

Bridging the Digital Divide: A Review of Challenges and Opportunities in Digital Entrepreneurship in Developing Economies

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ABSTRACT The digital age has accelerated entrepreneurial opportunities, including innovation. However, persistent inequalities in digital access have limited the potential of digital entrepreneurship in developing countries. This paper aims to review and synthesise the literature on the challenges and opportunities of digital entrepreneurship in developing countries. A structured review of literature from main online scholarly databases such as SCOPUS, Web of Science and Google Scholar was conducted. The findings were synthesised thematically to identify the trends in digital entrepreneurship in developing economies. The review highlights opportunities arising from access to new business models and women and youth empowerment through digital tools. Nevertheless, digital entrepreneurship in developing countries remains constrained by infrastructure gaps, digital skills shortages and policy and regulatory uncertainties, which together hinder innovation and business growth. Addressing the challenges in digital entrepreneurship is critical for leveraging the transformative potential of digital entrepreneurship and promoting inclusive economic development in developing countries.

INTRODUCTION

In recent decades, technological developments have digitalised economies prompting significant changes in entrepreneurship (Naude and Liebrechts 2020). Consequently, persistent innovation has compelled entrepreneurs to leverage technology to develop business ideas (Samara and Terzian 2021). For instance, the digital market has gained momentum globally encouraging entrepreneurs to interact and transact with diverse buyers (Tunio et al. 2023). However, the expansion of digital markets does not simply create new entrepreneurial opportunities, it also changes how entrepreneurs identify, develop and execute those opportunities. Hence, Redondo Rodríguez et al. (2023) attributed the rise of digital entrepreneurs and digital start-ups to technological innovation. Autio et al. (2024) argue that the evolution of digital technologies and infrastructure not only presents new opportunities for entrepreneurs but also transforms the execution of the opportunities. This suggests that digitalisation has become increasingly embedded

in entrepreneurial activity, rather than merely serving as a technological support mechanism. Nevertheless, these benefits are not experienced uniformly across contexts. According to Barreto et al. (2025), developing economies are increasingly characterised by rapid technological adoption and changing market dynamics, creating both opportunities and challenges for organisations seeking to exploit the potential of digital technologies. The coexistence of opportunity and constraint therefore raises an important question about the extent to which entrepreneurs in developing economies are able to translate digital opportunities into meaningful entrepreneurial outcomes.

Digital entrepreneurship has attracted considerable attention due to its impact on economic development. According to Nambisan (2017), it has generated novel opportunities for entrepreneurial ventures while fundamentally transforming entrepreneurial processes and outcomes. Additionally, literature emphasises its significant positive contribution to economic growth and employment creation (Sahut et al. 2021; Redondo-Rodríguez et al. 2023). This suggests that digital entrepreneurship presents opportunities to mitigate pressing socio-economic challenges that are particularly preva-

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lent in developing countries. This motivates the need to explore digital technologies for entrepreneurial development in these countries. However, according to Tunio et al. (2023), the digital market presents both opportunities and challenges. Even though new opportunities in online business emerge, there are challenges and drawbacks associated with the digital marketplace highlighting its complexity (Tunio et al. 2023). Nevertheless, Khalil (2023) stated that businesses are adopting digital entrepreneurship for survival, growth and advancements prospects.

While various opportunities including economic growth, innovation and connectivity have emerged in the digital age, technological revolution has also reinforced existing social and economic inequalities resulting in the digital divide (Hutchinson and Ahmad 2024). This implies that the advantages of digital technologies are unequally distributed with some groups not realising the full benefits. "Research indicates that digital inequality mirrors to a significant extent offline inequality related to socioeconomic resources" (Vassilakopoulou and Hustad 2023:955). In the context of digital entrepreneurship, marginalised entrepreneurs or those with limited resources are particularly vulnerable to digital exclusion. Consequently, Vassilakopoulou and Hustad (2023) argue that closing the digital divide is imperative for sustainable digitalised societies. Similarly, bridging the digital divide in developing countries may be critical for creating more equitable access to digital entrepreneurship opportunities.

