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A framework for stimulating adoption of ICT in SMEs in developing countries: The case of Zimbabwe

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Peter J. Makiwa

Faculty of Informatics
University of Pretoria, South Africa
Email: pmakiwa@gmail.com

&

Adriana A. Steyn

Faculty of Informatics
University of Pretoria, South Africa
Email: riana.steyn@up.ac.za

Abstract

The utilisation and adoption of information and communication technologies (ICTs) in small to medium enterprises (SMEs) around the world have had a significant effect on most economies and have resulted in sustainable growth and prosperity. However, most SMEs in developing countries, including Zimbabwe, are still ages behind their counterparts in developed countries with regard to the application of ICTs in business processes. Literature indicates that the Zimbabwean government has failed to stimulate the adoption of ICT and its use in Zimbabwean SMEs in recent decades. A qualitative methodology was employed. This paper presents a validated and implementable ICT adoption framework that the Zimbabwean government can utilise to stimulate ICT

adoption in SMEs. The research findings revealed that key factors that impact ICT adoption in Zimbabwean SMEs include a lack of government support, poor policy formulation, implementation and awareness, a lack of finances and inadequate infrastructure.

Keywords: *Adoption, Information And Communication Technology, Information Systems (Is), Government Policies, Ict Adoption Framework, Small To Medium Enterprise (Sme), Zimbabwe*

1. Introduction

Small to medium enterprises (SMEs) are a key ingredient in eradicating unemployment in both developed and developing countries and they are also essential to the enhancement of the gross domestic product (GDP) in these countries (Abor & Quartey, 2010). In most nations, information and communication technology (ICT) adoption in SMEs has changed the business scene, which has led to economic and social developments that have enthused every aspect of human life (Joseph, 2015). Makiwa and Steyn (2019) and Steyn and Leonard (2012) also add that the incorporation of ICT tools in key SME business processes enhances their competitive edge.

In the past decade, various researchers (Makiwa & Steyn, 2019; Li, Liu, Belitski, Ghobadian & O' Regan, 2016; Yunis, Tarhini, & Kassar, 2018; Steyn & Leonard, 2012), have focused on ICT adoption within global SMEs. However, the review of their publications and many others within this field reveal key gaps with regards to outlining an ICT adoption framework and practical strategies that key authorities in developing countries can use to enhance the adoption of ICT in SMEs.

Most Zimbabwean SMEs do not have the knowledge and means to effectively apply ICT in their business operations, which has led to innovation deficiencies, inferior and poor services and products, and an irrelevant contribution to the GDP (Nyoni & Bonga, 2018; Makiwa & Steyn, 2016). Tsarwe (2014) postulates that the main driver of ICT adoption in Zimbabwean SMEs is government support and the effective implementation of policies. Government policies have the potential to impact the ICT adoption in SMEs either positively or negatively, as policy architects can develop policies that create an empowering business environment to support and enhance ICT use (Stockdale & Standing,

2015). The subsidies and initiatives that have been put in place by the government of Zimbabwe have failed to effectively enhance ICT adoption in SMEs, and have lacked the desired support that can influence the use of ICT in SMEs, hence the need for an effective framework that guides implementation (Baro, 2011).

ICT adoption and use in Zimbabwean SMEs has in recent years sustained severe setbacks that have undermined all government efforts (Tsarwe, 2014). Despite the failure to achieve policy goals, the government of Zimbabwe is yet to initiate an investigation into how it can help curb the barriers to ICT adoption in SMEs.

The adoption of ICT in Zimbabwean SMEs is chaotic and does not have a systematic methodology, whose basis is on a custom-made framework that is relevant and appeals to different SMEs. The lack of a relevant and appropriate adoption guideline has hindered SME ICT adoption for many years in the country (Maseko, 2014).

This paper highlights a relevant and comprehensive framework and benchmarking tools that the Zimbabwean government can utilise to support and enhance the adoption of ICT in SMEs. It is also key to highlight that the findings of this paper have a significant effect on the Information Systems (IS) discipline that can drive relevant entities within the government of Zimbabwe and give deeper understanding to the adoption of ICTs by SMEs.

