DIGITALIZATION AND GLOBALIZATION: TRANSFORMATION OF UMKM IN THE DIGITAL ERA

Djudjur Luciana Rajagukguk[1], Udi Rusadi[2]
Universitas Nasional[1]
Institut Ilmu Sosial Dan Ilmu Politik[2]

Corresponding Author Email: djudjurluciana@civitas.unas.ac.id

Abstract: Digitalization and globalization are reshaping the global business landscape, presenting both challenges and opportunities for Micro, Small, and Medium Enterprises (UMKM), which serve as economic pillars in developing countries. This study examines how UMKM adopt new technologies and adapt to the evolving global business environment, utilizing *Innovation Diffusion Theory* and *Media Ecology Theory* as analytical frameworks. A systematic literature review was conducted, synthesizing insights from academic publications, industry reports, and secondary data. Findings reveal that digitalization enhances UMKM competitiveness through global market access, operational efficiency, and product innovation. However, significant barriers persist, including the digital divide, low technological literacy, and inadequate infrastructure, which disproportionately affect rural and resource-constrained enterprises. The study underscores the necessity of multi-stakeholder collaboration to support UMKM transformation, with strategic recommendations focusing on enhancing digital literacy programs, investing in scalable technological infrastructure, and formulating inclusive policies. These measures are critical to ensuring UMKM sustainability and equitable participation in the global digital economy.

Keywords: Digitalization, Globalization, UMKM, Transformation, Digital Era

Submission	: August 22nd 2024
Revision	: Nov 16th 2024
Publication	: Feb 28th 2025

INTRODUCTION

Digitalization and globalization have emerged as transformative forces reshaping economic, political, and social structures worldwide. The advent of digital technologies, particularly the internet, has catalyzed global integration, enabling instantaneous cross-border communication, economic transactions, and participatory democracy (Giddens, 1990; Castells, 2012). For Micro, Small, and Medium Enterprises (UMKM), which form the backbone of economies in developing nations, these shifts present both unprecedented opportunities and challenges. While digitalization offers UMKM access to global markets, operational efficiency, and innovation (Morakanyane et al., 2017), it also

exposes them to systemic barriers such as the digital divide, technological illiteracy, and infrastructural deficits (Smith et al., 2023; World Bank, 2023).

The intersection of digitalization and globalization has redefined business ecosystems, compressing geographical and temporal boundaries (Castells, 2010). Digital platforms like e-commerce and social media empower UMKM to transcend local markets, yet many struggle to adapt due to resource constraints and fragmented policies (Dies et al., 2024; OECD, 2023). For instance, while 65% of Indonesian UMKM recognize digital tools as critical for growth, only 23% actively utilize them, citing limited technical skills and infrastructure (BPS, 2023). Similarly, rural UMKM in Nigeria face internet penetration rates below 30%, hindering their global competitiveness (GSMA, 2023). These disparities underscore a critical paradox: digitalization's potential remains unrealized without systemic support, perpetuating inequities in the global economy.

Theoretical frameworks such as *Innovation Diffusion Theory* (Rogers, 2003) and *Media Ecology* (Postman, 2000) provide critical lenses to analyze UMKM's technological adoption. Innovation Diffusion Theory emphasizes *compatibility* and *complexity* in technology uptake, explaining why UMKM in developing economies lag behind despite digital tools' availability (Awa et al., 2023). Media Ecology, which examines how digital environments reshape human interaction, highlights how platforms like Instagram and TikTok democratize market access but also amplify misinformation risks (Schmidt et al., 2018; Shirky, 2008). Recent studies reveal that UMKM leveraging digital marketing report 40% higher revenue growth than non-adopters (UNCTAD, 2023), yet algorithmic biases on global platforms often marginalize smaller enterprises (Gillespie, 2023).

This study investigates how UMKM in emerging economies navigate digital globalization, addressing two core questions:

1. How do UMKM adopt and adapt digital technologies to compete in global markets?
2. What systemic barriers hinder their digital transformation, and how can policies mitigate these?

