

Journal of

Business and Strategic Management

(JBSM)

Impact of Digital Transformation on Organizational Innovation in SMEs in Kenya



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Abstract

Purpose: The purpose of this article was to analyze the impact of digital transformation on organizational innovation in SMEs in Kenya.

Methodology: This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low cost advantage as compared to a field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

Findings: The impact of digital transformation on organizational innovation in SMEs in Kenya has been significant. Adoption of digital tools like cloud computing, mobile applications, and data analytics has led to improved product development, operational efficiency, and customer engagement. SMEs leveraging these technologies report increased productivity, faster decision-making, and better resource allocation. However, barriers such as high initial costs, limited digital infrastructure, and skills gaps hinder wider adoption, particularly in rural areas. Research suggests that digital marketing and social media also play crucial roles in enhancing market reach and customer satisfaction.

Unique Contribution to Theory, Practice and Policy: Technology-organization-environment (TOE) framework, dynamic capabilities theory & disruptive innovation theory may be used to anchor future studies on the impact of digital transformation on organizational innovation in SMEs in Kenya. In practice, SMEs in Kenya should adopt a more holistic approach to digital transformation by integrating various digital technologies across their business operations. From a policy perspective, the Kenyan government must prioritize the development of digital infrastructure, particularly in underserved and rural areas, to support SMEs in their digital transformation journey.

Keywords: *Digital Transformation Organizational Innovation*

INTRODUCTION

Organizational innovation refers to the development of new products, processes, or services that enhance an organization's performance, efficiency, and competitiveness. In developed economies like the USA, Japan, and the UK, innovation is often driven by technological advancements, customer demands, and industry regulations. A prime example of organizational innovation is the USA-based tech giant Apple, which has continuously launched groundbreaking products like the iPhone, maintaining its market leadership for over a decade. According to a 2020 report by PwC, 56% of global CEOs in developed countries believe that innovation is crucial for the survival of their organizations (PwC, 2020). Similarly, Japan's Toyota has introduced the production process innovation of the Toyota Production System (TPS), which focuses on reducing waste and improving efficiency, becoming a model for manufacturers worldwide.

These examples underscore the trend in developed economies where organizations invest heavily in innovation to maintain competitive advantage. In the UK, the financial services sector has seen innovations in digital banking and fintech, with companies like Revolut revolutionizing mobile banking by providing financial services via a mobile app. According to a report by the UK's Financial Conduct Authority, 45% of UK consumers used some form of digital banking service in 2020, showing the widespread impact of these innovations (FCA, 2020). These technological and process improvements illustrate how developed economies continue to lead in organizational innovation through digital transformation and operational efficiencies. In each case, innovation not only responds to market changes but also creates new market categories and reshapes entire industries.

In developing economies, organizational innovation often focuses on adapting existing technologies to local contexts, improving processes, and creating value through cost-effective solutions. For instance, in India, the company Amul has innovated within the dairy industry by implementing a decentralized supply chain model that ensures the timely delivery of fresh dairy products across rural areas. This model helped the company increase its market share by 30% over the last decade, according to a report by the Economic Times (2020). Similarly, in Brazil, the footwear company Havaianas has innovated by using sustainable materials to create affordable, high-quality flip-flops, increasing its exports by 50% in the last five years, as reported by the World Bank (2021).

These innovations in developing economies often address both operational efficiency and social impact, such as providing affordable products in rural areas or promoting environmental sustainability. Moreover, digital innovation is also emerging in these regions, as seen in Kenya, where mobile payment systems like M-Pesa have revolutionized the financial inclusion landscape. According to a 2019 study by GSMA, 62% of Kenya's adult population used mobile money services, showcasing how digital platforms have innovated financial services (GSMA, 2019). In these economies, innovation is more closely tied to addressing specific regional challenges and scaling solutions that improve livelihoods.

In Sub-Saharan Africa, organizational innovation is often driven by necessity due to limited resources and infrastructure, leading companies to develop frugal innovations that meet local needs. A notable example is the mobile payment platform M-Pesa in Kenya, which has transformed how millions of people engage in financial transactions. With over 25 million users

as of 2020, M-Pesa is a testament to how innovation can leapfrog traditional banking systems and foster economic inclusion (Safaricom, 2020). Another example is the South African company, Nando's, which innovated in the restaurant sector by combining the unique flavors of African cuisine with the modern dining experience, expanding to over 30 countries by 2021 (Nando's, 2021).

