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Shifting Gears: From Informal Economies to Digital Enterprises in Zambia

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Abstract
Transitioning from a predominantly informal economy to a burgeoning digital one has become a central concern for African governments, including Zambia. Digital enterprises, ICT-enabled commercial ventures leveraging broadband, mobile, cloud, and other internet-based technologies are emerging across the continent's economic, social, and political spheres. This study examines Zambia's informal sector, outlining its longstanding role and the obstacles it faces in formalizing, then explores how the adoption of digital technologies is fostering digital entrepreneurship and a new wave of digital enterprises. Internal and international migration contributed to the rapid growth of informal economies in the 20th century. Informal foreign currency trading evolved into parallel (black) foreign exchange markets in Zimbabwe and Zambia. Informal economies enabled a growing number of migrant workers to meet their basic needs and financing costs. Migration also increased demand for small-scale agricultural and construction activities, which remain important features of informal economies across sub-Saharan Africa. Moreover, agriculture, construction, accommodation, and food sectors already dominate informal enterprises alongside those provided by non-African migrants.
Keywords: *Shift gears, informal economies, digital transformation, digital enterprises, digital literacy, digital adoption, mobile payment solutions.*

1. Introduction

The informal economy, encompassing activities unregulated by the government, has long comprised a significant portion, more than half of Zambia's entire economy (L. Mazarura, 2008).

Such economies, which are largely cash-driven, are characterised by a scale of operations, legal and institutional frameworks, and assets not articulated or protected by the state. Although informal economies provide essential employment opportunities, regulatory, financial, skills, and market barriers restrict many entrepreneurs from expanding their businesses and creating wealth (Bhorat et al., 2015). Against this backdrop, many individuals have turned to digital enterprises, leveraging electronic platforms to offer goods and services. Digital enterprises enable entrepreneurs to overcome traditional constraints and generate substantial wealth through enhanced market access, particularly when combining online presence with physical retail outlets in urban settings (Spring, 2016).

2. Overview of Informal Economies in Zambia

The concept of the informal economy has been clearly defined as a set of economic activities by unregistered firms. In the 1990s, the informal economy was barely acknowledged by the World Bank, particularly concerning small firm discussions. It was only at the end of the 1990s that the Bank began considering policies for fostering the growth of small firms in the informal economy. These policies aimed at the formalization of these enterprises without addressing their lack of growth (Devey et al., 2006).

Informal economies grew alongside economic recessions worldwide during the late 1970s and early 1980s, and economic liberalization from the late 1980s reduced the capacity of many African governments to participate actively in the development of the SME sector and to support the conversion of informal economies into formal ones. The economic context created by the 2008 financial and economic crisis has once again heightened the role SMEs and informal economies have today (Bhorat et al., 2015). Informal economies have played a significant role in employment creation, with many workers moving back and forth between the formal and informal sectors. To promote sectoral growth through job creation, sectorally based policies are required as growth in informal economies has a linkage with access to formal employment. Both the commodity chain and value chain analyses help to identify key interventions for expanding a sector and promote income generation. The traditional medicine sector in KwaZulu-Natal, South Africa, serves as a notable example.

Definition and Characteristics

The informal economy comprises diverse types of entrepreneurs, sharing several common features but exhibiting considerable variation in specific characteristics. The barriers to entry and the returns on invested capital within informal activities are not uniform but differ from one region to another. In developing countries with significant urban poverty, informal sector activities frequently represent the main source of employment and income. Constraints such as high costs of entry, stringent regulations, and limited access to finance can obstruct the growth and survival prospects of micro and small enterprises (Michael Grimm et al., 2012). The informal economy may function either as a form of surplus labor or, alternatively, as a dynamic entrepreneurship sector. Micro and small enterprises are particularly important for employment generation and income creation; these enterprises are characterized by low returns to invested

capital, large entry costs, and limited access to formal financial services. The process of formalizing an informal enterprise is complex, involving multifaceted social and economic factors that often contribute to the persistence of exclusion from formal systems. Although different segments of the informal sector exhibit shared traits, each segment is distinguished by its own set of characteristics.

Historical Context

Zambia is a landlocked nation with an informal economy that inspired its digital economy. The country is among the poorest economies in the world and relies on minerals and agriculture. Its informal economy employs more than 80% of the population and constitutes more than 40% of its gross domestic product.

