

## PREDICTORS OF DIGITAL MATURITY FOR ACCOMMODATION SMALL-AND MICRO ENTERPRISES: A SYSTEMATIC REVIEW

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**Abstract:** Organisations wanting to stay competitive through digital transformation must demonstrate high digital maturity levels according to current market conditions. South African small and micro enterprises (SMEs) have the potential to make a significant contribution to the local economy; however, they face specific digital transformation challenges and opportunities that distinguish them from other businesses. The small accommodation sector faces challenges such as limited financial resources, which impact digital access, inadequate infrastructure, insufficiently skilled workers, and must navigate complicated regulatory frameworks. Digitalisation can transform SMEs by enabling market expansion, operational efficiency, customer satisfaction, and business stability, thereby becoming more sustainable and contributing to a competitive advantage, while also supporting local employment and economic growth. The research combines existing studies to determine which factors influence digital maturity levels in South African small and micro accommodation businesses. The researcher conducted a systematic database search across Scopus, Web of Science, EBSCOhost, Google Scholar, and Sabinet for peer-reviewed articles published between January 2013 and May 2024. The PRISMA guidelines were used to evaluate studies after screening and extraction. The research included fourteen studies that met the established criteria. The findings revealed that SMEs achieve digital maturity through multiple interconnected elements, which include personal skills, organisational characteristics, and environmental and systemic factors. Digital maturity depends on the owner/manager's digital literacy, access to ICT infrastructure, organisational culture, financial capacity, external support networks, and regulatory environment. The development of digital maturity in South African accommodation SMEs requires programs that enhance digital competencies, build infrastructure, and create supportive regulatory frameworks. Financial backing, skill development, and information dissemination will enable stakeholders to harness digital transformation for enhanced sector competitiveness and inclusive economic expansion in South African tourism.

**Keywords:** digital maturity, Small-scale accommodation enterprises, digital transformation, technology adoption, hospitality SMEs

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### INTRODUCTION

Digital transformation is a fundamental business requirement that enables organisations to achieve market competitiveness and operational resilience (Buhalis & Leung, 2018; Westerman et al., 2014). Digital maturity is a fundamental business growth factor for tourism and hospitality companies because it determines their ability to use digital technologies for strategic and operational success (Mero et al., 2020; Li et al., 2021). The accommodation industry depends on digital platforms for distribution and marketing, guest communication, and operational efficiency, which makes digital maturity essential for market survival and business success (George et al., 2020; Ghosh et al., 2022). The accommodation sector of South Africa functions as a fundamental tourism industry segment which drives economic expansion and generates employment opportunities (Rogerson & Rogerson, 2021; SAT, 2021).

The accommodation sector consists of numerous small and micro enterprises which operate as guesthouses, bed-and-breakfasts, and boutique lodges to expand tourism participation, boost local economies, and promote inclusive economic growth (Rogerson, 2019; Lebambo & Shambare, 2021). The digital transformation of these SMEs faces unique barriers because they lack financial resources, have inadequate infrastructure, and insufficiently skilled workers, and must navigate complicated regulatory frameworks (Nyirenda & Pelser, 2020; Ndayizigamiye & Dube, 2020).

The COVID-19 pandemic created an immediate need for digital transformation in the accommodation industry because it forced all businesses to adopt digital solutions for marketing, guest engagement, and booking management (Mabaso et al., 2023; Kahiya & Mhlanga, 2022). The digital transformation presents an opportunity for some SMEs to enhance their digital capabilities. However, numerous businesses face challenges because of restricted resources and digital access problems that affect rural and township areas (Sibanda & Rambe, 2021; OECD, 2021).

The literature shows that digitalisation transforms SMEs by enabling market expansion, operational efficiency, customer satisfaction, and business stability (Martin et al., 2019; Li et al., 2021; OECD, 2021). The journey to digital maturity requires complex approaches because it depends on multiple internal and external elements. Research across

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international borders shows that digital transformation success depends on four key elements: leadership, digital literacy, organisational culture, financial readiness, and ecosystem support (Buhalis & Leung, 2018; Ghosh et al., 2022). The research field in South Africa has started to study these matters; however, there is no complete analysis of digital maturity predictors for accommodation SMEs. The identification of these predictors serves multiple essential purposes. Identifying these factors enables government agencies, development organisations, and industry bodies to create specific intervention strategies that help close digital gaps while fostering sustainable development. Identifying strategic digital investment and capacity-building priorities allows SMEs to be accommodated through this knowledge.