The next section outlines a review of literature, which describes the concept of ICT adoption in SMEs and discusses the study context, which is Zimbabwean SMEs. Section 3 outlines the study's methodology, and sections 4 and 5 present the study's results, analysis, discussion and the proposed ICT adoption framework.

2. Literature review

2.1 SMEs in Zimbabwe

Every year, over 300,000 graduates leave Zimbabwe's universities and colleges and SMEs have been earmarked to address the potentially disastrous rate of unemployment (Nyoni & Bonga, 2018). However, only a small fraction of Zimbabwean SMEs has more than one employee (Nyoni, 2012). SMEs in Zimbabwe contribute 58% to the country's GDP (Nyoni & Bonga, 2018). According to Mugozhi and Hlabiso (2017), Zimbabwean SMEs play a critical role in the nation's economic

and social advancement. Nyoni and Bonga (2018) add that SMEs in Zimbabwe are key drivers of the nation's economy. Nyoni (2012) postulates that a grounded SME sector in Zimbabwe can augment the flexibility of the nation's economy by enhancing economic activity, and subsequently diminishing its weakness during intermittent shocks.

The governing authority of Zimbabwean SMEs is the Ministry of Small and Medium Enterprises and Cooperative Development. This ministry asserts that an organisation is required to meet certain criteria that relate to the number of employees, the legal structure, as well as the asset base for the organisation, to be defined as an SME in Zimbabwe (Nyoni, 2012). Most Zimbabwean SMEs are not legally registered under the Companies or Factory and Works Act. Therefore, these informal entities do not pay corporate tax and their revenues are not included in the country's economic statistics (Nyoni, 2012). The main measure or criterion for SMEs' participation in this paper was that the SMEs had to be registered.

According to Nyoni (2012), the Zimbabwean government coined a small, micro and medium enterprises (SMMEs) policy document, in July 2002. He points out that this document had the mandate to deliver a mutual vision for all stakeholders in driving the SME cause and allowing them to attain their maximum capacity. However, the initiatives and policies proposed to improve the growth and sustainability of Zimbabwean SMEs have had inadequate success, despite government's efforts to enhance the SME sector and the vital contributions of SMEs to the development of the economy (Nyoni, 2012). According to Ndlovu (2013), this is mainly due to a plethora of issues that have beset the development of SMEs in Zimbabwe.

The key barriers that have obstructed effective implementation of these initiatives are indecisive leadership, corruption in key government ranks, poor infrastructure, credit access constraints and, most critical, the insincerity of purpose caused by high ranking government officials and the beneficiaries' abuse of several initiatives (Ndlovu, 2013). According to Naicker and Saungweme (2014), huge amounts of money obtained from various institutions for the purpose of implementing these policies and programmes have been diverted and spent elsewhere, which has resulted in these initiatives yielding poor results.

2.2 ICT adoption and use in SMEs

According to Joseph (2015), ICT is fast becoming one of the main drivers of change in organisations. Vodanovich and Urquhart (2017) define ICT as the range of digital technologies built for the purpose of storing, collecting, processing, organising and communicating information outside and within organisations.

According to Steiner and Mendelovitch (2017), ICT adoption augments the innovativeness of SMEs and permits the provision of unique services and products. The adoption of ICTs in SMEs enhances market contributions and strengthens internal business operations. It is hence key for SME owners or managers to be comprehensively equipped to make use of the potential benefits of ICT.

According to Sunday and Vera (2018), the adoption of ICT enables reliability and flexibility within the functional units of an organisation. Sunday and Vera (2018) add that ICT enhances productivity and offers SMEs the opportunity to reach new customers and markets that are beyond their geographical reach. ICT enhances an SME's competitiveness and allows for enhanced mechanisms for accessing unique information services and new markets (Sunday & Vera, 2018). Consoli (2012) notes the three key ICT adoption innovators for SMEs as perceived benefits, organisational readiness and external pressure.