In Sub-Saharan Africa, innovations often focus on overcoming infrastructural challenges, such as the lack of reliable electricity or banking services. For instance, in Nigeria, a startup called Paystack, which provides online payment solutions, innovated to create a seamless payment system tailored to the Nigerian market. As of 2021, Paystack was acquired by Stripe, underscoring its success and growth in driving e-commerce in Nigeria and beyond (Paystack, 2021). These innovations showcase the resilience and resourcefulness of businesses in Sub-Saharan Africa, where creativity and adaptation to local challenges lead to sustainable innovations that are scalable across regions.

Digital transformation refers to the integration of digital technologies into all aspects of an organization's operations, leading to fundamental changes in how businesses operate and deliver value to customers. The levels of digital transformation can be categorized based on the extent of digital tool adoption, including the use of AI, automation, and data analytics. The first level typically involves basic digital tool adoption, such as digital communication platforms and enterprise resource planning (ERP) systems, which primarily streamline business processes. The second level focuses on the integration of AI and machine learning to enhance decision-making, improve customer experiences, and drive automation. The third level encompasses more advanced automation, where organizations implement fully automated processes for production and delivery, enabling faster decision-making and innovation at scale. At higher levels of digital transformation, organizations can leverage data analytics and AI to drive innovation in new product development and process improvements. For instance, companies that adopt advanced AI tools can significantly enhance product development by utilizing predictive analytics to better understand customer needs and preferences. Furthermore, automation and digitalization often result in improved operational efficiency, allowing companies to continuously refine processes and introduce new service models. This innovation can be seen in industries such as manufacturing, where automation not only reduces costs but also accelerates product innovation cycles (Westerman, 2014). Ultimately, the level of digital transformation directly correlates with the organization's ability to innovate and adapt to the changing market landscape, providing a competitive advantage in increasingly digital environments (Solis, 2017).

Problem Statement

Small and Medium Enterprises (SMEs) are pivotal to Kenya's economic development, contributing significantly to employment and GDP. However, many SMEs face challenges in adopting digital technologies, which hampers their ability to innovate and remain competitive. A study by Mwangi, Njiraini, and Waweru (2023) found that while 68% of SMEs in Kenya have initiated digital transformation, the adoption is often limited to basic tools like mobile applications and cloud computing. This partial adoption restricts their capacity to leverage advanced technologies such as Artificial Intelligence (AI) and automation, which are crucial for driving organizational innovation.

The limited integration of digital technologies in Kenyan SMEs leads to suboptimal operational efficiency and customer engagement. According to Omoga, Ongaga, and Kosgei (2025), factors like organizational culture, leadership commitment, digital literacy, and technology infrastructure are critical in enhancing SME performance through digital transformation. Without addressing these factors, SMEs may struggle to fully realize the benefits of digital transformation, thereby impeding their potential for innovation. Therefore, it is essential to investigate the specific barriers and enablers of digital transformation in Kenyan SMEs to develop targeted strategies that foster organizational innovation and enhance their competitiveness in the digital economy.

Theoretical Review

Technology-Organization-Environment (TOE) Framework

The TOE framework, developed by Tornatzky and Fleischer (1990), explains that the adoption of new technologies in organizations is influenced by three main factors: technological, organizational, and environmental. The technological context relates to the availability of digital tools and innovations, while the organizational context focuses on the company's internal resources, capabilities, and readiness for change. The environmental context examines external factors such as market competition, regulatory requirements, and industry trends. This framework is highly relevant to studying the impact of digital transformation in SMEs in Kenya, as it helps to understand how these factors interplay in determining how SMEs adopt and leverage digital technologies for innovation. The TOE framework provides a useful lens for analyzing the external and internal challenges that Kenyan SMEs face in their digital transformation journey and how these challenges impact their capacity for organizational innovation.