Antonizzi and Smuts (2020) highlight a range of issues that continue to characterise the digital entrepreneurship landscape. For instance, Taura et al. (2019) argue that while digital platforms have enhanced access, digital entrepreneurs in Africa are confronted with various economic inefficiencies in their local environments, including corruption. On the other hand, the digital market presents challenges such as fraud, mistrust and cybercrimes on a global scale although they appear different from the context of developing countries like Pakistan (Tunio et al. 2023). This implies that digital entrepreneurship may not have reached its full potential in developing economies. Echoing this view, Jamwal et al. (2025) emphasise gaps in understanding the significance of industry 4.0 technologies on the sustainability of SMEs in emerging economies. In a similar vein, Hajli et al. (2025) ar-

gues that despite extensive research on entrepreneurial ecosystems, there remains a heightened quest to understand how they have been influenced by digital transformations. There is therefore a need to conduct research to unpack the various issues in digital entrepreneurship in the context of developing countries.

Kraus et al. (2019) highlighted limited research conducted on the challenges, opportunities and success factors for digital entrepreneurship. Consequently, Naude and Liebrechts (2020) emphasised a strong need to escalate research on digital entrepreneurship. In a similar vein, Sahut et al. (2021) highlights the growing interest among academic researchers in understanding the circumstances and facilitators of digital entrepreneurship as it supports business practices and the development of policies to support digital entrepreneurship. For this reason, this review aims to synthesise literature on challenges and opportunities of digital entrepreneurship in developing economies. This research fills the gap identified by Kyriakopoulos (2022) that the key barriers of digital entrepreneurship globally are not adequately addressed in existing literature. However, this paper addresses this gap in the context of developing countries considering that Soluk et al. (2021) contends that there exists a significant contrast between entrepreneurship in emerging and developed markets. Similarly, Nambisan (2017) contends that developed and developing countries may face different challenges in digital entrepreneurship. Hence, this review synthesises literature to understand digital entrepreneurship from the perspective of developing countries.

Review Objectives

The objectives are therefore as follows:

- ♦ To explore the challenges in digital entrepreneurship in developing countries.
- ♦ To examine the opportunities for digital entrepreneurship in developing countries.

Structure of the Paper

The paper follows with a discussion on the key concepts for this research, digital entrepreneurship and the digital divide. Thereafter, the paper discusses the Technology-Organisation-Environment and Resource-Based-View frameworks

and their application to digital entrepreneurship. The methodology used to identify literature reviewed for this study follows thereafter. The paper then presents the challenges and opportunities in digital entrepreneurship in developing countries and closes with a discussion on research gaps and future directions.

Conceptual Foundations

Defining Digital Entrepreneurship

According to von Briel et al. (2021), “digital entrepreneurship concerns the creation of new economic activity wherein either the creation or the new activity is embodied in or enabled by digital technologies”. In other words, digital technology is central to digital entrepreneurship. This is supported by Elia et al. (2020) who stated that digital technologies paved the way for new business ventures and digital start-ups that rely on innovative technology as a core element of their business models and operations. On a similar notion, Nambisan (2017) reported that digital entrepreneurship is the integration of digital technologies and entrepreneurship.

Understanding the Digital Divide

According to Van Dijk (2019:2), digital divide refers to “a division between people who have access and use of digital media and those who do not”. This implies the existence of gaps in the access to and adoption of digital technologies, highlighting that it is not an equal opportunities environment. Hutchinson and Ahmad (2024) identified different forms of digital divide including access, usage and skills divide. Hence, Vassilakopoulou and Hustad (2023) argue that digital divide is a multifaceted concept that goes beyond access to information and communication resources. Access divide refers to disparities in accessing information and communications technology which is often caused by location, socio-economic status and government policies (Hutchinson and Ahmad 2024). Usage divide refers to inequalities in the utilisation of digital technologies influenced by factors such as digital literacy, education level and cultural norms (Hutchinson and Ahmad 2024). On the other hand, skills divide refers to variations in the ability to use digital technologies which are

influenced by individuals’ digital literacy and skills’ levels.

