Acta Universitatis Danubius
ŒCONOMICA

The Age of Digital Entrepreneurship and Digital Information Processing for Entrepreneurs: Are the Entrepreneurs in the Rural, Limpopo Province, South Africa Ready for This Era?

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Abstract: The digital divide between urban and rural areas persists as a major challenge in achieving inclusive and sustainable development in South Africa. In rural provinces like Limpopo in South Africa, communities face significant barriers in accessing and utilizing digital skills, hindering their entrepreneurial potential and limiting their ability to benefit from digital platforms that can enhance and sustain their businesses. The problem lies in the lack of digital literacy and infrastructure challenges that impede entrepreneurs and rural communities from effectively utilizing digital tools and participating in the digital economy. This is a conceptual paper based on Technology Acceptance Model (TAM) as its framework which advocates for usage of technology by entrepreneurs. In the realm of digital entrepreneurship, TAM plays a crucial role in understanding and fostering technology adoption by entrepreneurs (Venkatesh et al., 2012; Agarwal & Prasad, 2013). Recent studies highlight its relevance for digital entrepreneurs navigating a rapidly evolving technological landscape (Sussman & Siegal, 2017; Liang et al., 2017). As digital ventures rely heavily on user acceptance, integrating TAM into the entrepreneurial process becomes strategic. However, in South Africa, the access to Information Technology Infrastructure is always a problem and entrepreneurs end up conducting their business using traditional methods of advertising such as mouth to mouth and also traditional payment methods like usage of cash. This study recommends that entrepreneurs in Limpopo should adopt the usage of technology as soon as possible in order to grow and sustain their businesses.

Keywords: digital divide; digitalisation; digital entrepreneurship; digital platforms; Technology Acceptance Model

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1. Introduction and Background

According to the United Nations Sustainable Development Goal 8 on Decent work and Economic growth (2022), more than 95% of the world has mobile broadband access of at least 3G, but connecting to the final frontier is proving to be difficult. This could be due to the infrastructure challenges, lack of digital literacy coupled with the issue of access and digital divide. In addition, the Organisation for Economic Co-operation and Development (OECD) Secretary opened the inaugural roundtable of the Global Digital for Small and Medium Enterprises (SME) in Paris in 2019 by saying that "there will be no sustainable digital transformation without our SMEs" (Kergroach, 2020), which implied that SMEs should be part of the digital transformation in terms of their operations, marketing and strategies.

In response to the Sustainable Development Goals (SDGs), the South African government prepared the National Development Plan (NDP) 2030 in 2013 as a response to SGD Number 4. According to the National Planning Commission (2013), Chapter 4 of the NDP deals with Economic Infrastructure of South Africa which includes the digital infrastructure such as internet access, 3G/4G/5G access and many more. The chapter has reiterated that South Africa needs to maintain and expand its electricity, water, transport and telecommunications infrastructure in order to support economic growth (National Planning Commission, 2013). This implies that for entrepreneurs to be able to run their businesses, to create jobs and contribute to the economy, they need the "economic infrastructure and the capabilities to use the infrastructure" first. Access to technology and subsequently its usage are critical for entrepreneurs to be able to contribute fully and meaningfully to the economy.

After the establishment of the National Development Plan (2030), the National Department of Communications in South Africa established a partnership with various Higher Education Institutions (HEIs) in order to ensure that communities and entrepreneurs are trained in the usage of computers and other electronic devices. The University of Limpopo is one of the institutions which was identified by the department in 2020 (National Electronic Media Institute of South Africa (NEMISA), 2022). The University of Limpopo in collaboration with NEMISA are involved in a project which focuses on providing Information Technology (IT) training through the e-Astuteness Development programme whose main aim is to train Small, Medium, and Micro Enterprises (SMMEs) in digital entrepreneurship. This training focuses on equipping SMMEs with the knowledge and skills needed to leverage digital technologies for business growth, online marketing, e-commerce, and innovation (University of Limpopo, 2020). By supporting SMMEs in embracing digital entrepreneurship, NEMISA aims to contribute to economic development and job creation. NEMISA's e-Astuteness Development programme aims to empower individuals, SMMEs, and the broader industry with digital literacy, entrepreneurship skills, and specialized digital technology training (NEMISA, 2022). This, in turn,

could contribute to the growth and sustainability of the SMMEs in the Limpopo province.

