Digitalization Opportunities for Tourism Micro-Entrepreneurship in South Africa : An Academic Gaze

Portia Pearl Siyanda Sifolo [1]
Philasande Sokhela [2]

Abstract

Framed within the technology determinism and diffusion of innovation (DOI) theory, the study aimed to evaluate digitalization opportunities that could be explored by the tourism micro-entrepreneurs (TMEs) in South Africa. A question raised in this paper is how tourism micro-entrepreneurs can improve firms' performance through digitalization, particularly in the South African context as a developing country. A systematic review of the literature on the digitalization of micro-entrepreneurs in an African context was conducted. The study reviewed 50 publications in peer-reviewed journals between 2017 and 2021. The literature analysis revealed that there is value in the digitalization of tourism micro-entrepreneurs. However, digitalization opportunities can only be realized through coordination and collaboration with relevant stakeholders. The findings revealed that developing a digital strategy could address the change in customers' needs, the future of work, and the preservation of historical and cultural practices while investing in tourism intelligence and improving policy regulations. The paper contributed toward adding to the limited academic gaze on tourism micro-entrepreneurship in Africa by identifying strategic prospects in digitalization.

Keywords : **tourism micro-entrepreneurship, digitalization, technological determinism, tourism 4.0, diffusion of innovation, digital adoption index**

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The world has become interconnected; hence, organizations worldwide are adopting digitalization as one of the inescapable strategies to remain competitive within the Fourth industrial revolution (4IR) era. According to Happ and Ivancsó-Horváth (2018), digitalization is indispensable for tourism organizations to meet the ever-growing expectations of consumers. However, critically evaluating the digitalization of a firm remains an abstract process due to the context-dependency (e.g., society, company, individual) and various perspectives on the topic (e.g., human, process, technology), particularly in the developing country context (Thordsen et al., 2020). While the digitalization of tourism micro-entrepreneurs (TMEs) in developing countries, particularly in South Africa, is minimally addressed in the academic gaze, this study identifies the strategic opportunities for TMEs.

Background of Digital Adoption in Micro Tourism Entrepreneurship

The use of cutting-edge technology among organizations that have been in operation for less than 3.5 years has

[1] *Senior Lecturer,* Department of Tourism Management, Tshwane University of Technology, Pretoria, 0183, South Africa. (Email : SifoloPS@tut.ac.za) ; ORCID iD : https://orcid.org/0000-0001-6618-8796
[2] *Lecturer,* College of Business Economics, Johannesburg Business School, Johannesburg, 2092, South Africa. (Email : Philasande.sokhela@jbs.ac.za) ; ORCID iD : https://orcid.org/0000-0003-4893-2432

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enabled them to achieve extraordinary growth rates throughout the years (Gupta et al., 2021). As a result, TMEs need to incorporate new technology to remain viable. Tourism is probably one of the most integrated and fastest-growing sectors in the global economy, having enormous potential to improve South Africa's GDP. Digital is not a new phenomenon; it dates back to the 1950s with the introduction of computing. According to Aly (2022, p. 3), "digital is the application of electronic tools to improve business operations using the internet." Digital exists on the internet. Therefore, adopting digital tools of TMEs correlates with a competitive advantage for both international and domestic service providers for destinations.

The idea of digital adoption in developing nations remains an abstract process owing to context-dependency (e.g., society, firm, person) and varied viewpoints on the issue (e.g., human, process, technology) (Thordsen et al., 2020). Nevertheless, technology adoption in developed and developing countries is recorded in the Digital Adoption Index (DAI) (World Bank Group, 2016). According to the World Bank Group (2016), South Africa scored 0.63, which indicates a greater adoption rate when compared to other developing nations such as Nigeria (0.41), Algeria (0.43), Egypt (0.52), and Morocco (0.55). The comparison is based on the countries with the largest GDP (in US$) in 2021 (World Bank Group, 2021). This could be attributed to the quick response toward digital adoption among South African micro-enterprises.

There are four billion internet users globally (Internet World Stats, 2021). This accounts for an internet penetration of 58% of the world population. For example, South Africa has 41.19 million active internet users and 47,8 million active mobile internet users (Galal, 2022). This amounts to almost 67% of the total population. This number of internet and active mobile internet users demonstrates the significant role internet plays in the information exchange between consumers and service providers. From the tourism perspective, the internet provides means for tourism micro-entrepreneurs to reach target audiences outside their geographical boundaries and connect users to destinations.

