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LITERATURE REVIEW ON DIGITAL ENTREPRENEURSHIP IN SOUTH AFRICA: A HUMAN CAPITAL PERSPECTIVE*

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Abstract: This paper aims to assess the current status of digital entrepreneurship in the South African environment by analysing people's knowledge and behaviour towards the fourth industrial revolution. Numerous studies have been conducted regarding social, corporate and women entrepreneurship. In addition, the current literature on digital entrepreneurship needs to be more specific and depends on the field. Previous studies highlight digital entrepreneurship from various dimensions, such as global growth, women and gender, regulatory challenges and their impact on economic growth. Furthermore, studies assessing human capital's influence on digital entrepreneurship still need to be completed. Individuals and businesses must embrace digital entrepreneurship and consider the impact of human capital on business success. Therefore, there is urgent to consider the human capital factors in digital entrepreneurship. The study uses a library search and analysis of previous literature on digital entrepreneurship, regardless of its impact on economic growth. This study found that a lack of technological knowledge and a low number of mobile social media users are the main factors that affect the development of digital entrepreneurship in South Africa. The discussion provided in this paper would strengthen the body of knowledge on the effects of human capital on digital entrepreneurship and act as a reference for empirical research.

Keywords: digital entrepreneurship; human capital; industrial revolution; digitalisation; South Africa

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1. Introduction

Digital technology has recently turned out to be a new social and economic force, remodelling old-style business models, processes and strategies. Digitalisation has become a challenge for human capital since a neep arose to develop continuously in this vigorous period. Digital entrepreneurship emphasises forming new ventures and converting current experiences by developing new digital technologies (Yin et al., 2019; Muafi, Syafri, Prabowo

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& Nur, 2021). Changes caused by technological advancement started years ago, changing the societies' way of living, the state of the economy, and organisational strategies and structures around the world (Steininger, 2019; Elia, Margherita & Passiante, 2020). The Covid-19 pandemic reinforced the progressive expansion of digital technology; since it was needed to lessen direct social interaction due to the Covid-19 pandemic in almost all parts of the world. Isolation led to more social interactions happening virtually than in the real world. Distance and time were no longer vital issues in networking or transmitting messages to the community (Muafi, Syafri, Prabowo & Nur, 2021). Consequently, various offline businesses have shifted to online companies (Nambisan Wright & Feldman, 2019; Geissinger et al., 2019; Richter, Kraus & Syrjä, 2015). This increase in online business has motivated this study to document the influence of human capital so that a clear picture of digital entrepreneurship and human capital is achieved.

Existing literature focuses on digital entrepreneurship and its growth at the global level. Ratten (2014) provided that a decade ago, many studies on entrepreneurship concentrated on North America and Europe. Research on Asian countries was few; studies focused on Africa were omitted. The significant body of research on entrepreneurship focussed on how the context of business doing affects entrepreneurial attitude (Ratten, 2014). Recognising digital entrepreneurship through a much more contextualised approach is still necessary. Hence, studies of African entrepreneurship have to consider the conditions of business operations of countries, specifically in this continent (Beshir, 2022; Rezk et al., 2022; Shipanga, Le Roux & Dubihlela, 2022; Agbaje, 2022; Hegedús, 2022).

To become a digital entrepreneur, a person has to understand and appreciate how to operate and grow businesses in particular local settings (Wahutu, 2021). How digital entrepreneurship develops in South Africa differs from how it unfolds in other nations.

The fourth industrial revolution has brought severe concerns about human development in developed and developing nations. Even though the fourth industrial revolution inclines to improve human well-being in sustainable and advanced ways, almost half of the work in Africa is vulnerable to innovations of technological changes (Alabi & Mutula, 2022). Ratten (2020) provided that Africa is a diverse geographic space influenced by historical, cultural and societal change. The human ability to adjust to innovation changes affects digital entrepreneurship. Thus, referring to the study done by Huggins, Prokop and Thompson (2017), it is vivid that human capital connects to the experience and knowledge of entrepreneurs, including the growth motivation of their ventures as a result of the strategic decisions they make, impact upon rates of survival. The local setting contributes immensely to the possibility of survival. Therefore, this paper aims to critically discuss the impact of human capital in their respective environment on digital entrepreneurship. Unlike previous studies, the authors focus on the peculiarities of African digital entrepreneurship.

