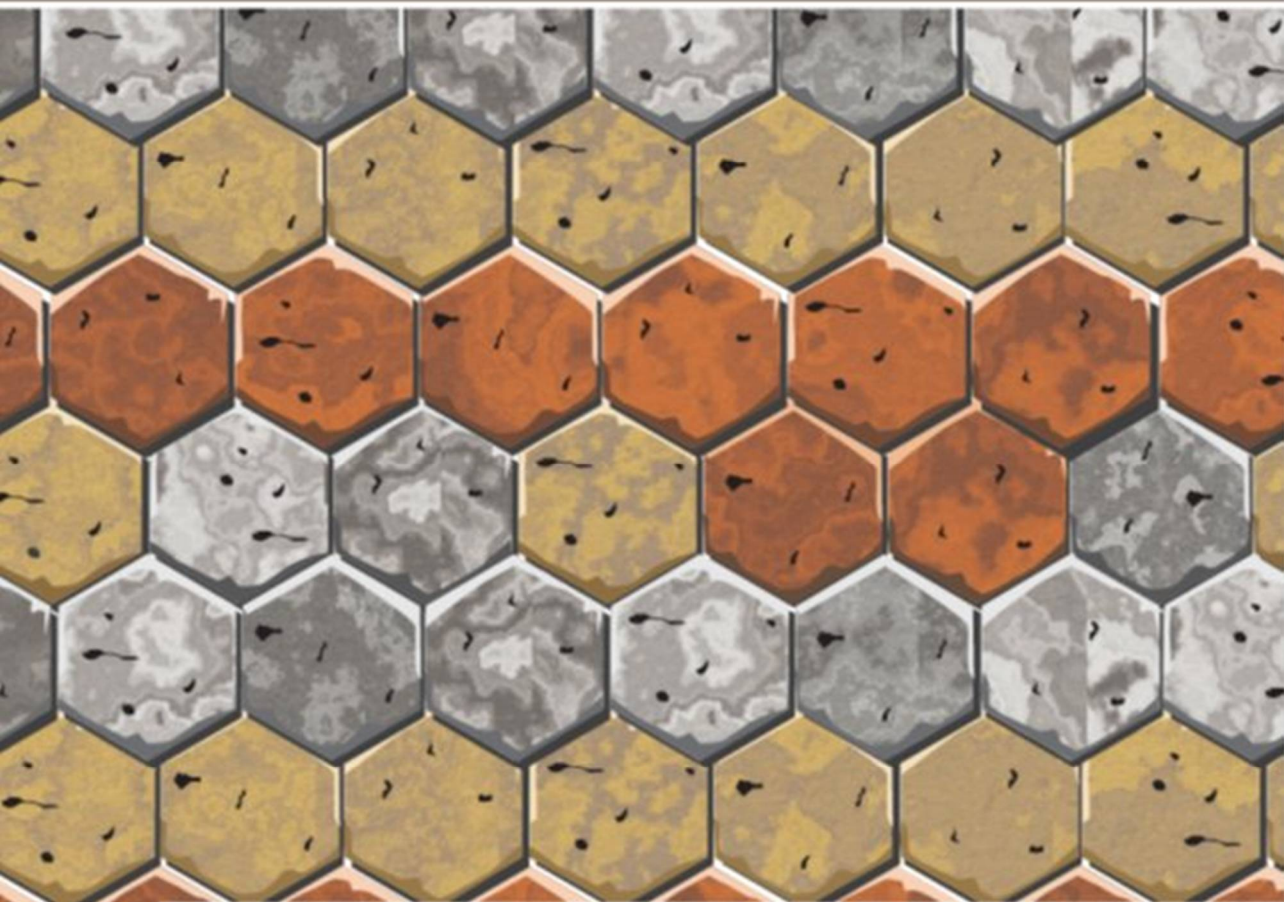


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DIGITALISATION AND INFORMALITY: A CASE STUDY OF INFORMAL BUSINESSES IN SOUTH AFRICA

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Abstract

This study examines the factors and challenges influencing digitalisation by small scale informal traders in South Africa, using Melville in Johannesburg as a case study. The Resource Based View (RBV) theory is used as its theoretical framework, by focusing on the assets and capabilities that the informal traders have which can enable them to gain a competitive advantage. A mixed methods approach was used in the study. Data was obtained in two phases using surveys, focus group discussions and in-depth interviews. Descriptive statistics using frequencies and percentages was used to analyse the data. The results indicate that factors influencing digitisation by the informal traders are gender, accessibility of devices, affordability in terms of airtime and data needed to go online, the nature of products being sold, enhanced interactions with customers, and the ability of the entrepreneur to effectively utilise the digital devices. Cost of data and the precarity of informal business operations were the main challenges identified. The study recommends that local authorities support the informal traders through setting up of Wi-Fi hotspots close to the areas where the traders stay, facilitating skills acquisition in the use of ICT, and supporting them in ensuring safe payment methods from their customers.

Key words: Adoption, digitalisation, informality, informal traders, mobile devices.

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Introduction

Digital transformation is generally regarded as a source of productivity, growth and improved well-being of all citizens (OECD, 2018; Kanungo & Gupta, 2018; Verhoeff, 2021). This is being enabled by interconnected digital technologies and data (OECD, 2018:8). Advancements in the Information and Communication Technology (ICT) sector are enabling both informal and formal entrepreneurs in South Africa to adopt a new business trend that involves offering goods and services online or via e-commerce. Lakeman and Lay (2019:1) observe that there has been “uberisation” of work, which is the increasing use of digital platforms by self-employed service providers, which is often seen as a pathway into precarious employment in developed countries, but is a source of new opportunities for informal sector entrepreneurs to become more productive in developing countries.

