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**DIGITAL TECHNOLOGY ADOPTION IN SMALL AND MEDIUM-SIZED ENTERPRISES:
EMPLOYEE READINESS AND ORGANISATIONAL CAPABILITY IN SOUTH AFRICA****Hloniphile Cleopatra Zwane^{1*}, Yanga Nontu², Mzweleni Fundani Mthethwa³, Mduduzi Mzanywa⁴**^{1*} University of Zululand, P. Bag X1001, Kwa-Dlangezwa 3886, South Africa Quality Assurance Office² Department of Agriculture, University of Zululand, P/Bag X1001, KwaDlangezwa 3886, South Africa³ Moses Kotane Research Institute, 190 KE Masinga Rd, Durban, 4001, South Africa⁴ University of Fort Hare, South AfricaE-mails: ^{1*} zwaneh@unizulu.ac.za (Corresponding author) ² NontuY@unizulu.ac.za; ³ mzwelenimthethwa@gmail.com; ⁴ Mzanywa@gmail.com*Received 25 May 2026; accepted 14 August 2026; published 30 September 2026*

Abstract. Small and Medium-sized Enterprises (SMEs) in South Africa face increasing pressure to adapt to technological changes as digital transformation becomes essential for corporate resilience, competitiveness, and long-term sustainability. However, a significant gap remains in the literature on how these enterprises are prepared to implement and sustain digital transformation, particularly regarding organisational capabilities and digital skills. Government interventions and public policy support SMEs' digitalisation; however, their effectiveness is limited due to a lack of contextual relevance, accessibility, and low awareness. Therefore, this study examines the anticipated readiness and utilisation of digital technology among South African SMEs, focusing on the structural, strategic, and human capital capabilities required for successful transformation. A systematic desktop analysis was utilised using 86 peer-reviewed academic articles, policy documents, and institutional reports published over the past decade. The findings of the study reveal that although government intervention and digital support initiatives exist, they often fail to reach their intended beneficiaries due to misalignment with SME-specific challenges. Findings indicate notable disparities in SMEs' strategic alignment with digital goals, technology investment behaviours, employee digital literacy, and leadership preparedness. Moreover, the findings inform policy development and capacity-building efforts among policymakers, enterprise development agencies, and SME owners by contributing to the discourse on digital transformation in developing economies. Drawing on the Technology Organisation Environment (TOE) framework and the Resource-Based View (RBV), the study analyses the readiness of South African SMEs for digital transformation, identifying strategic, capability, skills, and policy gaps that constrain digital resilience and competitiveness.

Keywords: digital technology; SME's, employee readiness; organisational capability; Resource-Based View

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JEL Classifications: M21, O32**1. Introduction**

According to the Organisation for Economic Co-operation and Development (OECD) (2025), Small and Medium-sized Enterprises (SME) in South Africa play an imperative role in alleviating poverty and inequality and improving livelihoods. South Africa's SMEs contribute over 34% of the country's GDP and account for approximately 60% of employment (The Department of Trade, Industry, and Competition, 2019). The competitiveness and long-term sustainability of SMEs in the digital era increasingly rely on their ability to adopt and effectively utilise digital technologies (Vrontis et al. 2022; Parra-Sánchez & Talero-Sarmiento, 2023).

Evidence suggests that digital tools such as cloud computing, enterprise resource planning (ERP), e-commerce platforms, artificial intelligence (AI), and data analytics can significantly transform SME operations, lower costs, expand market reach, and improve decision-making (World Bank, 2025). Despite the transformative potential of digital innovations, South African SMEs continue to exhibit slow to adoption, attributing this delay to various organisational, structural, and human capital hurdles (GCIS, 2021; Mashavira et al., 2022). Employee readiness remains a critical constraint to digital transformation in South African SMEs, encompassing factors such as digital literacy, willingness to adapt, training availability, and perceptions of job security (Ben Arfi & Hikkerova, 2021). Many employees in SMEs exhibit insufficient digital competencies. In contrast, others resist technological change, often due to fears of redundancy or a lack of adequate support structures. Furthermore, organisational capability, which encompasses leadership commitment, technological infrastructure, change management processes, and an innovation culture, is often weak or underdeveloped in many local SMEs (Saah & Mbohwa, 2025; Mkansi & Nsakanda, 2025; Siljeur et al., 2026; Belete & Murthy, 2026).