This paper begins with a literature review that explains the definition of digital entrepreneurship and human capital, the current trends of the phenomenon worldwide, including the impact of human capital on digital entrepreneurship. It further explains the gap between theoretical approaches and objective human capital development factors that affect digital entrepreneurship in South Africa. Methodology, findings and discussions follow this section. This paper ends with conclusions and human capital implications for digital entrepreneurship in South Africa.

2. Methodology

Secondary data analysis (SDA) was adopted as the research method for the study. This method is an empirical exercise that applies similar principles to studies using primary data (Johnston, 2014). In operationalising this method, a library searches and examination of previous studies on digital entrepreneurship were applied, guided by a deliberate resolution to select and include only literature on digital entrepreneurship in the study. Compared

to other methods, document analysis is less expensive and unobtrusive (Neuman, 2011). A critical document analysis systematically discussed the nexus between digital entrepreneurship and human capital. As mentioned, it is understood that the fourth industrial revolution has changed the traditional way of doing business to online business, hence a need for nations to embrace digitalisation. The library search includes online articles and offline materials such as textbooks and newspaper articles. The papers were obtained from the databases for management and entrepreneurship, viz; Taylor and Francis, Scopus and Emerald (with the keyword: digital entrepreneurship).

3. Literature Review

Digitalisation is now an economic and social force which has transformed the old-style business models. Digital technology is a controlling instrument in influencing the growth of new technology-based ventures by forming the capacity to scale the business rapidly (Steininger, 2019; Cavallo et al., 2019; Richter et al., 2017). Digital technology has numerous forms of productivity that can be employed, viz, artificial intelligence, crowd-funding platforms, digital 3D printing, social media platforms, big data, cloud, and smartphones that can create entrepreneurial prospects with innovative methods (Ghezzi & Cavallo, 2020; Cavallo et al., 2019). Therefore, entrepreneurs (human capital) must quickly adapt to innovative changes and be willing to learn continuously. Thus, technological readiness is critical in sustaining a venture since the market condition undoubtedly strains entrepreneurs to heighten the use of technology (Moldabekova et al., 2021). In this regard, businesses must adapt to technological advancements to cope with the changes and remain competitive. Therefore, the pervasiveness and relative accessibility of digital technologies make the creation of digital value imminent for the desired outcome (Sahut et al., 2021).

Elia, Margherita, and Passiante (2020) explained digital entrepreneurship as forming new businesses and altering current companies by generating digital technology. Digital-based entrepreneurship comprises studies exploring the entrepreneurial process through digital changes in business processes (Steininger, 2019; Cavallo et al., 2019). Rauch and Rijdsdijk, (2011) define human capital as the skills and knowledge people obtain through investment in education, training, and experience. High levels of human capital may be a pre-requisite for entrepreneurs to adjust to the current technological environment, enable the application of new information within firms, and determine the nature and extent of knowledge spillovers for the survival of new businesses. Barringer and Ireland (2019) stated that the high failure rate of new ventures is caused by the liability of newness, which refers to the fact that businesses always fail because the individual who creates them is not capable enough to adjust to their new roles swiftly. There is a need for entrepreneurs to learn and embrace digitalisation to support business growth.

Too many issues have been discussed in the digital entrepreneurship literature concerning the social, corporate, woman/gender, global entrepreneurship, impact on economic growth and impact of Small and Medium Enterprises (SMEs). However, a limited study organises digital entrepreneurship and how it is influenced by human capital. Before analysing digital entrepreneurship and human capital in detail, it is necessary to skim through the discussions in previous studies. Discussions on the digital entrepreneurship phenomenon embrace the woman/gender aspects (Duffy & Pruchniewska, 2017; Pergelova et al., 2019; Wang, 2022), impact on SMEs (Franco, Godinho & Rodrigues, 2021; Ramdani, Raja & Kayumova, 2022; Pfister & Lehmann, 2021; Lee, Kelley, Lee & Lee, 2012), regulatory challenges (Dong 2019; Lafuente, Ács, & Szerb 2022), and challenges for particular countries are discussed without much emphasis on human capital and South Africa (Briel et al., 2021).