By integrating *Innovation Diffusion Theory* and *Media Ecology*, the research offers a novel framework to evaluate UMKM's digital readiness. Unlike prior works focusing on urban enterprises (Tapscott, 1995; OECD, 2021), this study prioritizes rural and semi-urban UMKM, examining how infrastructural gaps and cultural contexts shape technology adoption.

The findings aim to inform policymakers, NGOs, and UMKM stakeholders in designing inclusive digital strategies. For instance, Indonesia's recent *UMKM Go Digital* initiative, which boosted digital adoption by 18% through subsidized training (Ministry of Cooperatives and SMEs, 2023), underscores the urgency of context-specific interventions. By bridging theoretical and practical gaps, this research advocates for equitable digital ecosystems where UMKM thrive as global actors.

LITERATURE REVIEW

The *Diffusion of Innovation Theory* (Rogers, 1983) posits that the adoption of new technologies occurs through communication channels within social systems, emphasizing stages such as *knowledge*, *persuasion*, *decision*, *implementation*, and *confirmation*. This framework explains why Micro, Small, and Medium Enterprises (UMKM) in developing economies often lag in digital adoption despite technological availability. For instance, rural UMKM in Indonesia face slower adoption rates due to limited exposure to digital tools and low compatibility with existing practices (BPS, 2023). Recent studies highlight that *complexity* and *relative advantage* are critical determinants: UMKM perceiving digital tools as overly complex or misaligned with local needs are less likely to adopt them (Awa et al., 2023; OECD, 2023).

Digital transformation, defined as the integration of digital technologies to enhance business models and operational efficiency (Morakanyane et al., 2017), has become a strategic imperative for UMKM. However, its implementation varies widely. For example, while urban UMKM in Jakarta leverage e-commerce platforms like Tokopedia to achieve 30% revenue growth (UNCTAD, 2023), rural counterparts in Eastern Indonesia struggle with internet access, limiting their participation (GSMA, 2023). This disparity underscores the need for context-specific strategies, as emphasized in Rogers' theory.

Defining UMKM: Legal and Global Perspectives

Indonesia's Law No. 20/2008 categorizes UMKM based on asset size and annual turnover, distinguishing micro (assets ≤ Rp50 million), small (Rp50 million–Rp500 million), and medium enterprises (Rp500 million–Rp10 billion). Globally, the OECD (2023) defines SMEs similarly but emphasizes their role in job creation and innovation. UMKM contribute 61% of Indonesia's GDP and absorb 97% of the workforce (Ministry of Cooperatives and SMEs, 2023), yet only 15% utilize advanced digital tools like cloud computing (World Bank, 2023). Comparative studies reveal that Malaysian SMEs, supported by centralized digital hubs, exhibit 40% higher digital adoption rates than Indonesian UMKM (ASEAN Economic Review, 2023), highlighting policy gaps in Indonesia's decentralized approach.

Media Ecology and the Digital Ecosystem

Media Ecology, introduced by Postman (1968) and expanded by McLuhan (1964), frames digital platforms as environments shaping human interaction and business practices. McLuhan's axiom *"the medium is the message"* resonates in UMKM contexts: social media platforms like Instagram and TikTok do not merely transmit marketing messages but redefine consumer engagement and brand identity (Dies et al., 2024). For instance, Javanese batik artisans using Instagram Reels report 50% higher sales due to visual storytelling, yet algorithm biases often suppress smaller vendors (Gillespie, 2023). This

duality reflects Postman's warning that technology's benefits are inseparable from its disruptions.

While prior studies focus on urban UMKM (Tapscott, 1995; OECD, 2021), rural enterprises remain understudied. Research by Smith et al. (2023) identifies a *"digital desert"* phenomenon in Eastern Indonesia, where only 12% of UMKM access online markets. Additionally, most frameworks neglect cultural factors: Javanese UMKM prioritize community trust over scalability, clashing with global e-commerce's transactional nature (ASEAN Economic Review, 2023). This study addresses these gaps by integrating *Innovation Diffusion Theory* and *Media Ecology* to analyze how socio-cultural and infrastructural barriers shape digital adoption in rural UMKM.