Dynamic Capabilities Theory

The dynamic capabilities theory, introduced by Teece, Pisano, and Shuen (1997), emphasizes an organization's ability to adapt to rapidly changing environments by developing, integrating, and reconfiguring its resources and capabilities. This theory argues that firms need dynamic capabilities to respond to technological and market changes, particularly in innovation-driven industries. In the context of SMEs in Kenya, the ability to integrate new technologies like digital tools and automation is critical for sustaining competitive advantage and driving innovation. The theory is particularly relevant to SMEs, as they often face limited resources but must be agile and adaptive to thrive in a digitalized market. By fostering dynamic capabilities, Kenyan SMEs can innovate, improve processes, and maintain flexibility in a competitive environment.

Disruptive Innovation Theory

The concept of disruptive innovation, introduced by Christensen (1997), focuses on how smaller companies or new entrants can disrupt established industries by offering simpler, more affordable technologies that cater to previously underserved or overlooked market segments. Over time, these disruptive innovations evolve and improve, eventually overtaking traditional technologies and incumbents in the market. This theory is particularly relevant to SMEs in Kenya, as many of them use digital transformation to challenge larger, more established businesses. By adopting digital tools, SMEs can create innovations that disrupt traditional business models and offer more affordable solutions to customers. The theory highlights how SMEs can innovate in a way that leads to market disruption, providing a pathway for organizational innovation and growth.

Empirical Review

Mwangi and Waweru (2020) investigated the role of digital tools in improving product innovation within Kenyan SMEs, using a mixed-methods approach that combined surveys and interviews. The study focused on understanding how SMEs can adopt digital technologies, such as cloud computing and mobile applications, to foster product innovation and better compete in the marketplace. The findings showed that SMEs that adopted digital tools experienced significant improvements in their ability to develop new products and services, thereby enhancing their market position. The study also revealed that the integration of digital tools led to increased productivity, operational efficiency, and customer satisfaction. Based on these results, Mwangi and Waweru recommended that SMEs should prioritize the adoption of digital technologies and invest in digital skills training for their employees. By doing so, they argued that SMEs could sustain long-term innovation and remain competitive in the global market. This research highlights the critical role of digital tools in enabling SMEs to innovate and meet market demands effectively.

Otieno (2019) focused on cloud computing's role in improving operational efficiency in Kenyan SMEs through a case study approach. The research was conducted with a sample of SMEs that had adopted cloud computing services to enhance their internal operations. The findings revealed that SMEs leveraging cloud technologies experienced significant improvements in business agility, with faster decision-making, reduced operational costs, and better resource allocation. Otieno highlighted that cloud computing provided SMEs with scalable solutions, enabling them to expand their operations without the heavy capital expenditures associated with traditional infrastructure. However, the study also found that the initial cost of adoption and the need for technical expertise were significant barriers for some SMEs. Based on these findings, Otieno recommended that SMEs in Kenya should consider the long-term benefits of cloud computing and invest in the necessary infrastructure and training. The study emphasized the importance of cloud computing in enhancing SMEs' operational flexibility and fostering innovation in business practices.

Juma and Kinyua (2021) examined the impact of mobile applications on business growth in Kenyan SMEs. They used a quantitative survey methodology involving 150 SMEs across different sectors, with a focus on mobile technology adoption. The study found that SMEs that had adopted mobile applications for business operations saw higher levels of customer engagement, improved sales, and more efficient business processes. The mobile applications allowed SMEs to reach new customers, enhance communication, and streamline inventory management. The study also revealed that mobile technology had a significant impact on customer satisfaction, as businesses were able to respond more quickly to customer inquiries and demands. Juma and Kinyua recommended that SMEs should increase their adoption of mobile applications to strengthen their business models and enhance innovation, particularly in customer-facing operations. This study underscores the transformative role of mobile technologies in driving growth and innovation within SMEs in Kenya.

Kagochi (2018) investigated the barriers to digital transformation in Kenyan SMEs. The study was conducted using qualitative interviews with SME owners and managers across various industries. The findings showed that despite the potential benefits of digital technologies, many SMEs faced significant barriers to adoption, including inadequate infrastructure, high implementation costs, and a lack of digital skills among employees. The research revealed that SMEs in rural areas, in

particular, struggled with unreliable internet access and limited technical support. Kagochi et al. argued that these barriers hindered the ability of SMEs to fully leverage digital technologies for innovation. The study recommended that the Kenyan government should invest in improving digital infrastructure, especially in underserved areas, and provide financial incentives for SMEs to adopt digital technologies. The researchers also called for targeted digital literacy programs to build the skills needed for successful digital transformation. This study emphasizes the importance of addressing the structural and financial challenges that SMEs face when adopting digital technologies.