In comparison, previous studies highlighted digital entrepreneurship from various dimensions but still need to address the reality gap surrounding digital entrepreneurship. Based on research by von Briel et al. (2021), current issues affecting digital entrepreneurship are societal problems such as poverty. Thus Dy (2022) stated that despite the productive potential of the internet, the landscape of digital entrepreneurship is still shaped by social patterns of privilege and disadvantage, which prevents people in Africa from acquiring knowledge and accessing funds for

business activities (Asongu & Odhiambo, 2019). Digital entrepreneurship is being affected by human capital factors. Human capital characteristics are essential, such as digital knowledge and readiness to support digital entrepreneurship.

However, this research explains the human capital issues as current matters influencing digital entrepreneurship. Digitalisation creates new possibilities, which include virtual teams and intelligent work, new communication instruments, quick access to information, the influence of energy structures and improvement in efficiency and standardisation. To assist SMEs and support them in earning the benefits of digital transformations, managers need to acquire various skills, namely: communication via digital media; worldwide connectivity and quick information exchange, generating a competitive environment for the digital venture, which must cope with rapid changes, competition and technology (Horner-Long & Schoenberg, 2002). Entrepreneurship studies concerning economic growth, women and gender imbalances, and globalisation issues are not the only matters influencing digital entrepreneurship in South Africa. Bishop and Brand (2014) argued that human capital's level and heterogeneity are essential for services. Human capital quality is vital for businesses to continue to improve their operations in a dynamic market in South Africa.

The application of digital entrepreneurship has been carried out in all parts of the world. This progress shows the existence of public trust in digital-based businesses. Globally, the market share is becoming wider and continues to grow. Digital entrepreneurship can supplement traditional business models (Elia, Margherita, & Passiante, 2020). Digital technologies are incorporated into internet-based business models and digital platforms (Elia, Margherita, and Passiante, 2020; Richter et al., 2015). Elia, Margherita, and Passiante (2020) provided six research streams related to digital entrepreneurship: digital business models, digital entrepreneurship processes, platform strategies, digital ecosystems, entrepreneurship education, and digital social entrepreneurship. With the alteration of the business environment in Indonesia, the essence of entrepreneurship started to appear in the young generation, with a term called digital entrepreneurship. Among numerous forms of entrepreneurship, digital entrepreneurship is in high demand by the millennial generation, including college learners (Muafi et al., 2021). It means that baby boomers still need to fully embrace digitalisation which is still a challenge in South Africa. This statement is supported by Dy (2022), who claims that there needs to be more knowledgeable about the wide range of people undertaking entrepreneurial activities online - their backgrounds, activities, and experiences - especially outside of high-tech or deep-tech sectors. While not exclusively entrepreneurial, online trading is a principal activity, and notably, 18% of UK internet users sell goods or services online (Prescott, 2017). Yet, apart from the importance of the digital economy for entrepreneurship, the rate at which individuals entrepreneurially practice digital technologies and generate digital venture networks still needs to be explored (Giones & Brem, 2017; Sussan & Acs, 2017).

A study by Wahutu (2021) about digital entrepreneurship in eleven African countries revealed that in none of those the users of social media on mobile cell phones go above 38 per cent, with the highest city with mobile social media users being Johannesburg, with 38 per cent and the lowest being Kigali at 4.6 per cent. This is apart from mobile internet users ranging from 77 per cent in Nairobi to 15 per cent in Addis Ababa and Maputo. These statistics should cause researchers and academics to question social media businesses' claims about their growth and uptake in African countries. Wahutu (2021) further alludes that in Ghana, an interviewee notifies that while more people in Ghana have smartphones, Ghanaians typically use these phones for WhatsApp, so while there was an 'excellent smartphone influx, there's a gap between the phone and the people. In Kigali, an entrepreneur captures this disjuncture by notifying that while mobile broadband coverage has improved, and smartphones have become cheaper and common among wealthy and middle-class Africans, many Africans do not want the designed smartphones available at their price range.

Furthermore, because of the newness of digital entrepreneurship in African countries, locally relevant entrepreneurial knowledge still needs to be improved and has only recently started being built (Wahutu, 2021).

Notably, this probes a need to explain human capital factors for the success of digital entrepreneurship in South Africa. Mtotywa, Moitse and Seabi (2021), conducted in South Africa, revealed a low level of knowledge about the fourth industrial revolution among unemployed citizens and entrepreneurs. This is concerning as these groups are the main target for the growth of digital entrepreneurship in South Africa. Furthermore, the findings by Alabi and Mutula (2022) revealed that human development positively influenced the fourth industrial revolution. This needs to be improved and is still required to grow the digital entrepreneurship concept.