Informal economies are primarily unregulated and unregistered businesses whose employees receive no social protection or formal employment benefits. Informal businesses usually have no access to formal credit facilities and rely primarily on personal savings, family, and friends. Regulations make it difficult for informal businesses to enter formal markets. The process formalization requires a high initial financial investment and new administrative work and regulations. The growth of informal economies in developing countries does not take the same path as that of the Western countries' manufacturing and industrial economies; instead, the informal services have remained the majority form of informal activity.

Since the 1990s, the number of digital enterprises has increased exponentially worldwide. A digital enterprise prepares to exploit digital channels, assets, and technology. Digital media has enabled informal economies to expand, most allowing social media platforms or e-commerce platforms to act as middlemen for payment and delivery. Digital communication, particularly social media, allows informal economies to search for jobs, products, and market their goods and services. Global trends in digital transformation have developed rapidly among the informal economies in developing countries, transforming from a cash-only exchange to digital exchanges. The shift to digital payments and digital shopping during the COVID-19 lockdown allowed many informal businesses to continue operations, even in locations where they were barred from physical markets. Digital technologies also have provided access to credit facilities, reducing the intermediate costs of bank loans and allowing data to be used as repayment guarantees (Resnick & Thurlow, 2008).

Current Landscape

Zambia's informal economy is characterised by a broad range of economic activities conducted outside formal institutional and regulatory frameworks, with working conditions that in many cases diverge from internationally accepted labour standards. The informal economy plays a significant role in labor absorption, poverty reduction, and economic growth (Bhorat et al., 2015). Informal economic units are mainly small-scale, unregistered, and unincorporated, with most informal workers self-employed or engaged as contributing family workers. The informal economy's sheer volume of economic and livelihood activities, coupled with the high number of people working in informal economies, highlights its strategic role in both broad-based and pro-

poor development and its potential for pro-poor development. Notably, the relatively long duration of informal firms' survival points to the sector's important role in poverty reduction.
Informal economies emerged in Zambia even before the country's independence from British colonial rule in 1964 under the leadership of President Kenneth Kaunda. They flourished during the colonial era as the legendary Underground Economy, Surplus Economy, and Unregistered Sector. At that time, they became synonymous with informal economies in Zambia. Informal enterprises are either market or non-market. Market-oriented informal activities engage in production or provision of goods and services. Non-market activities, on the other hand, consist primarily of domestic provision of goods and services and barter systems whose main income is non-monetary. Informal economies continue to play a very important role in Zambia given the country's high unemployment rate. In this regard, informal economies have effectively become the primary source of income for many households.

3. Challenges Faced by Informal Economies

Despite their significance in sustaining livelihoods and spurring entrepreneurial activity, informal economies encounter multiple challenges that hinder their growth and market access. Zambian entrepreneurs operating informally remain unregulated under prevailing laws, lacking formal support mechanisms (L. Mazarura, 2008). Further impediments include limited access to necessary capital, restricted market reach, and vulnerability to intense competition from both formal and informal actors. Consequently, many are compelled to operate below full capacity.
Shifting from informality to digitally enabled enterprises, which fall under the formal sector's rubric, introduces new opportunities for operation and growth. The digital enterprises model consolidates existing activities through digital information technology, dismantling barriers to entrepreneurship and promoting transparency. This model can determine optimal locations, operational hours, pricing, and product offerings; it also fosters fair play and curtails corruption by ensuring that every service seeker is treated equitably and by generating comprehensive data on business activities.
The transition is evident across the enterprise spectrum, from the smallest informal entities achieved through mobile devices to large digital technology companies is pivoting towards a national digital enterprise economy, enabling broader participation and enhanced efficiency (Sikalumbi, 2021).

Regulatory Barriers

Regulatory barriers are among the highest hurdles that informal economies face when attempting to formalize operations. Small- and medium-sized entrepreneurs often lack the means to obtain official licenses or are unaware of the processes involved in registering their companies (Abrahams, 2017). Regulations commonly require formal businesses to maintain adequate technology and accounting systems, hurdles that many informal economy participants cannot meet. Beyond licensing, regulatory frameworks encompass business permits, tax structures, labor laws, minimum wage mandates, social security, and health insurance obligations. For many informal enterprises, compliance demands investments in infrastructure and equipment that are

out of reach, while a significant portion also resists formal adherence to evade fiscal responsibilities. The complexity of local regulations may lead to frustration or inadvertent non-compliance during licensing attempts, prompting some entrepreneurs to abandon efforts to formalize operations. In Zambia, navigating this challenging regulatory environment remains a fundamental obstacle impeding the transition of informal ventures into formalized enterprises.