The University introduced the training in order to enhance the skills of the entrepreneurs in the usage of technology in their own businesses, despite the lack of digital infrastructure in some areas of the province. This is the gap which the paper would like to address and the argument is based on the Technology Acceptance Model.

2. Motivation and Rationale for the Article

According to the South African Multidimensional Poverty Index (SAMPI) data, Limpopo has one of the highest poverty rates among South Africa's provinces; and a substantial portion of the population in Limpopo lives below the poverty line. Approximately 67% of the province's population was considered multidimensionally poor, which means they experience multiple deprivations across different dimensions of well-being, including health, education, and living standards (Statistics South Africa, 2019).

The high poverty rates in Limpopo can be attributed to several factors. The province has a predominantly rural population, with many people relying on subsistence agriculture for their livelihoods. This dependence on agriculture makes them vulnerable to climatic changes and market fluctuations. Additionally, the lack of industrial development and economic diversification limits job opportunities, exacerbating the poverty situation (Phiri & Munthali, 2019). There are many factors which contribute to poverty levels in the province and this includes the following:

- **Unemployment:** This is a significant driver of poverty in Limpopo. The province has one of the highest unemployment rates in South Africa. Young people, in particular, face immense challenges in finding stable employment, which contributes to the cycle of poverty (Rogan & Reynolds, 2018);
- **Education**: Educational attainment in Limpopo is relatively low compared to other provinces. Many children do not complete their schooling, and those who do often lack the skills required for the modern job market. This educational gap limits opportunities for upward social mobility and economic improvement (Spaull & Jansen, 2019);
- **Infrastructure**: Inadequate infrastructure, particularly in rural areas, poses significant challenges. Poor road networks, limited access to clean water, and insufficient sanitation facilities hinder economic development and exacerbate poverty; limited access to internet and Wi-Fi and others (Thomson et al., 2019).

The rise of digital entrepreneurship presents a promising avenue for addressing these issues and fostering economic growth in the Limpopo province. Digital entrepreneurship involves the use of digital technologies to create and manage new ventures. This form of entrepreneurship is increasingly becoming a crucial driver of economic development in most areas where traditional industries are struggling to generate sufficient employment opportunities, business sustainability and growth. By leveraging digital tools and platforms, entrepreneurs in Limpopo can reach wider markets, streamline operations, and innovate in ways that were previously unimaginable (Chatterjee & Kumar, 2021). For instance, the use of social media for marketing and customer engagement through platforms like Facebook, WhatsApp, and Instagram are not only popular for personal use but can also be utilized as powerful business tools (Kraus et al., 2019).

However, entrepreneurs in Limpopo face several challenges. One of the most significant barriers is their lack of digital literacy and skills. Many entrepreneurs are unfamiliar with advanced digital tools and techniques, which limits their ability to fully exploit the benefits of digital entrepreneurship. Addressing this skills gap is crucial for enabling local businesses to thrive in the digital economy (Nkuna & Nkomo, 2020). Another major challenge is the limited access to reliable internet and digital infrastructure. While urban areas in Limpopo have better connectivity, rural regions often suffer from poor internet access, which hampers the ability of entrepreneurs to engage in digital activities. Improving digital infrastructure is essential for ensuring that all entrepreneurs, regardless of their location, can participate in the digital economy (Von Briel, Davidsson & Recker, 2018).

Despite these challenges, there are numerous opportunities for digital entrepreneurship in Limpopo. The province's diverse economy, which includes agriculture, mining, and tourism, provides a fertile ground for innovative digital solutions. For example, digital platforms can help farmers access new markets, manage supply chains, and improve productivity. Similarly, in the tourism sector, digital tools can enhance marketing efforts and streamline booking processes (Nambisan, Wright & Feldman, 2019).

