

Rural E-commerce Development Based on Legitimacy and Local Wisdom: An Integrative Review of Platform Innovation, Credit Risk Analysis, and Digital Empowerment Strategies in Indonesia

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Abstract: The growth of e-commerce in Indonesia, especially in rural areas, has triggered the need to integrate technological innovations with local wisdom in order to promote digital inclusion and sustainable economic development. This review article integrates a literature analysis from three related international studies: legitimacy building and the development of e-commerce platforms, the application of game theory in credit risk analysis, and strategies for e-commerce development in rural areas of BRICS countries. A comparative approach was employed by examining key findings and existing conceptual frameworks, which were then tailored to the cultural and socio-economic context of Indonesia. The review reveals that the synergy between legitimacy-building strategies, risk management mechanisms based on game theory, and the implementation of local values is a crucial factor in enhancing consumer trust and optimizing the growth of digital platforms. Consequently, the article concludes that the success of rural e-commerce development in Indonesia heavily relies on the adaptation of technological innovations that are responsive to local characteristics and proactive risk management. Strategic recommendations are provided for stakeholders to foster policies that support an inclusive and competitive digital transformation.

Keywords: Rural e-commerce, legitimacy building, local wisdom, platform innovation, credit risk analysis

1. Introduction

In recent decades, digital transformation has revolutionized various economic sectors worldwide, including in Indonesia. Advances in information and communication technology have enabled the growth of e-commerce as a key driver of economic development. Amid these advancements, e-commerce presents significant potential in improving market access, strengthening supply chains, and empowering local economies, particularly in rural areas that have historically received less attention. In Indonesia, cultural diversity and local wisdom are valuable assets that can be leveraged to optimize digital technology adoption in addressing access gaps and enhancing digital inclusion. Emphasizing local values is expected not only to

build consumer trust but also to drive the adoption of technology innovations that are relevant to the socio-economic context of rural communities. Furthermore, integrating sustainable technology and digital inclusion in rural e-commerce has been shown to be a critical factor for accelerating digital transformation, especially in regions with limited resources (Sheila & Fahmi, 2024). This approach not only promotes inclusivity but also aligns with environmentally sustainable business models that are crucial for long-term economic growth.

Several international studies have highlighted various strategic aspects of e-commerce development. Examiner how legitimacy-building through Alibaba's experience in China played a crucial role in fostering trust and ensuring the sustainability of digital platforms (Chen and Zhang, 2017). Meanwhile, Applied game theory to analyze credit risk in e-commerce transactions, offering an innovative approach to managing uncertainties inherent in digital payment systems (Kumar and Singh, 2018). Research on e-commerce development in rural areas of BRICS countries identified infrastructure challenges and limited technology access, which are also common in some rural regions of Indonesia (Gomez and Patel, 2019).

Additionally, Emphasized the importance of digital strategies tailored to local market characteristics to enhance technology adoption in developing countries (Lee and Park, 2020). Local studies by Rahman and Suryanto (2018) and Nugroho and Santoso (2022) also underscored the role of local wisdom in supporting digital transformation in rural communities, highlighting specific challenges and opportunities in the region. While these studies have explored these aspects separately, there remains a gap in integrating legitimacy-building, risk management through game theory, and the application of local wisdom in the context of rural e-commerce development in Indonesia.

This review article aims to integrate findings from various relevant studies to construct a conceptual framework that is adaptive to Indonesia's conditions. Specifically, the objectives of this study are: (1) To review and analyze the literature on legitimacy-building strategies in e-commerce platform development, emphasizing relevant international experiences. (2) To examine the application of game theory in credit risk management as an effort to reduce uncertainty in digital transactions. (3) To evaluate e-commerce development strategies in rural areas, focusing on the implementation of local wisdom values as a foundation for enhancing digital inclusion and empowering rural economies.

By integrating these findings, this article is expected to provide strategic recommendations for stakeholders both policymakers and business actors to design policies and initiatives that support inclusive, competitive, and sustainable digital transformation in Indonesia.

2. Methods

2.1 Research Approach

This study employs a systematic review method with a comparative analysis approach applied to three primary studies on e-commerce development: (a) Legitimacy building and e-commerce platform development (Chen & Zhang, 2017) (b) Game theory-based credit risk analysis in e-commerce (Kumar & Singh, 2018) (c) E-commerce development strategies in rural BRICS regions (Gomez & Patel, 2019).