The research adds to academic knowledge about digital transformation in developing markets by providing findings that could help other African and Global South countries (George et al., 2020). The systematic review aims to address this knowledge gap through a comprehensive evaluation of research evidence, which determines digital maturity predictors for South African accommodation SMEs. The research seeks to achieve two main objectives, which include (1) identifying and sorting the internal and external elements that support or hinder digital maturity in this setting and (2) developing practical recommendations for policy implementation, future research, and practice applications. The review aims to help South African accommodation SMEs achieve digital transformation by revealing their transformation paths and obstacles to digital economy benefits. Studies worldwide support these results because digital maturity depends on technology access and human resources, organisational culture, and supportive business environments (Martin et al., 2019; OECD, 2021). The specific socio-economic situation of South Africa, with its vast social gaps and limited infrastructure, requires a detailed analysis of digital maturity factors affecting accommodation SMEs.

## LITERATURE REVIEW

### Digital transformation and SMEs in the accommodation sector

The digital transformation of small and micro-enterprises (SMEs) operating in the accommodation sector has become a significant research focus in emerging economies because these economies face ongoing digital access disparities (Buhalis & Leung, 2018; George et al., 2020). The accommodation industry of South Africa consists mainly of small and micro enterprises, which include guesthouses, bed-and-breakfasts, lodges, and boutique hotels (Rogerson & Rogerson, 2021).

Tourism-driven local economic development depends heavily on these businesses, but they encounter specific challenges and development routes to achieve digital maturity (Nyirenda & Pelser, 2020). Organisations achieve digital maturity through their ability to integrate digital technologies into fundamental business operations, decision systems, and customer relations (Westerman et al., 2014; Ghosh et al., 2022). Research worldwide shows that digital maturity helps small and medium enterprises (SMEs) to operate more efficiently while reaching broader markets and delivering better customer experiences (Mero et al., 2020; Li et al., 2021). Research about African and South African accommodation businesses shows that technological adoption follows non-linear patterns because it depends on multiple socioeconomic factors, organisational elements, and environmental conditions (Sibanda & Rambe, 2021).

South African research shows that some accommodation SMEs expand their operations using online booking systems, digital marketing tools, and property management software. However, numerous businesses maintain manual operations or use only partial digital solutions (Rogerson, 2019; South African Tourism, 2021). The research conducted by Davids & Jokonya (2019) demonstrated that Western Cape SMEs exhibit diverse digital adoption levels because urban businesses outperform rural businesses. The study by Lebambo & Shambare (2021) shows that local conditions determine digital adoption because infrastructure problems, cost barriers, and differences in digital competence levels generate substantial inequalities.

The COVID-19 pandemic has become a digital transformation accelerator because it forced numerous SMEs to speed up their digital evolution through changes in consumer conduct and operational limitations (Kahiya & Mhlanga, 2022). The literature shows that digital integration faces ongoing challenges because of restricted funding opportunities, insufficient training programs, and unclear regulatory frameworks (Ndayizigamiye & Dube, 2020).

Research worldwide supports these findings by showing that digital maturity depends on technological and human resources, organisational culture, and supportive business environments (Martin et al., 2019; OECD, 2021). The specific socio-economic conditions of South Africa demand a detailed investigation into what drives digital maturity among accommodation SMEs throughout the country.

### The role and impact of small-scale accommodation enterprises in South Africa

#### Economic and social contributions

Most South African tourism accommodation businesses operate as small-scale enterprises (SSAEs), including guesthouses and bed and breakfasts (B&Bs), self-catering cottages, boutique lodges, and homestays. The Tourism Grading Council of South Africa (TGCSA, 2022) and South African Tourism (2023) report that small-scale accommodation businesses account for more than 80% of the country's 60,000 registered accommodation facilities. Most companies operate in non-urban areas, small towns, and rural locations. SSAEs serve as essential job generators in the economy.

The World Travel & Tourism Council (WTTC, 2023) reports that tourism in South Africa created 1.1 million direct employment opportunities in 2022, while SSAEs generated between 40-50% of accommodation sector jobs according to SEDA (2022) and UNWTO (2022). The labour-intensive nature of SSAEs and their local presence make them essential for fighting unemployment while creating entry-level positions for women and young people. The ownership structure of SSAEs demonstrates national transformation and empowerment because more than half of these businesses are operated by women, and one-third are managed by young people (NDT, 2023). The economic influence of SSAEs reaches beyond their ability to create employment opportunities. These businesses create economic growth locally by

purchasing products and services from nearby suppliers, including food producers, laundry services, artisans, and tour operators. The World Bank (2021) demonstrates that every rand earned by SSAEs creates 72 cents of additional economic activity through their local supply chain networks, which increases their overall economic impact.

