hybrid technology adoption pathways *that* arise from variations in national monetary regulatory environments, sociocultural conditions, and contrasting religious social capital between Muslim-majority and Muslim-minority regions in Southeast Asia (Kusno et al., 2026; Thippayana & Thinnam, 2023).

Population and Sample

The study population included all managers of Islamic market cooperatives and micro-scale traditional market traders registered as active members of cooperatives in Central Java (Indonesia) and Yala (Southern Thailand). The sample determination was carried out in a targeted manner using a *purposive sampling technique* based on specific inclusion criteria, namely: (1) Islamic market cooperatives that have actively implemented daily digital payment instruments or mobile micro- banking for at least the past two years; (2) Micro-scale traditional market traders who are registered as active members of cooperatives and use digital transactions (such as QRIS or PromptPay) in their daily trading activities.

The sample size was determined based on the principle of qualitative data saturation (Braun & Clarke, 2025), where sample addition is stopped when no new information or thematic variations are found in the field. Based on this principle, the total informants in this study consisted of 6 managers of Islamic market cooperatives/BMTs and 20 traditional market micro traders in Semarang for the Central Java case, and 4 managers of the Ibnu Affan Berhad Islamic Cooperative and 15 traditional micro traders in Yala for the Southern Thailand case.

Data collection technique

Primary and secondary data collection is carried out in an integrated manner through three main instruments to ensure the depth and completeness of the information collected (Sugiyono, 2016):

1. Structured *In-Depth Interviews: Face-to-face* interviews with cooperative administrators were conducted to explore the organization's strategic policies, accounting information system architecture, and national regulatory constraints. Interviews with micro-merchants focused on evaluating perceived benefits, the ease of daily cashless transactions, and the direct impact of fintech adoption on business financial resilience.
2. Direct *On-Site Observation* : Researchers directly observed the daily non-cash transaction process in traditional markets, tested the adoption rate of standardized QR code instruments (QRIS) in Central Java, and documented the functional integration of the PromptPay instant transfer system in the daily transactions of Muslim traders in Yala, Southern Thailand.
3. Documentation Study *:* Conducted through a review of formal institutional documents, including the annual report book of the Annual Members Meeting (RAT), cooperative asset development profiles, standard operating procedures (SOP) for financing distribution, research documents, and government regulatory documents related to non-cash payment systems in both countries.
4. Cross-Case Data Analysis Techniques

The collected qualitative data was analyzed using Cross -*Case Thematic Analysis Technique* which refers systematically to the interactive analysis framework (Miles et al., 2018)as well (Braun & Clarke, 2025).

The operational analysis stages include:

1. *Data Reduction:* Starting with interview transcription, field data editing, and thematic coding *based* on theoretical indicators of cooperative dynamic capabilities, perceptions of usefulness and ease of technology (TAM), working capital cost efficiency, financing default risk mitigation, and the role of social capital.
2. *Data Display:* The findings of the codification results are presented systematically in the form of a cross-country comparative matrix to map the similarities (convergence) and differences (divergence) of digital technology adoption paths in Central Java and Yala.
3. *Conclusion Drawing and Verification:* Formulating a conceptual synthesis of the cross-border digital microfinance inclusion model, which is then rigorously verified to produce strong scientific conclusions.
4. *Data Trustworthiness Testing:* Conducted to ensure the credibility, reliability, and scientific objectivity of the results of this comparative analysis, data trustworthiness testing is carried out through the application of triangulation techniques.
5. *Source Triangulation:* Comparing the conformity of information between statements from micro traders, cooperative administrators, the Sharia Supervisory Board (DPS), and the official annual report documents of the cooperative .
6. *Triangulation Method:* Checking the degree of trustworthiness of the findings by combining data from in-depth interviews, observation notes on daily non-cash transaction behavior in the market, and the results of regulatory document analysis.
7. *Peer Debriefing:* Conducting analytical discussions with fellow academics and Islamic economic experts in the field of cooperatives to minimize the researcher's subjective bias during the data interpretation process.