Access to Finance

Access to finance critically influences the ability of firms to expand (Siwale, 2019). For small enterprises, where resources are scarce, access to credit can mean the difference between stagnation and growth. Previous studies tend to focus on the bank perspective, emphasizing the requirements and procedures of financial institutions rather than the needs and experiences of farmers. Nevertheless, since most Zambians depend on agriculture for their rural livelihoods and considering that small-scale farmers play a vital role in Zambia's ongoing fight against poverty, a robust quantitative study is required to examine the factors influencing their access to finance. Understanding these barriers can enhance the effectiveness of support programs and guide policy strategies aimed at providing affordable finance and credit to small-scale farmers. Improved access to finance has the potential to elevate productivity, ensure food security, increase income security, stimulate GDP growth, and reduce poverty, contributing directly to the achievement of SDG1. Zambia's transition from informal markets to digital marketplaces makes micro, small- and medium-sized enterprises fundamental actors in economic growth. Informal businesses have nonetheless retained their importance in economic development and poverty reduction since a large proportion of the poor seek entry into formal labour markets. Because low access to finance among uninsured informal businesses lowers investment levels, stronger financing among informal businesses encourages investment and provides better opportunities to attain larger scales of operation. The urban informal sector is thus a substantial contributor to economic growth and poverty reduction in developing countries (Sikalumbi, 2021).

Market Limitations

In Zambia, market limitations present significant hurdles to business growth and sustainability. Informal businesses face high tariffs mandated by parastatals, which increase operating costs and reduce profit margins. The country's public infrastructure, particularly roads, railways, electricity, and water supply—has continued to deteriorate, impeding the efficient movement of goods and services as well as production activities (Karedza et al., 2014). Access to reliable water and sanitation remains inadequate, with infrastructure capacity falling short of the demands of a growing population. Rural water supplies frequently break down due to insufficient preventive maintenance funding, further hampering enterprise operations. These persistent infrastructural deficits and pricing constraints restrict market development and limit entrepreneurs' ability to expand beyond subsistence levels.

4. The Rise of Digital Enterprises

Digital enterprises are legitimized businesses online that create and sell products and services through digital platforms such as websites, mobile applications, and social media networks (Bolat & Taura, 2019). Globally, the COVID-19 pandemic has accelerated the adoption of digital solutions and reshaped the way entrepreneurs conduct business. Digitalization cuts across all sectors of the economy, establishing a connection between stakeholders and streamlining management processes and operations. Through digitalization, businesses can widen their market base far beyond their immediate geographic location, reduce administrative and business compliance costs, access funds more easily, and compete on a more level playing field against other businesses in a digital economy. Driven by the global trend towards full digitization and the inherent flexibility of digital enterprises, Zambia has experienced a significant economic shift over the past eight years. The traditional informal economy, which once dominated in a landlocked Southern African country, now coexists alongside an emerging digital economy. To evaluate this transformation and the rising prominence of digital enterprises in Zambia's economic landscape, comprehensive research has been undertaken into the informal economy, its challenges, and the impact and rise of digital enterprises.

Defining Digital Enterprises

Digital enterprises are businesses that conduct a significant portion of their operations and transactions using digital technologies and online platforms. Digital technologies encompass a wide range of hardware, software, and telecommunications tools that facilitate the transfer of data and knowledge. The term "digital enterprise" can also refer to organizations that have adopted digital technology solutions not only for transactions but also to enhance core business capabilities such as product design, development, manufacturing, distribution, and customer management. Digital enterprises leverage evolving digital technologies, including the Internet, social media, and mobile platforms, which connect customers, supply-chain partners, and different organizational functions with greater reach and immediacy. The affordability and availability of digital technologies have accelerated digital transformation around the world and through every sector and industry (Bolat & Taura, 2019). Zambia is also undergoing a nationwide digital transformation. Through improved communication and information sharing, these technologies have the potential to enhance the efficiency of informal economies, the segment that accounts for more than 70 of the population and years of stunted economic growth that have in the past create serious challenges for Zambian policymakers (KOSHY, 2019).

Global Trends in Digitalization

Digital enterprises incur less risk and fewer costs compared to traditional businesses and have better access to capital (Bolat & Taura, 2019). Digitalization represents a multifaceted transformation that touches on social and economic practices, technologies, and infrastructures (Al Dahdah & Quet, 2020). Online platforms like e-commerce, mobile payments, and messaging apps extend companies' reach and raise the visibility of their products, enabling microenterprises to build reputations and gain access to new markets. Rather than providing only a new set of

tools or selling points, digitalization fundamentally changes the organisational dimensions of businesses, operations, and exchanges with customers and partners.

