

BINDURA UNIVERSITY OF SCIENCE EDUCATION

THE DEVELOPMENT OF A STRATEGIC SYSTEM IN ENHANCING TECHNOLOGICAL ADOPTION BY SMES FOR THE FOURTH INDUSTRIAL REVOLUTION IN ZIMBABWE. A CASE STUDY OF GRANITESIDE INDUSTRIAL AREA, HARARE.

BY

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DECLARATION

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DEDICATION

As I embarked on this new chapter of my academic journey, pursuing a Master's in Business Leadership, I am filled with immense gratitude and a deep sense of purpose. This degree represents not only a personal milestone but a testament to the unwavering support and encouragement of those closest to me.

First and foremost, I want to express my heartfelt appreciation to my husband Royal Muwirimi, for being my constant pillar of strength. Your unwavering love, patience, and understanding have been the driving force that has propelled me forward, even in the most challenging times. Thank you for believing in me and for shouldering responsibilities at home, allowing me to dedicate the necessary time and effort to my studies.

To my children, Daisy and Michael, you are the inspiration that fuels my determination. Your smiles and laughter are the beacons that guide me through the ups and downs of this journey. I hope that by pursuing this degree, I can set an example for you, demonstrating the power of perseverance and the boundless potential that lies within each of us

I also extend my sincere gratitude to my family and friends, who have cheered me on every step of the way. Your words of encouragement and the occasional helping hand have made all the difference, reminding me that I am never alone in this endeavor.

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With heartfelt appreciation,

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I thank and praise God Almighty for He is good and His love endures forever.

Abstract

The research focused on the development of a strategic system in enhancing technological adoption by SMEs for the Fourth Industrial Revolution in Zimbabwe focusing on the Graniteside in Harare. The research was of the view of the SMEs in Zimbabwe have not embraced technological adoption in the work that they do and this has limited their marketing and revenue generation. The research highlighted that through technological adoption, SMEs in other countries have immensely to the Gross National Product (GNP) and Gross Domestic Product (GDP). The research objectives of the study were as follows, to examine the perceived usefulness of technological adoption in Zimbabwean SMES, to examine how lack of Artificial Intelligence, Cloud computing, CRM and ERP affect SMEs in Zimbabwe and to explore how the CRM and ERP technological models be implemented to enhance the technological competence of SMEs in Zimbabwe. The strategic contingency theory and diffusion innovation theory were used as the theoretical frameworks for the research. The scholarly contributions were had been contributed in the past were also included in the study, which relatively brought out the knowledge gap of the research. Key variables such as artificial intelligence, cloud computing, CRM and ERP were asserted in this research. A positivism research philosophy was used in the research and a quantitative research approach which made use of a descriptive survey design. The simple systematic sampling procedure was used and 60 participants actively engaged in the research. Questionnaires were used as the research instrument for the research. SPSS was used to analyze the data which was collected and regression was used as the statistical approach to the data which was collected. The ethical considerations were also considered in this research. Data was tabulated through regression highlighting different correlations. The results collected indicated that there is a correlation between absence of technological adoption and lack of revenue generation and poor marketing strategies. The last chapter effectively reflected those conclusions and recommendations of the research to the policymakers and government officials.

Keywords: SMEs, Gross National Product, Artificial Intelligence,Cloud computing,

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List of Abbreviations

SMEs – Small Medium Enterprises

AI – Artificial Intelligence

CRM- Customer Relationship Management

ERP- Enterprise Resource Planning

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The introductory chapter of this research focused on the background analysis of the research which revolved around the inevitability of the fourth industrial revolution through the use of Artificial Intelligence (AI) and Cloud Computing. This chapter highlighted the historical analysis of SMEs and technological adoption, the obstacles, research questions, hypotheses and delimitations among other aspects.

1.2 Background of the study

The world has shifted from the traditional markets and many developing countries have embraced the presence of small medium enterprises. Many developed countries which are realizing their potential economically have embraced the prevalence of small enterprises. According to Tong and Gong (2020), SMEs are the cornerstone of Malaysia's business landscape. However, these enterprises have struggled with digitization during the COVID-19 pandemic. One cited factor for their poor performance in this area is the Movement Control Order (MCO) implemented by the Malaysian government. SMEs represent most business establishments in Malaysia, with 99% of the 920,624 business outlets falling into this category (Tong and Gong, 2020). Statistics show that SMEs employ 66.2% of the country's workforce and contribute RM 522.1 billion, or 38.3%, to Malaysia's Gross Domestic Product (GDP). The World Bank (2020) notes that Malaysian businesses have been slow to adopt technology in response to the pandemic, with only 29% having a web presence and less than 4.9% engaged in e-commerce as of 2015.

The importance of the small medium enterprises has as well been noticed in Singapore. According to Khang (2024) in Singapore, SMEs contribute to 72% of the economy and constitute to 99% of

the businesses which are in the country. 47% of the country `s GDP is contributed to by the SMEs in the country. Job creation, innovation and diversity and resilience and adaptability are some of the characteristics which characterize the SMEs. SMEs in Singapore have encountered several challenges with reference to technological adaptability and marketing through neglecting the use of artificial intelligence, cloud computing, customer relationship management (CRM) and enterprise resource planning (ERP) (Khang, 2024). According to Wang (2024) in South Korea, productivity levels of SMEs has decreased by 5.76% and this is a sharp significant decrease which has been caused by lack of evolving and embracing the contemporary technological advancements which are being made in the world. De Vos (2023) the advent of artificial intelligence through machine learning and robotics should inform the SMEs and connect them to the global world, thus increasing its clientele. The World Bank (2023) argued that most of the SMEs have remained traditional in the advent of artificial intelligence and structural flexibility has been affected, thus, globally for SMEs to continue dominating the economy of such countries as Singapore, Malaysia, Thailand , South Korea and Tanzania , there is the need for them to shift their attention to the use of technological advanced tools.

Regionally, in Africa, SMEs contribute to more than 50% of the GDP and 60% of the total employment. (Muriithi, 2017). Ethiopia, South Africa, Nigeria and Kenya are some of the countries with the largest number of SMEs in the continent. A key observation to note is that, according to International Monetary Fund (2024), South Africa has the largest Gross Domestic Product (GDP) Africa with a nominal GGP of $373.233 billion, while Nigeria is fourth with $ 252.738 billion, Ethiopia is in fifth place with a nominal GDP of $ 205.130 billion and Kenya with seven of $ 104.001 billion. These statistics are key in reflecting those countries with the largest SMEs have also the highest nominal GDP in the continent, highlighting a key correlation between SMEs and a productive economy. Chapman (2021), stipulated that SMEs in Africa, have not embraced the current changes in the technological world and this has affected their business models with particularity to marketing and market segmentation. The African Union Development Agency (AUDA) (2022) mentioned that, in sub-Saharan Africa, there are 44million SMEs and are facing dynamic challenges which are inclusive of 10-14% interest rates. Lack of technological awareness among the SMEs has made the African Union to establish, the African Union High Level Panel on Emerging Technologies (APET). The establishment of this committee highly reflect the challenges which SMEs are facing in Africa and how their potential has been minimized

by refusing to evolve technologically. Zimbabwe is one of the countries which has an increased number of SMEs, and this moved the government to solemnly dedicate a ministry for small medium enterprises. The current minister of the ministry with its facets being clearly outlined in the National Development Strategy 1 (2020-2025), as well as National Development Strategy 2 (2026-2030). According to International Trade Center (2023) SMEs in Zimbabwe contribute to about 90% of the business, 60% of the Gross Domestic Product (GDP) and 50% of the employment. This reiterates the importance of SMEs towards the Zimbabwean economy and why they should be supported because they are a vital cog in the realization of an upper -middle income economy by 2030.

1.2 Statement of the Problem

SMEs in Zimbabwe have hugely remained traditional targeting the same clientele and sluggish in growth because of not embracing technological trends. The use of Artificial Intelligence, Cloud Computing, CRM and ERP in Zimbabwean SMEs has become a perception rather than a reality. This has affected the profit trends amongst the SMEs. According to Yoon (2023) upon embracing technological advancement in the use and marketing of their business ideas, a profit was made of 3.017 trillion South Korean Won, as compared to 2.673 trillion South Koran Won. Meanwhile, according to Mutsvangwa (2024) in 2023, the SMEs contributed $US 8.6 billion dollars to the economy but castigated lack of technological advancement as hampering the potential. The challenge is that world global markets are shifting and are embracing technological challenges, hence continued growth. In juxtaposition, Zimbabwean SMEs are not thoroughly realizing their potential because of this problem, thus, the need to fully understand the predicament.

1.3 Research Objectives

I) To examine the perceived usefulness of technological adoption in Zimbabwean SMES

II) To examine how lack of Artificial Intelligence, Cloud computing, CRM and ERP affect SMEs in Zimbabwe.

III) To explore how the CRM and ERP technological models be implemented to enhance the technological competence of SMEs in Zimbabwe

1.4 Research Questions

I) What is the perceived usefulness of technological adoption in by the Zimbabwean SMES?

II) How has the lack of Artificial Intelligence, Cloud computing, CRM and ERP affect SMEs in Zimbabwe?

III) How can the CRM and ERP technological models be implemented to enhance the technological competence of SMEs in Zimbabwe?

1.5 Hypothesis

H_0: Adoption of modern technologies will streamline processes, reduce operational costs, and improve productivity.

H_1: SMEs will be better positioned to embrace emerging trends in automation, digitalization, and innovation, thus aligning with Industry 4.0 standards.

1.6 Research Assumptions

The research has many assumptions, and these are some of the assumptions which the research holds:

I) SMEs are immensely contributing to the development of the economy in Zimbabwe and the global world.

II) Artificial Intelligence, Cloud Computing, CRM and ERP have become an integral part of SMEs` success in the recent years

III) The launch of the African Union High Level Panel on Emerging Technologies (APET) highlights a key challenge which is being faced by SMEs in the continent.

IV) There are strategies such as the utilization of the CRM and ERP systems which can be used to market and increase revenue growth for the SMEs in Zimbabwe.