The informal sector is central to economies in Africa, and is playing a significant role in generating incomes and supporting livelihoods, yet remains largely unexplored (Mokomane, 2021; Smit and Musango, 2015; Benjamin & Mbaye, 2020). Adoption of digitalisation in the sector in Africa also remains unexplored (Banerjee et al, 2023; Sifolo and Sokhela, 2023; Ayokmni, 2022). This study attempts to examine the emerging role of digitalisation in the informal sector using South Africa as a case study.

Many small business enterprises in the informal sector have realized the importance of using digital media to conduct their businesses. Digitalisation involves the adoption of digital technologies in business and society, as well as the associated changes in the connectivity of individuals, organisations, and objects (Sifolo & Sokhela, 2021; Gimpel, Hosseini, Huber, Probst, Roeglinger and Faisst, 2018).

Digitalisation has changed the orientation of conducting business, ranging from procurement of raw materials, manufacturing, delivery and consumption of goods and services (Arora and Rathi, 2019). Digitalisation has also resulted in the emergence of local startups reliant on digital technologies (Capelli al, 2023; Hervé, Schmitt, & Baldegger, 2021). One such innovative opportunity that a number of South African entrepreneurs have embraced is the setting up of enterprises that use digital platforms to aggregate and match demand and supply through selling goods and provision of services (UNCTAD, 2022:12). These include online retailing of consumer goods, provision of services including logistics, catering, cleaning, electronic repairs, academic services including editing and others.

These local digital businesses are based on the operating model of large global companies like Amazon and Alibaba (Accenture, 2018). These enterprises are creating income-generating opportunities for both entrepreneurs and low skilled laborers, especially in the form of on-line retailing platforms and deliveries. This is a new business model that is enhanced by digital technology, especially the use of mobile devices. These small enterprises do not need significant start-up capital (Sifolo & Sokhela, 2021). Small businesses have identified an exploitable gap through digitalisation that can result in increases in sales and profitability, increases in the market share creation and building of brand awareness at minimal cost, fast feedback that enables entrepreneurs to incorporate suggested or desired changes by customers, and positive impacts on sustainability of the environment (Arora and Rathi, 2019; Herve et al, 2021)

Although it is evident that there is increasing digitalisation adoption by businesses in the informal sector, few studies exist that examine the factors and challenges of the process (Shettima and Sharma, 2020; Bogavac & Cekeravac, 2019; Arora & Rathi, 2019). Bogavac et al (2020:2) consider digital transformation of the informal sector as playing a key role in improving performance and competitiveness. Their study contends that small informal business digitalisation is influenced by the owner/manager's attitude towards modern technology and their willingness to incorporate the technology into their business practice. Arora and Rathi (2019) on the other hand, argue that there are strong notions for implementing the rapidly evolving digital technologies, as they are perceived to be capable of cost reduction and improvement in customer relations. Shettima and Sharma (2020) recognise that despite the informal sector having a high potential for future growth, challenges exist including low levels of usage of digitalisation for business purpose, lack of digital strategy, and a perceived lack of safe cybersecurity. Arora & Rathi (2019) acknowledge that due to limited resources, digitalisation can be challenging for many operators in the informal sector. Bogavac et al (2020) observe that some informal sector business operators exhibit erratic behaviours in terms of ICT investment; hence, there is need for external support to integrate digitalisation in the overall business strategies of their enterprises.

The importance of digitalisation in the informal sector lies in the ability of these businesses to derive advantages that would otherwise be denied to them due to their informality. Onyima and Ojiagu (2017) are of the view that informal businesses should adopt digitalisation as

this will enable them to link into the formal sector and bridge the digital divide.

Digitalisation in the South African Informal Sector

Entrepreneurs in South Africa can be classified as being formal and informal (Naude, 2011; Naglar and Naude, 2014, Matsongoni and Mutambara, 2018). Most enterprises in the country fall under the informal sector where enterprises are small, rarely grow, and are locally owned in most cases (Naglar and Naude, 2014). This could be attributed to Meyer et al. (2016) contention that most informal entrepreneurs in South Africa are necessity driven rather than opportunity-driven.

The digital revolution, occasioned by easy access to the internet has changed the entire way that business is being transacted. Matsongoni and Mutambara (2018) posit that lack of basic ICT knowledge, and the threat of cybercrime has created a significant barrier to the adoption and growth of digitally mediated businesses. Despite this, Arora and Rathi (2019) argue that businesses operating in the informal sector need to change the way they operate and take advantage of digitalisation, especially in marketing due to the creation of a boundary-less environment. This environment is characterised by consumers who are constantly targeted through marketing campaigns using both social and mainstream media. Van Dyk and Van Belle (2019) have argued that many business owners have been facing a market shift over the past few years, driven by a better response to customers, which has forced them to undertake digital transformation. In addition, Rachinger et al (2018) state that digitalisation has resulted in increased complexity and enabled businesses to meet changing consumer preferences and legal requirements.