### **Social, cultural, and developmental impacts**

SSAEs create social inclusion and community development through three main mechanisms. Most SSAEs operate as family-run or community-based businesses that preserve cultural heritage by delivering genuine local experiences and showcasing indigenous traditions and regional history (Rogerson & Rogerson, 2021). The development of rural and Township areas benefits from SSAEs because they expand tourism beyond major cities and resorts, which leads to economic diversification and reduced regional disparities (UNWTO, 2022). These businesses are essential tools for entrepreneurship and empowerment because they provide entry points for local business owners to join the formal economy while fostering self-reliance and innovation (SEDA, 2022). SSAEs create positive social cohesion through their ability to host local events and facilitate visitor-host interactions and business partnerships, which unite communities with tourists.

### **Contribution to tourism growth and resilience**

The diverse range of accommodation options in South Africa depends on small-scale accommodation enterprises to maintain its position as an accessible tourist destination. These businesses maintain quick response capabilities to market changes through their adaptability, which helped them thrive during domestic travel growth during COVID-19 and the rise of experiential and slow tourism (SA Tourism, 2023). The remote locations of these businesses make them essential for building tourism-based recovery and resilience in underdeveloped areas.

### **Challenges unique to small-scale accommodation enterprises**

The numerous advantages of SSAEs face multiple obstacles that restrict their ability to grow and become more resilient while adopting digital transformation. The main impediment to SSAEs stems from their restricted financial capabilities. Most SSAEs function with minimal profit margins while facing extreme sensitivity to market fluctuations and unexpected disturbances. Traditional lenders avoid investing in digital technology and marketing initiatives for small, informal, and rural businesses because they consider these operations risky, which blocks access to finance (World Bank, 2021). The financial restrictions become more severe because owner-operators handle multiple responsibilities, preventing them from dedicating time or resources to strategic planning or staff development.

The industry faces a significant problem because many operators within the sector lack digital competence and human resource expertise. The digital skills and online marketing abilities of SSAE owners and their staff members remain insufficient to implement new technology systems and handle digital guest relations and online business promotion (SEDA, 2022). The fast evolution of technology and restricted affordable training options prevent numerous SSAEs from implementing essential digital tools, including online booking systems, property management systems, and digital marketing platforms, vital for contemporary market success. The existing infrastructure problems worsen these difficulties because rural and township areas experience unreliable broadband connections and regular power blackouts that disrupt business operations. Statistics South Africa (2022) shows that rural SSAEs achieve less than 50% internet reliability, yet urban areas maintain more than 90% reliable internet access. The digital requirements of modern travellers create market barriers because they need immediate online services and communication channels.

The registration process for SSAEs remains complicated because they must follow strict compliance rules while dealing with insufficient government agency support. Their informal and semi-formal operations prevent them from accessing official support programs, mainstream distribution channels, and financial assistance. The restricted market access stems from minimal marketing funds and dependence on third-party platforms, which impose high fees that reduce direct customer connections. The inability to handle online reputation management negatively impacts booking numbers because online reviews have become essential for businesses. SSAEs face exceptional risk from outside events, including pandemics, economic downturns, and climate-related disasters. The COVID-19 pandemic exposed the weak state of SSAEs because numerous businesses needed to shut down or reduce their operations due to travel restrictions and significant market demand reductions. The recovery period has proven challenging for SSAEs because they need to implement new health measures and adapt to changing consumer tastes while dealing with digital booking platforms that continue to gain market share. Small-scale accommodation enterprises in South Africa play a vital role in economic expansion, social integration, and tourism variety. Yet, they encounter multiple obstacles which endanger their ability to innovate and survive. The complete realisation of SSAEs as tourism development drivers for inclusive and resilient growth depends on joint initiatives to enhance digital skills training, financial access, infrastructure development, and support network availability.

### **Digital maturity and transformation frameworks**

Assessing digital maturity among South African small-scale accommodation enterprises (SSAEs) requires multiple theoretical perspectives. Analysing digital transformation predictors and barriers in the sector depends on combining digital transformation theories, technology adoption models, organisational behaviour, and small business management principles. The ability of organisations to use digital technology for business model improvement, operational efficiency, and customer engagement and adaptability defines digital maturity (Westerman et al., 2011; Kane et al., 2015). The digital maturity model from Westerman et al. (2011) divides organisations into four stages, starting from digital beginners who lack integration, to fashionistas who have many digital initiatives but no integration, and

conservatives who are risk-averse, and digital masters who achieve full integration, innovation, and agility. The position of SSAEs on this spectrum depends on various internal and external elements. Digital transformation involves more than technology implementation because it requires organisations to transform their complete structure, operational systems, and cultural framework (Bharadwaj et al., 2013; Hess et al., 2016). The hospitality industry requires businesses to unite online booking systems with automated property management, social media marketing, and customer analytics platforms. Digital transformation requires organisations to develop "digitally mature" cultures and mindsets because it involves technological implementation and human behavioural changes (Buhalis & Leung, 2018).