1.7 Justification of the research

The research is of paramount significance because a total population of 4.8 million people out of an estimated population of 16 million people in Zimbabwe are employed by the small medium enterprises. The SMEs contribute to 60% of the total Gross Domestic Product (GDP) in the country, thus they are very important to the development of the economy. The world is fast transforming while the regulators are slow-paced, hence there is the need for technological awareness amongst the key players so as to raise revenue and make sure that SMEs play an integral

part in the role in developing our country. The annual profit which is being made by Zimbabwean SMEs is way less as compared to their counterparts who have embraced digitalization.

Contemporarily, the education 5.0 model was initiated by the Zimbabwean government in 2022 unveiled the education 5.0 model asserting that the goal was to improve the socio-economic development of the country (Tshili,2022). According to Zinyemba (2023) the heritage-based education 5.0 model places greater importance on the utilization of local resources in achieving the Vision 2030, which is to make Zimbabwe a upper-middle class economy. The vision of the government is to make sure that the local people are heavily involved in production. The associated principles of the education 5.0 model are teaching, learning, community service, research, innovation and industrialization. SMEs are the cornerstone of what the Zimbabwean Government seeks to achieve, and its imprints will be relayed through this research, thus, the justification of this research

1.8 Purpose of the study

Developing a strategic system in enhancing technological adoption by SMEs for the fourth industrial revolution

The research seeks to thoroughly understand the inimical challenges faced by the SMEs in the Zimbabwean community. The research understands that SMEs in the global world are transforming due to the advent of Artificial Intelligence and its related facets. This research is of the view that SMEs in Zimbabwe are not gobbling their desired profits due to lack of technological advancements.

1.9 Significance of the study

The research will be of paramount significance to different institutions and stakeholders and some of the stakeholders who will benefit from the research include:

Ministry of Small Medium Enterprises

The ministry which is currently led by Honorable Monica Mutsvangwa will gain a deeper insight onto how the SMEs can embrace technology in the current business that they are doing and how it can help transform their livelihoods.

Information and Technology Organizations

This study effectively reflected how the Tech organizations need to initiate a drive to empower SMEs owners on why they should embrace technological changes which are contemporary.

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Limited literature has been identified in the institution`s repository, thus, this research will serve as a breath of freshness, as it will enhance research which are SMEs-Tech centered and provide the fertile knowledge for the subject matter under scrutiny.

1.10 Delimitations

The research was limited to the SMEs businesses which are in Granite side, Harare. Granite Side is an uptown market which has many SMEs which are diversified in their products. It limited my objectives in different aspects particularly the comprehension of artificial intelligence, cloud computing, CRM and ERP. The researcher had to first explain to the participants what it meant and how it is being utilized in the business arena so that they can understand.

1.11 Limitations

I) The research was limited geographically, as it focused on Granite Side SMEs, thus the reflections which were reflected in this research are those of the participants based in Granite Side

II) The research was also limited to the perceived usefulness of technology among SMEs. It limited my objectives in different aspects particularly the comprehension of artificial intelligence, cloud computing, CRM and ERP. The researcher had to first explain to the participants what it meant and how it is being utilized in the business arena so that they can understand

1.12 Organization of the Study

The chapter was the introductory chapter and was inclusive of background of study, problem statement, research questions, research hypothesis, delimitations, limitations. The chapter was reflective of the scholarly contributions which have been made in retrospect. The theoretical

frameworks and the knowledge gap were also indicated in this research. The research methodology of the study which was used was the quantitative research approach. The data analysis of the research was done in this chapter. The SPSS Version 25 and thematic analysis was used to analyze the data which was collected from the participants. The last chapter highlighted the discussions, summary and recommendations for future studies which can focus on SMEs and technological adoption.

1.13 Chapter Summary

The introductory chapter of this research focused on the background analysis of the research which revolved around the inevitability of the fourth industrial revolution through the use of Artificial Intelligence (AI) and Cloud Computing. This chapter highlighted the historical analysis of SMEs and technological adoption, the obstacles, research questions, hypotheses and delimitations among other aspects. The oncoming chapter focused on the scholarly evidence which has been contributed in relation to SMEs and technological adoption while using the funnel approach.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter paid attention to the literature review of the research which encompassed the perceived challenges which have been faced by the SMEs in relation to technological adoption. This was projected through a clear representation of global and regional, scholarly contributions. The strategic contingency theory and the Diffusion Innovation theory were used as the theoretical frameworks for the research. It is also of paramount significance to mention that the knowledge gap was also accommodated in this chapter.

2.2 Perceived Usefulness of Technological Adoption Amongst SMES

In the United States of America, SMEs have been fundamental to the growth of the economy as 17% of their Gross National Product (GNP) has been contributed to the development of the country. According to Bakar et al. (2020), when the Covid-19 pandemic emerged, the Malaysian government introduced a policy known as the Movement Control Order (MCO), which restricted movement across the country and increased the need for technological adoption. The World Health Organization's regulations emphasized the importance of minimizing physical interaction, highlighting the value of technology for SMEs. Selamat (2011) notes that SMEs in Malaysia employ over 5.6 million people, and their potential closure underscored the need for alternative solutions, such as adopting technological tools. With 518,996 SMEs in Malaysia, many of which export over 19% of their products globally, the shift to technology became essential.

According to Wang (2024), productivity levels among SMEs in South Korea have dropped by 5.76%, a notable decrease attributed to their failure to adopt and integrate contemporary technological advancements. De Vos (2023) suggests that the rise of artificial intelligence,

including machine learning and robotics, should guide SMEs to connect with the global market and expand their clientele. The World Bank (2023) notes that many SMEs have remained traditional despite the advancements in artificial intelligence, which has affected their structural flexibility. To maintain economic dominance in countries such as Singapore, Malaysia, Thailand, South Korea, and Tanzania, SMEs need to shift their focus toward utilizing advanced technological tools. Limited literature has been done on technological adoption by SMEs in Zimbabwe, hence , the quest for this research.

According to Hatfield (2020) technological devices in the United States of America were of paramount importance to the continued existence and income flows of the small medium enterprises because they provided the narrative alternative which could be used and this included online marketing, selling and ordering of goods which could be delivered in the comfort of their homes and subsequently their businesses. The fourth industrial revolution in the world has brought the need for an integrated technological system in the manner and ways in which businesses are conducting their day-to-day activities. According to Kumar (2021) technology is instrumental in the small medium enterprises as it reduced the wage bill because a lot of employees who were serving in the various departments of the businesses had to be retrenched because a job which was normally done by more than five people could now be done by one person. This can be alluded to be the usefulness of technology to the small business enterprises because it reduced the number of employees and made the small business enterprises owners that they could actually work with a limited number of employees. SMEs in Zimbabwe are usually swamped up with huge wage bills and embracing technology can be useful towards minimizing the wage expense bills.

According to Afolayan, et al, (2012) technology is very important in small medium enterprises because they can be used for the operational and strategic aspects of the business. During the Covid-19, pandemic, use of technology in both the developed and developing countries was embraced to keep the small medium enterprises afloat financially and this was one of the major uses of the technological devices to the small medium enterprises. According to Adam (2021) the survival of the small business enterprise during has largely depended on the use of technology and they must be appreciative of the role which was played by the technological world in ensuring the sustainability of the services which were being offered by the small medium enterprises, thus the usefulness of technology to the small medium enterprises in the world.

Moreover, it can be postulated that technology is useful because it saves the time of the customers

as they would order their required item, and it would be delivered ion their doorstep. Cariolle (2020) researches which have been done globally have highlighted that 75% of the customers have embraced the technological ordering of their required items as it is cost and time saving as well as very effective and efficient, thus the use of the technological devices in the small medium enterprises being embraced by the customers as an efficient way of purchasing their goods show how pivotal and vital the use of technology was to the small medium enterprises. The growth which has been related with small medium enterprise can be largely attributed to the role which has been played by the technological world as many of these small medium enterprises have gone global because of marketing their products on the internet (Akomea-Bonsu, 2012). This is also another usefulness of technology in the small medium enterprises because it has helped them to evolve and be global and their have reached market targets which they had never dreamt of in the past and this can be stated to be one of the most important uses of technology in the small medium enterprises.

2.3 Artificial Intelligence and SMEs in Zimbabwe

The technological adoption which was done by most small medium enterprises has increased their marketability and ease of doing business. World Economic Forum (2021) stated that the small business enterprises compromises of 90% of the companies which are operating in the world and seven out of the ten jobs in the world emanates from the small medium enterprises. The advent of artificial intelligence (AI), Cloud computing and CRM has been instrumental towards how SMEs are now conducting their businesses. According to the International Monetary Fund (IMF) (2021) the small medium enterprises have dismally failed in embracing the fourth industrial revolution which is inclusive of the technological facilities. Other scholars have had a negative perception of technological adoption citing that, this leads to mutual separations and downsizing as organizations can forecast that they can operate without a huge number of people (Ulas, 2019).
The bulk of the customers who prefer small medium enterprises usually prefer physical presence and appearance in selecting the commodity which they are interested in and the provision of technological adoption in the purchasing of goods reduced the numbers of customers (Rodriguez-Bustello, 2021). This is another versatile challenge which was brought up with reference to customer preference, as the argument was based on the view that the elderly customers might not be in a position of understanding artificial intelligence and cloud computing. The demographical

issues were also another segment of the customers which was hugely affected by the technological adoption. In most developing countries, it was noted that, the majority of the customers are technological illiterate and do not have the resources which are required for them to have accessibility to internet purchasing. According to Batista-Foguet , et al, (2021) data charges and mediums used for internet accessibility in many parts of the world remain very expensive and this was an effect on the business flows of the small medium enterprises. The introduction of Starlink was a joy to many souls in developing countries but it is currently failing to match the asserted standards.

The procedures and protocols which were needed to be followed in order to have access to the small medium enterprises' websites were not easily accessible and this was the effect which was caused by the technological adoption as most of the customers who had relied with the services of the small medium enterprises were left stranded. According to Du (2022) the emergency of the technological development in the small medium enterprises was not inducted as a planned approach but as a dynamic influenced by the flexible markets.