In recent years, Zimbabwe has seen the liberalisation of the ICT sector (Zindiye & Roberts-Lombard, 2012). In the past decade, ICT in Zimbabwe has been characterised by various players who have struggled to remain sustainable in offering competent internet, broadcasting and telecommunication services (Ruhode, 2016). The government has established regulatory bodies, including the Postal and Telecommunications Authority of Zimbabwe (PO'TRAZ), as a way of acknowledging the critical value of ICT to the economic turnaround of the country (Zanamwe, Bere, Zungura, Nyamakura & Muchangani, 2012). However, the integration of ICT through online business operational platforms is still an unfulfilled dream, with most organisations still relying on traditional means of gaining a competitive edge (Ruhode, 2016).

2.3 ICT adoption factors

Margherita and Petti (2010) point out key factors that impact ICT adoption and disclose that effective adoption of ICT requires the serious

consideration of people, strategy, systems, culture and procedures. Margherita and Petti (2010) add that a systematic understanding of these essentials is imperative for streamlining ICT adoption and the redesign of processes. The following sections outline ICT adoption factors under the three key categories of organisation, individual and environmental factors, which form the basis of the framework presented in this paper.

2.3.1 Organisational factors

Organisational factors include elements that pertain to the characteristics and nature of the firm itself. These are the following:

- *Top management support and skill:* The attitude and support of SMEs' management play a key role in the adoption and utilisation of ICT within the firm. SME owners and managers are accountable for the establishment of the appropriate culture, vision and policy of the SME (Steiner & Mendelovitch, 2017).
- *Security, trust and privacy:* The subject of security, trust and protection is one of the most basic determinants of ICT adoption (Bharati & Chaudhury, 2015). They add that security can be described in terms of two classifications: the assurance of clients' value-based detail and the protection of respondents' individual data.
- *Finances:* According to Petronilla, Horner & Pemberton (2016), one of the key challenges preventing the advancement of ICT adoption in SMEs is the issue of financial capacity. This identifies the measure of resources that a firm can utilise to acquire ICT assets for business execution, marketing and the delivery of products and services. Steiner and Mendelovitch (2017) add that SMEs in most developing nations lack the financial capacity to secure basic ICT tools.
- *Perceived advantages of ICT:* The perceived advantages of the adoption and utilisation of ICT is a key factor highlighted in various research studies (Yunis et al., 2018; Makiwa & Steyn, 2016; Makiwa & Steyn, 2019; Vodanovich & Urquhart, 2017). Most SMEs in developing nations are uninformed about what and how ICT can benefit them because of the absence of training and, at times, ignorance.

2.3.2 Technological factors

Technological factors include the elements that are acquired from the characteristics and nature of ICT that SMEs use or expect to utilise for their business operations (Tseng, 2017). These factors include:

- *Internet accessibility*: In many developing nations, internet accessibility for SMEs has extraordinarily added to the postponement of embracing various ICT tools (Tseng, 2017).
- *ICT complexity*: The sophistication of ICT is a key factor that affects ICT adoption in SMEs. A few SMEs have been cautious about embracing ICT due to concerns about information management issues that relate to new and old ICT applications (Forman, 2015).

2.3.3 Environmental factors

The SME's external environment also affects ICT adoption (Bharati & Chaudhury, 2015).

- *Government role*: The role of the government in providing various types of mediation has been denoted as a catalyst for the progression of ICT adoption in SMEs (Tseng, 2017). Government support comes through policies that enable SMEs' operations in the country, institutional technical support, and the provision of finance and authorization of well-articulated ICT business laws (Alshmrany & Wilkinson, 2017).
- *Infrastructure*: According to Steyn (2018), an effective and accessible infrastructure is key to the level of ICT adoption of organisations. This relates to the cost and availability of internet connectivity, electricity supply and the country's telecommunication infrastructure.

The above factors serve to facilitate the identification, validation and confirmation of key constructs that make up the ICT adoption framework for SMEs.

2.4 Theoretical framework

This paper utilised three theoretical frameworks: the Diffusion of Innovations (DOI) model, the Technology-organisation-

environment (TOE) model and the Unified Theory of Acceptance and Use of Technology (UTAUT) model to facilitate the identification and classification of government-related factors that affect SMEs' adoption of ICT in Zimbabwe.

