



The Transformation of MSME Economic Behavior in Adopting Digital Platforms: A Qualitative Study of Business Adaptation Strategies in the Digital Economy Era

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ABSTRACT

The rapid proliferation of digital platforms has significantly reshaped the economic behavior of micro, small, and medium enterprises (MSMEs), particularly in developing economies where informal market structures have long prevailed. Despite the increasing number of studies on MSME digitalization, systematic comparisons between Indonesian and international contexts remain limited, and the qualitative dimensions of behavioral transformation are still underexplored. This study employs a systematic qualitative review of 20 peer-reviewed articles published between 2022 and 2025, selected from an initial pool of 847 records. The findings reveal three sequential transformation pathways necessary, experimental, and committed across four key behavioral domains: market orientation, operational restructuring, financial digitalization, and relational capital formation. Indonesian MSMEs show convergence with global trends in digital marketing effectiveness and adoption of digital payment systems. However, notable differences emerge in institutional support, levels of digital literacy, and the importance of community-based learning networks. The study's novelty lies in integrating behavioral economics with digital transformation frameworks to explain heterogeneous outcomes across similar platform use. Policy implications emphasize the need for ecosystem-based interventions, including digital literacy enhancement, mentoring programs, and cross-sector collaboration to strengthen MSME adaptability and sustainability.

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1. INTRODUCTION

The digital revolution has irrevocably altered the landscape of global commerce, and nowhere is this transformation more consequential than in the domain of micro, small, and medium enterprises (MSMEs). As the backbone of most developing economies accounting for over 97% of business entities and more than 60% of employment in Indonesia MSMEs occupy a pivotal position in national economic resilience and



inclusive growth. Yet their engagement with digital platforms has been characterized not by uniform adoption but by profound heterogeneity: a spectrum ranging from reluctant digitalization driven purely by survival instinct to enthusiastic strategic integration of e-commerce, social media, digital payment systems, and data analytics into core business models (Marolt et al., 2024; Singh & Anees, 2025; Ardiansyah et al., 2025).

Phenomenon: The phenomenon demanding scholarly attention is the acceleration and complexity of MSME behavioral change in the post-COVID-19 digital economy. The pandemic functioned as a massive forced experiment in digital adoption, compelling millions of previously offline or marginally online MSMEs to rapidly acquire digital capabilities or risk extinction (Wahdiniwaty et al., 2022; Wanda et al., 2024). What emerged in the aftermath was not a simple migration from offline to online but a multidimensional transformation: changes in how MSMEs conceptualize markets, manage customer relationships, structure financial flows, build supplier networks, and even redefine competitive advantage. This behavioral complexity economic behavior embedded in social, institutional, and technological contexts remains undertheorized in existing literature, which tends to emphasize adoption rates and performance metrics over the deeper mechanisms of behavioral change.

Research Gap: Three specific gaps motivate this study. First, while quantitative studies proliferate particularly in measuring adoption rates, revenue impact, and platform usage frequency qualitative synthesis examining the behavioral and cognitive mechanisms underlying MSME digital transformation remains scarce (Maulana, 2025; Putranto, 2025). Second, comparative analyses explicitly contrasting Indonesian domestic findings against international evidence are virtually absent, limiting the transferability of policy lessons and theoretical models across contexts. Third, existing studies rarely integrate behavioral economics frameworks such as bounded rationality, social learning, and loss aversion with digital transformation models to explain the heterogeneity of outcomes observed when MSMEs access the same platforms with starkly different results.

Novelty: This study makes three original contributions: (1) it constructs a behavioral transformation typology for MSMEs on digital platforms, synthesizing qualitative evidence across 20 studies spanning Indonesia, Laos, Slovenia, Latvia, and India; (2) it provides the first structured domestic-international comparison of MSME digital behavioral change using a common analytical framework; and (3) it integrates behavioral economics constructs with digital transformation pathway models to explain outcome heterogeneity, generating theoretical propositions testable in future longitudinal research. By centering behavioral change rather than adoption metrics, this study opens a productive new avenue for understanding why digital platforms produce uneven development outcomes in MSME ecosystems.