In the midst of a lethal pandemic , African countries closed their boarders with each other and this includes the most important boarder-post in the continent which is the Beitbridge boarder post and this means that the outputs which are produced in developed countries would no longer reach its market in sub-Saharan Africa, since the boarders were close and this was a negative effect of the adoption of the technological facilities because albeit they could market and even sell but the entrance of the products was completely blocked. It is important to note that in the technology acceptance model there is *p*erceived usefulness (PU) *and* Perceived Ease of Use (PEOU). The conceptual framework establishes that when technology is being incorporated into the educational system it is important to state and note of useful it will be to the learners and students because they will be innovative

Contemporarily, it is important to deduce that we are now in the 4^{th} industrial revolution which is technological and simply posits that industries are having a paradigm shift towards intensified use of technology, and this justifies the technology acceptance model. The 4^{th} industrial revolution can be best defined with specific reference to its key features which include blurring boundaries between the physical, digital, and biological worlds. It is important to state that the 4^{th} industrial revolution has brought the use of internet in all facets and spectrums of life on the planet earth and

most of its innovations are revolving around artificial intelligence and genetic engineering, autonomous vehicles, and advanced robotics. These can immensely transform the SMEs within different countries and could actually increase their innovation. The 4th industrial revolution is a chronological sequence of revolutions which have occurred in the past which started in the 18th century through the invention of the steam engine. The new revolution has placed SMEs at the centre of their strategy as they believe they have the power to transform.

According to McGinnis (2020) the founder of the Economic World Forum, Klaus Schwab who mentioned that the 4th industrial revolution had the capacity and ability to raise global income levels and raise the quality of life for most of the people in the world through the use of technology in the industries. It can be stated that, he further postulated that technological innovation will also lead to a supply-side miracle, with long-term gains in efficiency and productivity. Transportation and communication costs will drop, logistics and global supply chains will become more effective, and the cost of trade will diminish, all of which will open new markets and drive economic growth. Some of the physical key drivers include autonomous vehicles, 3D printing and advanced robotics. The majority of the companies in the world which are in the motor industry are advocating for the production of driverless cars meaning to say that very soon when the 4th industrial revolution is in full force, a rampant and robust production of cars which do not need drivers will be witnessed.

The majority of the customers in most of the developed countries are in support of the digitalization as they allude that it makes business efficient and effective, and this was supported by 76% of the customers who participated in the online survey. According to McGinns (2017) 50% of the customers also stated that the products which are advertised on the companies and organization's portals give them an indication of what they do have in store and saves a lot of time. The 4th industrial revolution is increasing competition among businesses and diffusion of customers because of a wide variety of offers which can be through the internet of all things which is also another enabler of the 4th industrial revolution, and this competition has reduced the number of customers for some of the business due to the differing exposures which the customers are being exposed to, thus the industrialization coming from the side of information technology. In Zimbabwe, the government has supported the noble cause of STEM subjects as they have indicated that they can enormously help the country to industrialize through the aid of technology, that's perceived usefulness in the technology acceptance model.

Perceived credibility is defined as the degree to which a user feels the certainty and pleasant consequences of using an electronic application service, when there is no financial risk, physical risk, functional risk, social risk, time-loss risk, opportunity cost risk, and information risk. This has been one of the credentials which has been associated with the use of information technology as it has proved to be very much secured when it comes to security, and this has promoted the use of the technological devices when it comes to business throughout the world. Perceived credibility is consisting of two important elements namely privacy and security, which directly affect consumer adaptation of electronic banking systems. PC is usually impersonal and relies on reputation, information, and economic reasoning (Ba and Pavlou,2019). Previous research has shown that security and privacy are the most concern for consumer, which have a direct or indirect influence on e-banking adoption. For example, through mobile money banking the security features of the banking cards from pin codes to fingerprints have empowered security features which are necessary, thus perceived credibility.

According to the technology acceptance model technological experience allows the direct acquisition of information, which allows individuals to gain more knowledge, and changes their existing perceptions (Min & Galle, 2017), and at the same time encourages the acquisition of new perceptions and knowledge related to Information Technology. Through the use of new technologies, the use gains new skills and experiences, which lead to accumulation of automatic behaviour tendencies over time (Liao et al., 2011*).* Perceived usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her job performance. In the industries the use of computers has made work easy for most of the people as they have provided efficiency and effectiveness Within an organizational context, people are generally reinforced for good performance by raises, promotions, bonuses, and other rewards A system high in perceived usefulness, in turn, is one for which a user believes in the existence of a positive use-performance relationship. Organizations' recruitment websites often support jobseekers with comprehensive job information including, salary information, benefits, rewards, and organizational programs. Perceiving system usefulness as antecedent of e-recruitment utilization, such as using these information and tools to enhance the effectiveness of job application, would draw the attention of many employed jobseekers into adopting the technology for job search (Tong, 2008). This shows how the technology acceptance model can be of usefulness in organizations as it enhances the recruitment processes.

Perceived ease of use, in contrast, refers to the degree to which a person believes that using a particular system would be free of effort (Venkatesh and Bala,2008). All else being equal, we claim, an application perceived to be easier to use than another is more likely to be accepted by users. The learners must be taught the different software's on the technological gadgets and must be aware of what is needed to operate them, and this becomes the commercial part of information technology. On the contrary, a complex system, that is difficult to use, is less likely to be adopted since it requires significant effort and interest on the part of the user (Teo, 2017). As perceived ease of use has an inverse relationship with the perceived complexity of use of the technology, it affects perceived usefulness. TAM thus posits that perceived usefulness is influenced by perceived ease of use Similarly, in the e-recruitment context, jobseekers would prefer the system if it were easy to use compared to other methods of job applications.

Furthermore, new technologies such as recruitment websites are complex, Thus, people form attitudes and intentions toward trying to learn to use the new technology prior to initiating efforts directed at using. According to Mayer, et al. (2019) study found that the relationship between perceived usefulness and behavioral intention was strong among goal-directed users. Consequently, this study relates PEOU to PU and PU to BI with the following hypotheses: Perceived Ease of Use (PEU) positively influences Perceived Usefulness (PU) in Recruitment adoption. Perceived Usefulness (PU) positively influences Behavioral Intention (BI) to use organization's e-recruitment website. Therefore, given empirical tested studies of modified TAM and the significant causal link among the three constructs by previous researchers, the author attempts to use Structural Equation Modelling (SEM) to test these highly validated studies with PEOU, PU, as independent variables, and BI as the dependent variable for this study. Therefore, this posits to the notion that perceived ease of use is crucial in industries as it will make people to produce quality products because the people will be well-versed with what they are supposed to do within the organization.

In expounding on the concept of perceived self-efficacy, direct experience is the strongest generator of SEF. Through direct experience, a user is able to gain important skills that allow for the development of the perception, and this can only be achieved through the education system indoctrinating the learners and students with the necessary skills required. Individuals who use internet frequently are more confident and hence more inclined to share and disclose information in other words, the research

concludes that internet users who have more experience and use internet frequently are more satisfied with it and also have a greater perceived self-efficacy (Dogaru,2020).This is the notion which the technology acceptance model hints at in illustrating the importance of self-efficacy while using the technological gadgets and this is important in innovation because when you have efficacy with something you are bound to explore and be innovative in the process and this is what actually the technological acceptance model stipulates. For example, most of the people that have founded different software's including Elon Musk ` s Starlink have emanated from individuals who had self-efficacy in using technological gadgets and this is the importance of self-efficacy in the use of information and technology. For example, if the effectiveness of an organization's web site in attracting potential employees is considered to be a crucial determinant of an organization's ability to generate qualified applicants (Willianson et al., 2017), identifying the factors that influence jobseekers' attraction to organization website has to be a high priority. This fact was highlighted by a recent study of college students reporting that 26% of students rejected potential employers from job search consideration because of the poor design of their web sites (Karr, 2000).

2.3.1 Cloud computing and SMEs in Zimbabwe

Cloud computing has emerged as a revolutionary technological advancement, offering businesses, including Small and Medium Enterprises (SMEs), the ability to store, manage, and process data over the internet. This transformation is particularly important in developing economies such as Zimbabwe, where SMEs play a pivotal role in economic development but face challenges in adopting advanced technology. Cloud computing provides SMEs with access to sophisticated IT resources without the need for hefty upfront investments in hardware, software, and infrastructure. For many SMEs in Zimbabwe, who often face financial constraints, cloud solutions offer a cost-effective way to scale operations. According to Muposi et al. (2020), cloud-based systems significantly reduce the costs of setting up and maintaining physical servers and IT infrastructure, allowing SMEs to focus more on core business functions.

Cloud computing offers SMEs the flexibility to scale their operations up or down based on business needs. As the business grows, SMEs can easily increase storage capacity, processing power, and software capabilities without overburdening their resources. This scalability is essential for SMEs in Zimbabwe, especially those in dynamic industries like agriculture, retail, and manufacturing,

where market demands may fluctuate rapidly (Chikodzi, 2021). Cloud platforms enable SMEs to collaborate more effectively with remote teams and partners, both locally and globally. This collaborative advantage is particularly significant for Zimbabwean SMEs looking to expand their reach beyond local markets. Mudzengi and Mutsvunguma (2021), cloud computing allows businesses to access data and software applications from anywhere, which helps SMEs tap into international opportunities, enhance customer service, and foster innovation.

SMEs in Zimbabwe may be concerned about data security, cloud computing offers advanced security measures that protect sensitive business information from loss, theft, or cyberattacks. Cloud providers typically use encryption, firewalls, and other security protocols to ensure data integrity. Additionally, cloud-based backup solutions provide SMEs with a way to protect critical data without the need for in-house data management, which is often expensive for SMEs in Zimbabwe (Zhou & Chin, 2020). The cost-effective nature of cloud computing in the long run, the initial setup costs (such as training, internet infrastructure, and purchasing cloud services) can be a barrier for many SMEs in Zimbabwe. Chigona (2020), the upfront cost of transitioning to cloud computing remains a significant challenge, particularly for SMEs in sectors that operate with limited capital and have low-profit margins. The adoption of cloud computing requires reliable internet access, but Zimbabwe continues to struggle with challenges related to limited bandwidth, unreliable power supply, and slow internet speeds, especially in rural areas. Muposi et al. (2020) highlight that these infrastructure issues make it difficult for many SMEs in Zimbabwe to fully leverage cloud-based services, as their productivity can be hindered by poor connectivity and downtime.