The DOI model points out that innovation in organisations is directly connected to three key elements. These include internal organisational characteristics, individual elements and external factors (Rogers, 1995). DOI offers an all-inclusive guide to studying the adoption of ICT in SMEs, as it covers relational views and adoption policy-making processes that conceptualise the adoption of ICT in Zimbabwean SMEs. The theory also sheds more light on the foundational elements and attributes of ICT innovation adoption that will aid the development of the ICT adoption framework.

The TOE framework established by Tornatzky and Fleischer (1990) posits that three elements (technology, the organisation and the environment) have an impact on how an organisation adopts ICT. These elements enable the identification of critical ICT adoption factors in the framework. The key elements identified in the TOE model are aligned with those in the DOI model, emphasising individual, internal and external characteristics.

The UTAUT model of Venkatesh, Morris, Davis and Davis (2003) is the most prevalent framework in the technology acceptance field, as it connects views from distinguished technology acceptance models. The model is constructed on foundations of four key constructs: performance expectancy, effort expectancy, facilitating conditions and social influence.

The UTAUT model is sought to identify relationships between several variables and ICT adoption factors in Zimbabwean SMEs. Using the UTAUT model revealed the extent to which the assumed usefulness and purpose align with gender and age. The UTAUT model also facilitated the identification of the main constructs on the ICT adoption framework is built.

These identified constructs were linked to and verified using the UTAUT model and enabled the researchers to establish key guidelines that play a major role in influencing ICT use in Zimbabwean SMEs. The model assisted the researchers as it provided a tool that can be utilised to assess the effectiveness of technology introductions and identify the drivers of adoption.

The review of literature and analysis of the selected frameworks of ICT adoption outlined key constructs and building blocks that are

important for effective adoption of ICT in Zimbabwean SMEs. These constructs, presented in Figure 1, are the initial tentative ICT adoption model. The enabling elements or catalysts include government support and the three adoption models (DOI, TOE and UTAUT).

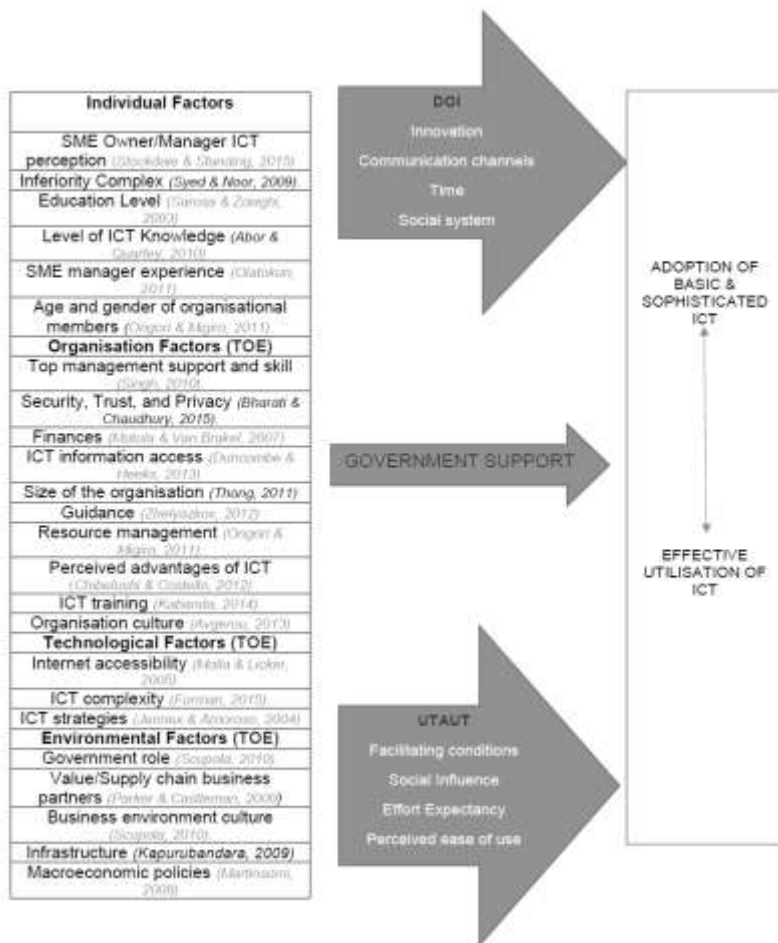


Figure 1: Tentative ICT adoption model

3. Research method

The research adopted a design science approach and utilised a case study strategy with semi-structured interviews for the collection of data. The case study strategy was selected as it is an ideal approach for an in-depth and

holistic analysis and investigation of the participants' views, thoughts and behaviour in organisations (Yin, 2003). The paper also took on an interpretative psychological approach, which, according to Vaishnavi and Kuechler (2014), allowed for the effective study of the phenomenon as the researchers remained independent of the research context.