### **Technology acceptance model (TAM)**

According to Davis (1989), the Technology Acceptance Model (TAM) shows that users will adopt new technologies based on their perceived usefulness and ease of use. The adoption rates of digital tools in SSAEs increase when owners and staff members see their value and find them easy to implement (Mariani & Borghi, 2019). The model demonstrates why owner-managers' digital literacy and positive attitudes are crucial in adopting.

### **Diffusion of innovations theory**

The Diffusion of Innovations theory, as proposed by Rogers (2003), explains how innovations spread between organisations and within them at a macro level. The theory's five factors of relative advantage, compatibility, complexity, trialability, and observability explain why digital tool adoption rates differ between urban and rural SSAEs and different market segments (Rogerson, 2019).

### **Unified theory of acceptance and use of technology (UTAUT)**

The UTAUT model (Venkatesh et al., 2003) extends TAM by adding social influence factors and facilitating conditions, including peer and customer expectations and infrastructure support. Small tourism businesses in the industry face digital adoption influences from their industry networks, customer market forces, and local business support systems.

### **Organisational culture and change management**

The success of digital transformation depends heavily on organisational culture, according to Schein (2010) and Leso et al. (2023). Organisations that value learning, innovation, and adaptability will be more willing to test digital technology implementations. The change management theory of Kotter (1995) demonstrates that organisations must establish a clear vision and leadership while maintaining open communication with stakeholders to implement lasting transformation successfully. The values and attitudes of SSAE owners who actively manage daily operations determine how open their organisations will be to change.

### **Resource-based view (RBV) and dynamic capabilities**

The Resource-Based View (Barney, 1991) states that organisations gain sustainable competitive advantage by possessing distinctive valuable resources, including physical assets and knowledge-based elements. Digital literacy, innovative culture, and customer relationships are essential for SSAEs to succeed. According to Teece et al. (1997), organisations must develop dynamic capabilities to detect digital opportunities and threats and convert them into business advantages.

### **SME and entrepreneurship theory**

Sme theory (storey, 1994) explains how small businesses encounter unique obstacles because they operate with limited resources and informal structures and face greater exposure to environmental challenges. The digital divide affecting small and medium enterprises (SMEs) is most severe in developing countries like South Africa because of limited infrastructure, financial resources, and weak institutional support (Deloitte, 2021).6. Tourism and Hospitality Context.

The tourism and hospitality industry faces special challenges because of its intangible nature, perishable products, and its focus on delivering exceptional customer experiences, making digital maturity adoption more significant (Buhalis & Leung, 2018). The tourism sector needs digital transformation because guests now expect immediate service and customised communication through online platforms following the pandemic (World Bank, 2021; UNWTO, 2022).

### **Digital ecosystem and external environment**

The digital ecosystem, which includes government policies, industry standards, and public-private partnerships, is a fundamental factor enabling or hindering digital maturity development (OECD, 2021; SA Tourism, 2023). Organisations that join industry associations, digital accelerators, and training programs gain better access to knowledge, resources, and social capital (Google Africa, 2023).

### **Theoretical insights on digital maturity in small-scale accommodation enterprises**

The systematic review bases its theoretical framework on the understanding that digital maturity within small-scale accommodation enterprises (SSAEs) consists of multiple interconnected elements. The research demonstrates that digital transformation of the South African tourism sector requires multiple theoretical approaches because each framework provides insufficient understanding of its distinct challenges and prospects. Understanding digital maturity requires more than technology acquisition and infrastructure availability. The availability of reliable internet, capital, and modern devices does not automatically lead to success in the digital transformation.

The Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) demonstrate that human elements, particularly owner-manager and staff perceptions and confidence and openness toward digital tools, play a vital role in digital transformation success. According to Schein (2010) and Kotter (1995), the individual readiness of staff members interacts with organisational culture because organisations need to create spaces that encourage learning, experimentation, and adaptability for lasting change.