Zambia's Digital Transformation Journey

The Zambian government, through the Industrial Development Policy of 2015, expressed its commitment to addressing youth unemployment by promoting micro, small, and medium-sized enterprises. In Zambia's Vision 2030, the country is conceived as a prosperous middle-income nation through rapid structural transformation from traditional agriculture to manufacturing. Contemporary manufacturing growth sectors include mining, agriculture, construction, and tourism (Ngosa, 2019).

In the next decade, the government will support the transformation of informal economic activities, which support approximately 88 per cent of the working population, into formal enterprises. Since all private-sector businesses will likely be online, and since online businesses must generally be formal, this transformation will necessarily be a matter of "digital." Services like Uber depend on such digital businesses; companies like Flexclub and Getela seek to bring the informal transport industry entirely online.

5. Impact of Digital Technologies on Informal Economies

Digital business transformation refers to the integration of digital technologies into all business areas, resulting in fundamental changes in operations and value delivered to customers (Bolat & Taura, 2019). In Zambia, digital transformation offers informal economies opportunities for formalisation and expansion as digital enterprises. The advent of the internet has altered how societies and economies operate, with electronic communication permeating everyday life (A. Steyn, 2018). Digital enterprises emerge as the pandemic drives the global economy towards web-based activities, increasing digitalisation of economic processes. They utilize internet technologies, such as social media marketing, mobile money, and online presence, to manage business processes and operations. Digital entrepreneurship involves using the internet and information and communication technologies (ICT) to develop new business opportunities. The last decade has seen a surge in digital entrepreneurship across sectors.

Digital transformation increases competition, especially as rapid shifts favour digital-savvy companies. Small and medium-sized enterprises (SMEs) should adopt an active approach to digitisation to remain competitive. Digital technology empowers businesses to compete on a more equal footing. In Ghana, it influences agriculture through agri-tech firms providing pricing data, crowdfunding, and communication services. Nigerian rice processing improves with digital tools, benefiting SMEs in media through enhanced data sharing and production quality. Nigeria's film industry extends its reach and production capabilities via digitisation. Digital hubs proliferate across Africa, yet entrepreneurs sometimes perceive them as inefficient. Local conditions and culture, including corruption, hinder efficiency and growth. Communication, transport, and energy challenges persist, while Nigeria's movie sector requires regulatory reforms and skill development for sustained expansion.

Digital technology offers positive prospects for informal economies in Zambia. Digital connection enables existing businesses to formalise or new digital enterprises to emerge. Access to a larger market and easier information retrieval broaden business opportunities. Trading products and services on platforms like social media, company websites, and online marketplaces facilitate growth. These avenues provide informal businesses with competitive strategies to expand their customer base and increase profits. Digital platforms offer flexibility for informal enterprises balancing other income-generating activities between fixed jobs. Mobile money integration enhances customer transaction speed and accessibility, preventing potential losses. As internet adoption and online commerce rise in Zambia, informal economies increasingly become digital enterprises, leading to fundamental sectoral transformations (Sikalumbi, 2022).

Enhancing Access to Markets

Informal economic activities in many countries are characterized by a lack of business records essential for drafting business plans, absence of formal premises, failure to register with regulatory bodies, inadequate market information, and limited access to credit from financial institutions. Digital technologies offer new opportunities for segmenting, targeting, and choosing appropriate marketing media for digital marketing initiatives. Access to digital marketing tools enables informal businesses to follow up with and retain customers effectively. These tools facilitate accurate and prompt access to information about prices, delivery times, and competitor activities, which is pivotal in reducing distribution and transaction costs. Digital platforms reduce the effort and cost associated with keeping customers informed about product range and specification changes and allow localized customized promotions at the household level. The adoption of digital services further improves customer service by ensuring quick access to information, which is critical for timely delivery and effective handling of after-sales concerns. Digital technologies also assist in coordinating decisions accurately and efficiently across various tiers in the value-chain, integrating supply chains and enhancing the execution of production plans and routines (Ngosa, 2019).