Zimbabwe was an ideal context for this research being a developing country with low-to-middle per capita income, where SMEs make up 95% of the country's business population. The country's population has, however, been labelled in various literature (Chingwaru, 2014; Tsarwe, 2014) as the most educated in Southern Africa, yet its SMEs have struggled with ICT adoption. Zimbabwe was also ideal for this paper as it is one of the researchers' country of birth and this facilitated the ease with which data could be collected, as the researcher was able to communicate effectively with participants using their native languages and could efficiently navigate through the country.

Semi-structured interviews were conducted with three members of 12 SMEs in Zimbabwe. Four of the SMEs were based in rural areas, one was based in a semi-urban area and seven were located in urban areas. An interview protocol was used to guide the interviews. The tool was flexible and encouraged free-flowing dialogue, which encouraged participants to freely express their opinions and feelings. The interview questions were divided into key sections, which included the organisation's background, the government's role and ICT use within the organisation. A total of 36 interviews were conducted with employees, managers, owners, supervisors, secretaries and administrative personnel. For purposes of anonymity, SMEs were assigned alphabetical names and denoted as Company A to L. Participants will be identified by the letter of the SME to which they belong. For example, participants from SME A will be identified as A1, A2 and A3.

The researchers used non-probability, purposeful sampling to select 12 cases from the population sample, which included the five major Zimbabwean cities of Bulawayo, Gweru, Harare, Masvingo and Mutare, and the surrounding semi-urban and rural areas. Table 2 outlines the city of origin of the selected SMEs and the industries they represent.

Table 2: SMEs' city of origin and industry

| SME | Industry | No of employees | Years of operation | Location (rural/urban) | Number of years using ICT |
|------------|-----------------|------------------------|---------------------------|-------------------------------|----------------------------------|
| A | Mining | 7 | 2 | Rural | 2 |
| B | Retail | 5 | 7 | Rural | 3 |
| C | Hospitality | 15 | 4 | Urban | 1 |
| D | Transport | 13 | 11 | Urban | 5 |
| E | Legal | 4 | 1 | Urban | 1 |
| F | Insurance | 7 | 5 | Urban | 4 |
| G | Manufacturing | 19 | 12 | Rural | 5 |
| H | Agricultural | 17 | 6 | Rural | 1 |
| I | Manufacturing | 20 | 3 | Semi-urban | 3 |
| J | Education | 15 | 2 | Urban | 1 |
| K | Retail | 10 | 8 | Urban | 2 |
| L | Technology | 2 | 2 | Urban | 2 |

The data collected was analysed using thematic analysis where the data was grouped into various themes to ensure effective analysis. The themes were based mainly on the literature review and observations made during the interviews. For this paper, a repeated pattern of responses was used to identify the themes. The identification of the themes was achieved manually by observing the entire data set and identifying repeated patterns of responses.

The identified themes for this research are as follows:

- Government's role in the adoption of ICT
- The significance of ICT in the selected SMEs
- The adoption of sophisticated ICTs
- Involvement of the owner or manager in ICT
- ICT barriers
- ICT success factors

4 Research findings

4.1 Government's role

4.1.1 Government ICT policy awareness

Regarding the awareness of government's ICT policies, some SMEs said that they had some knowledge of the policies but cannot elaborate on their critical elements.

A2 (rural) – “I am not aware of any ICT-related policies that government has put in place. If the policy is there, then no one has brought it to our attention.”

The SMEs revealed that relevant stakeholders are not aware of government policies that affect SMEs, clearly indicating that the decrees of the policies have not affected SMEs. Stockdale and Standing (2015) add that government policies have the potential to negatively or positively affect ICT adoption in organisations as policy makers can coin policies to facilitate an enabling environment that supports and enhances ICT use.