## RESEARCH METHODOLOGY

The systematic review uses established best practices for literature synthesis described by Tranfield et al. (2003) and the PRISMA guidelines (Moher et al., 2009; PRISMA, 2020). The research design aims to gather all relevant scholarly and grey literature about SSAE digital maturity predictors in South Africa to deliver strong, actionable results for researchers, policymakers, and practitioners. The study design started with the understanding that digital maturity is a complex concept that unites knowledge from tourism management, information systems, small business development, and economic policy fields. The interdisciplinary nature of the subject led to the selection of systematic review methodology because it provides both complete and unbiased results beyond the capabilities of narrative or selective reviews (Booth et al., 2016). The review investigates which factors from scholarly and industry literature determine digital maturity in South African small-scale accommodation enterprises.

The researcher developed a search plan to find all relevant studies while preventing any form of bias. The researcher conducted systematic database searches for academic and thesis content through Scopus, Web of Science, EBSCOhost, ScienceDirect, JSTOR, and ProQuest. The search included official reports from South African Tourism and NDT, SEDA and WTTC, and international organisations such as the World Bank, Deloitte, UNWTO, and OECD. The research focused on essential hospitality and tourism and SME-related academic publications. The combination of Boolean operators with specific keywords, including "digital maturity", "digital transformation", "small-scale accommodation", and "South Africa", produced relevant studies while minimising unimportant results. The review analysed publications from 2010 onward but included essential earlier works to establish theoretical foundations.

The research applied specific criteria for study selection to achieve both transparency and objectivity in the process. The research included studies examining digital maturity, transformation, and technology adoption within South African small-scale accommodations and hospitality businesses. The review included research from Sub-Saharan Africa when the findings directly applied to the study. The review included academic peer-reviewed articles and high-quality grey literature sources that used English as their publication language.

The study excluded research that concentrated on big hotel corporations and tourism industries outside hospitality and digital maturity assessments that did not serve as the primary focus. The research excluded opinion pieces, newsletters, and non-systematic reviews because they failed to meet the required methodological standards.

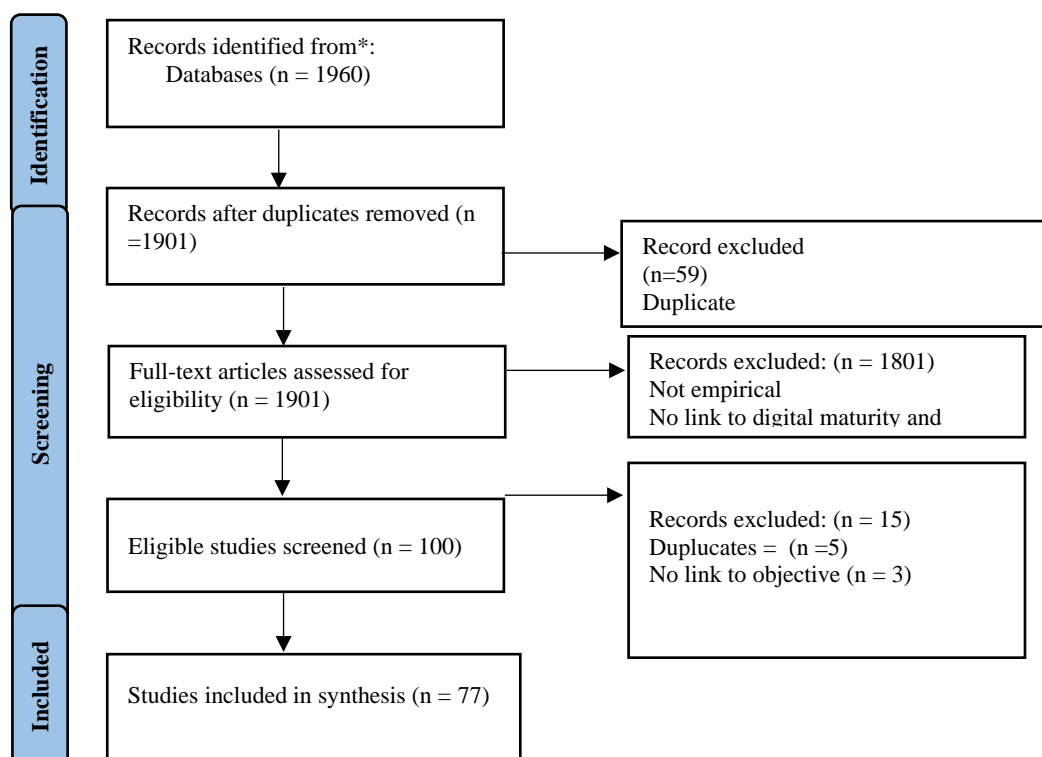


Figure 1. PRISMA framework flow chart (Moher et al., 2009)