Improving Financial Inclusion

Financial services constitute a significant obstacle to enterprises operating in Zambia's informal economy (Siwale, 2019). Such entities often depend on informal financial sources that restrict their capacity to save money and invest in the productive assets needed for growth. This reliance on informal credit also increases exposure to the risk of loan default or asset repossession, while its dependence on social networks for informal financial services limits the expansion of both customer and business networks. Improving financial inclusion in Zambia therefore appears pivotal to resolving these financing challenges. Financial inclusion, broadly understood as overcoming barriers that exclude individuals and businesses from credit, savings, banking and financial services, supplements broader government initiatives aimed at promoting technological innovation and digital transformation in the country (Mazai Moyo, 2018; Lapukeni, 2015). Firms that extend beyond the informal economy by embracing mobile payments, digital marketing and

e-commerce, augmented by the necessary technological infrastructure and workforce skills, acquire a correspondingly enhanced capacity to increase productivity, impact and sustainability.

Facilitating Business Operations

Innovative digital technologies exhibit the potential to bolster the creation and subsequent development of digital enterprises in Zambia (Bolat & Taura, 2019). Yet the country's small and medium-sized enterprises (SMEs) frequently encounter persistent challenges and limitations that constrain further expansion and integration into the formal parliamentary economy (KOSHY, 2019).

Perceptions of digital financial services within the entrepreneurial ecosystem vary, however. SMEs are often cautious about the uncertain benefits and costs of digital technologies because existing business models emphasise traditional, unregulated cash-based systems. Lacking trust in a broader digital ecosystem exacerbates this issue, frequently limiting adoption. Government structures also exert indirect pressure on businesses in their efforts to establish themselves or access necessary services. Many firms remain unwilling to register formally for the enormous administrative burdens involved.

6. Case Studies of Successful Digital Enterprises

Zambia has experienced significant growth in digital enterprises, with the successful emergence of technology startups, e-commerce platforms, and mobile payment solutions exemplifying this trend. The technology sector in the urban capital Lusaka is burgeoning, with startups providing web/software development, digital marketing services, and digital media content. Notable companies that have evolved into key players include Zamtel, Zoona, 4PSA, Mutrox, ILT, Silitech, and Smartcodes. In the broader national context, digital enterprises are diversifying into various sectors such as health, education, agriculture, and transport.

E-commerce platforms actively supply paper products to retailers and wholesalers, while social media influences leverage platforms like Facebook, Instagram, and TikTok to promote products. Payment platforms, including mobile-wallet companies and established alternative transaction services, play a vital role for many Zambians. Consumer-facing digital platforms and maternal health initiatives further underscore the expansion of digital enterprises.

The digital enterprises in Zambia can be categorized as follows:

Technology Companies: Entities involved in providing technology-based services, including web and software development, digital marketing, and digital media production. These firms contribute to the creation of digital infrastructure and content required for broader digital engagement (G. Ballantyne & Chavez-Tafur, 2019).

E-commerce: Platforms facilitating the distribution of goods such as paper products through online marketplaces and delivery services. These entities represent the transition from traditional retail to digital supply chains and consumer interaction (Resnick & Thurlow, 2008).

Mobile Payments: Solutions offering alternative financial transaction mechanisms accessible via mobile devices. These platforms address the need for inclusive financial services and enable cashless transactions, thus improving economic participation (Drew et al., 2017).

Consumer Platforms & Maternal Health: Digital services targeting specific consumer needs and health-related information dissemination. These initiatives demonstrate the adaptability of digital enterprises to niche markets and social imperatives, contributing to overall societal well-being.

The continued growth of these digital enterprises in urban hubs such as Lusaka indicates strong potential to surpass traditional informal-sector activities. The diverse range of digital businesses not only supports the economy but also offers avenues for employment, skills development, and enhanced service delivery across multiple sectors.

Startups in the Tech Sector

Zambia's nascent startup scene is largely centred on the tech sector, with several start-up companies already offering digital products and services to consumers within the country. Zambian experts contend that consumer demand for their digital products is stronger domestically than it is among global consumers, making the domestic market a logical place in which to establish and test products. The types of digital startups operating in the Zambian market span different domains. One growing area is FinTech, where digital startups are focused on devising financial solutions for the country, often aiming to bring financial services to underserved populations. The transport sector has also seen the emergence of challenges to pre-existing structures through these startups. Transport and logistics companies have developed applications aimed at facilitating the movement of people and goods across the country. In the e-commerce migration space, new digital enterprises have created platforms that enable consumers to purchase goods and book services online. The entertainment sector is similarly targeted by emerging digital startups that design digital applications to satisfy consumer demand. Finally, emerging digital startups have entered agritech, rolling out solutions that align with the digital transformation of agriculture. (Bolat & Taura, 2019).

