

Optimizing Technology to Improve Management Efficiency in the Creative Economy

Faizin Rahmadi Akbar¹, Mukhid²

^{1,2}Swadaya Institute of Business and Communication, Indonesia

E-mail: faizinakbar168@gmail.com

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Abstract

Digital transformation has become a central pillar in building a sustainable creative economy, yet most existing studies examine technology adoption in small and medium enterprises (SMEs) generically, without disaggregating how specific technologies translate into management efficiency across creative sub-sectors such as fashion, culinary, and design. This article addresses that gap by examining how the optimization of information and communication technology can improve managerial efficiency and business sustainability within Indonesia's creative economy. Using a qualitative descriptive design combining systematic literature review, document analysis, and multi-sector case illustration, data were drawn from thirty peer-reviewed sources published mainly between 2021 and 2026, triangulated with policy reports. The novelty of this study lies in a proposed Digital Management Efficiency in the Creative Economy (DMECE) framework that links specific technologies, including enterprise resource planning, customer relationship management, e-commerce platforms, cloud computing, big data analytics, and artificial intelligence, to concrete efficiency outcomes by sub-sector. Findings show that technology optimization accelerates production, expands market reach, and strengthens competitiveness, while infrastructure limitations, low digital literacy, and organizational resistance remain persistent barriers. The study recommends participatory, collaboration-based management strategies supported by policy interventions, offering practical guidance for creative economy managers, policymakers, and future researchers seeking to strengthen digital managerial capacity.

Keywords: digital transformation; management efficiency; creative economy; technology optimization; SME digitalization

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Corresponding Author:

Faizin Rahmadi Akbar
faizinakbar168@gmail.com

1. Introduction

Digital technology has fundamentally reshaped the global economic landscape, and the creative economy, a sector built on creativity, intellectual property, and innovation, is no exception. Recent evidence confirms that information technology functions as a catalyst for both innovation and sustainability within creative industries, reshaping how value is created, protected, and shared (Khan & Atmani, 2025). In the current digital era, creative economy actors no longer rely solely on artistic ideas; they depend heavily on technology to create, market, and distribute products and services. Digital transformation is therefore not a matter of choice but a necessity for creative economy actors who wish to remain relevant and competitive in an increasingly interconnected global market (Ortiz-Ospino et al., 2025).

Indonesia's creative economy has grown rapidly over the past decade, contributing significantly to Gross Domestic Product and generating substantial employment across fashion, culinary, design, film, and digital media sub-sectors. However, this growth has not been fully optimal because structural and managerial barriers persist, particularly regarding technology utilization. Many micro, small, and medium enterprises still face constraints in accessing efficient and affordable technology, which limits their capacity to scale operations and compete in wider markets (Triwahyono et al., 2023; Yani et al., 2025).

Management within the creative economy plays a decisive role in determining the success of digital transformation. Data-driven decision-making, strategic planning, and the use of integrated management information systems are key to improving efficiency. In this context, technology functions not merely as a supporting tool but as a catalyst that reshapes managerial mindsets and organizational workflows (Faiz et al., 2024). Enterprise resource planning and customer relationship management systems, for instance, allow creative businesses to manage inventory, finance, and customer relationships in a more integrated and responsive manner, while cloud-based platforms reduce the fixed costs traditionally associated with information technology infrastructure (Tang & Yang, 2023).

Beyond operational tools, digitalization opens opportunities for cross-sector collaboration that were previously difficult to achieve. Creative economy actors can now build partnerships with government agencies, universities, and technology communities to strengthen capacity and expand economic impact. Such collaboration requires a management style that is open, inclusive, and network-based, moving away from the traditionally hierarchical and siloed structures common among smaller creative enterprises (Pererva & Mazorenko, 2025). Business intelligence, organizational learning, and customer value anticipation have similarly been shown to spur SME performance in creative economy clusters, suggesting that technology adoption alone is insufficient without complementary managerial capabilities (Anjaningrum et al., 2024).

Nevertheless, digital transformation also introduces new challenges, including the need for improved digital literacy, stronger data security, and better protection of intellectual property, an asset that is central to the creative economy's value proposition. Management strategies must be capable of addressing these challenges through adaptive and sustainable approaches. The success of digital transformation depends not only on technology adoption itself but also on the readiness of human resources and the flexibility of organizational structures to absorb new working patterns (Seppänen et al., 2025).