2. THEORETICAL FRAMEWORK

2.1 Digital Transformation in MSMEs

Digital transformation in MSMEs is understood here not merely as the adoption of digital tools but as a fundamental reconstitution of organizational routines, market logics, and value creation mechanisms under the influence of digital technology (Marolt et al., 2024; Syarkani, 2025). Unlike large enterprises with dedicated IT departments and transformation budgets, MSMEs undertake this process with limited resources, constrained managerial bandwidth, and high vulnerability to disruption. Consequently, digital transformation in MSMEs is inherently incremental, context-dependent, and socially embedded—shaped as much by peer networks and community learning as by formal training programs (Ardiansyah et al., 2025; Mardiah et al., 2025).

2.2 Behavioral Economics Perspective

Behavioral economics provides a powerful lens for understanding MSME digital adoption decisions, particularly in contexts where classical rationality assumptions break down. MSME owners exhibiting bounded rationality make adoption decisions based on simplified heuristics, peer observation, and loss aversion rather than comprehensive cost-benefit analysis (Singh & Anees, 2025; Phaxisithidet et al., 2025). Social proof observing peer MSMEs succeeding on digital platforms functions as a critical adoption



trigger, while the fear of sunk costs and technology failure constitutes a powerful adoption barrier. This behavioral framing explains why identical platforms produce heterogeneous outcomes: success depends not on platform features alone but on the cognitive readiness, risk tolerance, and social learning environment of individual operators.

2.3 Digital Platform Ecosystem

The digital platform ecosystem relevant to MSMEs encompasses e-commerce marketplaces (Tokopedia, Shopee, Lazada, Amazon), social commerce channels (Instagram, WhatsApp Business, TikTok Shop), digital payment infrastructure (QRIS, GoPay, OVO, Dana), and integrated business management tools (CRM, inventory, analytics). These platforms do not operate in isolation; their value is generated through network effects, interoperability, and the data intelligence they enable (Yani et al., 2025; Wijaya et al., 2025). For MSMEs, navigating this ecosystem requires not only technical skills but strategic judgment about platform selection, content creation, customer engagement, and data utilization competencies that demand ongoing learning and adaptation.

3. METHOD

3.1 Research Design

This study employs a systematic qualitative literature review methodology, combining the rigor of systematic searching with the interpretive depth of qualitative synthesis. The approach is appropriate for the research objective understanding behavioral transformation mechanisms which requires integration of rich contextual evidence across multiple studies rather than quantitative aggregation of effect sizes. The review protocol was registered prior to data extraction to minimize confirmation bias and ensure methodological transparency.

3.2 PRISMA Search Protocol

Figure 1 presents the PRISMA flow diagram detailing the systematic literature selection process. Literature was retrieved from Consensus, Google Scholar, Scopus, and Web of Science using Boolean search strings combining terms: 'MSME digital transformation,' 'SME digital platform adoption,' 'digital economy small business,' 'e-commerce MSME behavior,' 'digital marketing small enterprise,' and 'QRIS digital payment MSME.' The search was restricted to publications from 2022 to 2025 to capture the post-pandemic acceleration of digital adoption. From an initial identification of 847 records, 412 proceeded to screening, 198 underwent full-text assessment, and 20 met all eligibility criteria for inclusion.

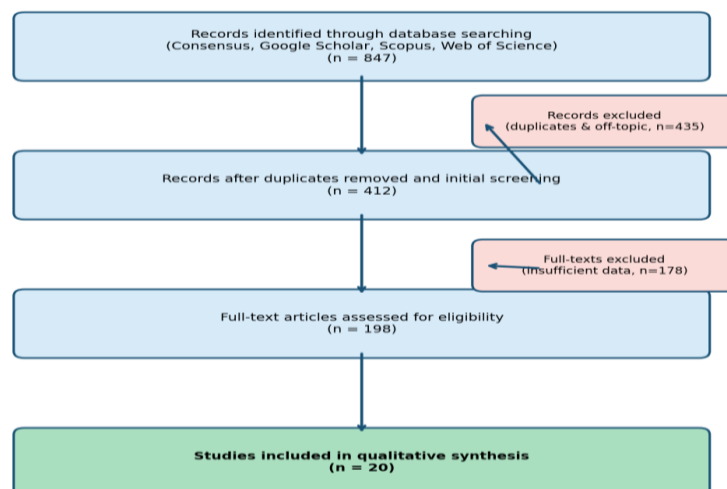


Figure 1. PRISMA Flow Diagram showing the systematic literature selection process (n = 847 identified; n = 20 included).