Theoretical Perspectives

Technology-Organisation-Environment Model

Proposed by Tornatzky et al. (1990), the Technology-Organisation-Environment (TOE) model helps explain the factors influencing an organisation’s intention to adopt an information system (Jere and Ngidi 2020). The model underlines the influence of three factors in the adoption of technology in organisational contexts, that is, technological, organisational and environmental (Baker 2012). The technology context refers to the technologies within an organisation’s reach, organisation context refers to the organisation’s characteristics, and the environment refers to factors in the business environment including competitors, industry, regulations and government relationships (Julies and Zuva 2021). This implies that organisations adopt technologies that are easily accessible to them and align to their characteristics. On the other hand, the organisation’s environment, including its industry, regulations and competitions determine whether they adopt certain technologies or not. For instance, if their competitors are using the same technologies and government regulations permit, they are most likely to adopt the technologies.

Regarding the organisation context, communication processes, top management, slack and organisation size influence technology adoption (Baker 2012). While Jere and Ngidi (2020) argue that familiarity with technology enhances the chances of adoption, Baker (2012) argues that existing technologies, competence-enhancing innovations and the impact of the innovation on the organisation influences adoption. The TOE model provides a framework to understand this research. In the technological context, digital tools, platforms and infrastructure including internet access and connectivity can appear as challenges or opportunities in digital entrepreneurship. For instance, poor digital infrastructure and internet access can hinder digital entrepreneurship. Regarding the organisational context, entrepreneurs’ resources and capabilities can hinder or promote digital entrepreneurship. For instance, adequate digital skills, knowledge, financial access and management support can promote digital entrepreneurship. On the oth-

er hand, external environmental conditions such as government regulations, industry characteristics and competition can promote or hinder digital entrepreneurship. Effective government regulations and support, and an industry that is receptive to technology innovation can enhance the adoption of digital technologies. Overall, entrepreneurs' internal and external factors such as skills, resources, government regulations, digital infrastructure and industry characteristics can serve as challenges or opportunities to digital entrepreneurship.

Resource-Based View (RBV)

Developed by Barney (1991), the Resource-Based View (RBV) provides a framework for understanding the challenges and opportunities of digital entrepreneurship. According to Madhani (2010), RBV framework underscores the significance of an organisation's internal resources and capabilities as important foundations for developing strategies that can enhance sustainable competitive advantage in the workplace. This implies that organisations should leverage on their financial, human and technological resources, skills, expertise and strategies to enhance sustainable competitive advantage in the marketplace. Barney et al. (2021) mentions that organisations enjoy a competitive advantage over other organisations in the same industry owing to their ability to create greater economic value than their counterparts. On the other hand, McGee (2014) emphasises that the uniqueness of an organisation's resources and capabilities facilitates the development of a sustainable competitive advantage. This implies that creating a sustainable competitive advantage goes beyond merely possessing resources and capability but depends on their uniqueness relative to competing organisations.

In the context of digital entrepreneurship and this research, drawing from the RBV framework, an entrepreneur's ability to adopt and achieve sustainable competitive advantage in digital entrepreneurship is determined by their digital resources and capabilities. Their resources and capabilities determine their ability to leverage on digital technologies to adopt digital entrepreneurship. For instance, innovative digital tools and infrastructure, innovative digital models and strategies, digital literacy, technical skills and adequate funding can facilitate the adoption of digital entrepreneurship.

However, for a sustainable competitive advantage, digital entrepreneurs should focus on distinguishing their digital resources and capabilities from their competitors. For example, digital entrepreneurs can leverage on emerging technologies such as artificial intelligence, chatbots, digital payment systems and mobile applications to create a competitive advantage.

METHODOLOGY

This review paper is based on secondary information collected from literature across different databases. Literature ranging from 2015 to 2025 was synthesised to analyse the challenges and opportunities in digital entrepreneurship in developing countries. Literature was gathered from databases such as SCOPUS, Web of Science and Google Scholar. Search terms such as 'digital divide', 'digital entrepreneurship challenges in developing countries', 'opportunities in digital entrepreneurship in developing countries', 'digital entrepreneurs' and 'digital entrepreneurship' were used to search for relevant literature across online databases. Literature was synthesised and analysed to identify key trends in digital entrepreneurship in developing countries.