Despite the growing body of literature on digital technology and SME performance, a specific research gap remains. Much of the existing empirical evidence, including studies on supply chain management and business performance (Ayu et al., 2024), digital marketing effectiveness (Sharabati et al., 2024), and enterprise digital management under cloud computing (Tang & Yang, 2023), examines SMEs and enterprises in general or focuses on a single national context such as China (Zhao et al., 2024) or Pakistan-based manufacturing settings (ul Haq et al., 2025). Relatively few studies disaggregate how particular technologies generate efficiency outcomes across distinct creative sub-sectors, such as fashion, culinary, and graphic design, or systematically connect those outcomes to specific managerial mechanisms within a developing-country creative economy context such as Indonesia's. Systematic reviews on technology trends in the creative and cultural industries (Ortiz-Ospino et al., 2025) and on digital innovation in circular creative business models (Astuty, 2026)

confirm that the field remains fragmented, with findings scattered across disciplines including tourism, fashion, media, and design, and rarely synthesized into an integrative managerial framework.

This study addresses that gap by offering two forms of novelty. First, it synthesizes recent empirical evidence published largely between 2021 and 2026 into a Digital Management Efficiency in the Creative Economy (DMECE) framework, which explicitly maps specific technology categories, including enterprise resource planning, customer relationship management, e-commerce, virtual and augmented reality, cloud-based inventory systems, big data analytics, and artificial intelligence, to concrete managerial efficiency mechanisms such as production speed, market expansion, customer responsiveness, and creative labor management, disaggregated by creative sub-sector. Second, it cross-validates findings from the Indonesian creative economy context against recent international evidence, including studies from China's Wanghong livestreaming industry (Guo & Rungsisawat, 2025), Chinese graphic design agencies (Fan & Wardi, 2025), and multimedia production settings (Uddin et al., 2026), thereby situating local practice within a broader global pattern of technology-enabled managerial transformation. This comparative synthesis distinguishes the present study from earlier descriptive accounts of Indonesia's creative economy, which tend to treat technology adoption as a uniform phenomenon rather than a sub-sector-specific process shaped by distinct operational logics and creative labor structures.

Theoretically, this study draws on two complementary lenses that have dominated recent digital adoption research. The Technology-Organization-Environment framework explains adoption decisions through technological readiness, organizational capacity, and environmental pressure, and has been used to explain digital technology adoption among SMEs in developing economies (Faiz et al., 2024) as well as artificial intelligence adoption under resource-constrained conditions (ul Haq et al., 2025). The Resource-Based View, meanwhile, frames technology and managerial capability as strategic resources that generate sustained competitive advantage when they are valuable, rare, and difficult to imitate. Applied to the creative economy, these two lenses suggest that technology alone rarely produces efficiency gains; rather, efficiency emerges from the interaction between technological infrastructure, organizational readiness, and the distinctive creative capabilities, such as design sensibility, storytelling, and cultural knowledge, that differentiate creative enterprises from conventional manufacturing or service firms. This theoretical positioning is consistent with evidence that digital leadership shapes individual creativity and employee performance through generational and cultural mediators (Öngel et al., 2023) and that business intelligence and network learning, rather than technology adoption in isolation, are what ultimately spur SME performance in creative clusters (Anjaningrum et al., 2024).

The gap identified above is compounded by a methodological limitation in much of the existing literature: many prior Indonesian studies on creative economy digitalization, including the earlier version of this article, rely on general descriptive narratives without an explicit conceptual model connecting technology categories to measurable efficiency dimensions, and without cross-referencing recent international empirical findings published after 2021. Studies such as those examining supply chain management and creative economy business performance (Ayu et al., 2024), or the moderating role of cooperation and job satisfaction in technology-mediated creative labor settings (Guo & Rungsisawat, 2025), each capture only a fragment of the broader picture. Systematic literature reviews on technology trends in the creative and cultural industries (Ortiz-Ospino et al., 2025) explicitly call for more integrative frameworks that connect specific digital tools to sub-sector-level managerial outcomes, a call that this study directly answers.