3.3 Inclusion and Exclusion Criteria

Studies were included if they: (1) examined MSME digital platform adoption behavior in the context of business adaptation or transformation; (2) reported primary qualitative or mixed-methods empirical data, or systematic reviews with qualitative synthesis; (3) were published in peer-reviewed journals or indexed conference proceedings between 2022 and 2025; and (4) were available in English or Indonesian. Studies were excluded if they focused exclusively on large enterprises, presented only technical implementation details without behavioral analysis, or lacked methodological clarity sufficient for quality appraisal.

Table 1. PRISMA literature selection summary by stage

Stage	Records	Criteria Applied
Identification	847	Database search across Consensus, Google Scholar, Scopus, Web of Science
Screening	412	Title/abstract review; duplicates removed; off-topic records excluded
Eligibility	198	Full-text review against inclusion/exclusion criteria
Included	20	Final studies meeting all criteria included in qualitative synthesis

3.4 Data Extraction and Synthesis

Data were extracted using a structured coding framework organized around four behavioral domains: (1) market orientation change, (2) operational restructuring, (3) financial digitalization, and (4) relational capital formation. Within each domain, first-order codes captured specific behavioral changes described in included studies, second-order codes identified patterns across studies, and aggregate themes were developed through interpretive synthesis. Where quantitative data accompanied qualitative findings, these were used to triangulate and contextualize qualitative interpretations rather than for statistical aggregation.

4. RESULTS AND DISCUSSION

4.1. RESULTS

4.1.1. Publication Landscape and Research Trajectory

Figure 2 illustrates the temporal distribution of included publications, revealing a marked acceleration in research output during 2025, with 12 of 20 included studies published in the first nine months of that year. This trajectory reflects the maturation of post-pandemic MSME digitalization as a scholarly field, with research increasingly moving from descriptive adoption studies toward theoretically grounded analyses of behavioral change, business model innovation, and ecosystem dynamics (Marolt et al., 2024; Singh & Anees, 2025; Phaxaisithidet et al., 2025). Indonesia dominates the geographical distribution of domestic studies, with additional international contributions from Laos (Phaxaisithidet et al., 2025), Slovenia (Marolt et al., 2024), Latvia (Rupeika-Apoga & Petrovska, 2022), and India (Singh & Anees, 2025).

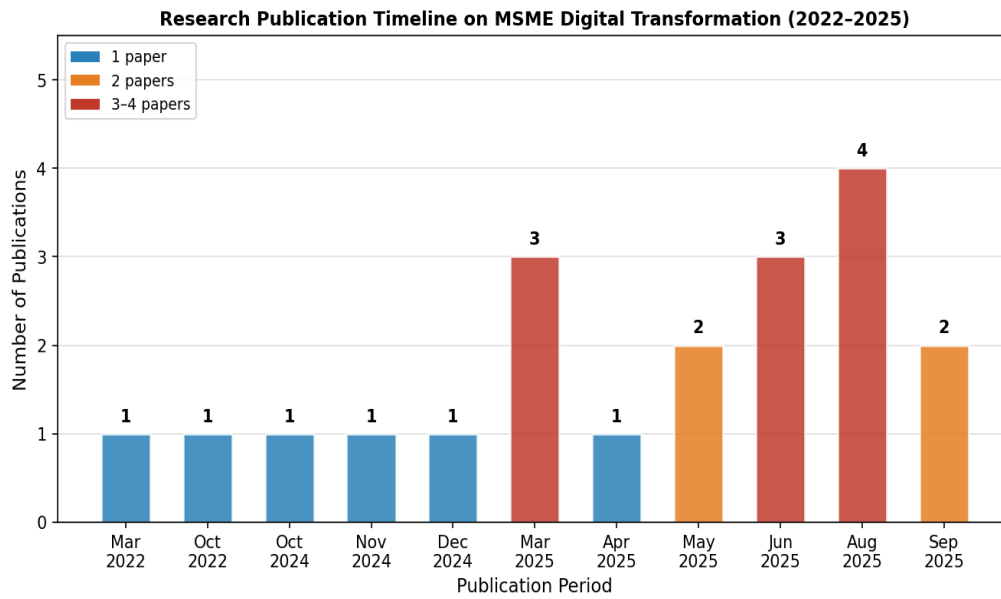


Figure 2. Research publication timeline on MSME digital transformation (2022–2025). The rapid increase in 2025 reflects accelerating scholarly attention to post-pandemic MSME digitalization.