The COVID-19 pandemic highlighted the digital divide, showing that SMEs with greater digital maturity exhibited enhanced resilience and adaptability throughout the crisis (UNCTAD, 2021). The acceleration of digitalisation during the pandemic revealed existing structural weaknesses in organisational agility and workforce preparedness among many South African SMEs (Stats SA, 2021). The National Digital and Future Skills Strategy of South Africa (2020–2030) identifies the critical need to cultivate a digitally proficient workforce and to enhance institutional support for digital adoption within small and medium enterprises (Department of Communications and Digital Technologies, 2020). This study examines the dual aspects of employee readiness and organisational capability in facilitating the adoption of digital technology within South African SMEs. This study seeks to offer empirical insights into the interaction between these two factors and identify necessary interventions to promote successful digital transformation in this critical economic sector.

2. Problem Statement

In 1995, the South African government adopted the White Paper on National Strategy for the Development and Promotion of Small Business in SA (DTI, 1995). At the time, just a year into the new democratic dispensation, the government faced multiple challenges, including high unemployment rates, high levels of inequality as reflected in the Gini Coefficient, and the urgent need to facilitate and champion economic transformation in the country. The government's promise of a better life for all had to be taken seriously. Central to the government's approach to employment creation, poverty alleviation, and transformation were SMEs. The national government identified the SMEs as key drivers of job creation, economic growth, and inequality reduction in South Africa. The government recognised the SME sector as an unexplored, strategically significant mechanism for creating employment opportunities and addressing the unemployment crisis. While the government and prominent scholars held this perception at the time, there was also an acknowledgement of underlying constraints limiting the growth and sustainability of SMEs in SA. These constraints included an unfavourable legal and regulatory environment confronting SMEs, limited access to markets, finance, and affordable business premises, inadequate managerial and technical skills and a lack of access to appropriate technology, poor business infrastructure in poverty areas, and, in some cases, the tax burden.

However, empirical evidence suggests that despite the implementation of numerous support initiatives, the majority of SMEs, especially those in rural areas, still lack information on how to obtain support from government institutions and their stakeholders. Jili, Masuku, and Selepe (2017) assert that 90% of surveyed SMEs had never received support from the government institutions. This study will investigate South African SMEs' anticipated readiness for and utilisation of digital technology, with a focus on the structural, strategic, and human capital capabilities required for successful transformation. A systematic desktop analysis was conducted, using 100 peer-reviewed academic articles, policy documents, and institutional reports published over the last decade.

3. Methodology

As with any other research paper, for a literature review to be considered a proper research methodology, the necessary steps and actions must be taken to ensure the review is accurate, precise, and reliable. Given the research question for this paper, a semi-systematic literature review was conducted to examine the relationships among digital technology adoption, employee readiness, and organisational capability in South African SMEs. A semi-systematic literature review, also known as the narrative review approach, is a type of review that follows partial as opposed to full guidelines of a systematic review in terms of a literature survey and selection, but also includes steps of framing a written discourse about literature that can be used as part of the research process (Zunder, 2021; Al Hadwer et al., 2021). This type of review is designed for topics conceptualised differently and studied by various groups of researchers within diverse disciplines (Snyder, 2019; Schreiber & Cramer, 2022).

Information sources and data collection process

A search strategy for identifying relevant literature was developed and conducted between Jan 2024 and September 2025 under five electronic databases: Google Scholar, Sabinet, Social Science Citation Index (Web of Science), and EBSCOhost. Table 1 below presents the total results for each database during the preliminary literature search. The selected search terms included were “Digital technology”, “SME’s”, “Employee Readiness”, “Organisational Capability” AND “Resource-Based View”. These terms are directly related to the research question of this review. The paper searched for literature within the past 20 years, as we needed older literature to better understand trends in digital transformation in SMEs in the South African context, with an emphasis on human and organisational factors.