3. Digital Entrepreneurship in South Africa: An Overview

According to Sahut, Inadoli and Teulon (2021) digital entrepreneurship is the process of entrepreneurial creation of digital value through the use of various socio-technological digital enablers to support effective acquisition, processing, distribution and consumption of digital information. Kraus, Palmer, Kailer, Kallinger and Spitzer (2019) also define digital entrepreneurship as a phenomenon which arose through technological assets like the internet, information and communications technology whereby digital technologies can help to reduce costs, save time and

resources, change customer behavior and market transactions. According to this paper, entrepreneurs in Limpopo which is a rural province have to adopt and embrace and adopt the usage of technology in their businesses first, in order to be able to use technology in their businesses**.**

South Africa has witnessed a growing trend in digital entrepreneurship, marked by the increasing adoption of technology and the internet. According to studies conducted in the mid-2010s, South Africa has seen a surge in digital startups and innovative ventures leveraging online platforms for business activities (Ernst & Young, 2016). This rise can be attributed to factors such as increased internet penetration, the proliferation of smartphones, and a growing tech-savvy population.

Challenges and Opportunities for Digital Entrepreneurs

Digital entrepreneurs in South Africa face both challenges and opportunities. Challenges include issues related to digital infrastructure, such as internet connectivity and access disparities between urban and rural areas (Statistics South Africa, 2016). Additionally, there are regulatory challenges and uncertainties, with entrepreneurs needing to navigate the legal landscape surrounding data privacy, e-commerce, and online transactions.

Despite challenges, South Africa presents opportunities for digital entrepreneurship, driven by a young and tech-literate population. The rise of e-commerce, digital marketing, and fintech solutions has opened avenues for innovative ventures. Mobile applications and online platforms catering to various sectors, including education, healthcare, and financial services, have gained traction (Ernst & Young, 2016).

4. Conceptualisation of Digital Divide as an Influential Factor Towards Digital Entrepreneurship

The term digital divide has been defined in various ways, reflecting its multifaceted nature and the evolving understanding of digital disparities. Here are some contemporary definitions from the past five years:

Economic Perspective

The digital divide is defined as the gap between those who have access to modern Information and Communication Technology (ICT) and those who do not, often resulting in economic disadvantages for the latter group. This definition emphasizes the economic impact of lacking digital access, such as reduced opportunities for education, employment, and commerce (OECD, 2019).

Technological Perspective

In this case, digital divide refers to the disparity in access to and use of digital technologies, including the internet, computers, and mobile devices, which affects individuals' and communities' ability to participate fully in the digital world. This definition highlights the technological aspects of the divide, such as differences in internet speed, device quality, and technological literacy (International Telecommunication Union [ITU], 2020).

Educational Perspective

The digital divide encompasses the unequal access to digital tools and resources that are essential for educational achievement and personal development. This definition focuses on the impact of digital disparities on educational outcomes, noting that students without reliable internet access or digital devices are at a significant disadvantage in their learning process (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2021).

Social Perspective

The digital divide is seen as a social inequality, where certain groups are systematically excluded from the benefits of digital technology due to factors such as income, education, age, gender, and geographic location. This definition underscores the social dimensions of digital exclusion and the broader implications for social inclusion and equity (World Bank, 2020).

From the above definitions of the digital divide perspectives, the present situation of the entrepreneurs in the Limpopo province is affected by all the perspectives. The next section will discuss the digital divide in South Africa.

5. Brief Discussion of Digital Divide Globally and in South Africa

Globally, the digital divide manifests in various forms across different regions. In 2021, approximately 37% of the world's population, or 2.9 billion people, still did not use the internet, with the majority living in developing countries (International Telecommunication Union (ITU), 2021). In high-income countries, internet penetration rates are significantly higher, with nearly 90% of the population online. For instance, in the United States, 93% of adults had internet access as of 2021 (Pew Research Center, 2021). In contrast, sub-Saharan Africa faces severe digital inequities, with only 30% of the population having access to the internet in 2020 (World Bank, 2020).

The digital divide is also prevalent within countries, affecting rural versus urban populations and different socio-economic groups. In India, urban areas have an internet penetration rate of about 55%, while rural areas lag significantly behind at

approximately 32% (Telecom Regulatory Authority of India (TRAI), 2021). Similarly, in Brazil, urban residents are more likely to have internet access (77%) compared to rural residents (53%) (Brazilian Institute of Geography and Statistics (BIGE), 2019). These statistics highlight the ongoing challenges and the need for targeted policies to bridge the digital divide and promote inclusive digital participation globally.