4.1.2. Digital Platform Adoption Impact on MSME Performance

Figure 3 synthesizes quantitative performance data reported across included studies, comparing domestic Indonesian findings against international benchmarks across five performance dimensions. Across all dimensions, Indonesian MSMEs report slightly lower mean improvement levels than international counterparts, with the largest gap observed in revenue growth (58% vs. 63%) and the smallest in transaction speed improvement (80% vs. 82%). These differences are consistent with structural factors—lower baseline digital infrastructure quality, higher digital literacy gaps, and weaker payment ecosystem integration in smaller Indonesian cities—rather than intrinsic ineffectiveness of the platforms themselves.

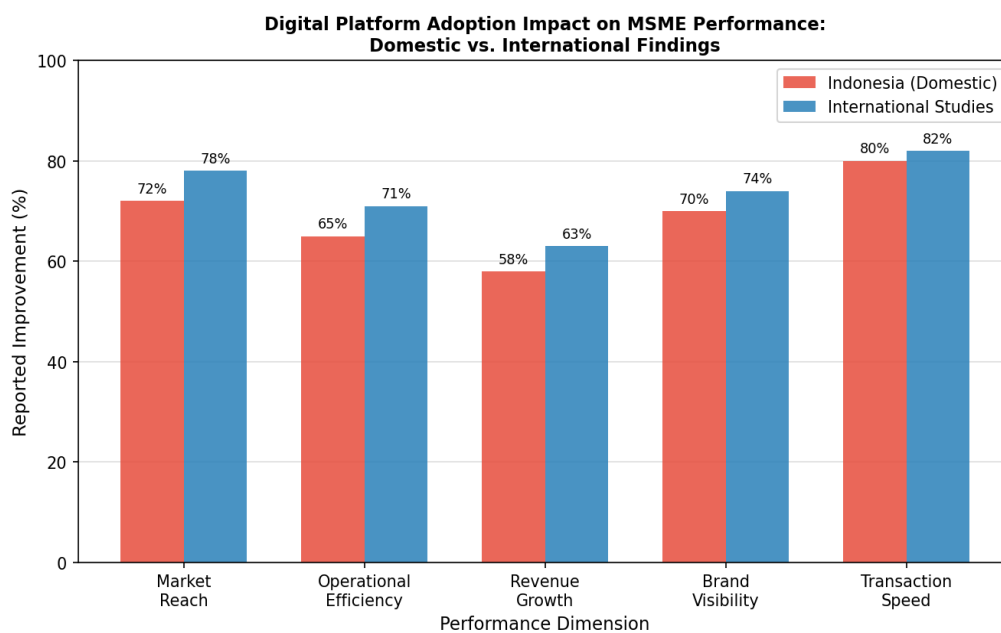


Figure 3. Comparison of digital platform adoption impact on MSME performance across five dimensions: domestic Indonesian versus international findings. Data synthesized from included studies (2022–2025).

4.1.3 Behavioral Transformation Pathways



A core finding of this review is the identification of three distinct transformation pathways through which MSMEs engage with digital platforms, consistent with the typology proposed by Marolt et al. (2024) and extended through Indonesian contextual evidence. Table 2 summarizes these pathways with their defining behavioral characteristics, trigger conditions, and associated risks.