Challenges in Digital Entrepreneurship

Infrastructure Gaps

According to Samara and Terzian (2021), digital entrepreneurs in developing contexts are challenged by a weak institutional infrastructure and a corrupt environment that hinders their business activities. Samara and Terzian's (2021) empirical findings supported by expert opinions and real-world cases provide critical insight into the challenges faced by digital entrepreneurs in developing countries. However, the findings are limited to three individuals' perceptions, and the experiences of some countries in the Middle East and Lebanon. As such, it can be argued that the findings are not reflective of most developing countries, especially Sub-Saharan African countries. A similar study conducted on a larger and diverse scale would provide a more comprehensive understanding of the challenges of digital entrepreneurship. Nevertheless, consistent with Samara and Terzian (2021), Jalan and Gupta (2020) identified infrastructure as

one of the primary challenges for digital entrepreneurship in developing countries. The authors argue that basic infrastructure, including inadequate equipment and poor network is a challenge for most rural and developing contexts. A critical drawback for Jalan and Gupta's (2020) study is that the findings are based on theoretical rather than empirical research, which calls for primary research to confirm the findings. On the other hand, primary research conducted on South Africa, Egypt and Nigeria confirmed that inadequate technology in African countries is a key barrier to the growth of digital entrepreneurship (Muhammad and Yusoff 2023). Thus, it is evident that gaps in infrastructure hinder the development of digital entrepreneurship in emerging contexts.

Digital Literacy and Skills Shortages

Research conducted by Mahlaule et al. (2024) found that inadequate digital literacy and skills hinder the implementation and adoption of digital businesses in rural and township regions of South Africa. Despite adopting a mixed-methods approach, the study focused on two villages in Limpopo and two townships in Gauteng. As such, drawing conclusions from the selected narrow sample may be shortsighted. Samara and Terzian's (2021) study confirms that a shortage of digitally competent and experienced employees limits digital entrepreneurs in developing countries. While Samara and Terzian's (2021) study sample is more diverse than Mahlaule et al.'s (2024) sample, it is narrow to draw conclusions on the wider developing countries. According to Kannoja (2023), attracting and retaining skilled digital personnel is a critical challenge in digital entrepreneurship. This is exacerbated by the constant evolution in digital technologies which requires continuous upskilling of employees. For instance, the Digital Transformation Strategy of Africa (2020-2030) adopted by the African Union stipulates that skills such as creating professional online profiles, digital graphic design, desktop publishing, artificial intelligence, digital entrepreneurship, cybersecurity and internet of things are critical (Dikmener et al. 2023). While Kannoja (2023) findings support previous research, it is not clear whether the secondary research study is specific to developing countries. According to the World Bank Group (2024), Sub-Saharan Africa has a critical shortage of skills for

digitally enabled industries and digital development despite recording significant progress in digital transformation. Additionally, most recent research conducted by Chasaya and Ayandibu (2025) found that inadequate technical skills constraints the adoption of artificial intelligence in South African SMEs. This implies that developing countries are confronted with limited skills for digital entrepreneurship.

Financial Barriers

Samara and Terzian's (2021) research reveal that inadequate funding due to limited venture capital markets and business angels is a challenge to digital entrepreneurship in developing countries. This view is supported by Kyriakopoulos (2022) who posited that digital businesses are constrained by limited financial resources. Kyriakopoulos's (2022) research adopted an international rather than developing economy focus. Considering that Nambisan (2017) argues that developed and developing economies may face different challenges in digital entrepreneurship, it is imperative to study the two contexts separately. However, businesses in developing countries with excessive corruption often experience limited funding and leverage on personal investments to litigate uncertainties (Naroz and Child 2017). Access to capital and resources can constrain digital entrepreneurs especially during business initiation (Kannoja 2023). While these recent findings support previous research (Naroz and Child 2017; Samara and Terzian 2021; Kyriakopoulos 2022), the study does not specify the context within which these findings are drawn, and it is theoretical rather than empirical. Kannoja's (2023) view contradicts Friederici's (2019) assertion that digital entrepreneurs encounter low barriers to entry, giving equal opportunities to entrepreneurs in resource-scarce environments and those in affluent contexts. This implies that lower start-up costs, global reach and access to digital platforms are opportunities for digital entrepreneurs in resource-scarce or developing environments to compete alongside those from affluent countries. However, this view oversimplifies the unequal distribution of resources between developing and developed countries, including unequal access to capital and funding. For instance, Mahlaule et al.'s (2024) research found that lack of funding for investments in digital