Adoption of digital technologies by entrepreneurs, especially in the informal sector, can be able to bring distinct advantages (Manda, 2018). Manda (2018) states that as digitization becomes more widespread throughout the world, the adoption of novel IT can generate new business opportunities and various benefits. Similarly, Manda and Dhaou (2019) opine that 4IR will demand the production of innovative products, business models and production techniques driven by technology. This calls for the need to invest more in research and development. Skills, innovation systems and knowledgeable communities provide the much-needed intellectual guidance in the development and implementation of smart and digital initiatives (Abdoullaev, 2011; Scholl, 2020).

The widespread availability of internet-enabled mobile phones in South Africa can facilitate digitalisation. South Africa has a comparatively high rate of smartphone ownership on the continent, with 51 per cent of the population owning a mobile phone that can access the internet and applications, making it the most common communication device in the country (PEW, 2017). Deen-Swarray et al (2013) argue that ICTs, especially mobile devices, are one of the key tools that can be used to support the success of enterprises. This is because the mobile devices assist in reducing information failure that may impact on business activities.

It has been suggested that for firms in the informal sector to be competitive and be able to survive in the current age of information and data management, they need to digitally transform (Deen-Swarray et al, 2013; Manda, 2018). Manda (2018) however cautions that there are challenges which informal sector firms face in their attempts at digital transformation from which they expect to leverage the social and economic benefits of a digital driven industry.

The national e-strategy of South Africa aims to position the country as a significant player in the development of ICTs throughout the value-chain of the sector, as well as accelerating the uptake and usage of ICTs in other social and economic sectors. The strategy states that “in line with 4IR, there’s need for South Africa as a country to develop a comprehensive framework and action plans to deal with the opportunities while mitigating the risks of the transit to the South Africa’s digital industrial revolution”, (RSA 2020:17). According to Manda and Dhaou (2019), South Africa’s approach to transiting to a digital industrial revolution is underpinned by the development of technology and digital systems that are relevant to the majority of South Africans and Africa. These technologies can be used to improve efficiencies in the delivery of services in local contexts.

Digital inclusion, access and socio-economic transformation thus remains a key focus of the strategy. Manda and Dhaou (2019) contend that infrastructural development, access for promoting marginalised communities, affordability and digital entrepreneurship are key priority areas of the strategy. Shipalana (2019) states that political leadership in South Africa has recognised the importance of the informal sector and acknowledge that a well-functioning informal economy holds great potential to address the country’s triple challenge of poverty and unemployment and inequality.

Policy responses to foster innovation in the informal sector have faced challenges due to the multi-dimensional nature of problems encountered by the sector. Shapiro et al (2015) suggest that

challenges arise at the small business level, at the sector level, within the context of social infrastructure, and in the innovation environment. Shapiro et al (2015) further indicate that there are demand-side gaps, including the informal sector lacking information, expertise and skills, training, resources, strategy, and confidence to adopt new techniques and technologies. On the supply side, gaps exist in terms of costs to vendors, consumers, consultants, and other business needs that are required to improve productivity of the informal sector. Authors such as Mehta et al, (2019) and Shapiro et al (2015) have argued that the increasing presence of open markets, low cost but technologically capable competition, shifts from economies of scale to economies of scope, and new innovation approaches present challenges in the innovation environments of the informal sector, hence affecting digitalisation.

There is need to examine the reasons behind the adoption of digital technologies by the informal sector entrepreneurs, the innovative processes involved, opportunities created by this digitalisation, reasons for adoption of the process, their potential and apparent risks, and aspects of their sustainability. Based on primary data collected from informal entrepreneurs in Johannesburg, this paper examines the process of adoption of digital technologies and challenges encountered using a mixed methods approach. This is underpinned by an appreciation of the fact that most startup businesses fail within the first year of their establishment (Sahoo et al, 2022:79).

The overall aim of this research is to examine the factors influencing digital adoption by small scale informal businesses in South Africa, and the challenges that they face.

This study is guided by the following research question:

What factors determine digital technology adoption by local informal businesses in South Africa?

Literature review

Literature on the intersection of informality, digitalization and small business development has tended to focus on formalisation (Chandra, 2017; Madichie, 2021; Mehta and Cunningham, 2023). Some literature on this intersection has also focused on circularity (Korsunova et al, 2022; Phelps & Aritenang, 2023). There has also been focus in the literature on digital technologies, methods and ethics (Steiner, 2021; Maalsen, Shrestha, & Gurran, 2022; Nguyen, Dekker & Ndungu, 2018; Kelikumu, 2021, Nguyen, 2022). Most of this literature is based in countries out of Africa, and does not

specifically focus on startups in the informal sector. In Africa, studies on digitalisation have mostly focused on the formal sector and have largely concentrated on leveraging digital technology to boost productivity (Nguimkeu & Okou, 2019; Nguimkeu & Okou, 2021), and financial inclusion (Konate, 2018; Shiplana, 2019; Kelikume, 2021; Mpofu & Mhlanga, 2022). Studies focusing on informality, digitalisation and startups in South Africa could not be identified on Google Scholar and Scopus. This paper intends to fill this gap.

Increased globalisation and advancements in ICT technology have opened up both opportunities and challenges for small and micro enterprises. It has been acknowledged that small enterprises can benefit from digitalization by growing, becoming more competitive, and becoming more inventive through the adoption and integration of ICTs into their strategy and procedures (Olsson and Bernhard, 2019). Ortar et al (2022) argue that globalisation has created new structures and new relationships through the rapidly evolving technological environment. The Genesis Analytics Discussion paper of 2018 on South Africa in the Digital Age observes that developments in the ICT sector are resulting in new types of work that can be conducted from anywhere in the world. This is opening up opportunities that have traditionally been proximity-based to more people through the use of digital technologies. Shetima and Sharma (2020) also observe that the advent of the Fourth Industrial Revolution (4IR) has witnessed the widespread adoption of digital technologies, which has reshaped how businesses and other organisation's function.