Results and Discussion

QRIS and Mobile Banking Integration Pathway in Central Java (Indonesia)

The analysis shows that Islamic market cooperatives in Central Java employ a *top-down approach* that is deeply integrated with the national financial ecosystem. The standardization of payment instruments based on the Quick Response Code *Indonesian Standard* (QRIS), officially regulated by the monetary authority, serves as a key foundation for grassroots digitalization. The cooperatives link this payment system directly to the institution's mobile microbanking application. Traditional market traders who are members of the cooperative receive daily cashless deposits from buyers, with the system automatically posting these transactions directly to their cooperative savings account balances.

Field findings confirm that digitizing downstream transactions has successfully simplified daily liquidity management for merchants and increased transparency in cash records. Merchants no longer need to keep large amounts of cash on hand, thus reducing the risk of theft and cash discrepancies. Furthermore, the Indonesian ecosystem benefits from broader integration with productive business units of cooperatives, philanthropic institutions, Islamic boarding school cooperatives, and the national halal supply chain development program. This pattern aligns with findings (Prasetyo & Dwianto, 2018; Yanti et al., 2026)confirming that standardizing digital payment technology in Indonesia can accelerate financial inclusion in the informal sector and strengthen the governance and accountability of microfinance institutions.

PromptPay and Supply Chain Integration Pathway in Yala (Southern Thailand)

In contrast to Central Java, Islamic savings and loan cooperatives in Yala, Southern Thailand, have adopted a *bottom-up adaptation approach* focused on upstream operational efficiency and national payment infrastructure. Although the Thai government has actively promoted the establishment of an Islamic financial system since 1998, Islamic savings and loan cooperatives face formal regulatory barriers due to the lack of specific legislation governing Islamic cooperatives. Consequently, Islamic cooperatives in Southern Thailand—including Ibnu Affan Berhad Islamic Cooperative—must operate under the secular legal framework of the Cooperatives *Act* .

To navigate these legal restrictions, the Ibnu Affan Cooperative independently leveraged PromptPay, a national, fee-free instant payment ecosystem based on ID or phone numbers. This digital integration was combined with a focus on upstream *supply chain management* . The cooperative built a collective digital ordering platform that allows micro-merchants to collectively order inventory directly from manufacturers or primary distributors. This innovative policy successfully shortened the lengthy distribution chain, reduced the cost of goods sold, and saved merchants daily working capital costs.

Throughout its development, the cooperative has consistently implemented various Sharia contracts, such as murabahah, musyarakah, mudharabah, ijarah, rahn, qardhul hasan, and salam. Through the application of modern, professional, democratic, and transparent management, the Ibnu Affan Cooperative has succeeded in advancing the socio-economic welfare of Muslim communities in border areas. As explained, (Hama et al., 2024; Madman et al., 2026; Thippayana & Thinnam, 2023)the adoption of a national instant payment system in Thailand has proven effective in increasing transaction efficiency at the small business level, even though it operates within a secular legal framework.

Table 1. Comparison Matrix of Digital Transformation Paths of Market Cooperatives

Comparative Dimension	Central Java, Indonesia	Yala, Southern Thailand
Main Drivers	National monetary regulatory policy	Community self-help and social capital initiatives
Digital Architecture Focus	Downstream sector (transactions and savings)	Upstream sector (supply chain and wholesale)
Payment Instruments	Standardized QR Code (QRIS)	National instant payment (PromptPay)
Major Financial Impacts	Automatic credit recording & loan shark mitigation	Working capital savings & stock efficiency

Note: Primary data processed by researchers (2026).

Discussion

Dynamic Capability Perspective and Technology Acceptance Model (TAM)

The discussion of these findings confirms the Dynamic Capabilities Theory . Cooperatives in both regions demonstrated adaptive internal resource reconfiguration in response to external environmental constraints. Cooperative administrators in Central Java demonstrated high capability in adopting mobile banking technology regulations, while administrators in Southern Thailand demonstrated extraordinary flexibility in integrating the PromptPay system into internal sharia murabahah and qardh contract mechanisms. This resource restructuring is rigorously evaluated and reported periodically through the Annual Members Meeting (RAT) to ensure organizational transparency.