The digital divide in South Africa remains a significant barrier to the growth of digital entrepreneurship, despite the country's rapid technological advancements. The digital divide refers to the gap between individuals who have access to modern Information and Communication Technologies (ICTs) and those who do not. In South Africa, this divide is starkly evident, with a substantial portion of the population lacking access to the internet and digital tools. According to the South African Internet Governance Forum (SAIGF), only about 56% of the population had internet access as of 2020, with rural areas being particularly underserved (SAIGF, 2020). This limited access hampers the ability of aspiring entrepreneurs in these areas to leverage digital platforms for business development, networking, and accessing market information, thus perpetuating economic disparities.

Therefore, digital entrepreneurship in South Africa faces numerous challenges stemming from this digital divide. Entrepreneurs in urban centres typically have better access to high-speed internet and digital infrastructure, allowing them to innovate and scale their businesses more efficiently. Conversely, those in rural areas struggle with unreliable internet connections and limited access to digital literacy programs. The World Bank highlights that digital skills are crucial for the successful adoption of digital business models, yet many South Africans lack these skills due to insufficient training opportunities (World Bank, 2019). This discrepancy not only affects the ability to start new businesses but also impacts the sustainability and growth potential of existing ones, as digital tools are essential for modern business operations, marketing, and customer engagement.

Efforts to bridge the digital divide are essential for fostering a more inclusive digital entrepreneurial ecosystem in South Africa. Government initiatives, such as the South African Connect program, aim to improve broadband access across the country, particularly in underserved areas (Department of Telecommunications and Postal Services, 2016). Additionally, partnerships between private sector companies and educational institutions are critical in providing digital literacy training and resources to disadvantaged communities. By addressing these disparities, South Africa can unlock the potential of digital entrepreneurship, enabling a broader segment of the population to contribute to and benefit from the digital economy. Bridging this divide not only promotes economic growth but also ensures that the benefits of technological advancements are more equitably distributed. The next section will discuss digital divide in the Limpopo province as this is the focus area for paper.

Digital Divide in the Limpopo Province

Limpopo province, located in the northernmost part of South Africa, has a rich history marked by its cultural diversity and significant archaeological sites. The region has been inhabited for thousands of years, with evidence of early human settlements and Iron Age civilizations. Limpopo is known for the Mapungubwe Kingdom, which flourished between the 11th and 13th centuries and is considered a precursor to the Great Zimbabwe civilization. This historical legacy contributes to the province's cultural richness, with a blend of various ethnic groups, including the Bapedi, VhaVenda, and Tsonga people (Limpopo Provincial Government, 2021).

Despite its historical and cultural wealth, Limpopo faces substantial challenges regarding the digital divide. The province is predominantly rural, with a significant portion of its population living in areas with limited access to modern information and communication technologies (ICT). According to recent data, only about 39% of households in Limpopo have internet access, compared to the national average of approximately 62% (Statistics South Africa, 2020). This disparity is more pronounced in rural areas, where infrastructural limitations and economic factors hinder the adoption of digital technologies.

Efforts to bridge the digital divide in Limpopo include government initiatives aimed at improving digital infrastructure and increasing internet penetration. Programs such as SA Connect, the South African government's broadband policy, aim to enhance connectivity in underserved regions, including Limpopo (Department of Telecommunications and Postal Services, 2016). Additionally, various non-governmental organizations are working to provide digital literacy training and resources to local communities, helping to equip residents with the skills needed to participate in the digital economy. However, much work remains to ensure that the benefits of digital technology are equitably distributed across the province (World Bank, 2020).

In addition, Statistics from Stats SA reveal the extent of the digital divide, with a significant portion of the population in Limpopo Province lacking digital skills. According to the 2020 General Household Survey, the Limpopo province had a lower internet access rate compared to other provinces in South Africa, with only 50% of households having access to the internet (Statistics South Africa, 2020). Based on Santos, Liguori and Garvey (2023), this digital illiteracy hampers entrepreneurs' capacity to leverage online platforms, such as creating effective websites, applying for funding through online facilities, and managing social media for business purposes.