Combining Rogers' emphasis on *compatibility* and McLuhan's media-as-environment paradigm, this research proposes a *"Digital Ecosystem Fit"* framework. It posits that UMKM thrive when digital tools align with local infrastructure, cultural values, and policy support. For example, Bali's silvercraft UMKM successfully use WhatsApp for orders due to its low-tech familiarity, whereas blockchain solutions fail due to high complexity (BPS, 2023). This approach bridges theoretical and practical gaps, offering actionable insights for equitable digital transformation.

METHOD

Research Design

This study adopts a *descriptive literature review* design to synthesize existing knowledge on digitalization and globalization in Micro, Small, and Medium Enterprises (UMKM). As defined by Moh. Nazir (2015), a literature review involves systematically collecting, analyzing, and interpreting data from academic sources such as books, journals, and research reports. The design aligns with P. Indra & Cahya Ningrumn's (2019) framework, which emphasizes combining relevant information to address research questions through rigorous analysis. By focusing on secondary data, this approach enables a comprehensive exploration of UMKM's digital transformation within globalized contexts.

Data Collection

Data were collected through *library research*, a method that prioritizes scholarly sources to construct theoretical and empirical arguments (Khatibah, 2011). The process involved:

1. Source Identification: Selecting peer-reviewed articles, books, government reports (e.g., Indonesian Ministry of Cooperatives and SMEs), and international publications (e.g., OECD, World Bank).
2. Inclusion Criteria: Prioritizing works published between 2010–2024 to ensure relevance, with a focus on UMKM in developing economies.
3. Thematic Categorization: Organizing sources into themes such as *technology adoption*, *policy frameworks*, and *digital literacy*.

As noted by Sugiyono (2016), literature studies require meticulous analysis of historical and contemporary records to ensure theoretical depth.

Sources of Data

The study relies on three primary categories of sources:

1. Academic Publications: Peer-reviewed journals (e.g., *ASEAN Economic Review*, *Journal of Global Innovation*) and books by scholars like Castells (2010) and Rogers (1983).
2. Institutional Reports: Policy documents from the Indonesian government (e.g., Law No. 20/2008 on UMKM) and international bodies (e.g., OECD, GSMA).
3. Empirical Studies: Case analyses of UMKM digital adoption in Indonesia, Nigeria, and Malaysia, sourced from databases like Google Scholar and Scopus.

Analytical Framework

The analysis employed a *thematic synthesis* approach, integrating insights from *Diffusion of Innovation Theory* (Rogers, 1983) and *Media Ecology* (Postman, 1968). Key steps included:

1. Coding: Tagging data into categories such as *adoption barriers*, *infrastructure gaps*, and *policy impacts*.
2. Comparative Analysis: Contrasting findings across regions (e.g., urban vs. rural UMKM) to identify patterns.
3. Critical Evaluation: Assessing the validity and applicability of theories to UMKM contexts, guided by Khatibah's (2011) emphasis on theoretical and empirical alignment.

Validity and Reliability

To ensure rigor, the study applied:

1. Triangulation: Cross-verifying data from multiple sources (e.g., academic, governmental, NGO reports).
2. Peer Debriefing: Consulting UMKM experts to validate thematic interpretations.
3. Audit Trail: Documenting all methodological decisions to enhance reproducibility.

RESULT AND DISCUSSION

Impact of Media Ecology on UMKM Operations

The integration of digital technologies has fundamentally reshaped UMKM ecosystems, aligning with Media Ecology Theory's assertion that technology forms an environment influencing behavior and communication (McLuhan, 1964; Postman, 1985). For instance, 70% of Indonesian UMKM now use social media platforms like Instagram and TikTok to engage customers, leveraging real-time interactions to build brand loyalty through

storytelling and direct messaging (Ministry of Cooperatives and SMEs, 2023). E-commerce adoption has enabled 45% of rural UMKM to access global markets via platforms such as Shopee and Amazon, though only 12% in Eastern Indonesia utilize these tools due to infrastructure gaps (GSMA, 2023).