The PRISMA (Figure 1) flow guided the study selection process, which started with record identification and de-duplication, followed by title and abstract screening for relevance, and ended with full-text evaluation against inclusion

criteria. The research team used multiple reviewers in a staged process to decrease selection bias while enhancing the reliability of the review. A standardised data extraction form was created to collect study information, including citation data, research context, methodology, participant demographics, and discovered factors, challenges, and primary research outcomes. The systematic method enabled researchers to evaluate evidence from different study types with other characteristics. The thematic synthesis process used inductive coding to find repeated patterns, which resulted in the organisation of predictors into conceptual groups, including human capital and financial resources, infrastructure and market pressures, and organisational culture. The thematic synthesis method allowed researchers to understand the data deeply while creating a connection between South African research outcomes and established digital maturity frameworks from Westerman et al. (2011) and Bharadwaj et al. (2013).

The methodology required a thorough evaluation of study quality for all included research papers. The research team applied the CASP (Critical Appraisal Skills Programme) checklist for qualitative studies and the JBI (Joanna Briggs Institute) checklist for quantitative research to evaluate empirical studies. The AACODS checklist assessed grey literature by verifying the source's authority, accuracy, coverage, objectivity, date, and significance.

The quality appraisal process enhances the reliability of the final synthesis by showing both the positive aspects and weaknesses of the evidence base. The research design includes recognition of its built-in constraints. The research analysis depends on English-language materials, which might have excluded important Afrikaans and indigenous language resources. The fast-paced development of digital technologies leads to the possibility that some research results will lose their validity because new digital tools and practices will appear in the sector.

The research team searched extensively but failed to discover all relevant grey literature and unpublished studies. The review process followed ethical standards by correctly referencing all sources while avoiding human participant involvement and sensitive data exposure. The systematic review methodology used in this study provides both high research reliability and evidence-based recommendations for South African small-scale accommodation enterprises to develop their digital transformation strategies.

## RESULTS

### Predictors of digital maturity in South African accommodation SMEs

The synthesis of the reviewed literature reveals a multi-dimensional framework of predictors that collectively shape digital maturity among South African accommodation SMEs (Table 1).

These predictors operate at the individual, organisational, and systemic levels.

Table 1. Predictors of digital maturity for SSAEs

Predictors	Description
1. Owner/Manager Digital Literacy & Attitude	Skills, confidence, and openness to digital transformation among leadership
2. Financial Resources & Access to Funding	Ability to invest in digital solutions, access to grants/loans, and perceived ROI
3. Digital Infrastructure & Connectivity	Availability and reliability of the internet and digital tools, especially in rural areas
4. Market & Customer Pressures	Demand from tech-savvy travellers, competition, and expectations for online access
5. External Support & Network Participation	Engagement with industry associations, mentorship, training, and government / private programs
6. Organisational Culture & Change Management	Willingness to innovate, learn, and manage change within the enterprise
7. Enterprise Characteristics (Type, Location)	Influence of urban/rural setting, market segment, and size on digital adoption

### Owner/manager digital literacy and attitudes

The literature shows that the owner or manager's digital literacy and willingness to adopt new technology are fundamental to digital transformation success. Research shows that SMEs operated by owners who demonstrate digital literacy and innovation-mindedness tend to adopt sophisticated digital solutions (Davids & Jokonya, 2019; Nyirenda & Pelsler, 2020). Research by Sibanda & Rambe (2021) in Limpopo province established that owner dedication to digital training and their willingness to learn new digital skills directly affected digital platform usage. The research confirms international findings about human capital's importance in digital transformation by identifying owner resistance to change and generational differences as major obstacles (Martin et al., 2019; OECD, 2021).

### Access to ICT infrastructure

The quality and accessibility of information and communication technology (ICT) infrastructure are essential elements enabling digital maturity development. Rogerson & Rogerson (2021) explain that urban SMEs experience stable internet connectivity and competitive digital service options, yet rural and peri-urban businesses struggle with ongoing connectivity problems. The absence of proper infrastructure prevents businesses from adopting digital solutions and stops them from joining digital platforms such as online travel agencies (OTAs) and e-payment systems (Lebambo & Shambare, 2021; Ndayizigamiye & Dube, 2020).

### Financial capacity and access to capital

SMEs need financial resources to purchase technology investments, employee training, and digital marketing initiatives (Ghosh et al., 2022). The initial expenses for property management systems, website maintenance, and OTA subscriptions create significant barriers for small businesses to enter the market. Research conducted by George et al.