Based on *the Technology Acceptance Model* (TAM), perceived usefulness is the primary driver for Central Javanese micro-merchants to

adopt cooperative technology due to the ease of obtaining written financial records. In Yala, perceived ease of use is driven by the absence of transaction fees in the PromptPay system. However, Islamic financial literacy remains a crucial challenge in Southern Thailand; limited public knowledge of muamalah contracts has the potential to reduce members' interest in saving. Empirical studies even show that the majority of Islamic credit users in Southern Thailand still prefer direct cash transactions through cooperative offices or representatives over internet banking. These findings support Thaker et al.'s (2021) argument that technical ease and measurable financial benefits are crucial variables determining the sustainability of Islamic financial technology adoption in Southeast Asia.

Resource-Based View (RBV) and Financial Risk Mitigation

Based on the Resource-Based View (RBV), access to affordable working capital is a strategic resource that determines the resilience of micro-enterprises. The digital transformation of market cooperatives has been proven to directly strengthen the resilience of traditional traders to daily economic shocks. In Central Java, automatically recorded digital transaction data is used by cooperative administrators to conduct credit scoring without the need for burdensome physical collateral. This step has proven highly effective in breaking traditional traders' dependence on informal money brokers or market loan sharks who charge exorbitant interest rates.

Meanwhile, in Yala, micro-enterprise resilience is built through upstream working capital efficiency. Savings on inventory purchasing costs through the cooperative's digital wholesale platform provide a thicker profit margin for micro-merchants, which serves as a financial cushion during commodity price fluctuations in border areas. To maintain financing quality and control default risk, the Ibnu Affan Cooperative disciplinedly applies customer eligibility criteria analysis based on the 5C principle (character, capacity, capital, economic condition, collateral) before submitting files to the financing committee meeting. This reinforces the findings of Banna et al. (2021) who stated that digital financial inclusion directly contributes to building micro-enterprise resilience in the ASEAN region through reduced transaction costs and more inclusive access to capital.

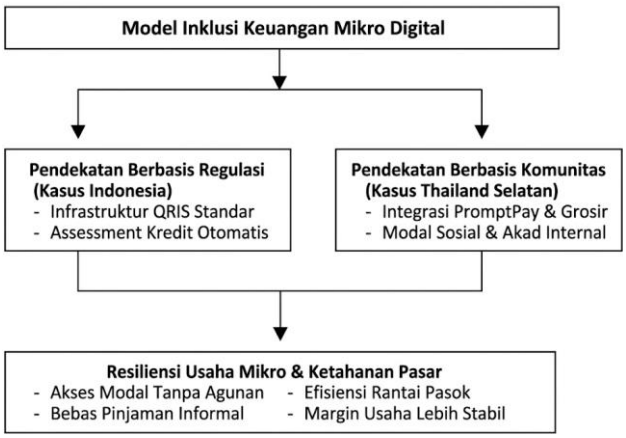
Digital Microfinance Inclusion Model and Cross-Border Policy

This cross-country comparison highlights the crucial role of differences in institutional environments. In Indonesia, strong legal certainty through government regulatory support provides robust legal protection for the development of Islamic financial technology (fintech) cooperatives (Ascarya, 2026). Conversely, in Southern Thailand, the lack of a specific legal framework for Islamic finance is offset by the strong social capital *and* local religious values inherent in the Patani Muslim community. Cooperatives in Yala leverage the strength of their religious moral bonds, the honesty of their members, and their mosque community network to ensure their commitment to transaction compliance and the smooth repayment of their digital financing .

ASEAN Cross-Border Digital Inclusion Framework

The synthesis of these two cases yields a flexible digital microfinance inclusion model for the ASEAN border region. This model emphasizes that there is no single path to implementing digital transformation for cooperatives. A top-down, regulation-based strategy in Indonesia and a bottom-up, social capital-based strategy in Southern Thailand have been equally successful in increasing financial inclusion, transaction efficiency, and crisis resilience for micro-entrepreneurs at the same level.

Figure 2.
A Comparative Model of Cross-Border Digital Microfinance Inclusion



These findings extend Hassan et al.'s (2021) perspective on the socio-economic impact of digital microfinance in emerging markets. The success of digitalization depends not solely on the availability of advanced technology, but rather on the ability of microfinance institutions to align digital instruments with legal realities, supply chain needs, and the socio-cultural characteristics of local market traders.