According to Dwyer (2015), the internet and social media assist in information dissemination between service providers, destinations, customers, goods, and services. Platforms such as TripAdvisor's TripBarometer, Facebook, Twitter, YouTube, Skype, and, more recently, Zoom have enabled tourism micro-entrepreneurs to engage efficiently with clients. However, it is uncertain to what extent digital platform use has altered TMEs. Museba et al. (2021) state that client-digital adoption is still limited to early adopters. As a result, only a small percentage of consumers have embraced digital to connect with TMEs service providers. This serves to enhance TMEs by integrating digital technologies to improve operations. Some digital platforms have enabled tourism service providers to manage bookings digitally, dealing with pricing aggregation websites; for example, Bookings.com is among the biggest travel marketplaces for tourism service suppliers (Booking.com, 2020). The web portal collects accommodation listings from over 28 million listings and receives daily visitors from 72 countries worldwide (Booking.com, 2020). Listing services on travel comparison and aggregation websites provide an excellent opportunity for tourism micro-entrepreneurs in South Africa to get access to local and worldwide markets.

Digital platforms improve online transactions by providing consumers direct access to service providers, making sales more transparent and competitive. As per the literature, customers have shifted to internet buying, providing additional motivation for tourism micro-entrepreneurship to adapt to consumer demands. Furthermore, COVID-19 has had a global influence on e-commerce and has significantly altered the character of enterprises (Bhatti et al., 2020).

This paper focuses on the digitalization prospects in the travel and accommodation sub-sectors to raise awareness of these opportunities. Any firm based on a technology landscape will prosper if it can meet consumers' constant high-quality demands, particularly in the tourism and hospitality sectors. In South Africa, the majority of small micro-medium enterprises (SMMEs) are in the trade and accommodation sectors (43%) (Small Enterprise Development Agency, 2018). "Despite the consequences of the present global economic crisis, tourism is the only

economic sector that has recently returned to pre-crisis levels, demonstrating the industry's high degree of adaptation to changes in the economic environment" (Firoiu & Croitoru, 2013, p. 101).

Literature Review

Digital and Digitization

The topic of "digitalization" has received a lot of attention in the literature since it impacts the economic and social sides of any organization (Popescu & Phi, n.d.). Several definitions of digitalization emphasize the "usage of information technology" as the primary component (Sausen, 2020). According to the definitions, digitalization and digitization in business involve employing digital technology to modify the business model and develop new income and value-creating alternatives. The definitions of digitalization are summarized in Table 1.

According to the definitions above, digitization is the process of transforming an offline (analog) process into one that employs technology. The phenomenon involves more than one stage and is difficult to accomplish. According to Dredge et al. (2019), digitization's success depends on the tourism sector's ability to share, learn, and interact. This may impact all stakeholders in the tourism value chain to consider business applications of machine learning. The marketing destinations in South Africa (SA) already use digital technologies to facilitate collaboration among stakeholders in the tourism value chain (Sifolo et al., 2017). However, there is still space for improvement in tourism micro-enterprises adopting digitalization.

Disse and Sommer (2020) highlighted that "digitization can enhance the finance mechanisms used to support SMEs in South Africa and enhance the access to supply diversified finance options" (p. 22). Arora and Rathi (2019) emphasize that the adoption of digital among SMEs leads to profitability. Furthermore, where there is a diversification of products or services, digitization is a significant factor in increasing competition and positively affects the managerial implications (Madhava Priya et al., 2019). This accentuates the need to understand and leverage digital technologies to enhance the tourism experience within the African context.

Digitization in the African Continent in the Value Chain

Compared to the rest of the globe, the African continent has a low participation rate of tourism micro-entrepreneurs in the digital economy. Digitization is "a critical enabler that helps African individuals, particularly SMEs, youth, women, and tech-preneurs, to engage in the digital economy" (African Union, 2020, p. 40). According to the World Bank, Africa can leverage the digital economy for growth and innovation (The World

Table 1. A *Summary of Definitions of Digitization*

Author	Definition
Happ and Ivancsó-Horváth (2018)	Digitization is a complex concept that involves several processes, which are built on one another, and consists of technology implementation in different steps for (almost) every organization.
Schumacher et al. (2016, p.2) ; Parviainen et al. (2017) as cited in Sausen (2020, p. 6)	Digitization is the "action or process of digitizing; it is the conversion of continuous analog (esp. in later use images, video, and text) into digital form, noisy and smoothly varying information into clear bits of 1s and 0s." Digitalization is the social implications of increased computer assistance, new media, and communication platforms for the economy, society, and culture.
Dredge et al. (2019) ; Chakraborty & Dash (2022)	Digitalization provides tools, frameworks, and technologies to create and/or add value to tourism products and experiences.

Bank, 2022). Therefore, correlating business success in the digital economy with the optimal utilization of key digitization features creates opportunities for TMEs. According to the digital transformation strategy for Africa 2020–2030, e-commerce accounted for 12% of worldwide trade in products (Kong, 2019), with the market size of e-commerce estimated to be US$50 billion in 2018, up from US$8 billion in 2013 (Kong, 2019).