(2020) and South African Tourism (2021) shows that companies with better access to funding and government support programs achieve higher digital capabilities and pandemic resilience (Mabaso et al., 2023).

#### **Organisational culture and innovation orientation**

The literature shows that organisations which promote learning and experimentation and embrace change as a value demonstrate digital maturity (Sibanda & Rambe, 2021; Buhalis & Leung, 2018). Businesses that support employee skill development and promote digital thinking among staff members achieve better results in technology adoption. Lebambo & Shambare (2021) discovered that SMEs that actively trained staff and interacted with customers through digital tools managed to sustain their operations during emergencies.

#### **External support networks and ecosystem engagement**

Research studies confirm that external networks, including government agencies, private sector partners, and industry associations, play a vital role in digital transformation (South African Tourism, 2021). Digital readiness programs, mentorship, and peer learning platforms enable organisations to share knowledge while accessing shared resources. The Tourism Incentive Programme and digital skills workshops provided by provincial tourism boards have proven successful in driving digital adoption, according to Rogerson (2019) and South African Tourism (2021).

#### **Regulatory and policy environment**

The development of digital maturity depends on a supportive regulatory framework that includes specific e-commerce laws, data protection standards, and business-friendly policies (Rogerson, 2019). The current bureaucratic system and insufficient targeted incentives are barriers to progress. Research indicates that businesses need simplified registration procedures and enhanced digital infrastructure funding opportunities and regulatory standards that match the operational capabilities of small and medium enterprises (Davids & Jokonya, 2019; OECD, 2021).

#### **Market pressure and customer expectations**

The growth of international online travel agencies, shifting consumer behaviour, and digital-first traveller trends have forced small and medium enterprises to implement digital transformation (Buhalis & Leung, 2018). The need for online booking, contactless payments, and real-time communication from customers has driven digital transformation among businesses that serve international customers (Li et al., 2021).

### **DISCUSSION**

The systematic review results demonstrate that South African accommodation SMEs achieve digital maturity through multiple interconnected elements, which include personal skills, organisational characteristics, and environmental and systemic factors. The research confirms that owner/manager digital literacy is the essential factor that aligns with worldwide studies showing leadership vision and digital competency drive technological adoption and digital transformation sustainability (Buhalis & Leung, 2018; Ghosh et al., 2022). The digital divide in South Africa becomes more pronounced because rural and township SMEs face unreliable internet access and unaffordable technology devices, according to Lebambo & Shambare (2021) and Rogerson & Rogerson (2021). According to existing research, financial resources are vital in digital investment. Small and micro enterprises face capital restrictions preventing them from buying digital platforms, joining online marketplaces, and maintaining their current systems (Mofokeng & Chinomona, 2019). The current government programs and industry support systems have limited reach and effectiveness because numerous small businesses lack knowledge about available programs and fail to qualify for them (South African Tourism, 2021).

The speed and extent of digital transformation depend on how organisations approach change through their cultural values and their willingness to innovate. Small and micro enterprises that maintain a learning-oriented culture, experimental mindset, and employee development programs achieve better utilisation of digital tools for service development and customer relations (Sibanda & Rambe, 2021). The combination of risk avoidance behaviour and digital unfamiliarity among leaders creates obstacles for business development. According to Kahiya & Mhlanga (2022), the pandemic forced all SMEs to adopt digital solutions for survival, but their long-term digital adoption success remains uncertain.

The literature repeatedly demonstrates that successful digital transformation depends on supportive ecosystems, which include industry associations, mentorship programs, and government agencies. These organisations deliver technical education and funding while creating knowledge exchange spaces, enabling SMEs to overcome their capacity limitations (Ndayizigamiye & Dube, 2020). The regulatory framework hinders SME digital adoption because it contains complex rules, insufficient digital infrastructure funding, and policy incentives that do not support digital transformation (Rogerson, 2019; OECD, 2021). The review further demonstrates that digital maturity requires individualised approaches because each organisation faces unique circumstances during its transformation process. Developing effective interventions and policy responses requires researchers to study how internal readiness interacts with external enablers and barriers.

#### **Recommendations**

South African accommodation small and micro enterprises (SMEs) need a complete strategy to enhance their digital maturity because it requires solutions for technological obstacles and human, financial, and systemic problems.

The government needs to establish digital infrastructure expansion programs focusing on underserved areas of South Africa because these regions lack reliable internet access for their numerous SMEs. The digital economy participation of

SMEs becomes possible through public-private partnerships, which receive targeted public funding to eliminate existing infrastructure barriers. The government needs to create financial support programs through grants, concessional loans, and tax incentives targeting digital investments for small and micro accommodation businesses. The support system must include easy-to-use application procedures and active outreach programs to help eligible SMEs obtain available resources, especially those with restricted administrative abilities.