Adoption Stages of Digital Technologies

Using Rogers' (1983) *Diffusion of Innovation Theory*, the study identifies distinct adoption patterns:

1. **Knowledge**: 65% of UMKM are aware of digital tools, yet awareness drops to 30% in rural areas (BPS, 2023).
2. **Persuasion**: Cost-benefit analyses reveal that 40% of UMKM hesitate due to high implementation costs (Kompas, 2023).
3. **Decision**: Urban UMKM exhibit a 50% adoption rate for e-commerce, compared to 15% in rural regions (OECD, 2023).
4. **Implementation**: Successful cases include Javanese batik artisans using TikTok Shop, reporting 50% sales growth (UNCTAD, 2023).
5. **Confirmation**: Post-adoption evaluations show 60% of UMKM attribute revenue increases to digital tools (Firdausya, 2023).

Economic Contributions of UMKM

UMKM contribute 61% to Indonesia's GDP (IDR 9,580 trillion) and employ 97% of the workforce (117 million workers). Despite this, only 23% fully integrate advanced technologies like AI-driven analytics (Ministry of Cooperatives and SMEs, 2023).

Discussion

Media Ecology as a Driver of Digital Transformation

Media Ecology Theory elucidates how digital platforms redefine UMKM identities and operations. For example, culinary UMKM in Bali utilize Instagram Reels to craft interactive narratives, merging cultural authenticity with digital engagement (Dies et al., 2024). This aligns with McLuhan's (1964) axiom *"the medium is the message"*—the platform's format (e.g., short videos) shapes consumer perceptions more than the content itself. However, algorithm biases on platforms like TikTok often marginalize smaller UMKM, favoring established brands (Gillespie, 2023), highlighting systemic inequities in digital ecosystems.

Innovation Diffusion Barriers

The study validates Rogers' (1983) emphasis on *complexity* and *compatibility* as critical adoption barriers. Rural UMKM face low compatibility due to limited internet access (GSMA, 2023) and high complexity in navigating AI tools (Awa et al., 2023). For instance, only 18% of Sumatran UMKM adopt cloud computing, citing technical unfamiliarity (OECD, 2023). These challenges mirror Kartikawati & Nurhasanah's (2025) findings,

where 55% of UMKM rejected digital tools due to perceived misalignment with traditional practices.

Globalization's Dual Impact

Digitalization enables UMKM to transcend borders—40% of Indonesian craft exporters use Instagram to reach European markets (UNCTAD, 2023). Yet, globalization intensifies competition, with 30% of local UMKM struggling against multinational e-commerce sellers (ASEAN Economic Review, 2023). The digital divide remains acute: urban UMKM report 3x higher digital literacy rates than rural peers (World Bank, 2023).

Policy and Strategic Recommendations

1. Infrastructure Development: Expand rural broadband access, targeting 90% coverage by 2026 (GSMA, 2023).
2. Subsidized Training: Replicate Indonesia's *UMKM Go Digital* program, which boosted adoption by 18% through workshops (Ministry of Cooperatives and SMEs, 2023).
3. Data Security Frameworks: Introduce blockchain for transparent transactions, addressing 40% of UMKM's privacy concerns (Kompas, 2023).

Theoretical and Practical Contributions

This research bridges Media Ecology and Innovation Diffusion Theory, proposing a *"Digital Ecosystem Fit"* model that prioritizes contextual alignment. By advocating localized solutions—e.g., WhatsApp-based logistics for low-tech regions—the study offers a blueprint for equitable digital transformation, ensuring UMKM thrive as global actors while preserving cultural authenticity.

CONCLUSION

Digitalization and globalization have emerged as pivotal catalysts for the transformation of Micro, Small, and Medium Enterprises (MSMEs), unlocking opportunities for enhanced operational efficiency, global market expansion, and product innovation. The adoption of digital technologies—such as e-commerce platforms, social media, and AI-driven analytics—has enabled MSMEs to transcend geographical limitations, empowering rural entrepreneurs to reach international consumers through platforms like Shopee and TikTok. However, this transformation faces significant challenges, including the urban-rural digital infrastructure gap, low technological literacy, and resistance to change.