Similarly, according to the World Economic Forum's (WEF's) Digital Transformation Initiative (DTI), from 2016 to 2025, digitalization in aviation, travel, and tourism is expected to create up to US$305 billion in value. These forecasts provide the potential for micro-entrepreneurs to offset collateral damage to the economy and, to a lesser degree, to improve the social fabric of the continent, such as contributing to the intra-African trade and food systems, health systems, and education. Therefore, the implementation of digital technologies and infrastructures on the African continent will significantly impact the economy and society due to the rise in the e-commerce environment, with more individuals working and purchasing from home.

COVID-19 altered how hotels, restaurants, and cafés function. Restaurants chose online delivery over dine-ins during the strict lockdown period, such as the Mr. Delivery meal app, to avoid spreading the virus. The pandemic served as a wake-up call for many organizations to develop a plan to deal with interruptions to maintain company continuity. COVID-19 enforced digitization throughout society to accelerate the pace of digitalization (Horgan et al., 2020). It is necessary to understand how society and TMEs perceive digitization potential in the tourism sector to accelerate the speed of digitalization.

Perceived Digitization Opportunities for Tourism Micro-Entrepreneurs

Digitalization created unprecedented potential for digitally savvy micro-entrepreneurs (Bam & Adao, 2019). Tourism micro-entrepreneurs use digital technology to establish new business models for the tourism sector. Despite this trajectory, TMEs that do not transform digitally or lack awareness will miss out on the existing possibilities. One may argue that the digitalization of TMEs would benefit only literate micro-entrepreneurs but disadvantage others who are technologically illiterate. However, the capacity to use digital technology in real-world applications could accelerate digital literacy (White, 2015). For example, micro-entrepreneurs need to invest time to understand the customer's ever-changing needs due to digitalization. This will allow the TMEs to produce new products and services for the tourism sector. The emergence of the COVID-19 pandemic has turned the focus to the development of futuristic tourism business models. Tourism micro-entrepreneurs have the potential to start innovative businesses that will influence tourism 4.0. The term "Tourism 4.0" refers to the application of industry 4.0 technologies to facilitate communication and collaboration among stakeholders in the tourism value chain (Peceny et al., 2019). "Artificial intelligence, blockchain, emerging technologies, behavioral modeling, wireless connectivity, big data, cloud computing, high-performance computing, user interface, augmented reality, internet of things, smart sensors, and visualization are among the enablers of tourism 4.0" (Zupan Korže, 2019, p. 36).

These are digital technologies that many enterprises have used. For example, the London Museum created an app that uses augmented reality (AR) to allow visitors to see remarkable and historical landmarks in the city by pressing a button (Özkul & Kumlu, 2019). The data is easily accessible with the press of a button. Another example is the European Union-funded project ARCHEOGUDE (Augmented Reality-based Cultural Heritage On-site), which gave customized AR tours for tourists and rebuilt ancient and decrepit cultural heritage sites (Vlahakis et al., 2001). According to Sifolo (2021), the African continent has potential for creative space, particularly with new technologies such as virtual reality (VR) and augmented reality (AR), which offer innovative solutions to create new experiences for evolving consumer preferences.

Tourism micro-entrepreneurs are presented with a myriad of opportunities to use digital technologies to create sustainable tourism 4.0 and enhance the tourism industry's innovation and competitiveness. Generally,

digitization transforms businesses and their ecosystems. Opportunities for micro-entrepreneurs help to expand market reach, increase growth, improve operational efficiencies, and increase competitive edge. As indicated earlier, COVID-19 imposed digitalization throughout societies, and the pandemic contributed to the loss of at least 42,350 jobs in March 2020. A report by Genesis Analytics for Nyati (2019) indicates that digitally-enabled firms are reshaping markets, determining customer experiences, and capturing significant value. Limited information about digital technological innovation presents a greater opportunity for micro-entrepreneurs in the tourism micro-entrepreneurs in African countries to lead innovation through investment in digitalization.

Digitization Opportunities for Tourism Micro-Entrepreneurs in South Africa

In response to the digitization of the South African tourism sector, the Department of Tourism (DoT) launched Jurni.co.za. This single gateway would holistically integrate all booking data, user activity, and activity data recorded modules of the tourism industry. The intention was to grow the tourism sector to use digital as a primary business through a website. This may assist the TMEs in making data-driven business decisions. According to Statistics South Africa (2019), there were 83 million day excursions and 69 million overnight visits in South Africa in 2019. For example, booking services through Airbnb, Bookings.com, Trivago, Afristay, Places.co.za, and SA-venues.com, to mention a few, have improved the booking process for visitors seeking accommodation in South Africa.