Cross-Case Analysis and Theoretical Testing of Micro-Business Resilience

The discussion of these findings confirms the Dynamic Capabilities Theory . Cooperatives in both regions demonstrated the ability to reconfigure internal resources adaptively to changes in the external environment. In Indonesia, dynamic capabilities were manifested in the management's ability to adopt mobile banking technology regulations. Meanwhile, in Southern Thailand, this capability was evident in the management's flexibility in integrating the PromptPay system into the internal sharia-compliant murabahah and qardh contract mechanisms.

Based on *the Technology Acceptance Model* (TAM), perceived usefulness is the primary driver for micro-merchants' adoption of cooperative technology. In Central Java, merchants experienced immediate usefulness in the form of easy access to written transaction histories, which serve as financial records. In Yala, perceived ease of use was driven by the absence of transaction fees in the national instant payment system. These findings support the argument (Madman et al., 2026; Safira et al., 2025)that technical ease and measurable financial benefits are crucial variables determining the sustainability of Islamic financial technology adoption in Southeast Asia.

Resource-Based View and Financial Risk Mitigation

Based on *the Resource-Based View* (RBV), access to affordable working capital is a strategic resource that determines the resilience of micro-enterprises. The digital transformation of market cooperatives has been proven to directly strengthen the resilience of traditional traders to daily economic shocks. In Central Java, automatically recorded digital transaction data is used by cooperative administrators to conduct credit scoring assessments *without* the need for burdensome physical collateral. This effectively cuts traders' dependence on informal money brokers or market loan sharks who charge exorbitant interest rates.

In Yala, micro-business resilience is built through working capital efficiency. Savings on inventory purchasing costs through the cooperative's digital wholesale platform provide micro-merchants with thicker profit margins. This additional margin serves as a financial cushion during commodity price fluctuations in border areas. This reinforces the finding (El Ashfahany et al., 2026; Prasetyo & Dwianto, 2018)that digital financial inclusion directly contributes to building micro-business resilience in the ASEAN region through reduced transaction costs and more inclusive access to capital.

Conclusion

The application of a comparative model of cross-border digital microfinance inclusion between Central Java, Indonesia, and Southern

Thailand (Yala) shows contrasting yet equivalent institutional divergences in building the resilience of traditional market traders' micro-enterprises. This comparative qualitative research concludes that digital transformation in upstream-downstream Islamic cooperatives does not have a single path but rather depends heavily on aligning digital instruments with the socio-cultural legal realities of local market traders.

Sharia market cooperatives in Central Java reflect an integrated Islamic economic ecosystem driven by the support of national monetary regulations. Standardizing digital payments in the form of quick response codes effectively automates the recording of daily transactions of downstream merchants, facilitates creditworthiness assessments without physical collateral, and protects traditional merchants from dependence on informal money brokers or market loan sharks. In contrast, in Southern Thailand, the limitations of specific legal regulations for Islamic financial institutions under the secular general cooperative law were independently circumvented by the Ibnu Affan Islamic Cooperative. Through a governance-based community resilience model, the cooperative integrates hybrid national instant payments and focuses digitization on upstream wholesale supply chain management to save traders' working capital costs. The daily transaction compliance of micro-traders in this Muslim minority area remains firmly maintained through the utilization of religious social capital derived from the bonds of honesty of the community and the local mosque network.

Suggestion

Based on the findings and limitations of this cross-border comparative qualitative research, several further ideas are expected to be implemented by stakeholders and future researchers. For Islamic cooperative managers in Indonesia, it is hoped that they can further integrate digital payment systems with the broader economic ecosystem, such as Islamic boarding school networks and upstream-downstream halal supply chains, to strengthen the resilience of member businesses. Meanwhile, for Islamic cooperative managers in Southern Thailand, it is recommended to optimize targeted education and outreach regarding mosque-based hybrid Islamic financing literacy to increase member savings participation, which has so far been dominated by cash transactions. For regulators, the Thai government is expected to immediately formulate specific regulations that accommodate the existence of Islamic cooperatives at the national level so that they can legally expand their operational networks for more equitable financial inclusion. Finally, for future research, it is hoped to expand cross-country comparative evidence by developing measurable indicators of Islamic financial independence, as well as testing this comparative model of hybrid financial inclusion in the context of countries with other Muslim minority institutional characteristics in Southeast Asia.

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