2.2 Data Sources

The data utilized in this study consist of three main sources: (1) Primary Data, obtained through interviews with rural e-commerce practitioners in Indonesia; (2) Secondary Data, derived from literature reviews of relevant international and national Q1 journals; and (3) Policy Analysis, focusing on e-commerce regulations in Indonesia related to digital trade in rural areas.

2.3 Methodological Integration

The following table summarizes the primary methods used in five selected studies and how they were adapted in this research:

Table 1. This table illustrates how methods from previous studies were adapted in this research

Method	Original Study	Implementation in This Study
Qualitative Analysis	Chen & Zhang (2017)	Examining e-commerce legitimacy strategies in Indonesia
Game Theory	Kumar & Singh (2018)	Analyzing credit risk and consumer trust in rural e-commerce
Rural Case Study	Gomez & Patel (2019)	Case study of e-commerce platforms in Indonesian villages
Technology Adoption Analysis	Santoso & Wibowo (2021)	Assessing adoption factors in rural e-commerce
Security & Trust Analysis	Silalahi et al. (2022)	Evaluating security and trust issues in digital transactions

Each methodology has direct implications for the rural e-commerce ecosystem in Indonesia. This approach ensures that the study adopts proven strategies while adapting them to the local context.



Figure 1. Research methodology flowchart

This study follows a systematic research approach, beginning with Literature Analysis, which involves collecting and reviewing journals related to e-commerce, credit risk, and rural digital ecosystems. Next, the Selection of Relevant Studies is conducted by identifying five key studies that are particularly relevant to Indonesia's e-commerce context. A Comparative Analysis is then performed to examine legitimacy-building models, credit risk management, and rural e-commerce strategies. Based on these insights, Model Integration is carried out to develop a conceptual framework that incorporates legitimacy strategies, game theory, and digital infrastructure. To complement the theoretical analysis, Case Studies and Interviews are conducted by collecting primary data from rural e-commerce practitioners in Indonesia. The gathered data are then examined through a Data Analysis process using a

triangulated approach, which includes thematic analysis, game theory simulation, comparative study, SWOT analysis, and regulatory evaluation.

3. Results and Discussion

By integrating strategies from these three studies, Indonesia can create a more inclusive, technology-driven e-commerce ecosystem that aligns with local social and economic conditions.

Table 2. Comparative analysis of key e-commerce development strategies

Aspect	Alibaba (China)	Game Theory (E-Commerce Risk)	E-Commerce in Rural Areas (BRICS)
Main Focus	Legitimacy and platform development	Credit risk management	Rural e-commerce development
Key Strategies	Regulation, technology, escrow system	Digital credit scoring, transaction incentives	Digital infrastructure, MSME empowerment
Relevance to Indonesia	Regulation and user trust	Implementation of credit scoring for MSMEs	Digitalization of MSMEs and internet access in rural areas

Implications for Indonesia:

1. Regulatory Strengthening and User Trust: Learning from Alibaba, Indonesia must establish strong e-commerce regulations and partnerships between the government and platforms to enhance consumer trust.
2. Technology-Driven Credit Risk Management: Implementing digital credit scoring and transaction-based incentives can improve financial inclusion for MSMEs in the e-commerce sector.
3. Rural E-Commerce Expansion: Enhancing digital infrastructure, increasing internet accessibility, and providing digital training for MSMEs are critical steps in fostering e-commerce adoption in rural Indonesia.

Conclusions

The findings of this study highlight the critical need for robust regulatory frameworks to support the e-commerce ecosystem and enhance user trust in Indonesia, similar to the regulatory strategies implemented by Alibaba. A well-defined regulatory environment is essential to fostering a secure and sustainable digital marketplace. Furthermore, the utilization of technology to mitigate credit risk is crucial in ensuring financial inclusivity, particularly for micro, small, and medium enterprises (MSMEs). The application of game theory models in digital financial systems can improve risk assessment mechanisms, enabling broader participation in the e-commerce sector.

In addition, strengthening digital infrastructure in rural areas is a key factor in the success of e-commerce expansion. Enhanced internet accessibility and digital literacy programs for small business owners are imperative to ensuring equitable economic growth and reducing the urban-rural digital divide. By integrating insights from these three studies, Indonesia's e-commerce sector can evolve into a more inclusive, technology-driven ecosystem that aligns with the country's unique social and economic characteristics. This approach not

only fosters digital transformation but also ensures that local businesses can thrive in a rapidly changing digital landscape.

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Conflicts of Interest

The authors confirm that they have no financial or personal affiliations that could have influenced the research process or the outcomes reported in this paper.

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