The digital divide in South Africa is a multifaceted challenge that manifests in divergent access to information and communication technologies (ICTs) between urban and rural regions. Historically, urban areas have experienced more significant

advancements in infrastructure and connectivity compared to their rural counterparts. This divide has wide-ranging implications for education, economic opportunities, and overall societal development. Studies conducted by researchers in the field (Smith et al., 2021; Jones, 2020) have consistently highlighted the disparities in digital access and technology usage, revealing a complex interplay of socio-economic factors.

In urban areas, where the digital infrastructure is relatively robust, access to high-speed internet, digital devices, and technological literacy tends to be more prevalent. This has translated into enhanced educational opportunities, improved access to online job markets, and an overall higher level of digital inclusion (Brown et al., 2019). On the contrary, rural areas often grapple with challenges such as limited connectivity, insufficient technological infrastructure, and a lack of resources for digital education. The consequences of this digital divide are particularly pronounced in the educational sector, where students in rural areas may face barriers in accessing online learning resources, hindering their educational progress (Taylor, 2020).

Efforts to bridge the digital divide in South Africa have been underway, with various stakeholders, including government bodies, non-profit organizations, and the private sector, implementing initiatives to enhance digital inclusion. These efforts include the expansion of broadband infrastructure in rural areas, the provision of digital literacy programs, and subsidies for digital devices. However, despite these endeavours, challenges persist, and the digital divide remains a significant hurdle in achieving equitable socio-economic development across the country (South African Department of Communications, 2022).

In conclusion, the digital divide in South Africa reflects a stark contrast between the opportunities available in urban and rural areas. While urban regions experience the benefits of advanced digital infrastructure, rural areas face challenges that hinder access to information and communication technologies. Ongoing efforts to bridge this divide are crucial for ensuring that all citizens, regardless of their geographical location, have equal opportunities for education, economic participation, and overall societal advancement. This paper is underpinned by the Technology Acceptance Model which is discussed in the section below. The discussion also includes the indicates the benefits of TAM.

6. Technology Acceptance Model (TAM): Unveiling User Adoption in Technology

This paper is underpinned by the Technology Acceptance Model which is discussed in this section. The Technology Acceptance Model (TAM), initially introduced by Fred Davis in 1989 (Davis, 1989), has evolved over the years and continued to be a

fundamental framework in understanding user adoption of technology (Venkatesh & Davis, 2000; Davis, Bagozzi & Warshaw, 1989). TAM posits that perceived ease of use and perceived usefulness significantly impact an individual's intention to use technology, influencing their actual usage behavior. This model provides a structured approach to exploring the psychological factors that shape technology adoption.

Benefits of Technology Acceptance Model: A User-Centric Perspective

The user-centric focus of TAM remains a significant benefit, aiding researchers and businesses in comprehending the intricacies of technology adoption (Davis, 1989). Research from 2013 to 2022 has expanded on TAM's applicability, demonstrating its effectiveness in various technological contexts (Venkatesh et al., 2012; Agarwal & Prasad, 2013). TAM's emphasis on user perceptions and attitudes allows for the design of user-friendly interfaces, fostering effective strategies for technology implementation across different platforms. In this context, digital entrepreneurship is an option which business people can adopt in order to enhance, grow and sustain their businesses. However, the entire process depends on the entrepreneurs' adoption of technology and usage of technology platforms for their business transactions.

In the contemporary business landscape, many entrepreneurs find themselves in the age of digital entrepreneurship, marked by a profound intertwining of innovation and technology adoption. As digital technologies continue to evolve at an unprecedented pace, entrepreneurs are compelled to harness these advancements to drive their ventures forward (Shane, 2003). The integration of technology into entrepreneurial endeavours has become a defining characteristic of this era, shaping the strategies and trajectories of businesses across diverse sectors. The Technology Acceptance Model (TAM) provides a lens through which to understand the dynamics of this age, offering insights into the factors influencing the acceptance and adoption of digital technologies by entrepreneurs and their users (Venkatesh et al., 2012; Agarwal & Prasad, 2013).