The research objective is therefore to examine how management strategies can optimize technology to support efficiency and sustainability in the creative economy, with particular attention to identifying key technologies, effective managerial approaches, and the constraints and opportunities faced by Indonesian creative economy actors. By exploring the dynamics between management and technology utilization in the creative economy, this article aims to contribute to both academic understanding and business practice, strengthening national competitiveness in the digital era. It is intended to serve as a reference for

policymakers, industry practitioners, and academics in formulating strategies for sustainable creative economy development, while also providing a conceptual foundation, the DMECE framework, that future empirical studies can test and refine across different creative sub-sectors and institutional contexts. The remainder of this article proceeds as follows: the methods section outlines the qualitative descriptive design, data sources, and analytical procedure, including the reference synthesis and sub-sector case illustrations; the results and discussion section presents the DMECE framework findings across technology categories and creative sub-sectors, supported by a comparative summary table; and the conclusion synthesizes the managerial and policy implications together with directions for future research

2. Method

This study employs a qualitative descriptive design combining systematic literature synthesis, document analysis, and illustrative multi-sector case description. This design is appropriate for the research objective because it allows the identification of recurring patterns across a heterogeneous body of recent empirical studies while retaining the contextual richness needed to interpret how technology-driven efficiency gains manifest differently across creative sub-sectors.

Data were collected from thirty peer-reviewed journal articles, most published between 2021 and 2026, supplemented by institutional reports from Indonesia's creative economy agency, the OECD, and UNESCO. Sources were identified through a structured search of Google Scholar and Scopus-indexed databases using combinations of the keywords "digital technology," "management efficiency," "creative economy," "SME digitalization," and "technology adoption," restricted to sources with an active, resolvable digital object identifier. Articles were screened for topical relevance to technology, management, and business efficiency in creative or SME contexts, then categorized into four analytical themes: technology categories and applications, managerial strategies, organizational barriers, and efficiency outcomes.

To ground the thematic synthesis in operational practice, the study incorporates illustrative case descriptions from three creative sub-sectors, fashion, culinary, and design or animation, drawn from the reviewed literature and secondary industry reports. These sub-sector illustrations are not primary field data but serve to concretize how the technologies and mechanisms identified in the literature synthesis operate in practice within an Indonesian creative economy setting.

Analytical validity was supported through source triangulation, cross-checking findings from academic literature against institutional reports and across studies from different national contexts, and through cross-referencing recurring themes across independent sources before they were incorporated into the proposed DMECE framework. Figure 1 summarizes the overall research procedure, from source identification and screening through thematic synthesis to framework development.

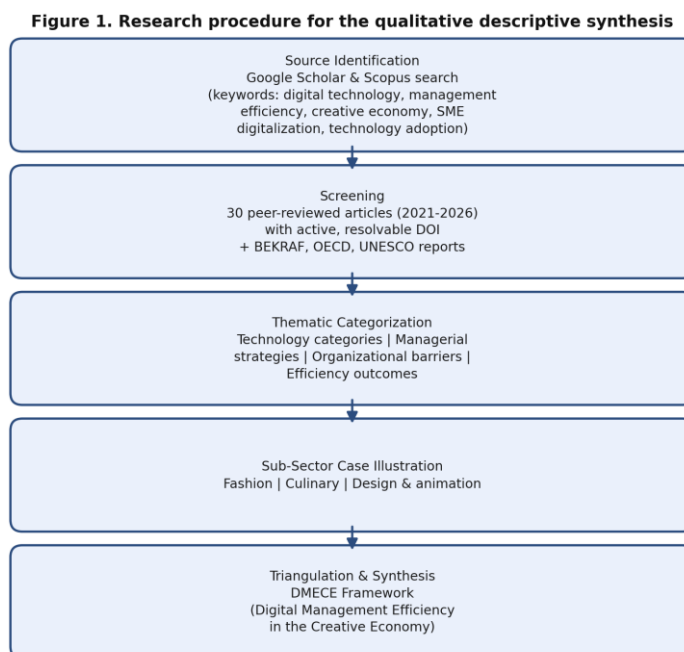


Figure 1. Research procedure for the qualitative descriptive synthesis

3. Results and Discussion

The synthesis of thirty recent sources confirms that digital technology optimization generates measurable improvements in the management efficiency of creative economy actors, while also revealing that these improvements are highly sub-sector-specific rather than uniform. Table 1 summarizes the mapping between technology categories, the creative sub-sectors in which they are most prominent, and the primary efficiency mechanism reported in the literature. This mapping constitutes the empirical core of the proposed Digital Management Efficiency in the Creative Economy (DMECE) framework.