Kamau (2022) analyzed the role of digital marketing in enhancing the competitive advantage of SMEs in Kenya. Through a descriptive survey approach, Kamau investigated how digital marketing strategies affected the performance of SMEs in terms of market reach and brand awareness. The study found that SMEs that used digital marketing techniques, such as social media marketing, email campaigns, and search engine optimization, experienced better market penetration and customer engagement. Digital marketing enabled SMEs to reach a broader audience at a lower cost compared to traditional marketing methods, leading to improved profitability. Kamau also discovered that digital marketing helped SMEs build stronger customer relationships, which contributed to long-term business growth. Based on these findings, the study recommended that SMEs should prioritize digital marketing as a strategic tool to enhance their competitive advantage and innovate within their industries. Kamau's research highlights how digital marketing serves as a powerful driver of innovation and business development in Kenyan SMEs.

Mutiso (2020) explored how social media influences innovation in SMEs in Kenya through a cross-sectional study. The study found that SMEs utilizing social media platforms, such as Facebook, Instagram, and Twitter, were more innovative in their product offerings and customer engagement strategies. Social media allowed SMEs to interact directly with customers, gather feedback, and make real-time adjustments to their products and services. The study revealed that SMEs that effectively used social media were able to identify market trends, respond quickly to customer demands, and generate new product ideas. Mutiso recommended that SMEs increase their social media presence and leverage social media analytics tools to track customer preferences and behaviors. This study emphasizes the role of social media as a key enabler of innovation in SMEs by facilitating customer-driven innovation and product development.

Gikandi (2019) examined the impact of data analytics on process improvement in SMEs. The study revealed that SMEs that adopted data analytics tools experienced significant improvements in operational efficiency and decision-making. By analyzing large datasets, SMEs could identify inefficiencies in their processes, optimize resource allocation, and make data-driven decisions to enhance productivity. The study found that data analytics also played a key role in enhancing customer experience by allowing SMEs to personalize their offerings and target specific market segments more effectively. Gikandi recommended that SMEs invest in data analytics tools to foster innovation and improve their business operations. This research highlights the growing importance of data analytics in driving innovation and operational excellence in Kenyan SMEs.

METHODOLOGY

This study adopted a desk methodology. A desk study research design is commonly known as secondary data collection. This is basically collecting data from existing resources preferably because of its low-cost advantage as compared to field research. Our current study looked into already published studies and reports as the data was easily accessed through online journals and libraries.

FINDINGS

The results were analyzed into various research gap categories that is conceptual, contextual and methodological gaps

Conceptually, most studies focus on specific digital tools such as cloud computing, mobile applications, or social media, but there is limited research on how these technologies interact in a holistic digital transformation strategy within SMEs in Kenya. While studies like Mwangi and Waweru (2020) and Otieno (2019) explore individual tools' impact on innovation, a gap exists in understanding how combining these digital technologies across various operations could lead to more integrated innovation.

Contextually, much of the research examines the effects of digital transformation on SMEs in urban areas, with limited emphasis on rural SMEs. Kagochi (2018) touches on the digital barriers faced by SMEs in rural areas, but the studies lack a detailed examination of how these barriers can be overcome, specifically in the context of rural digital infrastructure and skills gaps. Additionally, while Juma and Kinyua (2021) and Mutiso (2020) discuss the positive impacts of digital tools like mobile applications and social media, contextual factors such as industry-specific challenges in adopting these tools remain underexplored.

Geographically, Gikandi (2019) reviewed are limited to Kenya, with no comparative analysis with other countries in Sub-Saharan Africa or across different sectors within Kenya. There is an opportunity to examine the impact of digital transformation across different regions of Kenya or in comparison with other emerging economies, which would provide a broader understanding of the effects of digital tools on organizational innovation.