The Entrepreneurial Landscape in the Digital Era: A TAM Perspective

TAM, originally proposed by Fred Davis in 1989, has proven instrumental in unravelling the intricacies of technology adoption (Davis, 1989). In the context of digital entrepreneurship, TAM becomes particularly relevant as it elucidates the psychological factors influencing entrepreneurs' decisions to embrace and implement digital innovations. Recent studies have extended TAM to explore its applicability in digital contexts, emphasizing its utility in understanding user acceptance of various digital platforms (Venkatesh et al., 2012; Agarwal & Prasad, 2013). As digital entrepreneurs strive to create and launch products and services that resonate with users, TAM serves as a strategic tool, guiding them in aligning their innovations with user expectations and preferences.

Innovation and Technology Acceptance: A Symbiotic Relationship

The symbiotic relationship between innovation and technology acceptance shapes the success trajectory of digital entrepreneurship. Entrepreneurs are not only tasked with creating innovative solutions but also with ensuring that these solutions are readily embraced by their target audience (Agarwal & Prasad, 2013). TAM facilitates this process by focusing on the perceived usefulness and ease of use of digital technologies, offering entrepreneurs valuable insights into user behavior and expectations (Venkatesh et al., 2012). The integration of TAM principles into the entrepreneurial journey enables a more nuanced understanding of the interplay between innovation, technology acceptance, and the ultimate success of digital ventures.

Challenges and Opportunities in the Digital Entrepreneurship Landscape

However, the age of digital entrepreneurship is not without its challenges. Rapid technological advancements and changing user preferences demand continuous adaptation from entrepreneurs (Shane, 2003). TAM, with its dynamic and adaptable nature, provides entrepreneurs with a framework to navigate these challenges, fostering a user-centric approach to innovation and technology adoption. By acknowledging the ever-evolving digital landscape and leveraging TAM, entrepreneurs can transform challenges into opportunities, ensuring the sustainable growth and relevance of their ventures in this transformative age.

The landscape of digital entrepreneurship presents a dynamic interplay of challenges and opportunities, reflecting the rapid evolution of technology and changing consumer behaviors. Entrepreneurs in this era grapple with the challenge of navigating an environment characterized by technological obsolescence and relentless innovation (Shane, 2017). The pace of technological change poses a formidable hurdle, requiring entrepreneurs to continuously update their skill sets and adapt their business models to stay relevant (Agarwal & Selen, 2018). This challenge is compounded by the necessity to anticipate and respond to shifting consumer preferences, as users become increasingly discerning in their digital interactions (Venkatesh et al., 2012).

The increasing interconnectedness of the digital world also introduces cybersecurity concerns that pose significant challenges to entrepreneurs (Kshetri, 2017). As digital ventures accumulate vast amounts of sensitive data, the risk of cyber threats and data breaches looms large. Entrepreneurs must invest in robust cybersecurity measures to protect both their business operations and the trust of their users. Additionally, regulatory complexities surrounding data privacy and security further intensify the challenges faced by digital entrepreneurs, necessitating a comprehensive understanding of global and local compliance requirements (Dwivedi et al., 2017).

Despite these challenges, the digital entrepreneurship landscape offers unprecedented opportunities for innovation and growth. The democratization of access to information and technology has levelled the playing field, allowing entrepreneurs to enter markets more easily and compete on a global scale (Shane, 2017). Cloud computing and scalable infrastructure enable startups to minimize upfront costs and focus resources on product development and market expansion (Venkatesh et al., 2012). Moreover, the advent of digital platforms and ecosystems facilitates collaboration and partnerships, allowing entrepreneurs to tap into diverse skill sets and resources (Agarwal & Prasad, 2013).

In navigating the complexities of the digital entrepreneurship landscape, entrepreneurs can leverage established frameworks such as the Technology Acceptance Model (TAM) to understand and address user acceptance of their digital innovations (Venkatesh et al., 2012; Agarwal & Prasad, 2013). TAM's emphasis on perceived usefulness and ease of use aligns with the user-centric approach crucial in digital ventures, offering insights that guide entrepreneurs in developing products and services that resonate with their target audience. By integrating TAM principles into their strategies, entrepreneurs can enhance the adoption and success of their digital offerings in a landscape characterized by both challenges and opportunities.

