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Unit 7 – Literature Review

Use of Information Systems (IS) to transform Small Businesses in South Africa

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Introduction

Purpose of the Literature Review

The purpose of this literature review is to explore the use of Information Systems (IS) to transform small businesses in South Africa.

The current state of small businesses in South Africa

Small businesses are currently facing harsh economic conditions in South Africa amid post the covid-19 pandemic and subsequent lockdown measures (UNDP, 2021) as well as the current energy crises (de Villiers, 2023). While these businesses are thriving to survive they play a vital role to the South African economy promoting economic growth and job creation. According to Pradhan et al. (2018) small businesses can be defined as independent, non-subsidized organisations that employs a specific number of employees. This number varies across countries and is accepted to be less than 50 according to TIPS (2023) in South Africa. While small businesses can be considered as the backbone of the South African economy (TIPS, 2023) they face several challenges such as limited resources, limited access to finance as well as limited access to technology amongst many others. It therefore becomes crucial that small businesses maximises on any opportunity to increase business efficiencies and boost revenue generation.

Context of the Literature Review

Information Systems can provide various solutions and benefits to small businesses such as improving their efficiency by enhancing business processes, improving customer service as well as enhancing their ability to compete in the market (Ndubisi & Iftikhar, 2012). The context of this literature review will be focused on the potential benefits of implementing and using IS to increase productivity and efficiency of small

businesses in South Africa. Challenges of adopting Information Systems will also be presented within a South African perspective.

Background of Information Systems

According to a report by the South African Institute of International Affairs (SAIIA), the growth of the Information Systems sector in South Africa has been significant over the past decade (Corrigan, 2020). The International Trade Administration (ITA) also supports this view, stating that South Africa has become a leader in the information technology sector in Africa (ITA, 2021). This growth has been driven by the need for businesses to enhance their operations, increase efficiency, and remain competitive in a rapidly evolving digital environment.

Information Systems can be defined as "a set of interrelated components that collect, manipulate, store and disseminate data and information and provide a feedback mechanism to meet an objective" (Stair & Reynolds, 2016: 4). This definition is echoed by Bourgeois et al. (2019) and Rainer and Prince (2021). Information Systems have become a critical component of organisations and businesses in South Africa. They are used in the form of Customer Relationship Management (CRM) systems, Enterprise Resource Planning (ERP) systems, payroll administration systems, and many others (Rainer & Prince, 2021). The primary objective of these systems is to allow businesses to streamline processes and operate more efficiently and effectively.

The widespread adoption of IS in South Africa can be attributed to various factors, including government initiatives and policies to promote the use of technology in

business, the availability of affordable hardware and software, education and training and the growing demand for digital transformation among businesses (Bvuma & Marnewick, 2020). Despite the growth of IS usage in South Africa, there are still challenges that need to be addressed. The cost of acquiring and maintaining IS, the lack of skilled personnel, and concerns about security and privacy are some of these challenges (Corrigan, 2020). However, when these systems are implemented and used efficiently and effectively, they can provide businesses with a competitive advantage and numerous benefits as discussed in the subsequent sections below.

Benefits and Challenges of IS

Data is considered a valuable asset to any organisation or business in the world we live in today. Small businesses can benefit from using this data through Information Systems. These benefits include improved efficiency through automation (Rainer & Prince, 2021), using Artificial Intelligence (AI) and Deep Learning (DL) techniques (Wang et al., 2018), predictive and visual analytics (Akpan et al., 2020), and the use of Big Data. Big Data involves collecting and processing various types of data (Iqbal et al., 2018) and, when used in conjunction with Information Systems, can enable real-time analytics, allowing businesses to make swift decisions. Leveraging IS can also support the decision-making process, enabling small businesses to respond promptly to evolving market conditions (Ramaswamy, 2019). This can be particularly useful for SME's operating in the financial marketing sectors, allowing them to make data-driven decisions leading to improved performance and profitability (Olawajuwaju & Msomi, 2021).

Furthermore, Information Systems can provide additional benefits by automating both business processes, as well as manual and repetitive tasks. Some of these Information Systems have built in Robotic Process Automation (RPA) which can automate repetitive tasks, thereby reducing the likelihood of human error. This can also free up human resources, enabling them to focus on strategic and more productive opportunities (Accenture, 2019). However, this can be perceived as a threat by employees, as they may fear that their jobs will become redundant (Zahidi et al., 2020).

In addition, using Customer Relationship Management (CRM), Business Intelligence (BI) and Enterprise Resource Planning (ERP) systems can improve various aspects of a business, including customer service, customer engagement, and facilitating collaboration and communication between customers and employees (Rainer & Prince, 2021). A survey conducted by Timmis (2019) found that 79% of small businesses recognise the importance of implementing an Information System and the benefits it can provide to their business. For instance, CRM systems can track customer interactions and preferences, resulting in a more personalised customer experience. ERP systems with the use of Machine Learning (ML) and AI can predict near accurate forecasting and reveal hidden biases (Oracle, 2023). Inventory Management Systems (IMS) can prevent overstocking and automatically compute lead times and produce real-time analytics with a few clicks (Netstock, 2023).