Technology Category	Primary Creative Sub-Sector	Efficiency Mechanism	Key Source(s)
Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), e-commerce platforms	Cross-sector (fashion, culinary, design)	Integrated inventory, finance & customer data; reduced administrative overhead	Tang & Yang (2023); Faiz et al. (2024)
Virtual fitting room & augmented reality	Fashion	Reduced sample-production cost; interactive customer experience	Fan & Wardi (2025)
Cloud-based inventory / stock management	Fashion, culinary	Avoids overstock/stockout; lower fixed IT costs	Tang & Yang (2023); Kallmuenzer et al. (2024)
Digital ordering & delivery platforms	Culinary	Faster service delivery; real-time customer-preference analysis	Sharabati et al. (2024); Naik & Nuzula (2026)

Cloud-based creative software & AI editing/rendering tools	Design, animation, media	Faster production turnaround; access to global distribution	Uddin et al. (2026); Le Dinh et al. (2025)
Livestreaming & content platforms with technology integration	Digital media / creator economy	Reshapes creative-labor management and team power dynamics	Guo & Rungsisawat (2025)
Business intelligence & big data analytics	Cross-sector	Data-driven strategy; improved responsiveness to market trends	Anjaningrum et al. (2024); Adesina et al. (2024)
Artificial intelligence (AI) adoption	Cross-sector (context-dependent)	Performance gains mediated by leadership readiness and integration depth	ul Haq et al. (2025); Harfizar et al. (2024)

Table 1. Mapping of technology categories to creative sub-sectors and efficiency mechanisms (DMECE framework)

Enterprise resource planning, customer relationship management, and e-commerce platforms emerged as foundational technologies across nearly all creative sub-sectors. These systems allow creative enterprises to manage inventory, finances, and customer relationships in an integrated manner, reducing administrative overhead and enabling faster decision-making. Consistent with evidence on enterprise digital management under cloud computing and big data (Tang & Yang, 2023), the shift toward cloud-based systems reduces the fixed costs traditionally associated with information technology infrastructure, an advantage that is particularly significant for the small and medium-sized enterprises that dominate Indonesia's creative economy. This finding aligns with determinants-of-adoption research showing that adoption costs, digital culture, and top management support remain the most influential predictors of technology adoption among SMEs (Faiz et al., 2024).

In the fashion sub-sector, virtual fitting rooms and augmented reality applications provide interactive customer experiences while reducing the cost of producing physical samples, and cloud-based stock management systems help producers avoid both overstocking and stockouts. These findings resonate with broader evidence that digital design tools measurably improve organizational performance in creative agencies, as demonstrated among Chinese graphic design firms where digital tool adoption was associated with faster iteration cycles and improved client satisfaction (Fan & Wardi, 2025). The parallel between fashion technology adoption in Indonesia and design-tool adoption in China suggests that the underlying mechanism, reducing the cost and time of iterative creative production, operates similarly across creative sub-sectors and national contexts, lending support to the cross-sectoral applicability of the DMECE framework.

In the culinary sub-sector, digital ordering applications and delivery platforms have transformed traditional business models into digitally mediated ones. This shift accelerates service delivery and enables real-time analysis of customer preferences, informing managerial decisions on menu development and pricing. This pattern mirrors findings from the broader SME digital marketing literature, where digital marketing tools were found to significantly improve SME performance across analytical, operational, and market-responsiveness dimensions (Sharabati et al., 2024). It also echoes evidence that information technology use enhances customer satisfaction among SMEs in creative industries more broadly, particularly through faster feedback loops between customer behavior data and managerial response (Naik & Nuzula, 2026).