Small businesses play a significant role in job creation and the economic development of countries. With the increasing availability of mobile technology which can foster digitalisation, it is important to understand the role digitalisation can play in enhancing the competitiveness and sustainability of these small-scale enterprises. Digitalisation in this regard should be seen as an inevitable step in e-commerce, which is fast becoming a norm of conducting business (Arora and Rathi, 2019).

This study situates itself within digitalisation in the context of mobile technology, social media, and networking. Urbach and Roeglinger (2019) contend that the most significant characteristic of digitalisation is not the range of data or the adoption of technology, but the unprecedented speed of change at the level of connectedness, which also facilitates the customer's dominant role as well as the convergence of the physical and digital world. It is evident that digitalisation is transforming the world in almost every aspect of daily

life. Access to the internet, increase in the number of people using mobile smart phones, the growth of social media platforms such as WhatsApp, Twitter, and Facebook; and other ICT platforms have changed the way people act, interact, communicate, and even work (Schelenz, et al, 2021; Schelenz & Scoop, 2018). Small and emerging businesses can thus not afford to be left behind in the process of utilizing digitization to advance their business operations. Encouraging innovation in informal businesses should be at the heart of policy interventions for stimulating economic development at local and regional levels.

Digital adoption

The fast growth of use of the internet, as has been enabled by use of mobile phones, is visible in all spheres of life and is affecting how people live and do business. The informal sector stands to benefit greatly from the digitalisation of their business processes. This can be in the form of reduction in transaction costs, time savings and increased use of online payment which will lead to efficiency. Shettima and Sharma (2020) argue that the sales of goods and services by small scale businesses operating informally should be able to increase substantially due to adoption of the digitalisation process. This is because the physical sales of goods and services by an enterprise can be time consuming and limits the enterprise's market reach. By upgrading to digital technology and having an online presence, significant opportunities are able to emerge that may lead to an increase in the revenue base. Digitalisation can afford businesses operating in the informal sector flexibilities of time, geographical location and delivery of products leading to efficient transactions in business (Shettima and Sharma, 2020).

In carrying out digitalisation, small scale businesses in the informal sector need to focus on the exploitation of technology to improve operational efficiency. Access to new markets by these businesses can be enabled by digitalisation. Abidin et al (2022) state that digitalisation can allow both informal businesses to explore new markets and compete with established formal businesses in their specific industry. The process is also able to cut out intermediaries in the transaction processes, leading to lower operational costs and a higher profit margin (Shettima and Sharma, 2020).

An important aspect of digitalisation of informal sector businesses is its ability to enhance interaction between the entity and customers (Tiago & Verissima, 2014). Digitalisation is able to facilitate efficient decision making by informal sector operators in relation to their

customers by providing a deeper understanding of customer needs and preferences. The informal businesses are then able to adjust their products and services to these preferences, leading to delivery of the right products and services at the right time and at a cost-effective price (Tiago & Verrisima, 2014).

Digitization opens up new opportunities for informal businesses including the possibilities of global trade and access to markets, innovation and growth. With relatively low costs, informal businesses can be able to access information, knowledge networks, and strengthen their competitiveness through use of innovative products services while at the same time improving their production processes. In addition, digitisation can help informal businesses to further understand internal processes, customer and supplier needs, and their own business environment in which they are operating (Bagovac et al, 2020). Digitisation also allows those contemplating entering the informal sector opportunities to begin as lean-startups, with low investments and low initial costs (Schelenz et al, 2022).

For digitalisation to be effective there is a need for inclusivity. Inclusion must also involve addressing gender gaps in digitalisation. Literature on digital inclusion in the informal sector mostly tends to focus on financial inclusion (Gammage et al, 2017; Ndungu, 2018; Ojo, 2022) Gammage et al (2017) observe that untapped opportunities exist to provide inclusion of the poor and marginalised, including women and migrants, to reap advantages that are to be gained from digitalisation in the informal sector. Ndungu (2018) argues that digitization creates significant spillovers on local demand for services, and may lead to employment creation for women. Ojo (2022:11) contends that barriers to inclusion of women in digitalisation include 'low literacy level', 'low financial awareness', 'insufficient knowledge of digital transactions', 'little bank branches', 'poor Internet connectivity', 'constant power shortages', 'uncertainty about data security', 'resistance of local community vendors in embracing digital services', 'women's restrictions due to patriarchal communities' and 'limited usage and ownership of mobile services'. Thus strategies to digitize the informal economy should prioritize issues of gender and inclusion. This is because digitalization can lessen inequality and give informal sector operators more agency by addressing the unique needs and difficulties faced by women and marginalized communities (Gammage et al, 2017). Etim and Daramola (2020) have observed that the informal sector has become a means of survival for the poor, including women the marginalised

and those who have become unemployed due to changing economic conditions

Challenges have been identified in the process of informal sector business digitalisation and adoption. According to Arora and Rathi (2019), operators in the informal sector may not be ready to invest in the digitalisation process as perceived costs of set-up and re-engineering their methods of carrying out business may be high, and the results may not be realized in the immediate aftermath of the process. There might also be lack of expertise and knowledge, lack of awareness or limited awareness about the different support mechanisms that may be available for these informal sector business operators in the process of digitalisation. However, these drawbacks can be mitigated by the benefits that can be derived from digitalisation.