In the accommodation subcategory, 83% of travelers utilize the internet to find a place to stay. Therefore, the travel barometer emphasizes the need for tourism service companies to have a digital presence. As a result, constant investment by tourism micro-entrepreneurs is critical to improving the destination's competitiveness while boosting the quality of life. Table 2 shows the digital options available to tourism enterprises.

As a result, micro-entrepreneurs must devise novel methods or construct answers to the external environment in which they operate due to the growth of the tourism sector, profusion of digital technologies, and the need for new products and services. Smart gadgets, such as mobile and linked smartphones, tablets, and wearable technology, provide fresh capabilities for recording and analyzing data streams previously difficult or practically impossible to gather (Torous et al., 2017). In addition, new technologies like augmented reality (AR) safari tours, virtual tour guides (VR), 360 photography and video tours, the internet of things (IoT), and 5G travel technology will have a significant impact on the future of travel.

According to Cisco's Visual Networking Index, "by 2022, the globe will have numerous linked devices, more than three times the global population." The amount of activity that takes place online is enormous. For example, Google handles 3.8 million search requests in less than a minute, delivering an excess of 45 billion results. This is a fantastic chance for tourism micro-enterprises to become digital. The importance of technology in the digitalization process cannot be overstated. Understanding the ideas underlying the uptake of digital technology is so critical. The significance of technology is discussed to unravel thoughts concerning embracing digital as an alternate method of conducting business.

Tourism Micro-Entrepreneurship Landscape in South Africa

Although Africa's tourism sector is small compared to other economic sectors, any shift in visitor arrivals reduces tourism's economic impact. Consequently, SMMEs play an important part in South African economic growth. However, little information is available regarding the South African tourism micro-entrepreneurship scene. South Africa has about 5 million micro and small companies, most of which are in the informal sector (townships) (Torrington et al., 2020). According to Vial and Hanoteau (2015), worldwide definitions of micro-entrepreneurship must encompass organizations with less than five workers and self-employed people.

Table 2. ***Summary of Digital Opportunities and Challenges for SMMEs***

Digital Opportunities	**Aspects**
Development of Digital Strategy	With a youthful population structure, socioeconomic development will never be the same because momentum is gaining for a digital strategy for Africa. The continent presents several economic opportunities in virtually every sector. "Digital trade, cross-border systems for payments, cross border trade, identification, and verification for digital transactions and digital payment systems" (African Union, 2020, p. 4).
Change in Customers' Needs	The use of big data analytics may enable tourism SMEs to offer individualized experiences by understanding the specific wants and needs of the consumers (Gandomi & Haider, 2015). Many telecoms are on track to deliver or exceed their 5G implementation goals.
Future of Work	Virtual job opportunities.
Firms' Focus	Innovation and digital customer offerings are expected to remain varied across industries, markets, and geographies.
Preservation of Historical and Cultural Practices	Realignment of indigenous livelihoods with extant symbolic connections to wildlife will prevent illegal poaching of wildlife (Morais et al., 2018).
Digital Challenges	**Aspects**
Failure to Invest in Tourism Intelligence	Weak coordination among continental institutions (Sifolo, 2017). "Sluggish pace in pursuing the digitalization agenda of the continent" (African Union, 2020, p. 3). Context-dependency (e.g., society, company, individual) and various perspectives on the topic (e.g., human, process, technology), particularly in the developing context (Thordsen et al., 2020).
Limited Policy and Regulatory Reforms	"Limited facilitation of the interconnection of networks across borders, including national and commercial backbones, or supervisory frameworks for data protection, data storage/processing/handling" (African Union, 2020, p. 4).
Value Chain Consideration	Technological advancement and digital manufacturing are significant challenges for manufacturing SMMEs in South Africa (Mabotja, 2019).

The TME sector represents an amalgamation of multiple industries, sectors, and subsectors. Small, micro, and medium tourism enterprises (SMMTEs) in South Africa contribute directly to the country's gross domestic product (World Tourism and Travel Council, 2018) and the development of destinations (Tassiopoulos et al., 2016). The South African tourism sector employed 739,657 people across different subsectors in 2018 (Statistics South Africa, 2020) and contributed about 2.8% of the GDP (DoT, 2019). Notably, as of March 2020, this figure declined drastically as all travel activities were banned due to the Coronavirus (COVID-19) outbreak. According to the World Travel & Tourism Council (2021), 14% of employment was lost, and the sector needed more than ten months to recover. COVID-19 has caused huge industrial shutdowns and affected global supply networks. Restrictions on non-essential travel and a ban on activities and mass gatherings to contain the infection significantly impacted the tourism industry. This created a need for alternative employment opportunities and recovery strategies for micro-entrepreneurs. Thus, we argue that digitization and digitization could be a panacea for driving investments for SMMEs while enhancing connectivity among businesses and individuals.