The design, animation, and digital media sub-sectors show particularly strong productivity gains through cloud-based software and artificial intelligence tools that support editing, rendering, and global content distribution. Evidence from multimedia production settings indicates that structured technology management practices directly improve production efficiency, reducing turnaround time and enabling smaller studios to compete for international commissions (Uddin et al., 2026). Similarly, research on the Wanghong livestreaming and

content-creation industry shows that technological integration reshapes power dynamics and labor management within creative teams, with cooperation and job satisfaction moderating the relationship between technology adoption and creative output (Guo & Rungtornsupavan, 2025). This suggests that technology optimization in media-intensive creative sub-sectors cannot be evaluated purely on efficiency metrics; managerial attention to workforce well-being and collaborative culture is equally decisive.

Despite these gains, the synthesis confirms that not all creative economy actors can access or fully utilize digital technology. High initial investment costs, limited technology training, and uneven infrastructure distribution remain significant barriers, consistent with determinants-of-digitalization research showing that adoption costs and organizational readiness are among the strongest predictors of successful digital transformation among SMEs (Kallmuenzer et al., 2024). Systematic reviews of technology adoption in developing-country creative and manufacturing industries similarly find that firms in creative sectors face distinct barriers compared to manufacturing firms, including weaker access to structured financing and technical support (Seclen-Luna et al., 2022). Policy intervention supporting technology subsidies and digital training is therefore essential to prevent digitalization from deepening rather than narrowing competitive gaps between larger and smaller creative enterprises. Broader evidence on organizational efficiency also shows that structured technology adoption strategies, rather than ad hoc digitalization, are what translate into measurable productivity gains (Palad, 2023), while sustained digital transformation additionally depends on entrepreneurial orientation moderating how consistently SMEs convert technology adoption into value creation (Vrontis et al., 2022) and on managers treating operational efficiency as an ongoing transformation process rather than a one-time technology rollout (Trofimova, 2025).

Effective management strategies for optimizing technology include the involvement of stakeholders in decision-making, the establishment of internal digital transformation teams, and the integration of a technology vision into long-term business planning. These strategies enable sustainable organizational change rather than one-off technology adoption. Business intelligence, organizational learning, and network learning have been shown to spur SME performance in the creative economy sector of East Java, Indonesia, reinforcing that data-driven managerial capability, not technology alone, is what ultimately drives performance improvement (Anjaningrum et al., 2024). This is consistent with findings that digital transformation capability, encompassing not just tools but organizational capacity to absorb them, significantly influences operational performance across firms (Yu et al., 2022).

Data-driven management has emerged as a core element of the digital era. Collecting and analyzing data from customer activity, market trends, and internal performance produces actionable insight for adaptive, responsive business strategy. Analytics-driven process optimization has been shown to improve both efficiency and productivity in broader business contexts, supporting the applicability of this mechanism to creative economy management (Adesina et al., 2024). Collaboration with the wider technology ecosystem is likewise an important strategy: creative economy actors that partner with technology startups, universities, and digital communities gain access to resources, expertise, and innovation support that accelerate digital transformation, a pattern also observed in studies of digital transformation and digitizing management functions among incumbent SMEs, where human-centric management practices and leadership development, rather than technology procurement alone, were identified as the decisive enabling factors (Seppänen et al., 2025).

Ultimately, the success of technology-driven management strategy in the creative economy depends on visionary leadership, an organizational culture that supports innovation, and a sustained commitment to continuous learning. Without these elements, technology adoption risks becoming suboptimal or failing outright, a conclusion supported by systematic reviews showing that flexible performance management systems, rather than static technology deployment, are what sustain digital transformation gains over time (Cosa & Torelli, 2024). Comparable findings from studies of digital innovation, including artificial intelligence, the internet of things, and big data, in circular creative business models further indicate that

technology adoption succeeds only when embedded within a broader strategic and cultural transformation rather than treated as a discrete operational upgrade (Astuty, 2026).

Beyond sub-sector patterns, the synthesis also points to organizational-level enablers that cut across all creative sub-sectors. Digital leadership plays a particularly influential role: research examining generational differences in digital leadership found that leaders who actively model technology use and delegate decision authority tend to foster greater individual creativity and stronger employee performance than leaders who treat digital tools purely as compliance requirements (Öngel et al., 2023). This finding is significant for the creative economy, where individual creative output is often the direct source of commercial value, meaning that leadership style directly mediates the return on any technology investment, a conclusion reinforced by evidence that structured, SmartPLS-modeled analyses of artificial intelligence adoption find digital innovation capacity to be strongly predicted by organizational and leadership factors rather than technology sophistication alone (Harfizar et al., 2024). Complementary evidence from supply chain management research in the creative economy sector shows that technology-enabled supply chain integration strengthens business performance primarily when paired with clear managerial coordination mechanisms, rather than through automation alone (Ayu et al., 2024), reinforcing the DMECE framework's emphasis on the interaction between technology and management rather than technology in isolation.