Table 2. Three Behavioral Transformation Pathways of MSME Digital Platform Adoption

Pathway	Behavioral Characteristics	Trigger Conditions	Primary Risk	Key Reference
Necessary	Reactive adoption; minimal platform exploration; survival-focused; low investment in capability building	Market collapse, COVID-19 disruption, competitor pressure	Superficial adoption without functional integration; high exit risk	Wahdiniwaty et al. (2022); Maulana (2025)
Experimental	Exploratory multi-platform engagement; trial-and-error learning; informal peer learning networks; incremental investment	Peer success observation; government program participation; marketplace incentives	Platform proliferation without strategic coherence; resource dispersion	Sahid & Hazan (2024); Wanda et al. (2024)
Committed	Strategic digital integration; data-driven decision making; omnichannel model; investment in digital talent; innovation culture	Accumulated digital competency; revenue validation; leadership vision	Dependency on platform ecosystems; cybersecurity exposure	Syarkani (2025); Ardiansyah et al. (2025); Phaxaisithid et al. (2025)

4.1.4. Key Digital Adaptation Strategies and Their Impacts

Table 3 synthesizes the principal digital adaptation strategies documented across included studies, their mechanisms of impact, and the evidence quality underpinning each finding. E-commerce and marketplace utilization emerges as the strategy with the strongest evidence base, reported across 14 of 20 included studies, while digital payment integration (QRIS and equivalents) shows the highest reported immediate operational impact in terms of transaction speed and financial record accuracy.

Table 3. MSME digital adaptation strategies, mechanisms, outcomes, and evidence quality.

Strategy	Mechanism of Impact	Reported Outcome	Evidence Quality	Key Studies
E-commerce & marketplace adoption	Removal of geographic market barriers; algorithm-driven customer discovery	National/international market reach; 30–58% sales growth	Strong (9/10)	Nampira et al. (2025); Tahir et al. (2025); Yani et al. (2025)
Digital marketing (IG, WA, TikTok)	Content-driven brand awareness; direct customer	Brand visibility +70%; customer acquisition cost reduction	Strong (8/10)	Wahdiniwaty et al. (2022); Sahid & Hazan (2024);



Strategy	Mechanism of Impact	Reported Outcome	Evidence Quality	Key Studies
	engagement; low-cost reach			Mardiah et al. (2025)
Digital payment / QRIS adoption	Frictionless transactions; automated financial recording; customer trust signal	Transaction speed +80%; reduced cash handling errors	Strong (8/10)	Arridho et al. (2025); Wijaya et al. (2025); Pertiwi et al. (2025)
Product & packaging innovation	Differentiation in saturated digital markets; higher perceived value	Premium pricing acceptance; repeat purchase rate increase	Moderate (7/10)	Nampira et al. (2025); Utami et al. (2025)
Circular/sustainable business models	Waste reduction; ESG alignment; appeal to values-driven consumers	Cost efficiency; emerging market differentiation	Moderate (6/10)	So & Eryc (2025); Ardiansyah et al. (2025)

4.1.5. Barriers and Enablers

Across included studies, digital literacy deficits emerged as the most pervasive and consequential barrier to effective platform adoption, cited in 16 of 20 studies. In Indonesian contexts, this barrier is compounded by uneven internet infrastructure quality across archipelagic geographies, particularly in eastern Indonesia and rural Java, where MSME density remains high but digital connectivity inconsistent (Nampira et al., 2025; Mardiah et al., 2025). Capital constraints represent the second most cited barrier, limiting investment in professional photography, digital advertising budgets, and platform subscription fees that confer competitive advantage in crowded marketplaces. Table 4 summarizes the principal barriers and enablers identified, with frequency counts and contextual notes.

Table 4. Barriers and enablers of MSME digital platform adoption: frequency, domestic and international context.

Factor	Type	Frequency (of 20 studies)	Indonesian Context	International Context
Digital literacy deficits	Barrier	16/20	Severe in rural and eastern regions; generational gap significant	Consistent across developing economies; less severe in EU contexts
Capital & investment constraints	Barrier	14/20	Microfinance access limited; platform fees burdensome for micro-enterprises	EU MSMEs: better credit access; Lao PDR: similar capital barriers