Theories Linked to Digitization

Theories provide in-depth conceptual understandings of phenomena that cannot be defined, such as "how societies work, how organizations function, and why people behave in certain ways" (Reeves et al., 2008, p. 631). As a result, technological advancement is at the root of the transformation of micro-entrepreneur digitization. As

digital technologies are incorporated into society, the idea of shift is signified as social change. This study will adopt technological determinism and diffusion of innovation theories to understand the digitalization opportunities in micro-entrepreneurship better, emphasizing tourism TMEs.

Technological Determinism

Technological determinism adds to the essential success element in global marketing competitiveness (Gabberty & Vambery, 2008). As a result, it is relevant to tourism micro-entrepreneurs because they contribute significantly to consumer experiences while making a destination competitive. Apart from being a competitive business, TMEs contribute favorably to the GDP of their respective nations. Technological determinism describes how tourism micro-entrepreneurs utilize technology to sell their companies. Mehraliyev et al. (2021, p. 226) view technological determinism theory as an "emerging technology in hospitality and tourism that better conceptualizes social media's legitimate authority, which is significant in consumer–supplier relationships." Social media provides new marketing and distribution channels. Therefore, technological determinism creates an opportunity for TMEs (Chakraborty & Dash, 2022). However, there is minimal evidence of technological determinism applied to tourism micro-entrepreneurs in developing countries because the theory falls short when considering society (Kashada & Ehtiwsh, 2020). As a result, while the former focuses solely on marketing and technology, the diffusion theory better describes the research context.

Diffusion Innovation Theory (DIT)

In an attempt to better explain why, how, and which technology permeates society, Diffusion Innovation Theory (DIT) describes how social groups absorb innovative technology within their social setting. DIT is a life cycle model that depicts what a normal distribution might look like if it were plotted over time. Rogerson (1962) defined the model's stages as innovators, early adopters, early majority, late majority, and laggards. In an economic and social context, each stage indicates a proportion of technology adoption rates. Van den Berg and Van der Lingen (2019, p. 126) summarized the idea as a "model with varying degrees of excitement for technological advancement."

In this study, innovators could be purported as TMEs interested in digitalization while trying to figure out the function, regardless of whether the use environment is not mature at the innovation stage. Early adopters could be TMEs who decided to digitize their services and goods based on intuition. The early majority would be hesitant to digitalize their business operations and would not choose until they are certain of the value chain's utility. Only once the specification standards or rules are finalized and firmly established may the late majority choose to digitalize. The laggard TME may not digitalize through the value chain business systems until there is no synchronization (e.g., a synchronization failure).

The impression of innovation deteriorates due to adopters' acceptance or rejection of new technology. This means that technological advances are not universally embraced; there are areas of rejection and variable degrees of acceptance. Micro-entrepreneurs (individuals who manage businesses) would go through the various phases of adoption before recognizing innovation. This comprises becoming aware of the existence of innovation, deciding whether to embrace or reject it, testing it, and maybe continuing to employ it. In an ideal world, all micro-enterprises would embrace technology without reluctance; however, social dynamics decide who has access and who does not.

Micro-entrepreneurs can benefit from technical improvements in the tourism business. On the other hand, the choice to accept new technology would be based on a knowledge of the necessity for adoption. Although this is a qualitative study, diffusion innovation theory is appreciated.

Research Methodology

This study examines scholarly publications, institutional records, media stories, policy documents, and evaluative polls of the pandemic's impact on businesses. A comprehensive literature study was utilized to examine relevant literature on the digitization of tourism micro-entrepreneurs. A systematic literature review was adopted to investigate the existing literature that employs organized, transparent, and explicit methodologies (Tripathi et al., 2020; Williams Jr. et al., 2021). The systematic literature review was chosen because it provides "a strong process for consolidating the expertise of numerous experts while reducing prejudice" (Williams Jr. et al., 2021, p. 530). The review was organized into four rigorous stages. The following are the stages:

Stage 1 : Literature Search

Electronic publishing databases such as tandfonline, research gate (135 million publication pages), science direct (80 million pieces of information), and other government publications and regulations were used to search for literature. In addition, online databases like Google Scholar and Research Gate are frequently utilized to detect research gaps in various subjects (Kushwaha & Talib, 2022). It included a sufficient number of titles to undertake a systematic review.

Stage 2 : Screening of Publications According to Relevancy

The year of publication was considered to ensure that only relevant articles were evaluated. Only studies published between 2017 and 2021 were considered (excluding the literature from the theoretical concepts underpinning the study).