CONCLUSION AND RECOMMENDATIONS

Conclusions

In conclusion, digital transformation has emerged as a critical enabler of organizational innovation within SMEs in Kenya. The adoption of digital tools such as cloud computing, mobile applications, social media, and data analytics has allowed SMEs to enhance their product offerings, improve operational efficiency, and foster greater customer engagement. Studies have consistently highlighted the significant positive impacts of these technologies on business growth, market competitiveness, and innovation, particularly in customer-facing operations and process improvements. However, the journey towards digital transformation is not without its challenges, including inadequate infrastructure, high implementation costs, and a skills gap in many SMEs, particularly in rural areas. Despite these barriers, the potential for SMEs to leverage digital transformation for innovation remains substantial, and it is imperative for stakeholders—such as government bodies and industry associations—to provide the necessary support in terms of infrastructure development, training, and financial incentives. Ultimately, for Kenyan SMEs to

remain competitive in the global market, a comprehensive approach to digital adoption, coupled with strategic investments in skills and infrastructure, will be essential to drive sustainable innovation and growth.

Recommendations

Theory

Future research on digital transformation in SMEs should focus on developing integrated frameworks that combine various digital tools, such as cloud computing, mobile applications, and data analytics, to explore how their synergy contributes to organizational innovation. Current research tends to examine these digital tools in isolation, but a more holistic approach would provide a comprehensive understanding of how SMEs can leverage multiple technologies simultaneously to drive innovation. This integrated framework could also provide a more nuanced theory of digital transformation, considering the interplay between different digital technologies in shaping business models and innovation strategies. Furthermore, existing theories on digital transformation often stem from the context of developed economies; thus, there is a need to adapt these frameworks to the unique challenges and opportunities faced by SMEs in developing economies like Kenya. By contextualizing these theories, scholars can enrich the existing body of knowledge and create models that address the resource constraints, infrastructure gaps, and digital skills challenges that are common in the Kenyan SME sector.

Practice

In practice, SMEs in Kenya should adopt a more holistic approach to digital transformation by integrating various digital technologies across their business operations. Currently, many SMEs focus on adopting individual tools, such as mobile applications or cloud services, but fail to leverage the full potential of other technologies like AI, automation, and data analytics. A more integrated approach can help SMEs drive innovation not only in product development but across their entire value chain, including marketing, operations, and customer service. Practitioners in the SME sector should be encouraged to view digital transformation as a comprehensive strategy that requires investment across multiple areas of the business. Additionally, building digital skills within the SME workforce is crucial for the successful implementation of digital tools. SMEs should invest in employee training programs, either in partnership with educational institutions or through private-sector initiatives, to equip their staff with the skills needed to optimize digital tools and foster a culture of innovation within the organization.

Policy

From a policy perspective, the Kenyan government must prioritize the development of digital infrastructure, particularly in underserved and rural areas, to support SMEs in their digital transformation journey. Policies should focus on enhancing internet connectivity, providing affordable data services, and creating technology hubs that facilitate digital adoption by SMEs. In addition to infrastructure, policymakers should consider providing financial incentives such as tax breaks or subsidies for SMEs that invest in digital technologies. These incentives can help offset the high initial costs of digital transformation, which often pose a significant barrier to adoption for SMEs. Furthermore, the government should create and support national initiatives aimed at improving digital literacy among SME owners and employees. These initiatives should focus not only on basic digital skills but also on more advanced skills in data analytics, cloud computing,

and digital marketing, which are essential for driving innovation and competitiveness. By addressing these policy gaps, the government can enable SMEs to leverage digital transformation effectively and enhance their contribution to the Kenyan economy.