A major challenge facing SMEs in Zimbabwe is the limited technical expertise to manage and utilize cloud computing effectively. As noted by Chikodzi (2021), there is a lack of skilled IT professionals who can implement, maintain, and optimize cloud solutions for SMEs. This gap in knowledge and expertise limits the ability of SMEs to leverage the full potential of cloud computing, leading to underutilization of cloud-based tools and software. Though cloud services offer enhanced security, SMEs in Zimbabwe may still be concerned about the risks associated with data breaches, hacking, and data privacy violations. SMEs in the country, especially those in sensitive industries like healthcare and finance, might be reluctant to store data off-site due to fear of cyberattacks. According to Zhou and Chin (2020), these concerns about data security can

impede the adoption of cloud computing, especially when SMEs lack the resources to implement adequate cybersecurity measures.

The adoption of cloud computing, SMEs in Zimbabwe can gain access to the same tools and technologies as larger enterprises, thereby leveling the playing field. Cloud computing allows for the integration of advanced features such as enterprise resource planning (ERP) systems, customer relationship management (CRM) software, and data analytics, which are essential for staying competitive in the modern business landscape. SMEs can use cloud-based tools to enhance customer experiences, improve operational efficiency, and make data-driven decisions (Mudzengi & Mutsvunguma, 2021). Cloud computing offers SMEs the ability to innovate and develop new products or services without significant investment in research and development infrastructure. The availability of cloud-based tools for prototyping, simulation, and testing can help SMEs in Zimbabwe create innovative solutions and enter new markets more quickly. This aligns with findings from Muposi et al. (2020), which suggest that cloud computing enables SMEs to be more agile and responsive to changing market conditions.

Cloud computing enhances business continuity by offering reliable data backup and disaster recovery options. SMEs in Zimbabwe are particularly vulnerable to risks such as natural disasters, economic instability, and political unrest. The cloud ensures that critical business data is stored remotely and is accessible even in the event of local disruptions. According to Chikodzi (2021), this can be a vital lifeline for SMEs, ensuring that they continue operating even during challenging times. Cloud computing holds significant potential for SMEs in Zimbabwe, providing them with cost-effective, scalable, and flexible solutions to improve operational efficiency, enhance competitiveness, and innovate. However, the adoption of cloud technology is not without challenges, including high initial costs, connectivity issues, and a lack of technical expertise. To fully realize the benefits of cloud computing, SMEs in Zimbabwe must address these challenges through targeted investments in infrastructure, skill development, and cybersecurity measures. With the right support and strategies, cloud computing can be a powerful tool for driving the growth and success of SMEs in Zimbabwe.

2.3.2 CRM and ERP and SMEs in Zimbabwe

Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) systems have become critical tools for enhancing business operations and customer engagement in organizations worldwide. For Small and Medium Enterprises (SMEs) in Zimbabwe, both CRM and ERP systems can help streamline operations, improve customer service, and enhance decision-making. CRM systems are designed to help businesses manage customer interactions, improve customer satisfaction, and increase sales. CRM allows businesses to track communications, anticipate customer needs, and build long-lasting relationships with their clients. Improved Customer Relationships and Retention CRM systems enable SMEs to gather and analyze detailed customer data, which helps businesses personalize interactions and offerings. This capability can significantly improve customer satisfaction and loyalty. In Zimbabwe, where businesses compete in dynamic and price-sensitive markets, retaining customers is crucial. Mudzengi & Mutsvunguma (2021), SMEs that use CRM to understand customer preferences and needs are better positioned to offer tailored services, leading to enhanced customer retention.

Sales and Marketing Efficiency CRM systems help SMEs streamline sales and marketing activities by tracking customer interactions, segmenting customers based on behavior and preferences, and automating communication processes. This leads to more efficient marketing campaigns and better sales conversion rates. In Zimbabwe, where SMEs often struggle with limited marketing budgets, CRM systems can provide cost-effective tools for targeted marketing and customer engagement (Chikodzi, 2021). Data-Driven Decision Making by capturing detailed customer interactions and feedback, CRM systems provide SMEs with valuable insights that can inform business strategies and decision-making. Muposi et al. (2020) highlight that CRM systems give SMEs in Zimbabwe the ability to access real-time data, which helps in making informed decisions regarding product offerings, marketing strategies, and customer service improvements.

ERP systems are comprehensive software solutions that integrate various business functions such as finance, inventory management, human resources, and procurement into a single system. ERP systems help businesses automate processes, improve efficiency, and provide real-time insights into organizational performance. Streamlined Business Operations ERP systems integrate different business functions into one platform, allowing SMEs to streamline operations and reduce redundancies. In Zimbabwe, where SMEs often manage multiple tasks manually, ERP systems can simplify processes such as accounting, payroll, and inventory management. According to Muposi

et al. (2020), the adoption of ERP systems in SMEs helps businesses to reduce human errors, improve accuracy, and save time on administrative tasks.

Enhanced Data Accuracy and Decision-Making ERP systems provide SMEs with real-time data on all aspects of their business. This centralized data enables business owners and managers to make informed decisions based on accurate, up-to-date information. For SMEs in Zimbabwe, which often face challenges with data management and reporting, ERP systems can significantly improve decision-making by offering clear and comprehensive data (Chikodzi, 2021). Improved Financial Management ERP systems help SMEs in Zimbabwe manage finances more effectively by automating accounting processes, providing real-time financial reporting, and ensuring compliance with local tax regulations. According to Zhou & Chin (2020), ERP systems can improve financial transparency and help businesses track cash flows, leading to better financial planning and management. High Implementation Costs Similar to CRM systems, the implementation of ERP systems requires significant financial investment, which is a challenge for many SMEs in Zimbabwe. ERP software, especially for SMEs with fewer resources, may be expensive, including costs for customization, training, and ongoing support. Mudzengi & Mutsvunguma (2021) argue that the high costs of ERP systems discourage many SMEs in Zimbabwe from adopting them, even though the long-term benefits are clear.

Lack of Technical Expertise SMEs in Zimbabwe often lack the technical capacity to implement, operate, and maintain ERP systems. As with CRM systems, the shortage of skilled IT professionals means that businesses cannot effectively maximize the potential of ERP solutions. Chikodzi (2021) notes that the lack of training and support for SMEs impedes the successful adoption of ERP systems, leading to implementation delays or suboptimal use of the systems. Resistance to Change Many SMEs in Zimbabwe, especially family-owned businesses, tend to have entrenched management practices. The adoption of ERP systems often requires a significant change in business processes and employee roles. This cultural resistance to change can result in a reluctance to adopt ERP solutions. As noted by Zhou & Chin (2020), businesses need to foster a culture of innovation and openness to technological change to benefit from ERP systems.

Furthermore, CRM and ERP systems contribute to improved efficiency in SMEs. By automating processes and providing centralized access to data, these systems eliminate manual efforts, reduce human error, and enable employees to focus on more value-adding activities. As a result, SMEs

can operate more effectively and reduce operational costs. The integration of CRM systems enables SMEs to offer personalized services, which is crucial for customer retention in competitive markets. When combined with ERP systems, which streamline internal processes like inventory and order management, SMEs can provide faster and more accurate service to customers. This integration leads to improved customer satisfaction and better long-term business relationships.

CRM and ERP systems, although initially costly, can drive long-term growth and sustainability for SMEs in Zimbabwe. These systems offer SMEs the tools needed to scale operations, manage resources more effectively, and gain a competitive edge in an increasingly globalized economy. The adoption of CRM and ERP systems can thus contribute to the long-term viability and success of SMEs in Zimbabwe (Muposi et al., 2020). The adoption of CRM and ERP systems by SMEs in Zimbabwe holds significant potential to improve operational efficiency, enhance customer relationships, and provide strategic business insights. While the benefits of these systems are clear, challenges such as high initial costs, technical expertise gaps, and resistance to change remain significant barriers to adoption. For SMEs in Zimbabwe to fully harness the advantages of CRM and ERP systems, there is a need for investment in infrastructure, training, and a shift in organizational culture.

Shop 'n' Save, a popular retail chain in Zimbabwe, struggled with customer retention and engagement due to lack of centralized customer data and personalized services. Customers were increasingly dissatisfied with generic promotions and slow response times to inquiries, leading to a decline in repeat business, limited customer insights, poor customer retention strategies, fragmented customer data across various departments. The company decided to implement a CRM system to address these challenges. The CRM system allowed the company to store and manage detailed customer information, track purchasing behavior, and engage customers more effectively through personalized promotions and loyalty programs. Shop 'n' Save adopted a cloud-based CRM solution to minimize upfront costs and benefit from the scalability of cloud technology. The system integrated customer purchase history, preferences, and feedback into a central database, enabling customer service representatives to provide more personalized interactions.

Marketing campaigns were automated based on customer behavior data, with personalized offers sent via SMS, email, or through the company's mobile app. The personalized communication and loyalty programs improved customer satisfaction, with a notable increase in repeat customers.

Shop 'n' Save's adoption of CRM systems significantly enhanced its customer engagement and retention strategies. Despite challenges related to resistance to change and training, the company saw a tangible return on investment through improved customer loyalty and sales growth.

ZimTech Manufacturers is a medium-sized SME in Zimbabwe specializing in the production of consumer electronics. The company struggled with inefficiencies in inventory management, procurement, and financial reporting, resulting in frequent stockouts, overstocking, and difficulties in tracking financial performance. Inefficient inventory management leading to stockouts and excess inventory, lack of integration between different business functions, such as procurement, sales, and finance and manual and error-prone financial reporting. ZimTech decided to implement an ERP system to integrate its business processes and improve overall efficiency. The ERP system was selected based on its ability to manage inventory, financial reporting, procurement, and human resources all in one platform. The ERP system provided real-time data on stock levels, automating the inventory ordering process to reduce stockouts and prevent overstocking. The ERP system allowed for seamless integration between accounting, sales, and procurement, ensuring accurate financial reporting and better visibility into cash flow. The system automated the procurement process, improving supplier relationships by tracking orders and deliveries in real time. The company reduced instances of stockouts and overstocking, leading to improved customer satisfaction and optimized working capital. ZimTech's implementation of ERP significantly improved its operational efficiency, inventory management, and financial reporting. Although the high initial costs and resistance to change posed challenges, the long-term benefits, including improved productivity and cost savings, made the ERP system a worthwhile investment.