Table 1. Results of the preliminary literature search using databases

Databases	Total number of results	Peer-reviewed papers	Included for review
Google Scholar	250	150	30
Sabinet	100	40	15
Social Science Citation Index (Web of Science)	65	40	29
EBSCOhost	50	30	12

Source: Authors’ own compilation

Article selection

As shown in Table 1, our search yielded 465 articles; then duplicates and studies irrelevant to Digital Technology Adoption in Small and Medium-sized Enterprises: Employee Readiness and Organisational Capability in South Africa were removed, leaving a total of 260 articles. After a further rigorous review process and consideration of all the inclusion criteria (discussed in detail below), only 86 articles were selected for analysis. Data extraction involved first reading abstracts to make selections, followed by reading full-text articles before making the final selection. Once this step was completed and the initial articles (or other relevant literature) had been collected, the texts were screened in full to ensure they met the inclusion criteria. As an additional strategy, references in the selected articles were scanned to identify other potentially relevant articles. Findings were synthesised through thematic analysis, a method commonly used to identify, analyse and report patterns as themes within a text (Snyder, 2019). The abstracted data were based on findings and conceptualisation of digital technology adoption in small and medium-sized enterprises, focusing on employee readiness and organisational capability in South Africa.

Inclusion and exclusion criteria

Regarding research quality, deciding on inclusion and exclusion criteria is one of the most critical steps when conducting a review (Snyder, 2019). The inclusion criteria were the year of publication (between 2015 and 2024), the language of the article (strictly English), the types of articles (conceptual and empirical papers), and media

sources, as well as reports from institutional organisations. The studies considered were qualitative, quantitative, and mixed methods.

3. Literature Review

Entrepreneurship and Economic Growth

Over the past few decades, there has been a growing interest among scholars and policymakers worldwide in SMMEs and employment, particularly given high unemployment rates. Interest in SMMEs stems from several studies that have posited a link between entrepreneurial activity and economic growth, indicating that SMMEs are crucial and serve as the engine of economic growth (Carree, 2007; Wong et al., 2005; Bassanini et al., 2001). According to Baumol (1990), even if economies had an unlimited supply of entrepreneurs, economic growth would not occur without a supportive institutional environment. In other words, a supportive institutional environment favours the mobilisation of labour, capital and technology for productive endeavours, resulting in the accumulation of wealth (Acs et al., 2017). However, the Solow model allows no role for entrepreneurship, with appropriate institutional support, either as the basis for knowledge Spillovers or innovation and economic growth. Entrepreneurship, therefore, has considerably more importance to economic growth than is often given credit for by models such as the Solow model (Ramesh, 2020). Therefore, the study examines the relationship between the dependent variable and the independent variables using the three theories: the evolution theory of organisation, the resource-based theory, and the technology-organisation-environment theory, respectively.

Digital Transformation as a Strategic Imperative for SME Resilience and Growth

Research on the adoption of digital transformation by small and medium-sized enterprises (SMEs) has garnered considerable attention, particularly amid recent economic changes and technological advances spurred by the COVID-19 pandemic. This literature consolidates extensive research clarifying the factors influencing digital transformation in SMEs, the obstacles encountered, and the potential benefits of its implementation. A crucial element of the discussion on digital transformation is technology's role as a catalyst for change. Teng et al. (2022) contend that integrating diverse digital technologies, such as artificial intelligence, IoT, and cloud computing, is essential for SMEs seeking to improve performance and gain competitive advantages in dynamic, contemporary contexts. Research indicates that the implementation of customised digital strategies is associated with efficient resource allocation, hence positively influencing total transformation (Zhang et al., 2022). Furthermore, the use of digital technologies may enhance resilience, enabling SMEs to adapt to complex environments and thereby redefining stability from mere survival to a state of antifragility that allows them to prosper during crises (Corvello et al., 2022).