The synthesis further indicates that artificial intelligence and information technology adoption, while generally beneficial, produce uneven returns depending on firm-level readiness and market conditions. Evidence from resource-constrained manufacturing SMEs shows that artificial intelligence adoption significantly improves firm performance only when technological readiness, leadership vision, and competitive pressure are jointly present, with AI adoption acting as a mediating rather than a directly causal variable (ul Haq et al., 2025). A parallel study on artificial intelligence applications across SME business functions similarly finds that the core benefit of AI lies less in the technology itself and more in how it is integrated into existing business functions such as marketing, inventory, and customer service (Le Dinh et al., 2025). Applied to the creative economy, this suggests that Indonesian creative enterprises are unlikely to benefit from artificial intelligence adoption unless it is paired with deliberate integration into existing creative workflows, echoing the qualitative case evidence on design and animation studios described above.

Innovation and creativity themselves also emerge as necessary complements to technology within the management literature. A review of innovation and creativity in SME business management found that firms combining creative capability with structured business management practices outperformed those relying on creativity alone or management structure alone, underscoring that technology optimization is most effective when it amplifies, rather than replaces, the creative capabilities that differentiate creative economy firms from conventional manufacturing or service businesses (Ratna et al., 2024). This observation reinforces the theoretical positioning outlined earlier: efficiency in the creative economy is co-produced by technological infrastructure and the distinctive creative capital that creative enterprises already possess.

Comparing these findings against the earlier, more generalized account of Indonesia's creative economy digitalization, several distinctions become clear. First, whereas earlier descriptive accounts treated infrastructure limitation, low literacy, and resistance to change as a single undifferentiated barrier, the present synthesis shows that these barriers manifest differently by sub-sector: fashion and culinary actors are constrained primarily by upfront investment costs, while design and media actors are more often constrained by access to specialized digital skills and international market linkages. Second, the DMECE framework clarifies that the relationship between technology and efficiency is mediated by managerial and organizational variables, rather than being a direct causal pathway, a distinction with direct implications for policy design. Interventions that subsidize technology procurement without accompanying managerial capacity-building, digital leadership training, and structured integration support are, based on this synthesis, unlikely to produce the sustained efficiency gains that policymakers intend.

Taken together, these findings substantiate the DMECE framework's central proposition: management efficiency in the creative economy is not a direct function of technology adoption but an emergent outcome of the interaction between specific technologies, sub-sector operational logic, and organizational readiness. This nuanced, sub-sector-differentiated picture extends earlier, more generalized accounts of digital transformation in Indonesia's creative economy and offers a more actionable basis for both managerial practice and policy design

4. Conclusions and Suggestions

Technology optimization is a critical strategy for improving management efficiency and ensuring business sustainability in the creative economy. Rather than functioning merely as an operational aid, technology serves as a foundation for building innovative, adaptive, and data-driven business strategies. This study's proposed Digital Management Efficiency in the Creative Economy (DMECE) framework demonstrates that efficiency gains are sub-sector-specific: fashion enterprises benefit most from virtual fitting and cloud-based inventory systems, culinary businesses from ordering and delivery platforms, and design or media enterprises from cloud computing and artificial intelligence tools that accelerate creative production. Across all sub-sectors, however, these technological gains materialize only when paired with digital leadership, organizational readiness, and a culture that supports continuous learning.

The success of digital transformation ultimately depends on synergy between management, technology, and public policy. Digital infrastructure support, technology training, and cross-sector collaboration are essential to overcoming the barriers that continue to limit technology access among smaller creative enterprises. This study recommends an inclusive, collaboration-based management approach oriented toward capacity development, and it proposes the DMECE framework as a conceptual foundation that future researchers can empirically test, refine, and extend across other creative sub-sectors, regions, and institutional settings, thereby strengthening the evidence base needed to guide both managerial practice and policy design in the digital era.