Moreover, Information Systems can help small businesses improve their sales and marketing campaigns by integrating with social media platforms, allowing them to

establish an online presence (Ramaswamy, 2019). This, in turn, enables small businesses to reach a wider audience, interact with potential customers, and build brand awareness. By utilising Information Systems, small businesses can leverage the power of social media to promote their products and services, create engagement with their customers, and increase their visibility in the marketplace (Ramaswamy, 2019).

By using Information Systems, small businesses can enhance data security and comply with regulations and industry standards. In South Africa, small businesses are required to comply with the Protection of Personal Information Act (POPIA) which is similar to the General Data Protection Regulation (GDPR) established in the European Union (OneTrust DataGuidance, N.D.). IS can help small businesses protect their sensitive data and prevent cyber threats by managing and securing access to customer information, which is critical for complying with the POPIA. In addition, IS can provide tools and processes to monitor and detect potential security breaches, and ensure that the necessary security protocols are in place to prevent unauthorised access to confidential information (Gobeo et al., 2020). Therefore, implementing IS can be an effective strategy for small businesses to safeguard their data and comply with regulatory requirements (Gobeo et al., 2020).

While Information Systems have the potential to provide advantages to small businesses, implementing and managing these systems poses several challenges, especially in South Africa. Edison (2022) has identified five factors related to technology that apply to Information Systems as well. These factors include: a “Lack

of ICT (Information Communication and Technology) knowledge, unreliable infrastructure, high cost of adoption, the perceived usefulness of ICT, and the perceived ease of use” (Edison, 2022: 1). Bvuma and Marnewick (2020) also highlight similar challenges, especially in rural areas.

Information Systems can offer potential benefits to small businesses, but their effective use may be limited due to various factors. One such factor is the lack of necessary skills and knowledge among small business owners and employees. IS can be complex and difficult to use, which can serve as a barrier to adopt, particularly for businesses with limited technical expertise (Ramaswamy, 2019). Additionally, the cost of implementing and maintaining IS can be significant, which can also be a barrier for many small businesses, especially those with limited financial resources.

While the benefits highlighted in theory provide significant opportunities to transform small businesses, it is rather difficult from a practical perspective. Unlike many other countries, South Africa is seen to have contrasting views around the adoption of technology which includes Information Systems. Sutherland (2019) argues that South Africa is a late adopter of technology and IS due to various factors such as significant skills shortages, inferior quality and lack of maintained infrastructure, amongst many others. On the other hand, the International Trade Administration (ITA, 2019) mentions that South Africa has one of the largest fastest growing ICT (Information Communications and Technology) markets in Africa.

Resistance to change is another critical aspect to consider when adopting Information Systems in small businesses. According to Karltorp (2017), small businesses may be hesitant to adopt new technology due to the potential disruption of their business processes and the need for their employees to learn new skills. This resistance to change can hinder the adoption of IS. Additionally, it is important to note that Information Systems may not be free of software bugs and may be difficult to integrate with existing systems, as a result this may not cater to a specific business need.

Furthermore, analysing the literature from an holistic perspective, it is worth noting that some small businesses may struggle to operate in the face of the energy crises and the inability of the state to provide reliable electricity. According to a survey conducted by Timmis (2019), 59% of small businesses reported that power outages pose a significant challenge. As a result, these businesses may prioritise addressing their energy needs over adopting Information Systems.

Possible Gaps in Literature

Although there is extensive research available that explains the advantages and challenges of Information Systems and their impact on small businesses, there are still some gaps in the research that need to be addressed. Firstly, research needs to be conducted to determine the extent to which Information Systems have a positive effect on business performance in South Africa, and how this effect can be measured and evaluated. Secondly, there may be a gap in research regarding how Information Systems are used to support digital transformation in small businesses in South Africa, including the role of Information Systems in facilitating digital innovation and the adoption of new technologies. Thirdly, it is important to explore the impact of

Information Systems on skills development in small businesses in South Africa, and how this affects workforce training and development. Finally, to address these gaps, primary research on the points mentioned above needs to be conducted.

Conclusion

Using Information Systems can be an effective way to transform small businesses in South Africa, but it requires careful planning, implementation, and ongoing support to ensure success. Small businesses need to consider the potential benefits and costs of adopting IS, as well as the potential risks and challenges that come with implementing these systems. Therefore, it is essential to explore these benefits and how they can contribute to the growth, development, and transformation of small businesses in South Africa. The findings of this review suggest enormous benefits as well as significant obstacles and challenges when it comes to using and adopting IS. Addressing these challenges requires a holistic approach that involves collaboration between the government, private sector, and academia to provide support in terms of funding, training to address the knowledge and skills gap, and infrastructure development. Furthermore, the lack of statistics on IS adoption in literature indicates the potential for further primary research to be conducted.

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