technologies hinder the implementation and adoption of digital business in rural and township South Africa. While this may be the case for other developing rural and township areas, it may not be the case for the same areas in developed regions.

Policy and Regulatory Uncertainties

The World Bank Group (2024) identified inadequate regulatory and policy environments as a critical challenge for digital development in Africa. This observation aligns with Dikmener et al.'s (2023) assertion that African countries should enhance their legal frameworks to safeguard copyrights and trademarks in the digital era. This implies the existence of gaps in government digital entrepreneurship policy and regulatory frameworks of African countries. Yet, Kreiterling's (2023) study found that government roles enhance entrepreneurship sustainability, more than electronic readiness. However, a country specific investigation is needed to identify where such gaps exist. Taura et al. (2019) argue that while the business landscape in Africa is often hostile, there are significant differences in business performance, ranging from progressive, regressive and stagnant performance. As such, it can be argued that while the generalisation of policy and regulatory uncertainties to developing countries is imminent, variations exist from country to country. Consistent with Dikmener et al. (2023), Samara and Terzian's (2021) research underscored a lack of policies and regulations that protect and support e-commerce and digital entrepreneurs. This can have severe adverse effects on digital entrepreneurship which rely on customers for its success.

Cybersecurity and Trust Issues

Kyriakopoulos (2022) identified lack of digital security and trust as a challenge in digital entrepreneurship in both developing and developed countries. In the context of developing economies, this finding was confirmed by Mahlaule et al.'s (2024) study that found that trust and security issues in online transactions hinder the successful adoption and implementation of digital businesses in rural and township South Africa. Considering the diverse social contexts between rural and urban areas, it is uncertain whether similar findings can be reached in urban areas. It can be argued

that due to exposure, people in urban areas may be more receptive to online transactions than those in rural areas. As such, similar studies can be conducted in urban areas to confirm the findings. However, Dikmener et al. (2023) identified insufficient use of e-payment systems in Africa and attributed it to a lack of trust fuelled by perceived gaps in online security for shoppers. These findings imply existing trust issues in e-payment systems in both rural and non-rural settings in Africa. Kannoja (2023) attributed trust issues in the digital space to data privacy and online security concerns. Data privacy and online security concerns most likely affect consumers regardless of their geographical location.

Opportunities in Digital Entrepreneurship

Innovation and New Business Models

According to Dikmener et al. (2023), digital entrepreneurship contributes significantly to business-friendly reforms in Africa. The authors argue that the business-friendly reforms can attract investors and entrepreneurs to participate in Africa's digital entrepreneurship ecosystem (Dikmener et al. 2023). Considering the variation in access to digital technologies across developing countries, the level of digital entrepreneurship and business-friendly reforms may vary widely across developing countries. Taura et al. (2019) argue that despite digital platforms creating equal access, several digital entrepreneurs in Africa are adversely affected by socio-economic ills such as corruption and economic inefficiencies. As such, business-friendly reforms such as enhancing access to finance, and improving digital infrastructure are expected to vary widely across developing countries. Country specific research is imperative to assess the level of reforms for each country. Nevertheless, digital entrepreneurship levels the playing ground in certain regions and facilitates remote working and work from home (Jalan and Gupta 2020). This is evident in the surge in digital startups, particularly in Fintech, Edtech, Agritech, and Healthtech sectors across developing countries.