E-commerce Platforms

E-commerce platforms help entrepreneurs overcome the constraints of physical marketplaces. The growing availability and affordability of internet connectivity via broadband and mobile data networks, has accompanied a surge in online activities by Zambian small and medium-scale entrepreneurs and service providers (Kabanda, 2011). Enterprises use social networks to develop shared perceptions of e-commerce even before formal measures are in place. Small and medium enterprises (SMEs) that have yet to institutionalize e-commerce exploit the hybrid combination of static web pages and mobile payments that better fits the realities of the Zambian economy.

Mobile Payment Solutions

Mobile money represents a widely accepted payment system for unbanked and under-banked individuals. In Africa, systems such as MPESA enjoy public confidence and trust, becoming the primary method for most financial transactions. In Zimbabwe, mobile network coverage diminishes infrastructural barriers, especially in rural contexts where only 7 per cent of the branch network is situated. With 76 per cent of the population remaining unbanked, including rural

communities, mobile banking fosters financial inclusion and poverty reduction. After Kenya's M-PESA, EcoCash, offered by Econet Wireless, counts about 2 million subscribers, emerging as the fastest-growing mobile money platform (Thulani et al., 2014).

Mobile payment solutions have multiplied swiftly in accordance with the expansion of mobile subscribers worldwide. Consequently, several financial institutions have developed innovative mobile financial services. For example, Standard Chartered and Barclays launched mobile banking platforms that facilitate access. Likewise, MPESA, introduced in 2007 by Safaricom, has evolved from a non-profit to a sustainable source of revenue that substantially enhances financial inclusion. In Zimbabwe, more than three-quarters of the rural population lack a bank account because the banking infrastructure is inadequate and banking points are distant, reducing access to financial services. Consequently, most rural inhabitants depend on cash transactions or third-party remittances, which entail risks of loss or non-delivery (Chimonyo et al., 2015).

7. Government Policies and Support

An enabling regulatory framework is essential for the development of digital enterprises. The government has implemented various incentives to encourage digital adoption and has engaged in consultative workshops to address challenges such as taxation and interoperability (Resnick & Thurlow, 2008). In Zambia, numerous public-private partnerships have been established to facilitate digital transformation; however, a coordinating platform is needed across ministries to guide digital engagements consistently.

Regulatory Frameworks

Regulators in the Southern African Development Community (SADC) region have been primarily involved in establishing the infrastructural foundations for a digital economy, achieving varying levels of success (Abrahams, 2017). The current phase of digital economy development introduces a higher degree of complexity in legislative and regulatory processes, necessitating enhanced expertise and understanding of the regulatory landscape.

The Zambian government is actively working on legislation aimed at ensuring that all stakeholders benefit from digital developments and the emerging digital economy. These regulatory efforts are designed to promote inclusiveness and fair access, thereby facilitating the country's ongoing transition towards a digital enterprise ecosystem.

Incentives for Digital Adoption

Apart from individual initiative, firms that invest in digital technology should be provided with considerable incentives. Government policy should facilitate the easy adoption of digital technology through fostering a favourable regulatory framework and creating a community of users. The policy should constitute easy access to ICT infrastructure such as high-speed internet, efficient court system (for electronic commerce), good telecommunication, safe electricity, and data privacy and security. It should also provide for a rightful use of digital technology by putting in place laws such as those dealing with copyrights and patents. A supportive and innovative ecosystem; which includes the democratic and liberal economy, skilled labour force, access to

digital finance, dynamic digital demand, and availability of physical infrastructure supply chain, is an important facilitator of digital transformation.

Support schemes that aim to enable micro and small enterprises (MSEs) to acquire the relevant digital skills and education would impart them with the necessary knowledge requirements. The relatively low rate of digital literacy of business owners is one of the key factors contributing to the slow uptake of digital technology. The business community must, therefore, work closely with the education sector to ensure that relevant skills are developed and that they are made available to ICT practitioners, specialists, and educators. Other practical approaches to implementing digital education include technical-, vocational-training, and apprenticeship programmes.

Public-Private Partnerships

Public-private partnerships (PPPs) are arrangements where the private sector supplies infrastructure assets and services that were previously provided by the government. In a PPP, public and private actors cooperate to develop infrastructure and deliver services, sharing risks, costs and benefits; the exact allocation depends on the project. The current investment framework in Zambia is unclear on how sectors can incorporate PPPs; the government needs to strengthen the institutional framework and have clearly defined responsibilities. The introduction of the PPP law has not improved the approval process, especially regarding risk quantification (Muleya et al., 2019).