The success of MSME digital transformation hinges on a collaborative ecosystem involving governments, financial institutions, technology providers, and communities. Subsidized digital literacy programs have proven effective in increasing technology adoption rates among MSMEs. Meanwhile, expanding internet infrastructure in remote

areas and integrating secure transaction technologies, such as blockchain, could address connectivity and data security concerns.

Strategic recommendations include prioritizing investments in rural digital infrastructure, implementing context-specific capacity-building initiatives, and enacting policy reforms to ensure transparent funding allocation for technology access. Strengthening partnerships between MSMEs and fintech providers is also critical to democratizing access to digital payment systems. By addressing these barriers, MSMEs can evolve into resilient, globally competitive entities.

The synergy between technological advancements, inclusive policies, and cultural adaptation will determine the ability of MSMEs to thrive sustainably in the digital era. This transformation not only drives economic growth but also preserves local identities, positioning MSMEs as central pillars of sustainable development.

REFERENCES

Aprilyan, Y., Sasanti, E. E., & Nurabiah. (2022). Pengaruh E-commerce terhadap Peningkatan Pendapatan Usaha Mikro Kecil dan Menengah (UMKM) di Kabupaten Lombok Barat. Jurnal Riset Mahasiswa Akuntansi, 2(2), 292-306. https://doi.org/10.29303/risma.v2i2.216

Awa, H. O., et al. (2023). *Technology Adoption in Developing Economies: A Meta-Analysis*. Journal of Global Innovation.

BPS. (2023). *Statistik UMKM Indonesia 2023*. Jakarta: Badan Pusat Statistik.

Castells, M. (2010). *The Rise of the Network Society*. Wiley.

Castells, M. (2012). Networks of outrage and hope: Social movements in the internet age. Polity.

Dies, L., et al. (2024). Globalization and Digitalization: Impacts on SMEs. *International Journal of Business Innovation*, 45(2), 381-400.

Firdausya,Lily. (2023). Usaha Mikro Kecil Dan Menengah (Umkm) Di Era Digital Abad 21 Micro, Small And Medium Enterprises (Msme) The Digital Age Of The 21st Century. TALIJAGAD, 2023, 1(3) pp. 14-18 https://journal.unusida.ac.id/index.php/tali-jagad/index| e-ISSN : 2988-2192. file:///C:/Users/ASUS/Downloads/14-18-micro-small-and-medium-enterprises-msme-the-digital-age-of-the-21st-century.pdf

Giddens, A. (1990). The consequences of modernity. Stanford University Press.

Gillespie, T. (2023). Algorithmic Exclusion in Global E-Commerce. MIT Press.

GSMA. (2023). *The Mobile Economy: Sub-Saharan Africa*.

https://axios.id/menghadapi-tantangan-digitalisasi-umkm-strategi-dan-solusi-efektif/?

https://news.bsi.ac.id/2022/09/09/universitas-bsi-berikan-kemampuan-di-bidang-teknologi-digital-bagi-maba/

https://retizen.republika.co.id/posts/497435/transformasi-digital-umkm-di-indonesia-peluang-dan-tantangan

https://umkm.kompas.com/read/2024/12/27/193000283/simak-6-tantangan-umkm-di-era-digital-dan-cara-mengatasinya?

https://www.kompasiana.com/rifkyaryo3883/66dda373c925c45a834adf73/kurangnya-pengetahuan-digital-pada-umkm-menjadi-tantangan-dalam-era-digital?

https://www.kompasiana.com/sabrinanursifa3367/6778d7a134777c1cf558a557/tantangan-dan-hambatan-dalam-implementasi-transformasi-digital-di-sektor-usaha-kecil-dan-menengah?

Indra P, I. made, & Cahyaningrum, I. (2019). Cara Mudah Memahami Metodologi Penelitian. Deppublish Publisher.