Women and Youth Empowerment Through Digital Tools

Samara and Terzian (2021) concluded that education on digital entrepreneurship, including technical skills and online marketing, is an opportunity

for digital entrepreneurship in developing countries. These findings could benefit from specification on how education on digital entrepreneurship is delivered, the beneficiaries of the education and its impact on digital entrepreneurship. Nevertheless, findings by Samara and Terzian (2021) are consistent with Dikmener et al. (2023) who identified increase in digital literacy as an opportunity for digital entrepreneurship in Africa. The authors argue that “the added value of digital literacy and internet usage could position African youth to drive the continent’s development priorities” (Dikmener et al. 2023: 23). On the other hand, Ahmed et al. (2026) emphasised the role of e-commerce and digitisation in supporting Pakistani women intending to start businesses. Digital literacy is significant to boost innovation and participation in the global digital economy, which is critical for youth entrepreneurship in developing countries. Digital literacy for youths aligns with the Sustainable Development Goal 9, industry, innovation and infrastructure. However, digital skills without opportunity, infrastructure and inclusion may not significantly enhance digital entrepreneurship in developing countries, especially those with weak digital infrastructure and regulatory frameworks. For example, most developing countries are recording high unemployment rates despite a skilled and qualified youth population. Many youths are constrained by systemic barriers such as inadequate policies and frameworks, lack of access to capital and digital inequality.

RESULTS AND DISCUSSION

The findings highlight that although digital technologies and platforms create entrepreneurial opportunities, entrepreneurs in resource-constrained environments often lack the digital infrastructure, capabilities and financial resources required to benefit from these opportunities. This suggests that the existence of digital opportunities does not necessarily ensure entrepreneurs’ ability to access or exploit them, particularly where structural constraints limit their capacity to engage with digital technologies. This observation is supported by Swidan and Kishk (2026), who argue that despite improvements in market accessibility and productivity, technology-enabled businesses continue to face constraints related to digital infrastructure and capabilities. Similarly, Khoza (2026)

identifies digital divides, limited digital literacy and uneven ecosystem support as key barriers to the adoption of AI among young entrepreneurs in resource-constrained environments. The findings of these studies converge in showing that digital entrepreneurship is shaped not only by the availability of digital technologies, but also by the infrastructure, skills and ecosystem support required to use them effectively. Khoza (2026) further underscores the significance of informal learning, peer networks and digital improvisation in facilitating the acquisition and application of AI technologies by young entrepreneurs in resource-constrained environments. Thus, the availability of digital technologies does not necessarily translate into meaningful entrepreneurial use, particularly where entrepreneurs lack the complementary capabilities and support required to adopt and apply such technologies.

The South African evidence further illustrates how these constraints are shaped by the conditions in which entrepreneurs operate. Mwansa et al. (2025) indicate that digital exclusion has persistently challenged and deepened existing patterns of socioeconomic inequality in rural areas of South Africa. High costs, inadequate connectivity and geographical isolation contribute to digital exclusion in South African rural areas, with the cost of accessing digital technologies emerging as the most influential barrier (Mwansa et al. 2025). Their study of Mkatazo village in the Eastern Cape attributes the digital divide to interconnected challenges, including inadequate infrastructure, prohibitive costs and low digital literacy (Mwansa et al. 2025). This finding complements the broader argument that digital exclusion is not simply a matter of whether technology is physically available, but also whether entrepreneurs and communities can afford and effectively use it. Hence, according to Bautista (2026), digital literacy is a skill critical for the modern economy. In Zimbabwe, Mashapure et al. (2026) similarly found that women entrepreneurs in Mashonaland West have limited access to technology training, exacerbating the shortage of digital competencies needed to navigate contemporary business operations. The authors also identified lack of infrastructure, security and trust as key challenges widening the digital technology gap for women entrepreneurs in Mashonaland West, Zimbabwe (Mashapure et al. 2026). The evidence from South Africa and Zimbabwe therefore points to a combination of infrastructure, affordability, skills and

support-related constraints, rather than a single barrier to digital participation.