The analysed papers allow us to distinguish the following aspects, tackled with the context of research in digital entrepreneurship in evaluating it from a human capital perspective (Table 1). The selected papers represent the main aspects of research.

Table 1. Selected articles

Authors	Analysed aspects
Alabi & Mutula (2022)	the impact of human development on digital developments in sub-Saharan African countries
Barringer and Ireland (2019)	Human skills in launching a successful venture
Dong (2019)	Regulatory challenges on digital entrepreneurship
Franco et al. (2021)	Impact of digital entrepreneurship on the management of small businesses
Lafuente et al. (2022)	How countries endorsed different regulations to govern their relationships with tech-entrepreneurs
Lee et al. (2012)	How technology resources and globalisation impact small businesses
Mtotywa et al. (2021)	South African citizens' knowledge of the fourth industrial revolution
Muafi et al. (2021)	Challenges facing human capital in the digital entrepreneurship era
Pergelova et al. (2019)	Digital technologies and their effects on the global expansion of small businesses
Pfister & Lehmann (2021)	Impact of digitalisation on the performance of small businesses
Ramdani et al. (2022)	Digital innovations in small businesses
Ratten (2020)	diverse issues related to entrepreneurship in Africa
Von Briel et al. (2021)	Challenges affecting digital entrepreneurship and human capital in South Africa not emphasised
Wahutu (2021)	How Africans are making sense of digital entrepreneurship
Wang (2021)	Women and digital entrepreneurship in East Asia

Source: the authors

4. Findings and discussion

Even though digital entrepreneurship contributes to the economy's success in African countries, the gist of human capital challenges is the same, which is an entrepreneurial and technological adaptation. Some African countries acknowledged the lack of digital knowledge and transformation as the top priority that hinders the development of digital entrepreneurship. In contrast, some other countries consider the little use of smartphones by citizens as a factor that impedes the growth and support of digital businesses. However, the everyday use of smartphones may be attributed to poverty and the need for knowledge on mobile social media use. The existing literature explicates globalisation, economic trends, women and gender imbalances and the existence of SMEs as common factors that influence the growth of digital entrepreneurship. Nevertheless, most of it discusses the surface of each aspect, which warrants the specific human capital matters to be discussed in detail.

Contrary to previous studies, this article successfully highlights the effects of human capital on digital entrepreneurship development, such as lack of technological knowledge and low use of mobile social media. This finding concurs with Wahutu (2021), who found that the highest city with mobile social media users is Johannesburg, with 38 per cent. Though it is high in percentage, it is still low considering the population of this city.

While construed as opportunities to be solved by entrepreneurs, the country's socioeconomic problems are more likely to be barriers to market development. Furthermore, the level of knowledge about the fourth industrial revolution among unemployed people and entrepreneurs still needs to be higher. Embarking on massive awareness programs that aim to educate citizens about the importance of digitalisation in this 21st century may be necessary to spearhead digital entrepreneurship in South Africa. It is important to understand digital entrepreneurship through a much more contextualised approach to appreciate the level of innovation occurring on the continent,

Conclusions and implications

Reviewing past studies in this area shows that a more comprehensive framework is needed to promote digital entrepreneurship. The discussion on human factors that influence digital entrepreneurship needs serious attention from small and medium enterprises, government, and non-government bodies. All stakeholders must be aware of the challenges related to enabling individuals to cope with this fourth industrial revolution coupled with digitalisation. In addition, the fourth industrial revolution's emergence should be considered an opportunity to conduct business with limited boundaries.

Current literature explains digital entrepreneurship focusing on social and economic trends regardless of context and country. Only specific trends are standard worldwide since many countries have different environmental settings. Unique countries' peculiarities still require special attention.

This study's rationale is highlighted, including lack of technological knowledge and low use of mobile social media as factors influencing digital entrepreneurship in South Africa. Compared to past literature, the description is not specific to the context. The limitations of this study are the lack of data since this is a theoretical paper based on an analysis of contemporary literature in the field. It is, therefore, essential for this study to serve as a baseline study on digital entrepreneurship, and it is recommended that an investigation be considered in South Africa. Matters of regulations, gender imbalances and economic trends remain important in digital entrepreneurship; this study suggested that human capital development can support the growth of digital businesses in this fourth industrial revolution.

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