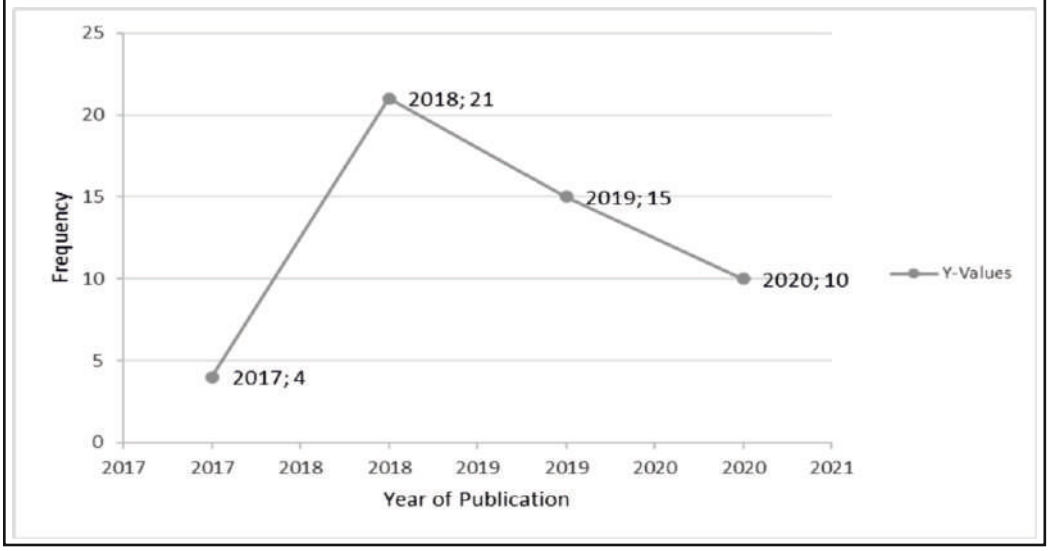
Stage 3 : Choosing Literature Based on the Primary Language of Publication

Only items published in English were taken into account. In the field of digitization, English is the dominating language. This choice improved the literature's accessibility, comparability, and readability. We studied articles from the following sources: Taylor & Francis Online [20 Articles], Science Direct [15 Articles], and government publications; Department of Small Business [10], Department of Tourism Policies [2], and Department of Telecommunication and Postal Services [3]. During the screening process, the items were filtered. A total of 50 articles have been written about the digitalization of micro-enterprises. Each article was extensively examined for relevance and importance to the study. These were then saved in subfolders on the research devices.

Stage 4 : Substantial Applicability

The whole article was reviewed to confirm that each publication was relevant to the investigation. This step enabled the validation of the research perspective and the making of a credible methodological choice. Next, the study used criteria sampling to discover relevant literature. Identifying articles based on pre-defined criteria is known as criterion sampling (Cohen & Crabtree, 2006). The review's initial criterion was a year, and the literature search consisted of two strings combined using Boolean operators. The following Boolean operator combinations were used: "digitization and digitalization," "digitization and micro-entrepreneurs," "digitization opportunities for micro-entrepreneurs," "tourism micro-entrepreneurship in South Africa," and "digitization opportunities in Africa." The key terms were chosen to answer the central study question: how can tourism micro-entrepreneurs explore new opportunities through digitalization?

Figure 1. ***Spread of Reviewed Articles According to the Year of Publication***



Analysis and Results

The findings of the literature review are explained in detail in the following subsections. This section covers the literature in terms of research characteristics, such as year of publication, kind of publication, journal type, and government publications.

Year of Publication

A total of 50 articles from various periodicals were included in the literature. Figure 1 displays the distribution of articles by frequency (Y-axis) and year (X-axis). The majority of the publications evaluated were published in the 2018/2019 academic year.

Types of Publications

Most of the publications evaluated were qualitative investigations, with 70% of the research using this technique. Interviews (50%), surveys (35%), and literature reviews (10%) are among the data collecting methods used (5%). Observations and official publications are examples of others.

Findings in the Literature on Digital Opportunities for Tourism Micro-Entrepreneurs

As previously indicated, numerous pieces of literature and government records were examined to conclude the impact of digitalizing tourism micro-entrepreneurs. Table 3 summarizes the top 10 recent papers from the 50 literature reviews.