Theoretical Framework

It has been suggested that awareness raising of the benefits of ICT use has great potential in encouraging business owners in the informal sector to adopt innovative technologies like digitalisation (Tiago & Verissimo, 2014; Masaro et al, 2020; Scholl, 2020). This study adopts the Resource Based View (RBV), also known as Resource Based Theory, as its theoretical framework. RBV focuses on the assets and capacities that a company has or may acquire in order to gain a competitive edge. In order to explain why and how some companies perform better than others and acquire competitive advantages, RBV examines the intra-organizational linkages of resources and their capacities. According to RBV, an entity's resources might be organizational, human, or physical and are valuable, rare, inimitable, and non-substitutable (Cruz & Haugan, 2019). These can be used by an enterprise to grow and improve efficiency. Bai, Quayson and Sarkis (2021) observe that organisational resources and capabilities have emerged as a lens through which to understand how both material and intangible resources aid businesses in developing competitive skills. This is linked to knowledge competency, which can help create intangible resources and enable dynamic organizational learning. RBV holds that an enterprise can be described as having a sustained competitive advantage when it outperforms its competition by deploying firm resources more cost effectively or more distinctively (or both) than its competitors. RBV can be applied to informal business operators. In the context of this study, the assets and

resources that informal sector operators possess or own can be utilised to grow their businesses and gain a competitive advantage.

Methodology

This study explores the adoption environment that is leading to digitalisation of the informal sector enterprises. Addressing the aim of this research required investigating in an empirical method the multiple reasons that can explain the reasons for adoption and use of digital technologies and other innovations by individuals in the informal sector, while analysing the emerging trends in the adoption process. Specifically, the study was interested in understanding the motivations/reasons for adoption; the adoption patterns, and the effects these have on the business. As such, a sequential Mixed Method (MM) approach was considered ideal for this research. The reason for opting for a MM approach was because some of the constructs to be explored in the study, such as levels of adoption and operational use, can be measured quantitatively. Others such as perception and views on reasons behind the adoption process can be understood using qualitative means. Data collection was done in two phases. The first phase was in March to August, 2021 just after the Covid-19 pandemic. This involved a survey and in-depth discussions, covering a sample of 50 respondents. The second phase was done in August to September 2023, and involved participation of 30 of the original 50 respondents. The reason for this was to enable comparison and understanding on whether the digitalisation process has picked up after the pandemic or not, thus understanding the emerging trends in the process. The two phase data collection also enabled the researcher to gain an in-depth understanding of the digitalisation process by the informal sector operators.

The population of the study consisted of all informal sector operators who are attempting to use digital platforms in their operations in Johannesburg. However, my core focus was on small business startups that are operating in Melville. From this population a sample of 50 informal businesses operating in the retailing and service sectors were selected using snowball sampling for the first phase in 2021. The criteria for selection was that they had to have an informal business that is running, and that they were in the process of digitalizing the business. The second phase involved 30 businesses that were still operating in 2023. The focus on retailing and service sectors was premised on the fact that these are sectors that are perceived to require relatively low capital and investment, and do not

require specific skills to operate (PWC, 2015). According to Borat et al. (2018), Johannesburg in South Africa houses the majority informal sector businesses in the country. The researcher based himself in Melville, Johannesburg where there is a high presence of informal digital retailers.

Since the study adopts a MM design, questionnaires and interview schedules were utilised to collect the data. The key areas covered included facilities available to entrepreneurs for enabling digitalisation, use of their mobile devices for business purposes, and reasons for digitalisation. Frequencies, means, and percentages of the main variables of the study were obtained. In addition, two individuals, a male and a female, were identified to participate in the in-depth interviews in both phases. The reason for the in-depth interviews was to gain deeper insights into the issues of informality and marginalisation in the process of establishing, running and adopting digitalisation in the informal enterprises. Their perspectives into this hence enabled a rich description into the reasons that explain why some of these enterprises continue to be informal. The analysed data and interpretation are presented in the next section.

Data analysis and discussion.

This section presents the analysed data and discussion under five broad themes: Reasons for digitalisation, gender aspects of digitalisation, specific uses of digitalisation, effectiveness of the digitalisation process and sustainability of the informal enterprises.

Description of sample

A total of 50 participants took part in the first phase of the study. 54 per cent of the participants were female while males constituted 46 per cent. In the second phase, 30 participants took part in the study. 63 per were women while men were 37 per cent. The ILO report of 2019 on Tackling Vulnerability in the Informal Economy posits that informal sector participation is a greater source of employment for men than women, with 63 per cent versus 58 per cent. However, the paper adds that informal employment is more common among women than men in Sub-Saharan Africa, Latin America, Southern Asia and more generally in low and lower-middle income countries. In my sample more women seem to be participating in the sector than men. This can be attributed to the ease of entry into the sector, as well as the nature of opportunities that present themselves in the sector. It can also be attributed to the pervasive gender inequality when it comes to women access to opportunities in the formal sector (ILO. 2018). This may explain why there is an increasing number of

women participating in the informal economy that is driven by digitalisation.

72 per cent of the participants were South Africans, while 28 per cent were of other nationalities including Kenya, Pakistan, Senegal, Swaziland, and Zimbabwe. Most of the participants who fell in the category of other nationalities were from Zimbabwe. In many African cities, informal enterprises are operated by local and international migrants. Crush, Skinner and Chikanda (2018) opine that migrants from other African countries have played an important role in the informal sector and have experienced considerable success. The study sample revealed that a majority of the entrepreneurs in the sector are from South Africa, while migrants from the rest of Africa are also participating in the sector.