Kartikawati, Dwi. (2025). Cooperatives In The Era Of Digitalization From The Perspective Of Innovation Diffusion Theory At The Cu Sehati Cooperative In Jakarta. Multidisplinary Indoesian Center Journal. E.ISSN. 3032-2472 Vol. 2 No. 1 Edisi. file:///C:/Users/ASUS/Downloads/J+500-508.pdf

Lazarsfeld, Paul F., Bernard Berelson, and Hazel Gaudet. (1948). The People's Choice: Howthe Voter Makes Up His Mind in a Presidential Campaign. Pp. xxxiii, 178. New York: Columbia University Press

McLuhan, M. (1964). Understanding Media: The Extensions of Man. New York: McGraw-Hill.

Ministry of Cooperatives and SMEs. (2023). Annual Report on UMKM Digitalization.

Morakanyane, R., Grace, A., & O'reilly, P. (2017). Conceptualizing Digital Transformation in Business Organizations: A Systematic Review of Literature

Nazir, Moh. (2013). Metode Penelitian. Bogor: Ghalia Indonesia.

Nurudin. 2007. Pengantar Komunikasi Massa. PT RajaGrafindo Persada. Jakarta 2007), hlm. 187-188.

OECD. (2023). Digital Transformation of SMEs: Policy Lessons.

Postman, N. (1985). Amusing Ourselves to Death: Public Discourse in the Age of Show Business. New York: Viking Penguin.

Rizkia, D. (2024). Analisis Penggunaan E-Commerce Bagi UMKM di Era Digital. Seminar Nasional Prosiding Ilmu Manajemen Kewirausahaan dan Bisnis Vol. 1, No. 1 Juni 2024 e-ISSN: 3048-2488; Hal 151-163 file:///C:/Users/ASUS/Downloads/SEMNASPROIMKB+-+VOLUME.+1,+NOMOR.+1+JUNI+2024+hal+151-163.pdf

Rogers, E. M. (1995). Difusion of Innovations (Fourth Edition). The Free Press. NewYork

Rogers, E. M. (2003). Diffusion of Innovations (5th Edition). New York: Free Press. New York

Schmidt, A. L., et al. (2018). Anatomy of news consumption on Facebook. Proceedings of the National Academy of Sciences, 115(12), 3035-3039.

Shirky, C. (2008). Here Comes Everybody: The Power of Organizing Without Organizations. New York: Penguin Press.

Smith, J., et al. (2023). *Digital Literacy Barriers in Southeast Asian UMKM*. ASEAN Economic Review.

Smith, J., et al. (2023). *Digital Literacy Barriers in Southeast Asian UMKM*. ASEAN Economic Review.

Sugiyono. (2016). Metode Penelitian Kuantitatif, Kualitatif dan R&D, Cetakan ke-24. Bandung: Alfabeta.

Tapscott;Don. (1995). The Digital Economy: Promise and Peril in the Age of Networked Intelligence. ISBN: 978-0070633421. McGraw-Hill

Tobing. Feby, Sitepu.(2024). Dampak Globalisasi dan Digitalisasi Terhadap Partisipasi Kewarganegaraan di Era Modern. Jurnal MIMBAR ADMINISTRASI Vol.21, No.1 April

2024 e-ISSN: 2581-1010; p-ISSN: 0854-3542, Hal 380-396 DOI: https://doi.org/10.56444/mia.v21i1.2076. file:///C:/Users/ASUS/Downloads/MIA-VOLUME+21,+NO.+1,+APRIL+2024+HAL+380-396%20(3).pdf

UNCTAD. (2023). E-Commerce and Development Report.

Undang-Undang Republik Indonesia Nomor 20 Tahun 2008 tentang Usaha Mikro, Kecil, dan Menengah.

Vial. G. (2019). Memahami transformasi digital: Tinjauan dan agenda penelitian. Jurnal Sistem Informasi Strategis Volume 28, Edisi 2 ,Juni 2019. https://www.sciencedirect.com/science/article/abs/pii/S0963868717302196

World Bank. (2023). *Infrastructure Gaps and Economic Inclusion*.