4.1.2 Government financial subsidies

Ramayah (2016) points out that one of the main barriers that prevents advancement in SMEs' adoption of ICT is the issue of financial capacity, as it allows SMEs to acquire ICT assets for business execution, marketing and the delivery of products and services.

C1 (urban) – “Government has neglected to inform the key stakeholders how to access subsidies because if you ask any small business in this area, there are none who know about the subsidies or know how to access them.”

Respondents D2 and E3 pointed out that banks still charge them high interest rates, which are equivalent to those that are charged for large corporates. Respondents I3, J2, K1 and L2 also said that they were not aware of any government financial subsidies and relied on unconventional means of obtaining funding for their businesses, including borrowing from friends and family. The respondents also raised the point that inaccessibility of cash from banks make it difficult to continue with business operations.

4.1.3 Government support for SMEs' ICT adoption

When asked how they perceive the importance of government support in the adoption of ICT and its use in their organisations, participants made the following comments:

C1 (urban) – Government support would be very useful to our efforts to use and adopt ICT.

G2 (rural) – I do not think government cares enough to assist marginalised small businesses like ours and the issue is that we do not even know where to go for help with issues related to ICT.

I2 (semi-urban) – I think government support for small businesses like ours should be through the provision of infrastructure that facilitates ICT use. Government should facilitate the provision of affordable internet and reliable electricity supply, which are key to the adoption of ICT.

4.1.4 Government laws, policies and regulations

When asked if the current national laws, policies and economic regulations encouraged their businesses to adopt ICT, the interviewed participants gave the following responses:

A1 (rural) – “The current government regulations actually bring constraints for small businesses, especially in the mining sector.

Respondents C2 and D3 also highlighted that the existing state laws do not shelter SMEs from exploitation and mistreatment from various establishments. The SMEs feel that, for their part in creating employment and alleviating poverty, government has failed to formulate regulations and policies that tackle SMEs' challenges in a systematic manner.

Respondent G2 added that state policies and laws should be established in such a way that SMEs can also participate in government tenders. The process of obtaining tender documents to supply government departments should be decentralised to other parts of the country.

L1 (urban) – The problem is that it is not so much government regulations, but the absence of social assistance and the lack of clarity and coordination that exists between government SME agencies and departments that wear small businesses down. The system is now characterised by frustrating bureaucratic procedures and penalties that discourage small business operation.

4.2 Lack of finances

Members of all 12 SMEs indicated lack of finance as a barrier to effectively implement ICT in their businesses.

A2 (rural) – It is an expensive endeavour that is quite limiting for us. The cost of running a generator to support ICT initiatives is very constraining. We cannot afford to even upgrade. It is also difficult for us to access bank loans to fund ICT initiatives mainly because we do not have collateral.

L1 (urban) – Cost is key because, currently, state-of-the art graphic design software is beyond our reach. We would have to sell all our current hardware just to get our hands on that software.

4.3 Electricity and internet constraints

Internet and electricity infrastructure constraints were also pointed out as factors that negatively impact ICT adoption and use.

A3 (rural) – We do not have any connection to the electricity grid and we totally rely on the generator. This is discouraging, especially when it comes to using ICT equipment. Despite our location, the electricity grid lines are not far away, but our application has been sitting there for months.

D2 (urban) – Internet service is also very bad in that it frequently goes off. We have an asymmetric digital subscriber line (ADSL) connection that gives us problems almost every day. It does not help that it is also expensive.

5 Discussion

5.1 Key factors

The perceptions derived from the research findings show that government has a critical role to play in stimulating the adoption of ICT in Zimbabwean SMEs. The UTAUT model points out the significance of facilitating conditions that support effective and efficient adoption of ICT within organisations. These facilitating conditions include a supportive and friendly business environment in which the government plays a key role.

The findings of the research indicate that the government of Zimbabwe has not offered SMEs any financial subsidies that would enable and encourage ICT adoption. The government has lacked interventions that ensure access to low-interest loans for SMEs, which would give them an incentive to acquire ICT tools for their businesses. Interest rates are exorbitant for SMEs, and opportunities to import ICT hardware are beyond the reach of these organisations, as they do not have the financial muscle to do so. Sunday and Vera (2018) add to the above-mentioned point by pointing out that SMEs struggle to perform on the same level as large corporates without effective government subsidies.