Cresta Hotels is a chain of hospitality establishments in Zimbabwe facing difficulties in managing customer relationships and integrating operational processes across its various branches. The company wanted to enhance customer service and streamline its operations, fragmented customer service across different hotel branches, lack of integrated operations between the front desk, housekeeping, and financial departments and limited access to real-time data for decision-making. Cresta Hotels implemented both CRM and ERP systems to enhance customer service and operational efficiency. The CRM system was used to track guest preferences, reservations, and

feedback, while the ERP system integrated financial management, HR, procurement, and inventory management across all hotel branches. Cresta Hotels' adoption of CRM and ERP systems resulted in significant improvements in customer service and operational efficiency. Despite challenges related to cost and training, the hotel chain was able to offer a more personalized experience for guests while optimizing its operations, which translated to increased customer satisfaction and profitability.

2.6. Conceptual Framework

The adoption of technological innovations, including the latest developments in digital tools and systems, is a critical factor in the success and competitiveness of Small and Medium Enterprises (SMEs), particularly as businesses transition into the Fourth Industrial Revolution (4IR). The 4IR is marked by the integration of digital technologies such as artificial intelligence (AI), cloud computing, the Internet of Things (IoT), and automation into business processes, which presents both opportunities and challenges for SMEs in Zimbabwe.

The conceptual framework for technological adoption by SMEs can be grounded in Technology Acceptance Model (TAM), Diffusion of Innovations (DOI) Theory (Rogers, 2003), and the Resource-Based View (RBV) (Barney, 2023). These theories provide a comprehensive understanding of how SMEs adopt technological innovations, the factors influencing their decision-making, and the internal resources necessary for successful adoption. Technology Acceptance Model (TAM) TAM proposes that the perceived ease of use and perceived usefulness of a technology are the primary factors that influence its adoption. For SMEs in Harare's Granite Side, the adoption of technological solutions for the 4IR will depend on whether business owners and employees believe that the technologies are easy to use and will bring tangible benefits such as cost savings, increased productivity, or customer satisfaction.

Diffusion of Innovations (DOI) Theory Rogers (2003) suggests that the adoption of new technologies is influenced by factors such as relative advantage, compatibility, complexity, trialability, and observability. These factors shape how innovations spread within a community or organization. SMEs in Granite Side will be more likely to adopt new technologies if they perceive them as advantageous, compatible with their existing practices, and not overly complex. Resource-Based View (RBV) The RBV emphasizes the importance of internal resources, such as financial capital, human resources, and organizational knowledge, in enabling firms to adopt and benefit

from technological innovations (Barney, 2023). For SMEs in Harare, the ability to access adequate resources for training, implementation, and maintenance of new technologies will be a significant determinant of successful technology adoption.

Moreover, awareness of new technologies and their potential benefits is a key driver of adoption. SMEs that are informed about 4IR technologies, such as AI, cloud computing, and automation, are more likely to integrate them into their business operations (Turi et al., 2020). Globalization and increasing competition force SMEs to innovate and adopt technologies to stay competitive (Kraemer-Mbula et al., 2013). In Granite Side, SMEs will need to invest in digital solutions to compete effectively with larger firms and international businesses. The demand for better, faster, and more efficient services pushes SMEs to adopt digital technologies that can meet these expectations (Choudhury & Hossain, 2020). Customer expectations in Harare will influence SMEs to incorporate digital systems for order processing, communication, and feedback. Access to capital is one of the primary barriers to the adoption of new technologies in SMEs (Makina, 2021). Many SMEs in Harare operate on tight budgets and may find it difficult to invest in the infrastructure needed for 4IR technologies.

The shortage of skilled workers, particularly those with expertise in IT and digital tools, can delay or prevent the implementation of advanced technologies in SMEs (Mutandwa et al., 2021). Without proper training and skilled personnel, the adoption of technology may not be fully effective. SMEs often face internal resistance to technological change from employees and management, especially when traditional methods have been used for many years (Saka & Adebiyi, 2020). Organizational culture can be a significant barrier to adopting new technologies. In some regions of Zimbabwe, limited access to reliable internet and electricity can inhibit the adoption of cloud-based systems and other digital solutions (Chitungo et al., 2020). This is particularly relevant for SMEs in areas like Granite Side, where infrastructure challenges persist. This conceptual framework provided a comprehensive approach to understanding the factors that influence the adoption of technological innovations by SMEs in Granite Side, Harare. The drivers and barriers to adoption and developing a strategic system that includes capacity building, partnerships, and financial support, SMEs can successfully integrate 4IR technologies into their operations. This will not only help enhance their competitiveness but also position them to thrive in the evolving digital economy.

2. 7 Knowledge Gap

Developed countries which has thriving SMEs have managed to do so on the basis of embracing technological adoption. This has been the gap which has been noticed in the SMEs which are in developing countries is that their SMEs are not embracing technological advancements in utilizing the products which they are selling, and this has significantly affected their sales and growth. The importance of the SMEs is that, globally, many countries have embraced SMEs as they immensely contribute to a country`s Gross Domestic Product) GDP), hence, proper utilization of technological tools in the SMEs industry can propel, Zimbabwe into an upper middle-income economy by 2030.

2.8 Theoretical Framework on Technological Adoption (DV) on SMEs

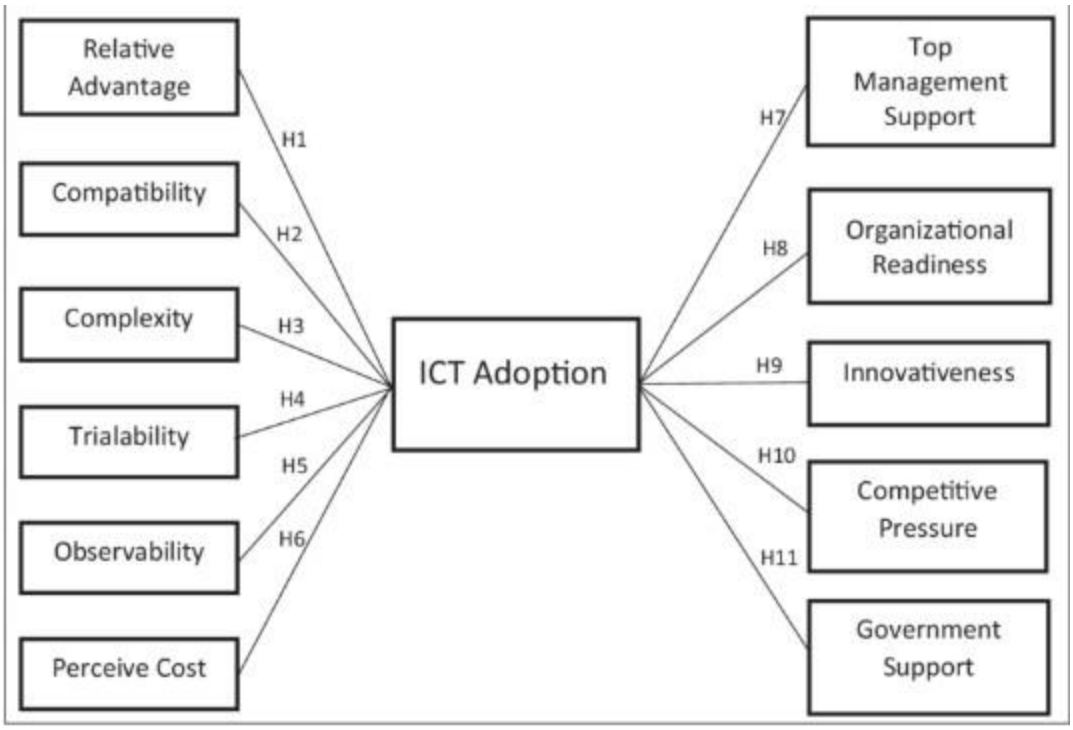


Fig 2.1 (Source: Shahadat, Technological Adoption Framework, 2023)

The independent variable in this research was the adoption of the small medium enterprise (SMEs) as it was influenced by the dependent variable. The dependent variable to the research was the technological facilities, as it could not be manipulated in any way by the socio-ecological factors. The diffusion innovation theory was used to clearly highlight how technological advancements are made and it stated that in any case they will be a predominant factor which will be determining and forcing all the five types and groups of people to accommodate technological changes. The small medium enterprise (SMEs) was the independent variable.

According to Tech Collective (2022) the introduction of the pandemic and its regulations meant that the normal way of conducting business had been ceased thus the small medium enterprises being independent on technological facilities for the continuity of their business. This was reflected by the accommodation of the innovation theory which alluded that whenever there is the need for technological accommodation there are five types of people which are witnessed and these included innovators, early adopters, early majority, late majority and laggards. Therefore, this shows that the dependent variable which correlated with the innovation theory was the adoption of the technological facilities.

According to Pasha (2021) the technological adoption can be classified as a dependent variable because it was a natural phenomenon, thus all the other variables were independent. Therefore, these were the independent variables and dependent variables in this research. It can also be stated that small medium enterprises (SMEs) can also be categorized as an independent variable to the different levels of operation. The strategic contingency theory was instrumental to the research because it stipulated that the independent variable could force the organization into changing its organizational culture and values to suit the directives stipulated by the independent variable, thus technological adoption by the small medium enterprises (SMEs).

2.9 Definition of Key Terms

SMEs – stands for Small and Medium-sized Enterprises. This term is used to describe businesses that are smaller in scale compared to large corporations. The classification of SMEs can vary by country and organization, but generally, it is based on criteria such as the number of employees, annual revenue, or total assets.

Technological Adoption – refers to the process by which individuals, organizations, or societies begin to use and integrate new technologies into their operations, practices, or daily lives. It involves not only the decision to start using a technology but also the subsequent implementation and integration of that technology.

Artificial Intelligence- the field of study and technology concerned with creating systems or machines that exhibit human-like intelligence. This encompasses the development of algorithms and computational models that enable machines to perform tasks that typically require human intelligence.