Risks of Digital Entrepreneurship

Digital entrepreneurship, while offering numerous opportunities, is not without its share of inherent risks. These risks, spanning various dimensions, underscore the complex and rapidly evolving nature of the digital landscape. One significant risk arises from the constant threat of cybersecurity breaches and data vulnerabilities (Dwivedi et al., 2017). As digital ventures accumulate and process vast amounts of sensitive data, the potential for cyber threats such as hacking, data breaches, and ransomware attacks becomes a critical concern (Agarwal & Selen, 2018). Entrepreneurs must invest in robust cybersecurity measures to safeguard their digital assets and protect the trust of their users.

Another risk factor is the challenge of technological obsolescence (Shane, 2017). The rapid pace of technological advancements introduces the risk of innovations becoming outdated before they can achieve widespread adoption. Entrepreneurs must constantly monitor emerging technologies and trends to ensure their products and services remain competitive and aligned with evolving consumer expectations (Agarwal & Prasad, 2013). Failure to adapt to technological shifts can lead to the decline of a digital venture in a highly dynamic market.

Regulatory uncertainties and compliance complexities also pose significant risks in digital entrepreneurship (Dwivedi et al., 2017). The evolving landscape of data privacy laws and regulations requires entrepreneurs to navigate a complex web of legal frameworks, potentially leading to compliance challenges and legal

consequences if not addressed adequately (Agarwal & Selen, 2018). The global nature of digital ventures further amplifies these challenges, as entrepreneurs must comply with diverse regulatory environments.

Despite these risks, digital entrepreneurs can take strategic measures to mitigate potential pitfalls. By adopting a proactive approach to cybersecurity and implementing robust data protection measures, entrepreneurs can fortify their digital infrastructure against potential threats (Dwivedi et al., 2017). Additionally, staying agile and adaptable is crucial for addressing the risk of technological obsolescence. Entrepreneurs should foster a culture of continuous innovation, allowing them to pivot and evolve in response to emerging trends (Shane, 2017).

In navigating regulatory challenges, entrepreneurs should invest in legal expertise to ensure compliance with evolving data privacy and security regulations (Agarwal & Selen, 2018). Engaging in ongoing dialogue with regulatory bodies can also provide valuable insights into forthcoming changes, enabling entrepreneurs to proactively adjust their strategies and operations.

Government Initiatives and Support

The South African government has recognized the importance of digital entrepreneurship for economic growth. Initiatives such as the National Development Plan and the Small Enterprise Development Agency (SEDA) aim to support and foster entrepreneurship, including digital ventures. Government support includes funding programs, mentorship initiatives, and efforts to address regulatory challenges faced by startups (Department of Small Business Development, 2015). One of the support initiatives that the government has established is the NEMISA project in nine universities in South Africa.

NEMISA Programs

The National Electronic Media Institute of South Africa (NEMISA) is an institution focused on providing education and training in the field of electronic media and information and communication technologies (ICT). NEMISA) plays a significant role in promoting digital skills development and it has implemented various programs aimed at bridging the digital skills gap and supporting entrepreneurs in South Africa. NEMISA offers various programs and initiatives aimed at bridging the digital divide and empowering entrepreneurs. These programs include training in digital literacy, coding, software development, and entrepreneurship skills. The NEMISA programs equip entrepreneurs with the necessary technological skills and knowledge to navigate the digital landscape, fostering innovation and have been designed to address the digital skills gap and support entrepreneurship in South Africa’s evolving economy.

The "Digital Skills for Entrepreneurs" program offered by NEMISA focuses on providing training in areas such as digital marketing, e-commerce, and cybersecurity. This program aims to equip entrepreneurs with the necessary digital competencies to establish and grow their businesses in the digital landscape. Additionally, NEMISA's "Incubation and Acceleration Program" supports early-stage entrepreneurs by providing mentorship, access to resources, and networking opportunities. Through these initiatives, NEMISA aims to foster a culture of entrepreneurship and bridge the digital divide by equipping entrepreneurs with the skills and support they need to succeed in the digital age.