8. The Role of Education and Skills Development

Education and skills development underpin employability and the capacity for self-employment among those in work and those seeking work. Consequently, education levels are directly correlated with income levels; significant proportions of households with lower levels of education have income below the poverty datum line. Informal workers generally have lower formal education and inadequate employment-related skills, making the education system crucial in improving their access to income-generating activities. Education reform is needed to enhance education quality and relevance, extending beyond the traditional school system and encompassing all forms of education at various life stages.

In addition to full-time, school-based education, what is needed are aspects of secondary and tertiary education such as identity formation; literacy skills; self-management; social and communication abilities; vocational and entrepreneurial skills; and values such as hard work, thrift, integrity, perseverance, quality consciousness, innovativeness, and desire for achievement. Equally important to life skills is acquiring appropriate technical know-how. Non-formal education is pivotal in facilitating education and training at a wide scale and minimal cost to the wider population. The rapid pace of technological change imposes continuous formal and informal retraining for many people. Informal-sector employees require relevant training to acquire appropriate skills and qualifications.

The relevance of skills to employment, whether paid formal or informal-sector work, hinges on the extent to which the training equips individuals with actual technical skills required by a

specific type of occupation. Skills acquired through general education may be inadequate for employment, both formal and informal. Employment-related skills can only be brought about through vocational or apprenticeship training, which can be acquired through either formal or informal training. TRADE refers to people or firms that assist in training or apprenticeship, the informal training may be clearly separated from other economic activities. This distinction is particularly important for designing and interpreting labour-force and employment surveys (Bhorat et al., 2015).

Digital Literacy Initiatives

Widespread internet penetration and the adoption of digital technologies are reshaping informal sector enterprises worldwide (A. Steyn, 2018). Various digital inclusion initiatives in Zambia focus exclusively on foundational digital literacy, but skills alone are insufficient. Enterprises require purposeful, context-specific digital support aligned with their operational models to leverage digital technologies effectively.

Vocational Training Programs

Vocational training programs play a vital and crucial role in effectively raising workers' skills, knowledge, and competencies in both the rapidly evolving digital economy and the increasingly diverse informal economy. These important programs are essential for significantly enhancing employability and fostering long-term career development for individuals across a wide variety of sectors. They provide targeted education, practical training, and hands-on experience that empower participants not just to survive but thrive successfully in an expansive range of job markets. Through thoughtfully structured curricula and real-world applications, these programs equip individuals with the necessary tools, techniques, and insights to adapt to ever-changing industry demands and secure meaningful employment opportunities that pave the way for a brighter future. The outcome of such training ultimately leads to a more skilled workforce, which benefits not only the individuals involved but also the community and the economy, demonstrating just how critical these initiatives are in today's competitive landscape (Bhorat et al., 2015).

Collaboration with Educational Institutions

Digital skills required for successful business digitalization differ by field and by the type of digital technologies used. They range from basic skills required to access a computer and use available services, to more advanced programming and testing skills used in a particular business model or digital enterprise. For example, certain enterprises, such as those based on mobile phone payments or e-commerce, require the willingness and skills to adopt and learn from the external environment. Education and training are four to five times as effective as experience in the workplace in developing the skills needed to operate digital businesses. Collaboration between businesses and educational institutions is therefore essential.

9. Future Trends and Predictions

Forecasts showing greater individual control of vehicles, increased partnerships between carmakers and technology companies, and greater adoption of automated driving technologies indicate that the convergence of the automotive and tech sectors is becoming more aligned with consumer preferences (I. Reimers-Hild & Schlake, 2014).

Emerging Technologies

Zambia's informal economy constitutes nearly half of the Gross Domestic Product (GDP) and provides employment to a significant portion of the population. Many of these informal business operators are seeking alternative approaches that will enable them to transition to formal trading mechanisms. The emergence of digital enterprises at various levels within Zambia's entrepreneurial context demonstrates the country's increasing integration into the global digital economy and the unfolding of the fourth industrial revolution. Digital enterprises are created and operated from digital platforms and harness digital technologies such as social media and online marketplaces to establish relationships with customers. Although digital enterprises are a worldwide phenomenon, the transformation of Zambia's informal businesses into digital enterprises is largely underexplored.