In terms of race, 84 per cent of the participants were black, whites comprised of 2 percent while people of Asian origin made up the remaining 14 per cent. The high participation of black people in the informal sector can be accounted for by the high-income disparities between different racial groups in the country. Etim and Daramola (2020:15) opine that in South Africa, the slow rate of economic growth, the impact of high-income disparity between the racial groups that lead to a high Gini coefficient can account for more black people participating in the informal sector than their white counterparts.

In terms of education levels, 2 per cent of the sample reported having no matric, 32 per cent had matric, 62 per cent had post matric while 4 per cent did not want to disclose their education levels. It has been argued that participants in the informal economy generally tend to have lower levels of education than their formal worker counterparts. Wills (2009:39) identified that there are significantly lower levels of educational attainment among informal workers, with less than 21 per cent of informal sector workers having no matric. This sample reveals the opposite in that only 2 percent had no matric, with the majority having post matric qualifications.

Adoption of digital technologies

Participation in the informal sector can be in terms of owning the enterprise or being employed by the enterprise owner. 68 per cent of the participants reported being owners of the business, while 32 percent indicated that they are either managers or employees. It should be noted that there is a distinction between 'employment in the informal sector' and informal employment. This study was interested in the two. Fourie (2018:14) suggests that employers and

employees play different roles in an informal enterprise. Persons who are employees can be unpaid or paid with money or in kind but remain employees. The owner of the business can be considered to be an 'own-account worker', though he is the initiator and owner of the business (Fourie, 2018:15). Though most participants reported to be owners of the enterprises, they however reported employing others thus creating jobs. 46 per cent of the respondents reported employing 5 people or below. 26 per cent of the respondents reported between 6 – 10 people, and 14 percent reported employing between 11 and 25 people. One person reported employing more than 25 people in his informal business.

Income derived from the business operations of those interviewed ranged from less than R1000 to over R10 000 weekly in both phases of the study. A few respondents did not want to report their weekly turnover. Low incomes in the informal sector have been recognised as being an indicator of the precarity of the informal sector. This is because for many, the sector is a survivalist strategy. This finding is in line with Etim and Daramola (2020) who state that the informal sector is a means of survival for the poor.

Small scale businesses in the informal sector face challenges including longevity of their enterprises. In this study, most of the business operation have been in existence for less than 2 years (64%). 24 per cent have been in existence for between 3 and 5 years, while 12 per cent have been in operation for more than 6 years. The ECSECC report of 2015 indicates that 44 per cent of informal enterprises in South Africa have been in existence for 3 years or less, 18 per cent between 3 – 5 years, and 21 per cent for 10 years or more (ECSECC, 2015:23). The figures from the present study are more or less similar to the national figures.

Informal sector participants in this study were drawn from a range of sectors, although others did not want to indicate in which sector they were operating from. A common thread of the sectors is that they were involved in those sectors which can easily be carried out with the use of digital devices. The retail sector, the health and body care sector, and the ICT sectors are attracting a significant number of informal sector players. The food and catering services also accounted for a significant number of these operators. Interestingly, some of the respondents did not want to disclose the sector that they are operating in. When prodded further, most of them indicated that they did not want to reveal their field of operation as more people would then realize that the sector is profitable and start similar businesses.

Many informal sector businesses operate from home or rented premises. The study determined that these businesses own some facilities at home which can be of crucial value for the digitalisation process. These are indicated below:

Table 1: Facilities that the informal business has

Item	Phase 1		Phase 2	
	Frequency	%	Frequency	%
Electricity access	22	44	16	53
Postal box	12	24	8	27
Business website	23	46	7	23
Social media presence for the business	43	86	28	93
Business bank account	27	54	21	70
Business mobile phone	36	72	28	93
Business computer/laptop	22	44	8	27
Online sales/e-commerce	29	58	21	70

Source: Field data

Most of the participants are involved in the provision of products and services online. It is thus expected that they would be using mobile devices to conduct their business. Of interest is that 86 per cent of the respondents have a social media presence in conducting their businesses in the first phase. This number increases substantially to 93 per cent in the second phase. These platforms include Facebook and WhatsApp. Many online businesses and services will depend on the use of online banking services to pay suppliers or receive payment. However only 54 per cent reported having a business account in the first phase of the study. This increased to 70 per cent in the second phase. On following up why some did not have a business account in the initial phase, the main response was that they use their personal banking accounts for transactions as they function as well as business accounts. In the second phase nearly all respondents indicated that they have had to open business accounts to be more competitive, as customers were more confident paying into such accounts compared to private accounts. 72 per cent of the respondents reported having a mobile phone for business purposes in the first phase, which increased to 93 per cent in the second

phase. Participants explained that they are more confident listing their business phone numbers on online platforms than their personal numbers. The versatility of today's smart phones enables them to perform a wide range of functionalities using applications. As such, the use of mobile phones is a process of digitization itself.