The importance of context is also evident in the literature. Salamzadeh et al. (2026) demonstrate that digital strategies need to be tailored to the cultural and social conditions of specific communities while recognising the distinct barriers and possibilities characterising the Iranian context. In the South African public sector, Enaifoghe (2025) highlights uneven training programs, inadequate infrastructure and reluctance to undergo digital transformation as key structural obstacles. Importantly, Enaifoghe (2025) highlights the influence of geographical context, with rural areas and poorly resourced offices in the South African public sector workforce facing the greatest constraints. Although these studies examine different contexts, they collectively indicate that digital adoption cannot be separated from the social, geographical and institutional conditions within which technology is introduced. This provides an important qualification to approaches that treat access to digital technologies as sufficient for achieving digital inclusion.

Díaz-Arancibia et al. (2024) similarly found that for SMEs in developing economies, financial constraints, technological literacy issues and lack of infrastructure are key barriers to digital transformation and technology adoption. The convergence between these findings and the evidence identified across the reviewed studies strengthens the interpretation that digital entrepreneurship in developing economies is constrained by multiple, mutually related conditions. The prevalence of these challenges across developing economies suggests that digital transformation alone is insufficient for fostering digital entrepreneurship. Although Berman et al. (2024) acknowledge the significance of digital entrepreneurship for economic growth and development, they argue that its main drivers remain unclear. This is important because it cautions against viewing digital entrepreneurship simply through the lens of technological access or digital transformation. Rather, the reviewed evidence indicates that entrepreneurs require a combination of conditions that enable them to translate technological opportunities into entrepreneurial activity. Digital entrepreneurship goes beyond access to technology and encompasses a multi-faceted ecosystem of digital infrastructure, human capital, financial resources, institutional support and regulatory frameworks that collectively influ-

ence entrepreneurial success. Thus, the findings emphasise the need for an inclusive ecosystem to enable entrepreneurs to create, sustain and scale digital ventures. Consistently, Usman et al. (2024) advocate for inclusive, technology-integrated strategies to support entrepreneurial ventures. In this respect, the literature suggests that technology integration is more meaningful when it is accompanied by the resources and capabilities necessary for entrepreneurs to use technology productively. With limited digital competencies and infrastructural support, entrepreneurs in developing economies may therefore struggle to transform technological access into sustainable business outcomes.

Although the review identified several challenges, these challenges are manifestations of a broader digital divide. The review suggests that infrastructure deficiencies, digital skills shortages and financial constraints are not isolated barriers but interconnected dimensions of the digital divide. The significance of this interconnectedness is that addressing one constraint in isolation may not necessarily overcome the wider difficulties experienced by entrepreneurs. For example, access to digital infrastructure may provide limited benefits where entrepreneurs lack the skills or financial resources required to use that infrastructure effectively. Entrepreneurs lacking reliable internet access are less likely to develop digital competencies, thereby limiting their ability to exploit digital opportunities. A study conducted by Ndubuisi and Uche (2024) found that extreme regulatory barriers limit both the growth and success of digital entrepreneurship ventures. These regulatory barriers can manifest in high administrative and compliance costs, complex regulatory frameworks and inconsistent policy implementation, which collectively discourage digital infrastructure and skills development. This is consistent with Mashapure et al. (2026) research conducted in the context of women entrepreneurs in Mashonaland West, Zimbabwe. The study found that customary and statutory laws perpetuate gender-based inequalities by limiting women's possession of own properties, including digital technology tools (Mashapure et al. 2026). Regulatory conditions therefore add another dimension to the digital divide, as entrepreneurs may face institutional barriers even where technological opportunities are available.

Consequently, digital entrepreneurship has the potential to promote economic inclusion while simultaneously exacerbating existing socioeconomic disparities across regions. This duality is particularly important in interpreting the findings of the review: digital entrepreneurship can create opportunities for participation in digitally enabled markets, but unequal access to the resources and capabilities required for participation may mean that these opportunities are not equally distributed. Hence, Díaz-Arancibia et al. (2024) highlighted the need for tailored technological adoption models that prioritise the unique challenges of SMEs in developing countries. Additionally, the authors highlighted the need for inclusive approaches that accommodate the sociocultural dynamics in developing countries to enhance technology integration strategies (Díaz-Arancibia et al. 2024). Overall, the reviewed literature indicates that bridging the digital divide in digital entrepreneurship requires attention not only to technological access but also to the interconnected infrastructure, skills, financial, institutional and contextual conditions that shape entrepreneurs' ability to use digital technologies.