References

- Adesina, A. A., Iyelolu, T. V., & Paul, P. O. (2024). Optimizing business processes with advanced analytics: Techniques for efficiency and productivity improvement. *World Journal of Advanced Research and Reviews*, 22(3), 1927-1934. <https://doi.org/10.30574/wjarr.2024.22.3.1960>
- Anjaningrum, W., Azizah, N., & Suryadi, N. (2024). Spurring SMEs' performance through business intelligence, organizational and network learning, customer value anticipation, and innovation: Empirical evidence of the creative economy sector in East Java, Indonesia. *Heliyon*, 10(6), e27998. <https://doi.org/10.1016/j.heliyon.2024.e27998>
- Astuty, N. M. R. K. (2026). The role of digital innovation (AI, IoT, and Big Data) in accelerating circular economy business models in the creative industries: A systematic literature review. *Eduvest - Journal of Universal Studies*, 6(3). <https://doi.org/10.59188/eduvest.v6i3.52399>
- Ayu, G., Agustini, A., Sudjiman, L., & Bagenda, C. (2024). Analysis of the relationship between supply chain management and business performance in the creative economy sector. *SULTANIST: Jurnal Manajemen dan Keuangan*, 12(2), 210-221. <https://doi.org/10.37403/sultanist.v12i2.643>
- Cosa, M., & Torelli, R. (2024). Digital transformation and flexible performance management: A systematic literature review of the evolution of performance measurement systems. *Global Journal of Flexible Systems Management*, 25, 445-466. <https://doi.org/10.1007/s40171-024-00409-9>

- Faiz, F., Le, V., & Masli, E. K. (2024). Determinants of digital technology adoption in innovative SMEs. *Journal of Innovation & Knowledge*, 9(4), 100610. <https://doi.org/10.1016/j.jik.2024.100610>
- Fan, Z., & Wardi, R. (2025). Digital design tools' impact on organizational performance: A model for Chinese graphic design agencies. *Quantum Journal of Social Sciences and Humanities*, 6(1). <https://doi.org/10.55197/qjssh.v6i1.634>
- Guo, Q., & Rungsrisawat, S. (2025). The moderating role of cooperation and job satisfaction in the Wanghong industry: The impact of technological integration on power dynamics and creative labor management. *Journal of Posthumanism*, 5(5). <https://doi.org/10.63332/joph.v5i5.1605>
- Harfizar, Wisnu, M., Wicaksono, M., Hakim, F. B., Wijaya, H., & Saleh, E. T. (2024). Analyzing the influence of artificial intelligence on digital innovation: A SmartPLS approach. *IAIC Transactions on Sustainable Digital Innovation*, 5(2). <https://doi.org/10.34306/itsdi.v5i2.659>
- Kallmuenzer, A., Mikhaylov, A., Chelaru, M., & Czakon, W. (2024). Adoption and performance outcome of digitalization in small and medium-sized enterprises. *Review of Managerial Science*, 19, 2011-2038. <https://doi.org/10.1007/s11846-024-00744-2>
- Khan, W., & Atmani, H. E. (2025). Information technology as a catalyst for innovation and sustainability in the creative industry. *Jurnal Genesis Indonesia*. <https://doi.org/10.56741/iistr.jgi.001861>
- Le Dinh, T., Vu, M.-C., & Tran, G. T. C. (2025). Artificial intelligence in SMEs: Enhancing business functions through technologies and applications. *Information*, 16(5), 415. <https://doi.org/10.3390/info16050415>
- Naik, A. R., & Nuzula, I. (2026). Exploring the role of IT usage in enhancing customer satisfaction: A literature review on SMEs in the creative industries. *Jurnal Genesis Indonesia*. <https://doi.org/10.56741/iistr.jgi.001860>
- Öngel, V., Günsel, A., Çelik, G. G., Altındağ, E., & Tatlı, H. S. (2023). Digital leadership's influence on individual creativity and employee performance: A view through the generational lens. *Behavioral Sciences*, 14(1), 3. <https://doi.org/10.3390/bs14010003>
- Ortiz-Ospino, L., González-Sarmiento, E., & Roa-Perez, J. (2025). Technology trends in the creative and cultural industries sector: A systematic literature review. *Journal of Innovation and Entrepreneurship*, 14. <https://doi.org/10.1186/s13731-025-00497-6>
- Palad, J. B. (2023). Strategies for improving organizational efficiency, productivity, and performance through technology adoption. *Journal of Management and Administration Provision*, 2(3), 148-160. <https://doi.org/10.55885/jmap.v2i3.230>
- Pererva, I., & Mazorenko, O. (2025). Digital transformation of creative industries: Challenges, opportunities and the role of digital tools. *Actual Problems of Innovative Economy and Law*, (1). <https://doi.org/10.36887/2524-0455-2025-1-11>
- Ratna, Purnomo, Y. J., & Sutrisno. (2024). The role of innovation and creativity in business management to enhance SME economy in the creative industry. *Indo-Fintech Intellectuals: Journal of Economics and Business*, 4(3), 858-871. <https://doi.org/10.54373/ifijeb.v4i3.1473>
- Seclen-Luna, J. P., Castro Vergara, R., & Lopez Valladares, H. (2022). Effects of the use of digital technologies on the performance of firms in a developing country: Are there differences between creative and manufacturing industries? *International Journal of Information Systems and Project Management*, 10(1), 61-79. <https://doi.org/10.12821/ijispm100104>