For those who answered having a mobile phone for business purposes, a follow up question was asked on what the phone was used for based on 12 predetermined uses. This was also a multi-select question. The responses are indicated in the table below:

Table 2: Use of mobile phones for business purposes

use	Phase 1		Phase 2	
	Frequency	%	Frequency	%
Placing orders	29	63	22	73
Transferring money to family and friends	22	49	14	47
Transferring vouchers/sending airtime	26	44	14	47
Following up on clients	37	80	24	80
Sending or receiving SMS	25	54	18	60
Sending and receiving email	23	50	21	70
Surfing the internet	23	50	24	80
Buying telephone services	29	63	17	57
Mobile banking	36	78	24	80
Talking to customers (Skype/WhatsApp) and other people	29	63	20	67
Visiting social websites	16	34	23	77
Communicating with business partners	11	24	14	47
other	7	7	4	13

Source: Field data

The mobile phone is mainly used for following up on clients, mobile banking and talking to customers via the use of applications such as Skype, Facebook Messenger and WhatsApp among others. It is evident from the responses provided that the mobile phone has become an important tool in transacting business for these informal sector operators. It would have been expected that a higher number of these informal sector operators are using their mobile phones for placing orders, as only 63 per cent of these respondents stated that

they do so in the first phase and 73 per cent in the second phase. Since the cohort of respondents also included those that are providing services such as cleaning and sanitizing, this could explain the less than expected number of business operators using this service.

The above facilities that informal sector operators have access to fits into the RBV theory, which holds that the assets and capacities that a firm has can be utilised to gain a competitive advantage. Participants in this study have access to mobile phones, business accounts, social media and access to online sales, which they are Utilising to carry out their businesses. The fact that most participants have dedicated mobile devices solely for their businesses indicate the important role they are playing in enhancing online businesses by the operators.

Most respondents in the study in both phases have a perception that the use of digital technologies does not result in new or significantly improved products, services, processes, or new ways of distributing or marketing their products or services. Respondents in both phases pointed out that digital technologies allow only new ways of marketing of products and services, without having influence on improved products or processes. Paunov and Satorra (2019:13) opine that digital innovation has opened up new opportunities for innovation in services, particularly as opportunities to exchange information with customers have enabled completely new forms of interaction.

Decision to adopt and use digital technologies

The study established that gender, the needs of customers, knowledge on the use of digital platforms, availability of devices to access the internet, data costs, amount of money available at the start of the business, nature of business and expected sales influence the adoption digital technology in the business.

In terms of gender having an influence on the decision to use digital technologies, in the first phase, 20 per cent reported that it had a strong impact while 22 per cent reported that it had a moderate impact. Only 10 per cent reported that it had a strong negative impact. The figures remained unchanged in the second phase. It has been suggested that the gender of the business owner influences the decision to adopt and use a technology. This finding concurs with Van Dyk and Van Belle (2019), who posit that females, and in particular older business owners, are described as bringing less technological experience to startups. The authors add that gender

differences, although not universally negative, and the perception that female business owners are less likely to adopt digital technologies, while common, are not universal. Thus the study finding where an equal number reported that it has no influence and that it has a moderate to strong influence fits into this perception.

In terms of the needs of customers, in the first phase, 50 per cent of the respondents reported that it had a strong impact, 18 per cent reported that it had a moderate impact while only 24 per cent reported that it had no impact. No respondent reported that it had a strong negative impact. In the second phase, 73 per cent reported that it had a strong impact, 12 per cent reported that it had a moderate impact, 15 per cent reported that it had no impact, while none reported it had a strong negative impact. From the above finding, it is evident that the needs of customers play a key role in determining whether informal business owners use digital technologies or not. This is in line with Van Dyk and Van Belle (2019) who observed that many business owners have been facing a market shift over the past few years, driven by a better response to customers, which have forced them to undertake digital transformation. From the above finding, it is evident that business operators in the informal sector are facing the same issue.

Knowledge of the use of digital platforms has a strong impact on the decision to use the technology. In the first phase of the study, 46 per cent of the respondents agreed that it had a strong impact, 26 per cent reported that it had a moderate impact, and only 18 per cent reported that it had no impact at all. No respondent stated that it had a strong negative impact. In the second phase, the figures did not differ significantly with 50 per cent indicating that it had strong impact, 22 per cent stated that it had a moderate impact, and 28 per cent reported that it had no impact at all. Muriithi, Honer and Pemberton (2016) opine that varying rates of decisions to use a technology can be a result of lack of exposure to a culture of ICT usage. This also relates to the decision to use digital technologies. Having knowledge to use digital means makes it easier for entrepreneurs to adopt digitization in their business operations.

The issue of data determines affordability and use of digital technologies, and the decision to use the technology. South Africa is one of the countries with the highest data costs in the world. According to REsearchICT in Africa (2020), despite recent mandatory data price reductions by the dominant operators, data pricing in South Africa remains high. In the first phase of the study, 10 per cent of the respondents stated that data costs had a strong

impact on the decision to use digital technologies, 34 per cent stated that it had moderate impact while 24 per cent indicated that it had a moderate negative impact. 8 per cent stated that it had a strong negative impact. In the second phase, 22 per cent of the respondents indicated that it had a strong impact, 30 percent stated that it had a moderate impact, 10 per cent indicated that it had a strong negative impact, while 38 per cent indicated that it had no impact at all. The city of Johannesburg has several regions and spots where it offers free Wi-Fi access. The informal traders in Melville congregate in one such spot where they are able to access free Wi-Fi and network. This could explain why a significant number of the respondents do not consider data costs as having no impact on the decision to use digital technologies. Furthermore, the main data providers in the country have been offering affordable uncapped packages for internet use, which could also explain the reason why data costs are not considered important.