A common feature that emerges from the above overview is that digitization improves the performance of tourism micro-tourism enterprises. However, there are hurdles, such as the cash and resources necessary to implement digitalization as a business strategy. These must not be overlooked, as they are exacerbating in underdeveloped countries. The studies in the literature come from both developed and developing nations and

Table 3. ***Systematic Literature Review Findings***

Author	Methodology	Data Collection	Key Findings
Dredge et al. (2019)	Quantitative	Secondary sources, interviews, scholarly research	Digitalization has the potential to increase connectivity, generate new business models, extend ecosystems, and result in new product developments in e-commerce.
Happ & Ivancsó-Horváth (2018)	Literature review	Scholarly research	The introduction of digital technology and procedures has caused a paradigm shift in tourism. Marketing tools may help companies on a local level and destinations on a larger scale, demonstrating how to use digitization to stay competitive in the tourism sector.
Barann et al. (2019)	Literature review and qualitative	Focus group interviews and scholarly research	Large organizations are at the vanguard of digitalization. In contrast, small and medium-sized firms (SMEs) confront resource constraints and a lack of guidance on capitalizing on the benefits of digitalization.
Mabotja (2019)	Qualitative	Survey data and in-depth interviews	Micro-entrepreneurs in South Africa confront significant technological and digital challenges.
Bouwman et al. (2019)	Qualitative	Surveys	Micro-entrepreneurs may employ a range of techniques to improve their performance when digital transformation affects their company model.
Cenamor et al. (2019)	Qualitative	Surveys	When digital transformation alters their business model, micro-entrepreneurs may employ various strategies to improve their performance.
Foroudi et al. (2017)	Qualitative	In-depth interviews and focus groups	Digital technology, tangible and intangible assets, and marketing ability are all important factors in a company's success.
Denner et al. (2018)	Qualitative	Interviews	Micro-entrepreneurs who utilize a logical and procedural approach may be able to overcome the uncertainty around the impact of digital technology.
Galindo-Martín et al. (2019)	Quantitative	Observations	Digital dividends and digital transformations (GDP, current price, and currency per capita at market pricing) enhance the number of entrepreneurs engaging in an economy.
Li et al. (2018)	Qualitative	Semi-structured interviews, focus-group interviews, and field observations	Micro-entrepreneurs excel at strengthening two parts of dynamic managerial capabilities–managerial cognition and management social network–to prepare for the digital transformation issue.

indicate that the construction of digital centers, which will assist innovation and digitalization of SMEs across the country, is emphasized in government programs promoting digitalization.

Digitization Opportunities Emerging from the Literature

(i) ***Adoption of Technology Linked to Digital Payment Systems.*** The possibilities vary from using previously existing technologies like Order bird's iPad POS system to sophisticated, efficient techniques that TMEs may

apply in their establishments to supplement tours and heritage site visits. All of this is feasible in an economy that promotes and supports innovation financially. The COVID-19 epidemic has compelled society and industry to adjust quickly to the "new normal." Some countries were fast to accept new technology, while others lagged. We observed that nations in the OECD have used digital technology to increase tourism's appeal. However, the study found that, despite attempts, there are still digitalization limits in the African population.

(ii) ***Listing on Online Aggregating Websites.*** According to the literature, aggregating sites give TMEs in South Africa an excellent opportunity to access local and international markets. In addition, there are digital opportunities for tourism supply chain agents in the Intra-African Trade & Food Systems, Health Systems, and Education. Through the acceptance of e-commerce and digital financing, using digital technologies and infrastructures on the African continent might significantly benefit the economy and society (e-payments, e-government, and the digitalization of public services).

(iii) ***Diffusion of Digital Literacy and Investments.*** Improving TME's digital literacy might facilitate communication and collaboration across players in the tourism value chain, allowing them to expand their market reach, accelerate growth, improve operational efficiency, and gain a competitive advantage. Furthermore, developing a digital strategy might address changes in consumer requirements, the future of employment, preserving historical and cultural practices, and improving policy regulations, all while investing in Tourism Intelligence and strengthening policy regulations. The investment opportunities could spur regional integration, create jobs, and contribute to poverty reduction, alternative employment opportunities, and recovery strategies for micro-entrepreneurs. So, in this article, we argue that digitization could be a panacea for driving investments for SMMEs while enhancing connectivity among businesses, customers, and general stakeholders at large.

Managerial and Theoretical Implications

Certain lessons must be learned from the disruptions that have occurred, not only in the tourism sector but also throughout the world. Despite significant unemployment and poverty-related concerns, the African continent continues to endeavor to meet the 2030 Sustainable Development Goals. Airbnb and Uber continue to teach us valuable lessons, especially in developing regions. One may argue that while there are opportunities with digitalization, there is a justification for governments to be hesitant in integrating technical developments such as Artificial Intelligence because the government is dealing with critical socioeconomic concerns. No matter how tempting digitization is, the immediate requirement for the government and corporate sector will be to invest in future skills.

Because of the ever-changing technologies from the internet of things (smartwatches, television), robots, and automation (ordering food on iPad, payments/bookings, banks, self-checking in machines at the airport), wearable, cloud, big data, and collaborative platforms, a war for talent is on the horizon. These ideas inspire new behaviors throughout the world. Tourism micro-entrepreneurs need to adapt to provide effective services, not just for marketing goals but also for long-term viability. Governance remains critical around technological breakthroughs, for example, Airbnb and Uber present lessons for many regarding necessary disruptions in the future.