Cloud Computing – it is the delivery of computing resources such as servers, storage, databases, networking, software, and analytics over the internet. It enables on-demand access to these resources with flexible scaling, pay-as-you-go pricing, and remote management. Cloud computing facilitates the efficient and scalable provision of IT services, often categorized into service models

(Infrastructure as a Service, Platform as a Service, Software as a Service) and deployment models (public, private, hybrid).

2.10 Theoretical Framework

2.10.1 The Strategic Contingency Theory

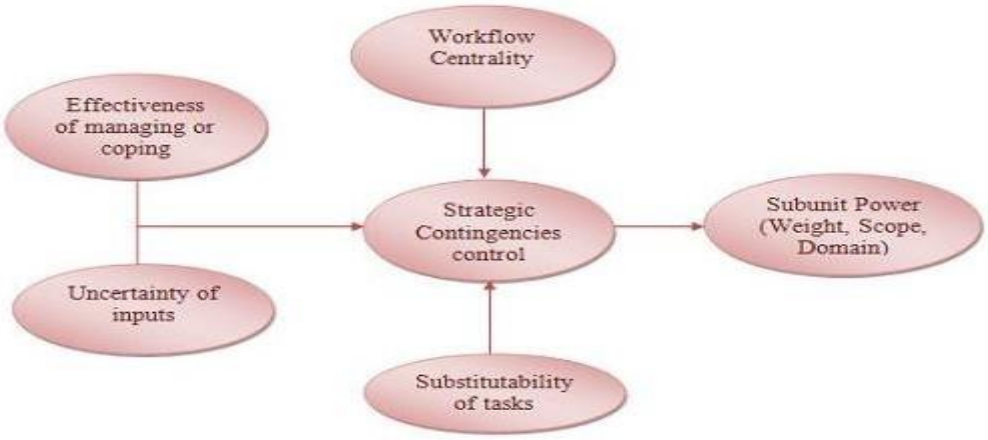


Fig 2.3 (Source: Bakar, et al, 2020)

The research utilized the strategic contingency theory to examine the impact of technology on SMEs. This theory focuses on the relationship between an organization's values and the dominant environmental factors. In other words, an organization's mission, vision, and values must align with external forces to achieve the desired outcomes, leading to higher productivity. According to the strategic contingency theory, environmental factors require effective management, centralization of workflow, and task substitutability. These elements are implemented within the organization, taking into account the specific conditions of the business environment.

2.10.2 Diffusion Innovation Theory

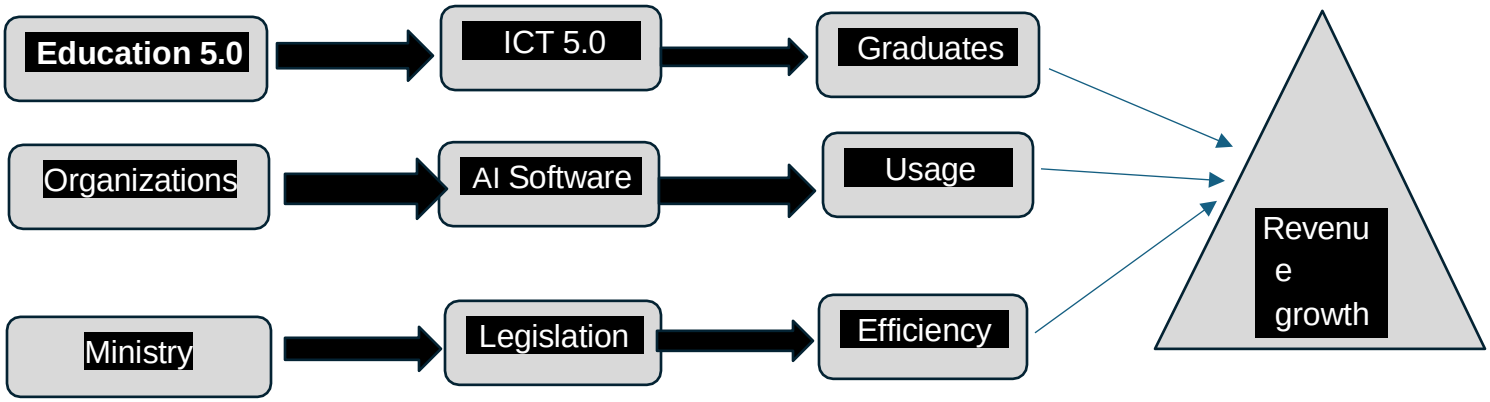


Fig 2.4 (Source: Selemat, Law of Diffusions Innovation, 2011)

This research incorporated the diffusion of innovation theory, which focuses on how new technological advancements spread across various organizations and cultures. The theory examines the rate at which these technological changes are adopted by different groups. According to the diffusion of innovation theory, there are five key categories of adopters within organizations: innovators, early adopters, early majority, late majority, and laggards. Innovators are the individuals who introduce new ideas into society. The study suggests that SMEs in Zimbabwe should take on the role of innovators, driving necessary change in the country.

2.11 Conceptual Framework on the SMEs

2.11.1 Zimbabwean SMEs Three Stage TECHNO-SMART Approach



The Zimbabwean SMEs three stage techno-smart approach emanated from the SMART approach which illustrates that goals should be Specific, Measurable, Attainable, Realistic and Timebound. The researches which were done, combined with the literature review which was done highlighted that the integration of ICT in the Zimbabwean SMEs needs a multifaceted approach which includes the key alignment of the Education 5.0, SMEs organizations and the Ministry of SMEs in the country. The three phased approach connotes the primary, secondary and tertiary intervention at all levels of society which resembles Bronfenbrenner's socio-ecological theory. The second stage is mainly concerned with processing with a reference to training while the third stage highlights the outcomes of the processes, with the final outcome being the desired impact which is revenue growth

2. 11 Chapter Summary

The chapter highlighted the available scholarly contributions which have been made on the nexus between technological adoption and SMEs in Zimbabwe. The funnel approach was used in the research to posit more on the global trends of artificial intelligence, cloud computing and CRM and how they can be integrated into the small medium enterprises. The strategic contingency theory and diffusion innovation theory were used as the theoretical frameworks of the research. The next chapter focused on the research methodology and the different techniques which were used to access the participant`s feedback on technological adoption in the SMEs industry.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter projected the research techniques which were accommodated to fully understand the different views of the participants with reference to the subject matter at hand which is technological adoption and the SMEs. The research used the quantitative approach and descriptive survey which then informed the sampling procedures, research instruments and data analysis.

3.1 Main Objective and Main Question

Enhancing technological adoption by SMEs for the fourth industrial revolution.

3.1 Research Philosophy

Positivism is a research philosophy rooted in the belief that reality is objective and can be measured and observed through empirical data and this was the reason why it was made use of in this research. This philosophy emphasizes the use of scientific methods to gather quantitative data, relying on observable facts, patterns, and laws. According to Creswell (2017) the philosophy assumes that the social world operates according to universal laws, much like the natural world, and that these laws can be uncovered through systematic observation and analysis.

The adoption of technology by small and medium-sized enterprises (SMEs), positivism offers a useful framework for understanding the empirical and measurable factors that influence such decisions. Positivism, as a research philosophy, focuses on the idea that knowledge is derived from observable, empirical data and that social phenomena can be studied in an objective and scientific manner (Bryman, 2016). The positivist approach emphasizes the importance of quantifying these factors through objective, measurable data. A researcher studying technological adoption in SMEs might measure variables such as the speed of adoption, the number of employees trained on the new system, or the level of productivity improvement after implementation (Venkatesh et al., 2014).

3.2 Research Approach

A balanced perspective on technological adoption by small and medium enterprises (SMEs) in Zimbabwe requires a quantitative approach. This approach was used to collect and present data statistically. According to Creswell (2017), quantitative research is grounded in an ontological perspective, focusing on the nature of reality. This approach was particularly valuable for the study, as it provided a clear understanding of technology adoption within Zimbabwean SMEs. Quantitative research is well-suited for comparing variables, using tools like Pearson's correlation coefficient and regression analysis to explore relationships between them (Bhandari, 2020). Babbie (2016) notes that quantitative research often involves larger sample sizes, helping to reduce bias and offer a more comprehensive understanding of the phenomena being studied. The use of tables, graphs, and pie charts is crucial in the quantitative approach, making it ideal for examining statistical data on the need for technological flexibility.

3.2 Research Design

The research adopted a descriptive survey design from a quantitative perspective. According to Nassaji (2015), this design is used to compare variables, such as the need to adopt current technological trends. The main feature of this design is its emphasis on observing and describing variables. Hurgler (2017) also supports that the descriptive survey was the primary research design employed. This approach facilitated a deeper understanding of the variables present within SMEs.

3.3 Target Population

The target population for this research was divided into two categories. In quantitative terms, the research aimed to include 600 participants. According to McLeod (2019), a target population refers to the total number of participants anticipated to take part in a study.

3.4 Procedure

3.4.1 Simple Systematic Sampling Procedure

In quantitative research, the interval period plays a crucial role in the systematic sampling process. Thomas (2020) explains that simple systematic sampling involves selecting participants in an organized and structured manner, rather than randomly or arbitrarily. For example, participants may be chosen following a specific pattern, such as selecting every nth individual, whether they are even or odd numbered. This method is particularly effective when the researcher lacks background information about the participants, as was the case in this study. The participants in this research were individuals working in or owning SMEs in Zimbabwe, with no prior information available to the researcher. Age was used as the interval for participant selection, making systematic sampling an ideal choice for this study due to its chronological selection process.

3.5 Research Instruments

3.5.1 Questionnaires

Quantitatively, questionnaires were distributed to individuals working in small and medium enterprises (SMEs). According to Doyle (2019), one of the key advantages of questionnaires is that they allow respondents to answer at their own pace, without feeling rushed, which increases their effectiveness. Questionnaires are particularly scalable among research instruments (Creswell, 2018). Debois (2019) emphasized that the strengths of questionnaires, including their comparability, ease of analysis, and ability to visualize data, enhance the reliability and validity of research. These benefits were the reason the researcher chose to use questionnaires in this study.

3.5.1 Dependability

The instrument could be depended upon because it created dialogue between the interviewer and the interviewee and it was open-ended meaning to highlight that the participant would be allowed to get out of the context in order for the researcher to comprehend

3.5.2 Trustworthiness

The informed consent form which was given to the participants and those who participated in the study were not tricked and forced, thus their responses were free from falsification.