Barriers to Digital Transformation Adoption in SMEs

Nonetheless, the adoption process is not without challenges. Pelletier and Cloutier (2019) emphasise the awareness and understanding of technical obstacles in SMEs, which frequently lack the necessary infrastructure and strategic frameworks to implement extensive digital changes. Lei et al. (2022) corroborate this view, indicating that the daunting aspects of digital transformation frequently induce reluctance among SMEs, especially in countries such as China, where economic sustainability depends on their ability to adapt quickly. These problems underscore the need for systematic strategies in digital transformation, advocating that SMEs implement gradual modifications rather than drastic reforms, as demonstrated by Priyono et al. (2020). Moreover, gender dynamics and leadership abilities are recognised as crucial elements in addressing the challenges of digital transformation. Alam et al. (2022) assert that leadership competencies and proficiency levels profoundly influence the effectiveness of digital efforts, especially during periods of disruption, such as the pandemic. This notion aligns with research findings that highlight the need for enhanced training and knowledge development among personnel to meet the technological requirements of digital transformation (Yen et al., 2024).

Strategic Approaches to Digital Transformation in SMEs

The significance of strategic frameworks is evident, as highlighted by Sánchez et al. (2023) and Wang (2024), who promote the incorporation of digital strategies into organisational practices to enhance transformation outcomes. The identification of specific drivers, such as market competitiveness, knowledge management, and business model innovation, further exemplifies the intricate and context-dependent nature of digital transformation in SMEs (Ragazou et al., 2022). Given these foundations, SMEs are encouraged to develop customised strategies that account for their unique circumstances and market dynamics. In conclusion, the literature offers a comprehensive understanding of the digital transformation process for SMEs, emphasising the strategic necessity of technology adoption and the complex issues that arise from these projects. By employing strong leadership, customised strategies, and gradual execution, SMEs can enhance their ability to leverage the benefits of digital transformation in an evolving economic environment.

Evolutionary Theory of Organisations

The Evolutionary Theory of Organisations posits that firms operate in dynamic and continuously changing environments, requiring constant adaptation to survive and remain competitive (Ferreira da Silva et al., 2016). Market systems are inherently unstable and evolve in response to shifts in consumer needs, technological advancements, and competitive pressures, leading to ongoing disequilibrium (Kiveu & Ofafa, 2013). As a result, firms must continuously innovate, improve product and service quality, and identify new market opportunities to sustain a competitive advantage. Failure to adapt may result in declining performance and eventual market exit. In the context of this study, the theory explains the necessity for South African SMEs to adopt digital technologies as part of their adaptive response to a rapidly evolving digital economy. It highlights that employee readiness and organisational capability are critical enablers of this adaptation, as firms require skilled employees and agile structures to respond to technological change and shifting market demands effectively.

The Resource-Based View

Subsequently, the Resource-Based View (RBV) conceptualises the firm as a bundle of resources and capabilities that can generate sustained competitive advantage when they are valuable, rare, inimitable, and non-substitutable (Barney, 1991; Mata, Fuerst & Barney, 1995). Originating in Penrose's (1959) work, the theory emphasises that firm growth depends on how effectively management utilises available resources. These resources include not only physical assets but also intangible elements such as knowledge, skills, organisational processes, and technological capabilities.

Empirical studies have demonstrated that firms with strong information systems (IS) capabilities tend to outperform their competitors (Bharadwaj, 2000; Santhanam & Hartono, 2003), while IS resources such as infrastructure, technical skills, and change management capabilities are critical for organisational performance (Wade & Hulland, 2024; Melville et al., 2024). In relation to this study, the RBV provides a lens for understanding how employees' digital literacy and organisational capability function as strategic resources within South African SMEs. Firms that possess strong digital skills, effective leadership, and robust technological infrastructure are better positioned to adopt and leverage digital technologies successfully. In contrast, resource-constrained SMEs face significant barriers to digital transformation.