Digital technologies have created new opportunities for businesses in sub-Saharan Africa to compete on a more equal footing. For example, in Ghana, digital technologies have impacted the agriculture sector, with agri-tech firms supporting farmers with pricing data, crowdfunding, and communication activities. They also play a role in Nigeria's agricultural sector, improving rice processing through innovative solutions developed via corporate collaborations. Small and medium-sized media businesses benefit from experimentation, partnerships, and a "mobile first" mindset, investing in data-sharing systems. Nigeria's movie industry has also benefited from digitisation, which has shortened production time, enhanced quality, and increased reach. Nevertheless, cultural artefacts created digitally can proliferate quickly, risking overexposure. The number of digital innovation hubs across Africa has grown sharply, yet entrepreneurs often consider hubs resource-intensive. Local conditions such as corruption and poor infrastructure pose substantial challenges. Further government support, regulatory reform, and skill development remain essential in sectors like Nigeria's film industry.

Shifts in Consumer Behavior

With the growing use of internet-enabled mobile telephony, more Zambians than ever have entered the digital arena. Although computer and internet access remain relatively limited in Zambia, consumers are now able to decide when and where to shop using their mobile telephones. They access an increasing number of services through their mobile phones such as financial transactions, bill payments, travel bookings, deliveries and price comparisons.

Zambian consumers are adopting progressively more innovative ways of spending their money such as Fantasy Football, buying Lottery Tickets with Play Tokens or entering Prize Competitions. As consumers acquire more experience in making purchases and buying products and services online, their interest in convenient shopping options will grow, thus pushing the retail transformation further.

Potential Economic Impacts

Digital technologies represent a growth opportunity for Zambia to transition from the informal economic system towards the formal economy (Bhorat et al., 2015). This transformation influences other sectors, such as access to public services, finance, and markets. Other sectors, for example, financial services and agriculture, have seen digital technologies supporting innovation and growth, albeit with challenges around sufficiency and value addition.

Digital services enhance market efficiency and expand market reach by lowering business costs and offering innovative services that clients can access remotely and at any time. Similarly, mobile money advancements facilitate transactions far beyond the reach of traditional infrastructure, offering alternative channels for payments and improving efficiency. Furthermore, digital education platforms increase access to education and skills development, helping businesses improve their workforce.

Digital finance and business services can enable the creation of an entrepreneurial ecosystem, providing access to various platforms and participating in value chains more efficiently. Nevertheless, digital technologies may present risks or constraints that hamper growth. For example, the online selling franchise model does not suit all sectors, and many sectors in Zambia have yet to adopt digital solutions to add value or improve efficiency. Some digital services may pose privacy concerns or alter business relationships, and certain innovative business ideas might be challenging to scale via digital platforms or require more resources than accessible through digital channels.

10. Conclusion

Informal economies have historically served as the backbone for indigenous entrepreneurship in developing countries. Such economies can provide a "steppingstone" in the entrepreneurial escape from poverty to the mainstream. In many Sub-Saharan African (SSA) countries, informal economy activity has absorbed huge numbers of workers displaced by the inability of the formal sector to create employment. Informal economy actors often face formidable obstacles impeding them from progressing despite the acknowledged economic relevance of their activities. Zambia is a typical case of such countries where informal economies have operated as the main activity sector for many Zambians since the colonial days to the present. In recent times, the rapid spread of digital technologies in SSA has further boosted the growth of digital enterprise activity several-fold. Digital enterprises have emerged as an increasingly important phenomenon for many developing African countries, not least for Zambia where the market is likely to expand even further in the coming years to play a key structural role driving economic growth and diversification (L. Mazarura, 2008). Thus, evidence suggests that digital technologies can present a promising solution to informality in Zambia. A range of investigative methods is employed: the systematic review is used to gain a holistic understanding of digital technology usage in Zambia's informal economy; the qualitative approach is employed for gathering data once initial patterns emerge to augment insights from existing literature that reveal how digital technologies are perceived and employed within the informal economy; finally, the quantitative method is used to measure the extent of usage by combining data sourced from stakeholders directly and

broadened by open-ended surveys. Analysis is conducted from the theoretical perspective that the entrepreneurs are not passive recipients of digital interventions but are active social agents who shape the ways digital technologies are deployed. The study finds that digital technology has been transformative for informal entrepreneurs and that digital trade in Zambia generates a number of developmental benefits including provision of cheap goods to the consumer, improved market accessibility for traders, reduced transaction boots, increased exposure to foreign markets both for traders and consumers, and the growth of a new business sector in cross-border digital trade.

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