3.5.3 Transferability

The external validity of the research was kept through the use of the two sampling procedures and accommodation of the ethical considerations to the study

3.6 Data Collection Procedures

The researcher obtained a research letter from the Bindura University of Science Education which she produced to the Association governing body of SMEs within Graniteside in Harare. The research letter stipulated that this research was being done solemnly for academic purposes.

3.7 Data Analysis

The data analysis tools which were used in this research differed with the research approach which was used. The quantitative approach used the SPSS version 25 to tabulate the data which it collected from the participants.

3.8 Ethical Considerations

The research adhered to ethical considerations, which are crucial for ensuring transferability, credibility, and transparency in any study (Chetty, 2016). Incorporating ethical considerations is essential for maintaining the integrity and standardization of research practices. The following ethical principles will be applied in the research.:

3.8.1 Informed Consent

Participants in the research were assured that all information they will provide will be treated with strict confidentiality and used solely for academic purposes. They will also be given an informed consent form to complete, which will confirm that their participation was voluntary and that they had not been pressured or coerced into taking part in the study.

3.8.2 Pseudonyms

The researcher was to take measures to protect the participants' identities by using pseudonyms in the data presentation. This approach will ensure that the real identities of the participants remain confidential.

3.8.3 Withdrawal

The participants in the research were be allowed to withdraw from the research once they feel that the nature of the questions being asked are sensitive.

3.9 Chapter Summary

The study highlighted the research techniques which were accommodated to fully understand the different views of the participants with reference to the subject matter at hand which is technological adoption and the SMEs. The research used the sequential mixed methods approach and descriptive survey which then informed the sampling procedures, research instruments and data analysis.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

The quest of this research is to highlight more on the adoption of digital technology by the SMEs in Zimbabwe. The research used the quantitative approach which was inclusive of the quantitative and qualitative research method. The SPSS data analysis and thematic analysis was used to analyze the results.

4.2 Questionnaire Response Rate

The response rate for the questionnaires administered to the participants was 100%. According to Harnett and Murphy (2012), the response rate refers to the proportion of participants who not only completed the questionnaire but also returned them. A total of 60 questionnaires were distributed, and all were successfully returned, resulting in a 100% response rate.

PARTICIPANT CATEGORY	NUMBER OF QUESTIONS DISTRIBUTED	NUMBER OF QUESTIONNAIRES RETURNED	QUESTIONNAIRE RESPONSE RATE
Participants	60	60	100%
Total	60	60	100%

Table 4.1 Questionnaire response rate **(Source Primary Data: 2024)**

4.2.1 Participants gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	30	50.0	50.0	50.0
	Male	30	50.0	50.0	100.0
	Total	60	100.0	100.0	

Source: *Fieldwork IBM® SPSS® version 25 computations*

The quantitative data collected in the research included responses from 30 males and 30 females, who answered the questions on the questionnaires provided by the researcher. The 60 participants (100%) were evenly distributed between males and females.

4.2.2 Participants Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	8	13.3	13.3	13.3
	26-45	35	58.3	58.3	71.7
	46-70	17	28.3	28.3	100.0
	Total	60	100.0	100.0	

Source: *Fieldwork IBM® SPSS® version 25 computations*

The first age group consisted of participants aged 18-25, making up 13% of the total population. The second group, aged 26-45, included 35 participants, representing 58%. The remaining participants were in the 46-70 age range, accounting for 28% of the sample.

4.2.4 Educational Level

highest educational qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	36	60.0	60.0	60.0
	College	22	36.7	36.7	96.7
	Post-Grad	2	3.3	3.3	100.0
	Total	60	100.0	100.0	

Source: *Fieldwork IBM® SPSS® version 25 computations*

The researcher asserted that the level of education of the individuals in the SMEs was very much important because someone with a secondary qualification cannot understand in the manner which it is understood by a graduate. 60% of the pharmacy personnel had pharmacy certificates while 36% of them had college degrees while 3% of them had post grads.

4.3 Statistical Data Analysis

The reliability and validity of the research was done using Cronbach's alpha. **The** IBM® SPSS® version 25 was used to analyses the quantitative data of the research. The scaling of the Cronbach's alpha was at 0.87 which exceeds 70% which is the standard measurement.

4.4 Zimbabwean SMEs to adopt the use of technology

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Regression

Notes

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Descriptive Statistics

	Mean	Std. Deviation	N
VAR00006	3.9333	1.23325	60
VAR00013	3.4167	1.38137	60

Correlations

		VAR00006	VAR00013
Pearson Correlation	VAR00006	1.000	.056
	VAR00013	.056	1.000

Sig. (1-tailed)	VAR00006	.	.334
	VAR00013	.334	.
N	VAR00006	60	60
	VAR00013	60	60

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
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a. Dependent Variable: VAR00006

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.056[a]	.003	-.014	1.24186	.003	.185

4

Model Summary

Model	Change Statistics		
	df1	df2	Sig. F Change
1	1[a]	58	.669

a. Predictors: (Constant), VAR00013

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.285	1	.285	.185	.669[b]
	Residual	89.448	58	1.542		
	Total	89.733	59			

a. Dependent Variable: VAR00006

b. Predictors: (Constant), VAR00013

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.761	.431		8.731	.00
	VAR00013	.050	.117	.056	.430	.66

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations	
		Lower Bound	Upper Bound	Zero-order	Partial
1	(Constant)	2.899	4.624		
	VAR00013	-.184	.285	.056	.056

a. Dependent Variable: VAR00006

Descriptive Statistics

Mean and Standard Deviation

VAR00006 (Dependent Variable): The mean value is **3.9333** with a standard deviation of **1.23325**. This indicates that the average value of the dependent variable is approximately 3.93, with some variation around this average.

VAR00013 (Independent Variable): The mean value is **3.4167** with a standard deviation of **1.38137**. The independent variable also shows some variation around its mean, with a value closer to 3.42.

Correlation

Pearson Correlation

The correlation between VAR00006 and VAR00013 is **0.056**, which indicates a very weak positive relationship between the two variables

The **significance (Sig.)** of the correlation is **0.334** (one-tailed test), which is above the common significance level of **0.05**. This suggests that the correlation is not statistically significant. In other words, VAR00013 does not have a meaningful relationship with VAR00006 based on this correlation.

Model Summary

R and R-Square

The **R-value** is **0.056**, indicating a very weak relationship between the independent variable and the dependent variable.

The **R-Square** value is **0.003**, meaning that only **0.3%** of the variance in the dependent variable (VAR00006) is explained by the independent variable (VAR00013). This suggests that the independent variable is not a strong predictor of the dependent variable.

The **Adjusted R-Square** value of **-0.014** is negative, which further suggests that the independent variable does not contribute to explaining the variance in the dependent variable when adjusting for the number of predictors.

Standard Error of the Estimate

The **Standard Error** is **1.24186**, which indicates the average distance that the observed values fall from the regression line. This relatively high value suggests that the model does not fit the data particularly well.

ANOVA (Analysis of Variance)

The F-statistic is 0.185, with a significance level of 0.669.

The **p-value** for the F-test is much greater than 0.05 (0.669), indicating that the model does not explain a significant portion of the variation in the dependent variable. This further confirms the lack of a strong relationship between the variables.

Coefficients

Unstandardized Coefficients:

The intercept (Constant) is **3.761**, which represents the predicted value of VAR00006 when VAR00013 is 0.

The coefficient for VAR00013 is **0.050**, meaning that for each one-unit increase in VAR00013, the dependent variable VAR00006 increases by 0.050 units. However, this effect is not statistically significant.

Standardized Coefficients (Beta)

The Beta coefficient for VAR00013 is **0.056**, which is very small. This suggests that the independent variable has a very weak impact on the dependent variable.

Significance (p-value):

The p-value for VAR00013 is **0.669**, which is far above the commonly used threshold of 0.05 for statistical significance. This indicates that VAR00013 does not have a significant effect on VAR00006 in this model.

Confidence Interval for B:

The confidence interval for the coefficient of VAR00013 is from **-0.184 to 0.285**, which includes zero. This further suggests that the true effect of VAR00013 could be zero, providing more evidence that it does not significantly influence the dependent variable. There is a very weak and

statistically insignificant relationship between VAR00013 (the independent variable) and VAR00006 (the dependent variable). The correlation is weak, and the regression model explains only a very small portion of the variance in the dependent variable.

4.4.2 Technological adoption and Revenue income

Regression

Notes

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Descriptive Statistics

	Mean	Std. Deviation	N
VAR00006	3.9333	1.23325	60
VAR00010	3.7000	1.30579	60

Correlations

		VAR00006	VAR00010
Pearson Correlation	VAR00006	1.000	.398
	VAR00010	.398	1.000
Sig. (1-tailed)	VAR00006	.	.001
	VAR00010	.001	.
N	VAR00006	60	60
	VAR00010	60	60

Variables Entered/Removed[a]

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a. Dependent Variable: VAR00006

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.398[a]	.158	.144	1.14116

a. Predictors: (Constant), VAR00010

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.203	1	14.203	10.907	.002[b]
	Residual	75.530	58	1.302		
	Total	89.733	59			

a. Dependent Variable: VAR00006

b. Predictors: (Constant), VAR00010

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.543	.446		5.702	.000
	VAR00010	.376	.114	.398	3.303	.002

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	1.650	3.436			
	VAR00010	.148	.603	.398	.398	.398

a. Dependent Variable: VAR00006

Coefficient Correlations[a]

Model	VAR00010

1	Correlations	VAR00010	1.000
	Covariances	VAR00010	.013

a. Dependent Variable: VAR00006

Analysis of Regression Results

Descriptive Statistics

Mean and Standard Deviation

VAR00006 (Dependent Variable): The mean value is **3.9333** with a standard deviation of **1.23325**. This indicates that the average value for VAR00006 is close to 3.93, with some variability (measured by the standard deviation).

VAR00010 (Independent Variable): The mean value for VAR00010 is **3.7000**, with a standard deviation of **1.30579**, showing that there is variability in the independent variable as well.

Correlation

Pearson Correlation

The Pearson correlation between VAR00006 and VAR00010 is **0.398**, indicating a moderate positive relationship between the two variables. This suggests that as VAR00010 increases, VAR00006 tends to increase as well, but the relationship is not very strong.