The establishment of strong capacity-building initiatives stands as a vital requirement. The combination of technology providers and educational institutions with local chambers of commerce and industry bodies should create accessible digital literacy training programs for accommodation SME owners, their staff members, and managers. The training programs must consider different digital experience levels, language backgrounds, and operational characteristics of accommodation SMEs. The sector will benefit from peer-to-peer learning networks, mentorship programs, and demonstration projects that promote best practices and encourage innovation and ongoing improvement.

The regulatory framework needs assessment for potential modifications to establish better conditions for the digital transformation of small businesses. The government needs to simplify regulatory requirements and minimise administrative hurdles while ensuring all digital rules match the needs of small businesses.

The current situation demands immediate efforts to spread knowledge about available resources, digital tools, and market opportunities to SMEs. Successful implementation of digital adoption requires coordinated communication efforts and advisory services to inform SMEs about existing support programs, digital tools, and market opportunities. Lastly, South African accommodation SMEs need government support, industry collaboration and active participation from SMEs to achieve digital maturity. The combination of infrastructure development with financial backing, skill development, regulatory improvements and information dissemination will enable stakeholders to harness digital transformation for enhanced sector competitiveness and inclusive economic expansion in South African tourism.

### **Suggestions for future research**

The current research provides essential knowledge about digital maturity predictors for SSAEs, yet multiple areas need additional investigation. Research needs to follow SSAEs through their digital transformation journey. This will help scientists understand how businesses change technology usage patterns and how digital adoption affects performance and community growth. Research opportunities exist through comparative studies, which can explore different variables. Research should investigate how digital maturity factors and results differ between urban and rural SSAEs and between different provinces and market segments. Research into geographic, demographic, and economic factors will help develop policy solutions addressing digital adoption challenges. Current public and private support programs must be assessed with high precision. Research on Google Africa Tourism Accelerator, Airbnb Africa Academy, and Tourism Transformation Fund programs will show which digital maturity and business performance improvement strategies work best and which need modification or expansion. The study needs to investigate how different demographic characteristics, including gender, age, educational background, and business registration status, affect digital technology adoption. Research into these dynamics will enable the creation of targeted training programs which meet the specific requirements of disadvantaged groups operating in the sector.

Research into what travellers think about digital presence and service quality of SSAEs presents a promising research opportunity. Research about tourist reactions to digital presence and service quality of SSAEs will generate practical knowledge for developing marketing plans and technology acquisition strategies. The growing online presence of SSAEs has created new security risks which require immediate research on digital trust and cybersecurity protection methods for resource-limited settings. Research should investigate how common cybersecurity threats affect SSAE owners and their digital trust levels, and identify effective risk management strategies for limited resource settings.

Research should focus on technological leapfrogging because SSAEs can use affordable mobile-based digital solutions to overcome infrastructure limitations. Research must evaluate how these digital strategies help promote digital inclusion and market competitiveness for businesses operating in areas with limited connectivity and marginalised communities. South African SSAEs need practical solutions and continuous research and development to achieve digital maturity in the tourism industry. The combination of specific research studies and well-informed policy development enables stakeholders to support SSAEs in their digital transformation, enhancing their benefits for communities and the entire national tourism sector.

### **CONCLUSION**

The research examines digital maturity predictors for South African small-scale accommodation businesses through a comprehensive analysis of theoretical and empirical evidence. The study shows that digital maturity in this industry depends on more than technology infrastructure because it results from owner-manager digital literacy and attitudes, organisational culture, financial and human resource availability, market forces, and network strength.

The combination of internal and external elements produces an environment that presents both possibilities and obstacles for digital transformation, especially for businesses in rural areas with limited resources. The research results demonstrate that digital maturity improvement initiatives must address all aspects of the problem while considering specific local conditions. The success of digital maturity enhancement requires more than technology access because it needs digital skill development, innovation culture transformation, financial support, and network development.

The development of South African small-scale accommodation enterprises requires policymakers and industry stakeholders to create extensive training programs and support systems, as well as targeted infrastructure funding for



businesses in marginalised and rural areas. Implementing successful case studies and peer mentorship programs should help build confidence while showing concrete advantages to stakeholders.

The digital transformation of small-scale accommodation enterprises is a fundamental solution to enhance South African tourism through increased business resilience, market competitiveness, and economic inclusion. The sustainable growth of local economies and communities depends on stakeholders who address human and systemic factors of digital maturity to empower SSAEs for digital marketplace success.

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