Insights from the findings show that the government of Zimbabwe needs to provide support for SMEs in their efforts to encourage the adoption of ICT in these organisations. The government has been called upon to provide support through infrastructure development and accessibility for SMEs, including the provision of electricity and internet connection. Support through financial facilities that are tailor-made for small businesses was also indicated as being critical.

A study by Petronilla et al. (2016) confirmed that various forms of government support can inspire adoption of ICT by SMEs in any economy, which often leads to the realisation of organisational objectives and makes a substantial contribution to the economy of the country. Nyoni (2012) confirms the points raised above by stating that the assistance offered by the government of Zimbabwe has been clumsy, piecemeal and irrelevant to the key needs of SMEs, including ICT adoption.

The findings also highlight that the current Zimbabwean government laws, regulations and policies that relate to SMEs are also major

constraints to the operation of small businesses. It is evidently a challenge for SMEs to even consider basic ICT adoption, let alone that of advanced ICT in a business environment where laws and policies are always squeezing the life out of them. Various studies also highlight the constraining nature of the regulatory environment in Zimbabwe, emphasising the lack of incentivised policies and schemes that have the potential to drive and encourage the adoption of ICT by Zimbabwean SMEs (Mugozhi & Hlabiso, 2017).

Insights from the research show that well-formulated and relevant policies can change the ICT landscape of a country's business environment. The empirical findings indicate that there is inadequate knowledge and cognizance of government policies that relate to SMEs. There is no comprehensive understanding of what the policies entail. The abovementioned statement aligns with the views of Vodanovich and Urquhart (2017), who noted, in a study on developing nations, that government policies play a key role in stimulating ICT adoption in SMEs.

5.2 Proposed framework

This paper highlighted key constructs that make up the ICT adoption framework for Zimbabwean SMEs. It should also be noted that the bulk of the constructs are related to the role of the government. The research findings have also enabled the development of key strategies that make up the ICT adoption and utilisation framework. The delineated framework serves as a guide to enable the removal of barriers that inhibit the adoption of ICT in Zimbabwean SMEs and to stimulate the adoption of sophisticated ICT tools.

Figure 2 presents the proposed framework for ICT adoption and effective utilisation for Zimbabwean SMEs and incorporates identified constructs and success strategies. The main basis of the identified constructs are the main themes outlined in the research results. The framework presents key entities that can alter the adoption and use of ICT tools in Zimbabwean SMEs. These include government support, owner/manager support (including ICT skills development for staff members), financial support and infrastructural support (including electricity and internet services).