Tourism micro-entrepreneurs must digitize secondary value chain operations as well as handle their accounts receivable, payables, and reconciliations. Secondary value chain activities, according to Porter's value chain model, include procurement, technical development, and infrastructure (Porter, 1985). As a result, accelerated digitization improves micro-enterprise procurement procedures while accelerating technical and infrastructural development. The globe is more linked than it has ever been. The World Wide Web has increased opportunities and

provided new ways to connect with and conduct business with clients. According to studies, the number of linked platforms has expanded over the previous decade (Chaffey, 2014). Travel businesses have devised tactics to attract Africans to visit the continent.

Digitalization has the potential to improve rural communities. Sohns and Revilla Diez (2018) found that in rural areas of developing markets, the person level dominates when understanding both opportunity and necessity-driven entrepreneurship. Sellers instantly connect to consumers who would not have heard of them otherwise. Informal businesses can now expand well beyond their immediate vicinity and known circle. Platforms harness latent demand for a wide range of activities, including low-skilled services, in which most South Africans seek to earn a living. As a result, enterprises must be able to comprehend and respond to digital disruptions at the value chain level. Technology and digital technologies have brought about multiple improvements that have drastically affected the entire spectrum of operations in various businesses to increase efficiency. Conversely, stakeholders in the tourism value chain, particularly those in rural areas and townships, have to modernize their offerings.

Conclusion

The notion of digitization increases efficiency and procurement procedures while balancing supply and demand. Digitalization helps both organizations and stakeholders, such as customers. For example, efficiently and effectively ordering products and services. Therefore, the digitalization of tourism micro-entrepreneurs is significant. When investigating the digitization prospects for micro-entrepreneurship, diffusion economic theory comes into play. Coordination and collaboration are critical for the African continent to realize the digital transformation agenda for Africa (2020 – 2030). In general, the readiness of micro-entrepreneurs to accept new technologies poses a crucial problem. This jeopardizes the realization of tourism 4.0 and its associated potential.

The paper contains several instances of tourism 4.0 enablers. However, the digital gap persists, posing threats to the future of tourism micro-entrepreneurs, particularly those operating in locations with insufficient infrastructure. Therefore, it is critical for future studies to uncover the potential that exists not just inside individual countries but also among Africa's Regional Economic Communities. This act will guarantee competitiveness throughout the tourism value chain while meeting the demands of the communities.

Limitations of the Study and Scope for Further Research

The scarcity of research on digitalization in the African environment necessitates the creation of this study. Although this study focuses on South Africa, some of the collaboration and cooperation potential given by the African Continental Free Trade Area could not be explored in places where basic infrastructure is still lacking. Furthermore, the systematic literature review in this study is restricted to less than 70 papers. Robust studies across the continent are needed to tell the tale and explain the “digitization” research agenda on tourism and hospitality micro-entrepreneurs in the future. Such research might provide evidence for the views discussed in this paper.

There is little information characterizing the digital micro-entrepreneurship environment in underdeveloped nations like South Africa. Since micro-entrepreneurship is not clearly distinguishable from SMEs, it is difficult to acquire statistics on micro-enterprises and digitalization in the tourism industry. However, according to Genesis Analytics for Nyati (2019, p. 4), digital enterprises are a subset of all businesses and are becoming digital. As a result, more studies on the influence of digitization on the general business environment might contribute to a healthy business climate, reward risk-taking innovation, and help enterprises adjust flexibly to rapidly changing markets.

Authors' Contribution

Dr. Portia Pearl Siyanda Sifolo conceived the idea and developed the topic to undertake the study. Philasande Sokhela extracted research papers with high repute, filtered these based on keywords, and generated concepts and codes relevant to the study design. Dr. Portia Pearl Siyanda Sifolo verified the analytical methods and supervised the study. Philasande Sokhela identified the qualitative design of a systematic literature review. Dr. Portia Pearl Siyanda Sifolo wrote the manuscript in consultation with Philasande Sokhela.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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About the Authors

Portia Pearl Siyanda Sifolo is a Senior Lecturer focusing on management, business leadership, and entrepreneurship subjects in the Department of Tourism Management at the Tshwane University of Technology. She is a Y2 National Research Foundation-rated researcher and a candidate for the Future Professors Program.

Philasande Sokhela is a Faculty Member at the Johannesburg Business School. His focus is on the latest digital marketing trends. He is a PhD Candidate with the University of Glasgow and a recipient of the Newton Fund Scholarship with the British Council.