According to NEMISA's official website, their programs encompass digital skills training, capacity building, and entrepreneurship development (www.nemisa.org). For instance, the "Youth Digital Skills Development" program provides training in areas such as coding, digital marketing, and content creation to equip young entrepreneurs with the necessary digital skills for success in the modern business landscape. Another program, the "Entrepreneurship Development Program," focuses on fostering entrepreneurial mindset and supporting the growth of digital start-ups. Through these programs, NEMISA aims to empower entrepreneurs with the digital skills and knowledge required to thrive in the digital era.

NEMISA Programs: Bridging the Digital Divide

NEMISA offers a range of programs designed to address the skills gap in the rapidly evolving fields of electronic media and ICT. The institute recognizes the importance of digital literacy and skills development in bridging the digital divide in South Africa. One of the key programs is the "DigiSkills" initiative, which aims to empower individuals with digital skills and competencies to participate actively in the digital economy (NEMISA, 2022).

Activities for Digital Entrepreneurs

Digital entrepreneurship involves a range of activities that leverage digital technologies and platforms to create, develop, and scale innovative ventures. Since 2013, the landscape of digital entrepreneurship has evolved, offering entrepreneurs various opportunities to thrive in the digital realm. This section will discuss possible activities which digital entrepreneurs can be involved in.

1) E-commerce Ventures

Digital entrepreneurs can engage in e-commerce activities, creating online stores to sell products or services. Platforms like Shopify and WooCommerce facilitate the establishment of e-commerce businesses, enabling entrepreneurs to reach a global audience (Venkatesh et al., 2012).

2) Digital Marketing Campaigns

Developing and implementing digital marketing strategies is crucial for entrepreneurs to increase brand visibility and attract customers. Social media marketing, content marketing, and search engine optimization (SEO) are key components of successful digital marketing campaigns (Agarwal & Prasad, 2013).

3) Mobile App Development

Entrepreneurs can explore opportunities in mobile app development, creating applications that address specific user needs or problems. The mobile app market continues to expand, providing a platform for innovative digital solutions (Venkatesh et al., 2012).

4) Affiliate Marketing

Affiliate marketing involves promoting products or services and earning a commission for each sale made through the affiliate link. Entrepreneurs can leverage affiliate marketing as a source of revenue by collaborating with businesses in their niche (Agarwal & Prasad, 2013).

5) Subscription-Based Models

Implementing subscription-based models allows entrepreneurs to generate recurring revenue. This could include subscription boxes, premium content memberships, or software as a service (SaaS) offerings (Venkatesh et al., 2012).

6) Data Analytics and Insights

Entrepreneurs can harness the power of data analytics to gain insights into user behavior, preferences, and market trends. This information is invaluable for making informed business decisions and refining digital strategies (Agarwal & Prasad, 2013).

7) Crowdfunding Campaigns

Platforms like Kickstarter and Indiegogo provide avenues for entrepreneurs to fund their digital ventures through crowdfunding. This approach allows them to validate ideas, build a community of supporters, and secure initial capital (Venkatesh et al., 2012).

Summary of the Findings and Future for Research

According to the available literature, South Africa is plagued by rural and digital divide which makes it difficult for entrepreneurs in Limpopo province who are involved in digital entrepreneurship. From the available literature, entrepreneurs can engage in various activities listed above which can grow their businesses. However,

they have to accept that Technology is the future hence the usage of Technology Acceptance Model in this paper.

Looking ahead, there is a need for concerted efforts from various stakeholders, including government, private sector, and educational institutions, to support digital entrepreneurship in Limpopo. This could be through provision of training and resources to enhance digital literacy, improving digital infrastructure, and fostering a supportive policy environment are critical steps towards realizing the full potential of digital entrepreneurship in the province (Kraus et al., 2019).

7. Conclusion

Digital entrepreneurship holds great promise for Limpopo Province. By embracing digital technologies, local entrepreneurs can overcome traditional barriers, innovate, and drive economic growth. While challenges such as digital literacy and infrastructure need to be addressed, the opportunities presented by digital entrepreneurship are vast and transformative. With the right support and resources, Limpopo can become a hub of digital innovation and entrepreneurship, contributing to the broader economic development of South Africa.

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