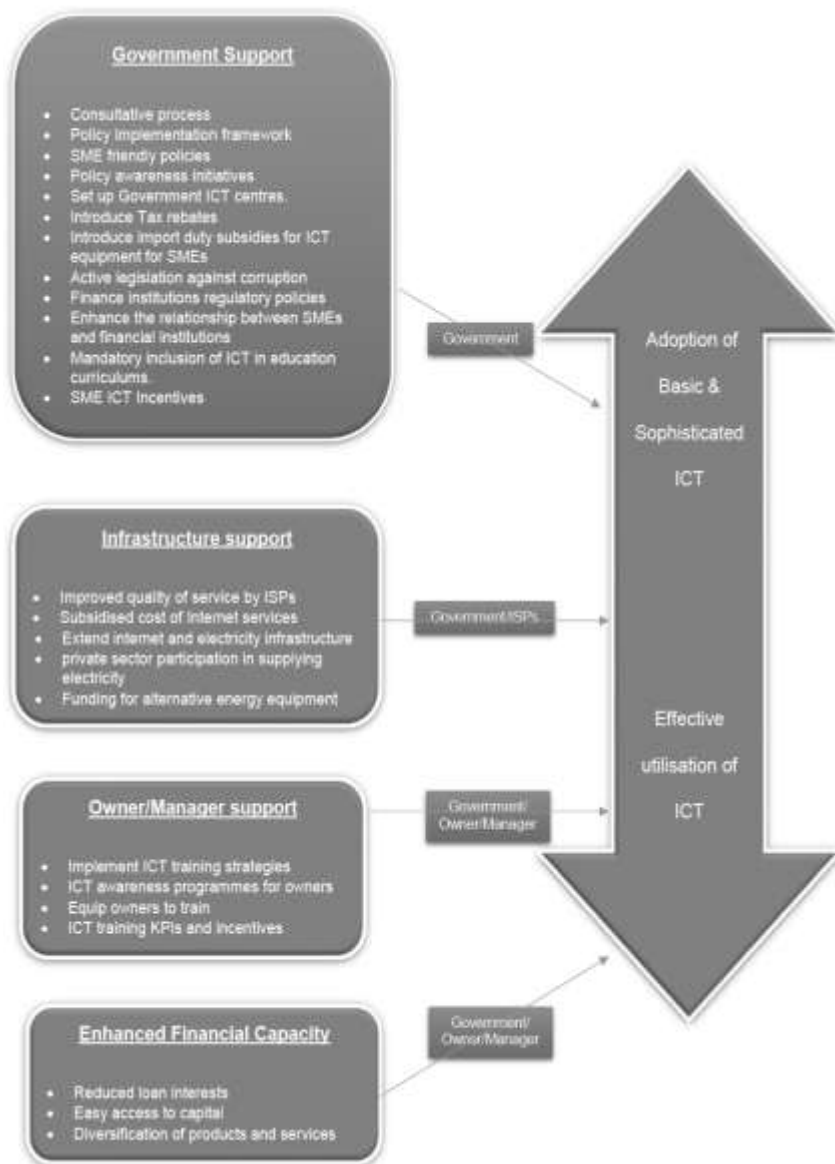


Figure 2: ICT adoption framework

The framework elements outlined in green indicate the stakeholders responsible for the key implementation of the constructs outlined on the

left of the framework. These stakeholders are mainly the government and the SME owner/manager. The double-arrowed figure on the right of the framework indicates the enhanced dual growth in the adoption and effective use of ICT in SMEs as a result of the implementation of the outlined framework constructs by the key framework stakeholders.

The requirement for Zimbabwean SMEs to efficiently utilise and adopt basic and sophisticated ICT has never been more critical to facilitate the subsistence of these entities. Zimbabwean SMEs play a substantial and critical role in the nation's economy, hence the Zimbabwean government and relevant stakeholders ought to effectively play their role in supporting SME initiatives and facilitate the adoption of ICT within their business processes.

The outlined framework has the potential to augment the development and sustainability of SMEs in Zimbabwe and enable access to an extended market. The effective adoption of the framework will stimulate the competitive edge of SMEs and enable them to compete on a global stage. The government of Zimbabwe should try to reposition the power sector to enhance the supply of electricity in Zimbabwe. It is evident that the key driver of the framework is the Zimbabwean government, which has the mandate to frame and implement initiatives that encourage the effective ICT adoption and use within SMEs.

5.3 Framework validation

The validity of this paper's ICT adoption and use framework for Zimbabwean SMEs was realised using both internal and external validity. External validity in this paper was accomplished through the comparison of the research findings with similar findings from various related studies as outlined in sections 5 and 6 of this paper.

Additional external validation of the framework included a focus group approach, which allowed the evaluation of the robustness and generalisability of the framework. The focus group was cost-effective and allowed an open discussion among SME stakeholders under one roof, and added value to the framework validation process. A focus group allows the participants to develop ideas and build on each other's answers, which is not possible in a one-on-one interview setting.

5.4 Conclusion

Insights from this paper exposed key government-related factors that impact ICT adoption and use in Zimbabwean SMEs. Key focus points of this framework included policy formulation, government support and implementation, infrastructure constraints and access to finance. This ICT adoption framework can assist the Zimbabwean government to enhance ICT usage within the SME sector. The framework identifies key government-related ICT adoption factors in Zimbabwean SMEs, as well as key practical strategies that government can use to inspire ICT adoption by SMEs in Zimbabwe. If the authorities want to enhance the adoption of ICT by SMEs, and thus allow for the growth and support of the SMEs, this framework is a good starting point to launch such an endeavour.

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