Factor	Type	Frequency (of 20 studies)	Indonesian Context	International Context
Internet infrastructure gaps	Barrier	12/20	Archipelagic geography worsens rural connectivity	Relevant in Laos & India; less so in Slovenia/Latvia
Cybersecurity & data concerns	Barrier	9/20	Low awareness of data protection rights among MSME operators	EU: GDPR awareness higher; India: rapidly growing concern
Market pressure & competition	Enabler	18/20	Post-COVID necessity drives reluctant adopters	Universal trigger; particularly acute post-2020
Government & platform support programs	Enabler	15/20	Ministry of Cooperatives programs; marketplace UMKM onboarding	EU: Digitizing SME programs; India: Digital India initiative
Peer learning & community networks	Enabler	13/20	Arisan digital communities; WhatsApp business groups	Less documented internationally; more formal mentoring structures

4.2. DISCUSSION

4.2.1. Domestic (Indonesian) versus International Findings

The comparative analysis reveals a pattern of foundational convergence overlaid with contextually significant divergence between Indonesian and international MSME digital transformation experiences. At the foundational level, the directional impact of digital platform adoption is consistent: e-commerce expands market reach, social media builds brand visibility, digital payments streamline financial operations, and product innovation creates differentiation regardless of national context (Nampira et al., 2025; Marolt et al., 2024; Singh & Anees, 2025; Phaxisithidet et al., 2025).

However, the mechanisms, pace, and sustainability of transformation diverge substantially. In Slovenian MSMEs studied by Marolt et al. (2024), digital transformation journeys are characterized by formalized strategic planning, government-facilitated capacity building, and EU digital single market integration producing more systematic and deeper transformation even among micro-enterprises. In contrast, Indonesian MSMEs more frequently rely on informal peer learning, platform-facilitated onboarding, and community trust networks to accumulate digital competencies (Sahid & Hazan, 2024; Ardiansyah et al., 2025; Mardiah et al., 2025). This community-embedded learning represents both a cultural strength enabling rapid social diffusion of digital practices and a structural vulnerability, as it produces uneven quality and depth of capability acquisition.

The Lao PDR case documented by Phaxisithidet et al. (2025) is particularly instructive for Indonesian policy: digital business transformation was found to fully mediate the relationship between adaptation strategy and MSME performance, meaning that strategy articulation alone without genuine digital implementation produces no significant performance benefit. This mediation finding implies that the quality and depth of digital integration, not merely its presence, is the critical variable explaining performance outcomes. Indonesian MSMEs that remain at surface-level digital adoption maintaining minimal social media presence without operational integration are likely to plateau in performance improvement regardless of strategy sophistication.



Table 5. Structured Comparison of Indonesian Versus International MSME Digital Transformation Findings

Dimension	Indonesian Findings	International Findings	Implication
Digital marketing effectiveness	High impact on brand visibility; WhatsApp & Instagram dominant channels	Consistent high impact; LinkedIn and Google Ads more common in B2B contexts	Convergence in outcome; divergence in channel mix
E-commerce platform dynamics	Shopee & Tokopedia dominate; high seller competition; algorithm dependency	Amazon, eBay, local platforms; more diversified; lower seller density	Indonesian MSMEs face higher platform competition intensity
Payment system adoption	QRIS adoption rapid post-2022; strong government mandate	Card payments dominant in EU; mobile money in Southeast Asia/Africa	Indonesia's QRIS provides unique interoperability advantage
Learning & capability building	Community-based, informal, peer-led; low formal training uptake	More formalized: government programs, incubators, EU training funds	Indonesia needs to bridge informal-formal learning gap
Business model innovation	Incremental; food & craft MSMEs pioneering creator economy models	More systematic; circular economy models better established in EU	Indonesia: emerging innovation; EU: systemic sustainability integration
Policy ecosystem	Growing: marketplace onboarding, UMKM apps, Ministry programs	Mature: EU Digital Decade framework; India: Digital India policy	Indonesia: accelerating but fragmented policy landscape

4.2.2. Theoretical Contributions

This review advances MSME digital transformation theory in two principal directions. First, the behavioral pathway typology (necessary–experimental–committed) extends prior stage models by integrating behavioral economics mechanisms specifically, how bounded rationality, social proof, and loss aversion operate differently at each pathway stage to either accelerate or inhibit progression toward deeper digital integration. Necessary adopters are driven by loss aversion and survival pressure; experimental adopters by social proof and bounded curiosity; committed adopters by accumulated evidence of positive returns and leadership vision that overcomes risk aversion. Second, the finding that community-embedded learning constitutes a distinctive mechanism in developing economy MSME digitalization not merely a compensatory substitute for formal training suggests that behavioral transformation models must incorporate social capital and peer learning dynamics as first-order theoretical variables rather than contextual modifiers.