The Technology-Organisation-Environment (TOE)

In line with the other theories mentioned, the Technology-Organisation-Environment (TOE) framework, developed by Tornatzky and Fleischer (1990), provides a comprehensive approach to understanding the factors influencing organisational adoption of technological innovations. The framework categorises these factors into three contexts: technological, organisational, and environmental. The technological context refers to the characteristics of the technology itself, such as complexity, compatibility, and security; the organisational context includes factors such as firm size, managerial support, and internal capabilities; and the environmental context encompasses external influences such as market competition, regulatory pressures, and government support. Compared with other models that focus on individual behaviour, such as the Technology Acceptance Model

(Davis et al., 1989; Venkatesh et al., 2003, 2008) and the Diffusion of Innovations theory (Rogers, 2003), the TOE framework is particularly well-suited to firm-level analysis. In this study, the TOE framework is applied to examine how technological readiness, organisational capability, and environmental factors collectively influence digital adoption among South African SMEs. Specifically, employee readiness aligns with the organisational context, while policy support and market pressures reflect the environmental dimension, enabling a holistic understanding of the enablers and barriers to digital transformation.

In conclusion, the Evolutionary Theory of Organisations, the RBV, and the TOE framework collectively offer a coherent and complementary foundation for understanding digital technology adoption among South African SMEs. The Evolutionary Theory highlights the imperative of continuous adaptation to rapidly changing technological and market conditions. At the same time, the RBV emphasises the strategic importance of internal resources, particularly employee skills and organisational capabilities, in achieving sustained competitive advantage. The TOE framework extends this understanding by integrating technological, organisational, and environmental dimensions that shape adoption decisions. Together, these perspectives demonstrate that successful digital transformation is not solely driven by access to technology, but by the alignment between internal capabilities and external pressures, thereby reinforcing the central role of employee readiness and organisational capability in this study.

4. Results and Discussion

The findings of this study reveal that digital readiness among South African SMEs remains highly uneven. While some enterprises have effectively integrated digital technologies into their operations, many continue to rely on outdated systems and manual processes. Employee readiness emerged as a critical factor influencing the pace and success of digital adoption. Organisations with a digitally literate workforce tend to adapt more successfully and reap greater benefits due to enhanced organisational performance. Similarly, leadership commitment, as evidenced by clear digital strategies and technology investments, was found to influence transformation outcomes significantly. However, despite numerous government programmes supporting SME digitalisation, issues of awareness, accessibility, and contextual relevance persist. The findings suggest that both human and organisational capabilities must be strengthened for meaningful progress to occur.

5. Policy Implications

The results carry significant implications for policymakers, enterprise development agencies and institutional stakeholders. There is a clear need for inclusive digital literacy programmes that empower not only business owners but also employees. Government support must be context-sensitive, ensuring that rural and township-based SMEs can access and benefit from available resources. Collaboration among government, academic institutions, and the private sector is crucial for building integrated support systems. Furthermore, digital policies should align with the realities of SMEs, focusing on the practical barriers that hinder their digital transformation rather than adopting one-size-fits-all approaches.

6. Recommendations

Based on these insights, this research proposes several recommendations. Firstly, there is a need to invest in continuous digital training for employees to foster adaptability and confidence in new technologies. Secondly, SMEs should cultivate a culture of innovation that encourages digital experimentation. Thirdly, access to government digitalisation programmes should be simplified and decentralised to reach marginalised business communities. Lastly, public-private partnerships should be promoted to expand digital infrastructure, particularly in rural regions. These measures would collectively enhance SME resilience, productivity, and competitiveness in an increasingly digital economy.

7. Conclusion

In conclusion, the study finds that digital transformation is not merely a technological challenge but fundamentally a human and organisational one. Employee readiness and organisational capability form the foundation upon which successful digital transformation is built. Without adequate skills, leadership commitment, and supportive structures, SMEs will struggle to leverage digital technologies effectively. For South Africa to achieve inclusive economic growth, we must prioritise building digital competencies and organisational resilience among our SMEs. Strengthening these areas will not only enhance business performance but also significantly contribute to national development goals, such as job creation, innovation, and competitiveness.

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