Research Gaps and Future Directions

Research on digital entrepreneurship in developing countries is still emerging. More research should be conducted to understand the trends in digital entrepreneurship across various developing countries. For example, research conducted by Samara and Terzian (2021) provides significant insights into the challenges and opportunities of digital entrepreneurship in developing countries but was limited to some countries in the Middle East and Lebanon. Muhammad and Yusoff (2023) research on challenges of digital entrepreneurship on development of Africa focused on only three countries, Nigeria, South Africa and Egypt. On the other hand, Dikmener et al.'s (2023) study focused on selected African countries. Limited research has been conducted in developing countries such as Uganda, Angola, Ethiopia, Zimbabwe and Ghana. Diversifying research into those regions will provide better understanding of the challenges and opportunities of digital entrepreneurship in developing countries. Limited research has also specifically focused on rural and township regions. For example, Mahlaule et al.'s (2024) research focused on rural and township areas in South Africa.

Limited research has considered the perspectives of digital women entrepreneurs in developing countries. Considering the long-standing traditional perceptions of women and entrepreneurship, it is imperative to understand the experiences of digital women entrepreneurs in developing countries. For example, Mousa et al.'s (2024) research examined digital entrepreneurship among Egyptian women, including their motivation.

Limited comparative studies on digital entrepreneurship have been conducted in developing countries. Considering the significant differences in performance of African businesses (Taura et al. 2019), it can be argued that the digital entrepreneurship ecosystem varies widely across developing countries, which calls for comparative studies. Comparative studies can also be conducted between developing and developed countries. For example, Dutot and Van Horne (2015) conducted a comparative study of digital entrepreneurship intention in France and the United Arab Emirates.

CONCLUSION

Digital entrepreneurship presents significant opportunities for innovation, new business creation and socio-economic development in developing countries. The review highlights the challenges and opportunities in digital entrepreneurship in developing countries. Key opportunities in digital entrepreneurship in developing countries include women and youth empowerment through digital tools and innovation and new business models. Key challenges include infrastructure gaps, digital literacy and skills shortages, financial barriers, policy and regulatory uncertainties and cybersecurity issues. The review also identifies important gaps in the literature, particularly regarding under-researched developing countries, rural and township contexts, women digital entrepreneurs and comparative studies. Addressing these challenges and research gaps is essential for advancing knowledge and fostering a more inclusive digital entrepreneurship ecosystem in developing countries. Collaborative efforts between the government, higher education institutions and the business sector are needed to advance research, resources and skills in digital entrepreneurship.

RECOMMENDATIONS

Based on the findings of this review, the following recommendations are proposed by the re-

searchers. Governments in developing countries should prioritise investments in reliable internet connectivity, digital infrastructure and technological resources to support the growth of digital entrepreneurship, particularly in rural and township areas. Policymakers, educational institutions and entrepreneurship support organisations should expand digital literacy and digital entrepreneurship training programs targeting youth and women entrepreneurs. These programs should focus on technical skills, including digital marketing, e-commerce and innovation management. Financial institutions and governments should develop funding mechanisms tailored to the needs of digital entrepreneurs, including start-up grants, venture capital initiatives and affordable financing opportunities. Governments should establish business-friendly regulatory environments that reduce barriers to digital entrepreneurship, encourage innovation and support the adoption of digital technologies by emerging entrepreneurs. Targeted interventions should be developed to address the unique challenges faced by women digital entrepreneurs, including access to finance, mentorship opportunities, networking platforms and digital skills development initiatives. Governments and development agencies should design programs that support digital entrepreneurship in rural and township communities to reduce digital inequalities and promote inclusive economic development. Future studies should focus on under-researched developing countries such as Uganda, Angola, Ethiopia, Zimbabwe and Ghana. Researchers should also examine the experiences of women digital entrepreneurs, investigate rural and township digital entrepreneurship and conduct comparative studies across developing and developed countries to generate a more comprehensive understanding of digital entrepreneurship ecosystems.

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