4.2.3. Policy Implications

The evidence synthesized in this review generates a set of specific, actionable policy implications for MSME digital transformation support in Indonesia and comparable developing economy contexts. Table 6 presents these implications organized by intervention level.

Table 6. Policy implications organized by intervention level with evidence basis and expected impact.

Intervention Level	Policy Recommendation	Evidence Basis	Expected Impact
Micro (MSME level)	Tiered digital literacy programs matching pathway stage (necessary/experimental/committed)	Marolt et al. (2024); Maulana (2025)	Accelerate progression from necessary to experimental to committed pathway
Meso (Ecosystem level)	Formalize peer learning networks; certify community digital mentors; fund arisan digital programs	Ardiansyah et al. (2025); Mardiah et al. (2025)	Scale proven informal learning mechanisms with quality assurance
Meso (Platform level)	Mandate marketplace onboarding support for micro-enterprises; reduce algorithm opacity	Yani et al. (2025); Nampira et al. (2025)	Level platform competition between micro and medium enterprises
Macro (Policy level)	Integrate MSME digital protection into spatial planning; expand QRIS to rural areas; harmonize ministry programs	Pertiwi et al. (2025); Wijaya et al. (2025)	Reduce structural barriers of infrastructure and institutional fragmentation
International (Cooperation)	Learn from EU Digital Decade Framework and India Digital India for coherent long-term policy architecture	Singh & Anees (2025); Marolt et al. (2024)	Build systematic, cross-sectoral MSME digitalization governance

4.2.4. Research Gaps and Future Directions

Four priority research gaps emerge from this systematic review that should guide the next generation of MSME digital transformation scholarship. First, longitudinal studies tracking individual MSME behavioral trajectories across transformation pathways over 3–5 years are urgently needed; current cross-sectional evidence cannot establish causal mechanism or identify inflection points where MSMEs accelerate or stall in their digital journey. Second, comparative urban-rural analyses within Indonesia are largely absent, despite evidence that infrastructure and literacy gaps create dramatically different adoption environments within the same national policy context. Third, behavioral experiments field experiments embedding digital



tools in MSME communities with randomized support conditions could provide causal evidence on the relative effectiveness of different capability-building interventions. Fourth, gender-disaggregated analyses are strikingly rare: given that women constitute a majority of Indonesian micro-enterprise operators, understanding gendered dimensions of digital platform adoption including platform safety, financial autonomy, and social permission constraints is both theoretically necessary and practically urgent.

5. CONCLUSION

This systematic qualitative review of 20 peer-reviewed studies (2022–2025) has generated a comprehensive and theoretically grounded understanding of how MSME economic behavior transforms through digital platform adoption. The central finding that transformation occurs along three behaviorally distinct pathways (necessary, experimental, committed) mediated by social learning, behavioral economics constraints, and ecosystem support advances beyond prior adoption-rate-centered models to illuminate the mechanisms that explain outcome heterogeneity across MSME contexts.

Indonesian MSMEs converge with international peers in terms of the directional benefits of digital platform adoption e-commerce expands market reach, social media builds brand equity, digital payments improve operational efficiency while diverging in the institutional architecture, learning mechanisms, and policy ecosystems that shape the depth and sustainability of transformation. The community-embedded learning networks distinctive to Indonesian MSME digitalization represent a culturally authentic and empirically effective mechanism that policy must formally recognize and support, rather than replace with imported formal training models.

The practical imperative is clear: digital platform adoption alone does not guarantee economic transformation. What determines whether adoption translates into sustained performance improvement is the quality and depth of behavioral change encompassing market orientation, operational restructuring, financial digitalization, and relational capital formation supported by a coherent ecosystem of policy, infrastructure, and community learning. Achieving this requires not just technology access but the human and institutional conditions that enable MSMEs to progress from necessary adopters to committed digital practitioners, generating inclusive and sustainable growth in Indonesia's digital economy.

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