- Seppänen, S., Ukko, J., & Saunila, M. (2025). Understanding determinants of digital transformation and digitizing management functions in incumbent SMEs. *Digital Business*, 5(1), 100106. <https://doi.org/10.1016/j.digbus.2025.100106>
- Sharabati, A., Ali, A., Allahham, M., Hussein, A. M. A., Alheet, A., & Mohammad, A. S. (2024). The impact of digital marketing on the performance of SMEs: An analytical study in light of modern digital transformations. *Sustainability*, 16(19), 8667. <https://doi.org/10.3390/su16198667>
- Tang, W., & Yang, S. (2023). Enterprise digital management efficiency under cloud computing and big data. *Sustainability*, 15(17), 13063. <https://doi.org/10.3390/su151713063>
- Trofimova, N. (2025). Managing enterprise operational efficiency in the context of digital transformation. *Accounting and Control*. <https://doi.org/10.36871/u.i.k.2025.10.02.020>
- Triwahyono, B., Rahayu, T., & Kraugusteeliana, K. (2023). Analysing the role of technological innovation in improving the operational efficiency of MSMEs. *Jurnal Minfo Polgan*, 12(1). <https://doi.org/10.33395/jmp.v12i1.12791>
- Uddin, N. A., Faisal, M. M., Salman, T. M., Arian, M., Tanzina, E. H., & Abdul, M. K. (2026). Evaluating the impact of technology management on multimedia production efficiency. *Theoretical and Applied Technological Science Review*, 4(1). <https://doi.org/10.64907/xkmf.v4i1.tatscr.3>
- ul Haq, F., Suki, N. M., Zaigham, H., Masood, A., & Rajput, A. (2025). Exploring AI adoption and SME performance in resource-constrained environments: A TOE-RBV perspective with mediation and moderation effects. *Journal of Digital Economy*. <https://doi.org/10.1016/j.jdec.2025.07.002>
- Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2022). Adoption of digital technologies by SMEs for sustainability and value creation: Moderating role of entrepreneurial orientation. *Sustainability*, 14(13), 7949. <https://doi.org/10.3390/su14137949>
- Yani, A., Manafe, M. W. N., & Santosa, S. (2025). Analysis of the role of digital technology in driving business model innovation in MSMEs: Implications for enhancing operational efficiency and sustainable economic growth. *Technology and Society Perspectives (TACIT)*, 3(1). <https://doi.org/10.61100/tacit.v3i1.253>
- Yu, J., Wang, J., & Moon, T.-E. (2022). Influence of digital transformation capability on operational performance. *Sustainability*, 14(13), 7909. <https://doi.org/10.3390/su14137909>
- Zhao, X., Shen, L., & Jiang, Z. (2024). The impact of the digital economy on creative industries development: Empirical evidence based on the China. *PLOS ONE*, 19(3), e0299232. <https://doi.org/10.1371/journal.pone.0299232>