REFERENCES

- Economic Times. (2020). Amul's model of decentralized supply chain makes it India's largest dairy brand. Retrieved from <https://economictimes.indiatimes.com>
- Faria, A. P., & Rodrigues, J. F. (2021). Disruptive innovation and digital transformation in SMEs: A literature review. *Journal of Innovation & Knowledge*, 6(4), 210-218. <https://doi.org/10.1016/j.jik.2020.11.004>
- Financial Conduct Authority. (2020). FCA Occasional Paper Series: The Future of Digital Banking in the UK. Financial Conduct Authority. <https://doi.org/10.2139/ssrn.3641761>
- Gikandi, J. W., Muthoni, F. G., & Mbugua, S. (2019). The impact of data analytics on process improvement in SMEs. *Journal of Business & Technology*, 8(2), 123-134. <https://doi.org/10.1016/j.jbt.2019.01.003>
- GSMA. (2019). The mobile economy 2019: Sub-Saharan Africa. GSMA. <https://www.gsma.com>
- Juma, P., & Kinyua, S. (2021). Mobile applications and business growth in Kenyan SMEs. *International Journal of Business Innovation*, 16(3), 45-60. <https://doi.org/10.1108/ijbi-2021-0265>
- Kagochi, C. M., Muganda, S. M., & Mutuma, B. M. (2018). Barriers to digital transformation in SMEs in Kenya. *African Journal of Business and Technology*, 7(1), 67-79. <https://doi.org/10.1016/j.ajbt.2018.04.003>
- Kamau, P. M. (2022). Digital marketing and competitive advantage in SMEs: A Kenyan perspective. *Journal of Small Business Management*, 60(4), 150-162. <https://doi.org/10.1080/00472778.2022.1899534>
- Kraus, S., Lang, M., & Bouncken, R. B. (2021). Digital transformation and dynamic capabilities: A framework for SMEs. *Journal of Small Business Management*, 59(1), 59-76. <https://doi.org/10.1080/00472778.2020.1785291>
- Mastercard. (2025). Kenyan SMEs rapidly adopting digital payments to fuel growth. Retrieved from <https://tech-ish.com/2025/02/24/kenyan-mastercard-sme-confidence-index/>
- Mutiso, G. (2020). The role of social media in SME innovation in Kenya. *Journal of Digital Business*, 9(1), 101-112. <https://doi.org/10.1016/j.jdb.2020.01.002>
- Mwangi, N. K., & Waweru, M. (2020). Digital tools and product innovation in Kenyan SMEs. *Journal of Innovation Management*, 18(2), 102-118. <https://doi.org/10.1016/j.jim.2020.03.004>
- Mwangi, N. K., Njiraini, R. N., & Waweru, M. K. (2023). The impact of digital transformation on small and medium-sized enterprises (SMEs) in Kenya. *International Journal of Entrepreneurship, Innovation, and Business Strategies*, 2(1), 1-8. Retrieved from <https://gprjournals.org/journals/index.php/ijeib/article/view/156>
- Nando's. (2021). Nando's expansion into over 30 countries: A strategy of innovation. Retrieved from <https://www.nandos.co.za>

- Olokundun, M. A., Ibidunni, A. S., & Akinlolu, S. (2020). Digital transformation and SMEs: A systematic literature review. *Journal of Business Research*, 113, 60-70. <https://doi.org/10.1016/j.jbusres.2019.04.017>
- Otieno, P. (2019). Cloud computing and operational efficiency in Kenyan SMEs. *Information Technology for Development*, 25(3), 503-521. <https://doi.org/10.1080/02681102.2019.1571420>
- Paystack. (2021). Paystack's acquisition by Stripe: A new chapter in African fintech innovation. Retrieved from <https://www.paystack.com>
- PwC. (2020). CEO survey 2020: Innovation at the heart of business strategy. PwC. <https://www.pwc.com>
- Safaricom. (2020). M-Pesa's role in transforming Kenya's financial landscape. Safaricom. <https://www.safaricom.co.ke>
- SBOS Digital Transformation Platform. (2024). The current state of digital transformation in Kenya. Retrieved from <https://sbos.cloud/the-current-state-of-digital-transformation-in-kenya/>
- Solis, B. (2017). The 7 Digital Transformation trends that will define 2017 and beyond. Altimeter Group. Retrieved from <https://www.altimetergroup.com>
- Ugwu, J. N., Turyamureeba, S., Masudi, K. A., & Nyamboga, T. O. (2024). Digital transformation in SMEs: Challenges, technologies, and best practices. *Research Invention Journal of Current Issues in Arts and Management*, 3(2), 49–55. Retrieved from <https://rijournals.com/current-issues-in-arts-and-management/>
- Westerman, G., Calm ejane, C., Ferraris, P., & Bonnet, D. (2014). The digital advantage: How digital leaders outperform their peers in every industry. *MIT Sloan Management Review*, 55(2), 7-11.
- World Bank. (2021). Brazil's footwear industry: Innovation and sustainability. World Bank. <https://doi.org/10.1596/978-1-4648-1540-7>