The above facilities and knowledge that informal sector operators possess fits into the RBV theory, which holds that the assets and capacities that a firm has can be utilised to gain a competitive advantage (Cruz & Haugan, 2020). Participants in this study have access to mobile phones, business accounts, social media and access to online sales, which they are Utilising to carry out their businesses. The fact that most participants have dedicated mobile devices solely for their businesses indicate the important role they are playing in enhancing online businesses by the operators.

The nature of business should determine the decision to use digital technologies. With increasing globalization, businesses have had to adopt new practices to be successful. Many businesses have adopted online means of reaching customers and sourcing for products. The use of digital technology enhances this. Bouwman et al (2017) state that due to digital technologies, entrepreneurs have been forced to reconsider their business models in order to be profitable. Social media and big data have been seen to play a key role in making companies profitable. Thus, the nature of business one is involved in will have an impact on the decision to use digital technology as the need to innovate will drive new startups to engage in companies that use digitalisation.

Shettima and Sharma (2020) state that digitalisation in business should lead to enhancing customer experience, optimizing operational processes, and augmenting business models. By upgrading to digital technology and having an online outreach,

informal businesses can gain significant opportunities to grow and increase their revenues and profits.

Due to exposure to information that is afforded by digitalisation, information exchange that can assist creativity by informal sector businesses is made possible. Miles and Green (2007) state that new technological platforms are changing the ways products and services are crafted, delivered, and marketed. This relates to both individual and consumers who are becoming more sophisticated in their tastes and choices. Consumers are sharing their views and preferences more readily among themselves and with producers, leading to more co-production of novel products and services.

Use of social media to access information has been expanding due to the simplified methods that these platforms enable interaction between people. The study established that informal traders were using these platforms to access information and markets. Kim and Sin (2015) assert that socio-technical development has opened up a wide range of channels for information seeking and sharing. The authors state that individuals most often turn to social media for finding information that relates to their day-to-day activities. These findings are in line with Kim and Sin (2015) who see social media platforms as being the first step in information seeking and sharing.

Digitalisation should be able to improve the performance of informal businesses. A significant number of respondents agreed that digital technology had improved performance in their businesses. In the first phase, 42 percent strongly agreed, 30 per cent somewhat agreed, 16 per cent neither agreed nor disagreed, while 8 per cent somewhat disagreed and 8 per cent strongly disagreed. In the second phase, all respondents strongly agreed that digitalisation had greatly improved the nature of their businesses. This indicates that most informal operators recognise that digitalisation results in improved performance of their entities.

From the two FGDs, six factors emerge as influencing the adoption of digitalisation of their businesses. These factors are accessibility of devices, affordability in terms of airtime and data needed to go online, the nature of products being sold, enhanced interactions with customers, and the ability of the entrepreneur to effectively utilise the digital devices.

Accessibility of devices to access the internet is key in the digitalisation process. The OECD report of 2020 on Digital Transformation of SMEs observes that firms of all shapes and sizes, across all sectors, are increasingly equipping their staff with digital tools. The report emphasizes that digital tools bring many significant

benefits for firms. These include cost reduction, integration into the national and global networks, accessing government services and other resources which are increasingly becoming available online. Accessibility of devices like smart phones, tablets and computers is thus a key influence in the adoption of digitalisation in the business. From the above argument, it is evident that digitalisation of informal businesses in the area has great potential for enabling growth and expansion. There is need for initiatives that specifically aim at encouraging digitalisation in the sector. Such initiatives can be in the form of policy frameworks that are geared towards assisting more informal businesses to engage in e-commerce and online business models, which should enable them to access new markets through digital tools. Another measure that can be implemented can be the setting up of funding ventures that support digitalisation in the sector. The funds can then distribute small grants or give loans to alleviate liquidity problems of the entrepreneurs. NGOs and other stakeholders can also come on board and provide platforms for e-learning courses that are tailored towards digitalisation in the informal sector. The local authorities and provincial government can also step in and assist the setting up of dedicated hubs at local community facilities that can provide a one-stop place where there is access to free internet and other communication facilities that support digitalisation.

Conclusion

This study set out to examine the factors influencing digital adoption by informal sector operators in South Africa, and the challenges that they face. Most businesses that are adopting digitalisation in the informal sector are in the retailing, health and ICT fields. An important finding made by the study is that the needs of customers determine the type of business the informal sector operators will engage in, leading to the need to digitalize. The study has established that a majority of the informal sectors operators who are in the process of adopting digitalization are women. It has also established that of the operators adopting digitalisation have a tertiary level of education. Even though most own the businesses, a significant number are creating employment through getting family members or others to run the businesses. Incomes of the businesses adopting digitalisation still remain low, indicating the precarity of the sector and its survivalist nature. A major challenge that these informal sector operators face include data costs, leading many of the operators to depend on free data from the metropolitan council.

These free data is provided in specific areas, and not all over the city. Knowledge of use of digital devices, and the use of social media also determines the adoption of digitalisation. The interaction between the informal business owner and the customer leads to most of the informal sector operators to adopt digitalisation. The ability to conduct business through various social media platforms is also leading to adoption of digitalisation. These findings address a gap in understanding the factors leading to the increasing use of digitalisation to conduct business by small scale informal business operators. It is recommended that the informal businesses that are adopting digitalisation need to be supported through establishing an enabling environment through policies that actively support the sector. These includes lowering the cost of data, setting up dedicated hubs in which these businesses can operate, and assisting in ensuring that transactions by these operators are seamless through establishment or use of dedicated payment platforms.

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