The **significance (Sig.)** of the correlation is **0.001** (1-tailed), which is less than the commonly used significance level of **0.05**. This indicates that the correlation between VAR00006 and VAR00010 is statistically significant, suggesting that the independent variable does have an effect on the dependent variable.

Model Summary

R and R-Square

The **R-value** is **0.398**, suggesting a moderate relationship between the independent variable (VAR00010) and the dependent variable (VAR00006).

The **R-Square** value is **0.158**, meaning that **15.8%** of the variance in VAR00006 can be explained by VAR00010. While this is not a very high R-Square value, it still indicates that VAR00010 has a meaningful, though not dominant, effect on the dependent variable.

The Adjusted R-Square value of **0.144** adjusts for the number of predictors in the model, and it is still relatively low, suggesting that while VAR00010 contributes to explaining the variance in VAR00006, there are other factors not included in the model that likely play a significant role.

Standard Error of the Estimate

The Standard Error is **1.14116**, which indicates the average distance that observed values fall from the regression line. This is relatively moderate and suggests some variability in the predictions, but the model does provide reasonable predictions overall.

ANOVA (Analysis of Variance)

The F-statistic is **10.907**, and the **p-value (Sig.)** is **0.002**, which is less than the typical threshold of **0.05**. This indicates that the overall regression model is statistically significant, meaning that at least one of the independent variables (in this case, VAR00010) explains a significant portion of the variation in the dependent variable (VAR00006).

The Sum of Squares for the regression is **14.203**, and the residual sum of squares is **75.530**, which reflects the unexplained variance in the dependent variable after accounting for the effect of VAR00010.

Coefficients

Unstandardized Coefficients:

The intercept (Constant) is **2.543**, which is the predicted value of VAR00006 when VAR00010 is equal to zero.

The coefficient for **VAR00010** is **0.376**, meaning that for each unit increase in VAR00010, the dependent variable VAR00006 is expected to increase by **0.376 units**.

Standardized Coefficients (Beta)

The **Beta coefficient** for VAR00010 is **0.398**, which suggests that VAR00010 has a moderate effect on VAR00006. This indicates that VAR00010 is a fairly important predictor of VAR00006, though it is not the only factor at play.

Significance (p-value)

The **p-value** for VAR00010 is **0.002**, which is less than **0.05**, indicating that the effect of VAR00010 on VAR00006 is statistically significant. This means that VAR00010 has a meaningful influence on VAR00006, and the relationship is unlikely to be due to chance.

Confidence Interval for B

The **95%** Confidence Interval for the coefficient of VAR00010 ranges from **0.148 to 0.603**. This interval does not include zero, which further suggests that VAR00010 has a statistically significant effect on VAR00006. We can be 95% confident that the true value of the coefficient lies within this range.

Correlation of Coefficients

The correlation between VAR00010 and itself is 1.000, which is expected as it is the same variable. The covariance is **0.013**, indicating a small positive relationship between the variables. VAR00010 has a statistically significant and moderate impact on VAR00006. While the model explains only a modest portion of the variance in the dependent variable, it highlights the importance of VAR00010 as a predictor and suggests that further investigation with additional variables could improve the model's explanatory power.

4.4.3 Absence of artificial intelligence , Cloud Computing and ERP systems of business

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Regression

Notes

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Descriptive Statistics

	Mean	Std. Deviation	N
VAR00007	3.8500	1.03866	60
VAR00011	3.8833	1.23634	60

Correlations

		VAR00007	VAR00011
Pearson Correlation	VAR00007	1.000	-.014
	VAR00011	-.014	1.000
Sig. (1-tailed)	VAR00007	.	.458
	VAR00011	.458	.
N	VAR00007	60	60
	VAR00011	60	60

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
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a. Dependent Variable: VAR00007

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.014[a]	.000	-.017	1.04747

a. Predictors: (Constant), VAR00011

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.012	1	.012	.011	.916[b]
	Residual	63.638	58	1.097		
	Total	63.650	59			

a. Dependent Variable: VAR00007

b. Predictors: (Constant), VAR00011

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	3.895	.449		8.672	.000
	VAR00011	-.012	.110	-.014	-.106	.916

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	2.996	4.794			
	VAR00011	-.232	.209	-.014	-.014	-.014

a. Dependent Variable: VAR00007

Coefficient Correlations[a]

Model			VAR00011
1	Correlations	VAR00011	1.000
	Covariances	VAR00011	.012

a. Dependent Variable: VAR00007

Analysis of Regression Results

Descriptive Statistics:

Mean and Standard Deviation:

VAR00007 (Dependent Variable) has a mean of 3.8500 with a standard deviation of 1.03866, indicating moderate variability in the data.

VAR00011 (Independent Variable) has a mean of 3.8833 with a standard deviation of 1.23634, showing some variability in the independent variable as well.

Correlation

Pearson Correlation

The correlation coefficient between VAR00007 and VAR00011 is -0.014, which is very close to zero, indicating a very weak negative relationship between the two variables. This suggests that changes in VAR00011 do not significantly correlate with changes in VAR00007.

The significance (Sig.) value is 0.458 (1-tailed), which is much higher than the typical threshold of 0.05. This means the correlation between VAR00007 and VAR00011 is not statistically significant, implying no meaningful linear relationship exists between the variables.

Model Summary

R and R-Square

The R-value is 0.014, indicating an extremely weak relationship between VAR00011 and VAR00007.

The R-Square is 0.000, meaning that 0% of the variance in the dependent variable VAR00007 can be explained by the independent variable VAR00011. This suggests that VAR00011 is not a useful predictor of VAR00007.

The Adjusted R-Square value is -0.017, which accounts for the number of predictors and sample size. A negative value here indicates that the inclusion of VAR00011 in the model actually worsens the fit of the model, reinforcing the idea that it does not meaningfully explain the variance in VAR00007.

Standard Error of the Estimate

The Standard Error of 1.04747 suggests that the model's predictions deviate, on average, by around 1.05 units from the observed values. Given the weak relationship between the independent and dependent variables, this error is relatively high.

ANOVA (Analysis of Variance)

The F-statistic is 0.011, and the p-value (Sig.) is 0.916, which is much greater than the significance level of 0.05. This indicates that the overall model does not explain a statistically significant amount of the variance in VAR00007.

The Sum of Squares for the regression is 0.012, which is extremely small compared to the residual sum of squares (63.638), further confirming that the model does not account for any meaningful variation in the dependent variable.

Coefficients

Unstandardized Coefficients

The intercept (Constant) is 3.895, which represents the predicted value of VAR00007 when VAR00011 equals zero.

The coefficient for VAR00011 is -0.012, meaning that for each unit increase in VAR00011, the dependent variable VAR00007 would decrease by 0.012 units. However, this is a very small effect size.

Standardized Coefficients (Beta)

The Beta coefficient for VAR00011 is -0.014, indicating an even weaker effect of VAR00011 on VAR00007. This suggests that VAR00011 does not have a significant influence on the dependent variable.

Significance (p-value)

The p-value for VAR00011 is 0.916, which is much greater than the common significance threshold of 0.05. This indicates that the coefficient for VAR00011 is not statistically significant and that VAR00011 does not have a meaningful effect on VAR00007.

Confidence Interval for B

The 95% Confidence Interval for the coefficient of VAR00011 ranges from -0.232 to 0.209, which includes zero. This reinforces the conclusion that VAR00011 does not have a statistically significant impact on VAR00007.

Coefficient Correlations

The correlation between VAR00011 and itself is 1.000, as expected. The covariance is 0.012, suggesting a very small positive relationship between the variables, but this is not meaningful in the context of the regression.The results suggest that VAR00011 does not have a significant impact

on VAR00007. The very weak negative correlation (-0.014) and the high p-value (0.916) imply that there is no meaningful linear relationship between the two variables.

4.4.4 Absence of artificial intelligence, Cloud Computing and ERP systems of business

Regression

Notes

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	Cases Used	Statistics are based on cases with no missing values for any variable used.

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Descriptive Statistics

	Mean	Std. Deviation	N
VAR00008	3.8833	.94046	60
VAR00012	3.4667	1.04908	60

Correlations

		VAR00008	VAR00012
Pearson Correlation	VAR00008	1.000	-.081
	VAR00012	-.081	1.000
Sig. (1-tailed)	VAR00008	.	.268
	VAR00012	.268	.
N	VAR00008	60	60
	VAR00012	60	60

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
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a. Dependent Variable: VAR00008

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.081[a]	.007	-.011	.94539

a. Predictors: (Constant), VAR00012

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.345	1	.345	.386	.537[b]
	Residual	51.838	58	.894		
	Total	52.183	59			

a. Dependent Variable: VAR00008

b. Predictors: (Constant), VAR00012

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.136	.425		9.740	.000
	VAR00012	-.073	.117	-.081	-.621	.537

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	3.286	4.986			
	VAR00012	-.308	.162	-.081	-.081	-.081

a. Dependent Variable: VAR00008

Coefficient Correlations[a]

Model			VAR00012
1	Correlations	VAR00012	1.000
	Covariances	VAR00012	.014

a. Dependent Variable: VAR00008

Analysis of Regression Results

Descriptive Statistics

Mean and Standard Deviation

VAR00008 (Dependent Variable) has a mean of 3.8833 and a standard deviation of 0.94046, indicating that the values of VAR00008 are somewhat spread out around the mean.

VAR00012 (Independent Variable) has a mean of 3.4667 with a standard deviation of 1.04908, showing that the independent variable also exhibits moderate variability.

Correlation

Pearson Correlation

The Pearson correlation between VAR00008 and VAR00012 is -0.081, which is very weak and negative. This suggests a negligible relationship between the two variables.

The significance (Sig.) value for this correlation is 0.268 (1-tailed), which is much greater than the commonly used threshold of 0.05. This indicates that the correlation is not statistically significant, further supporting the conclusion that the two variables do not have a meaningful linear relationship.

Model Summary

R and R-Square

The R-value is 0.081, which is very low and indicates a very weak relationship between VAR00012 and VAR00008.

The R-Square value is 0.007, meaning that only 0.7% of the variance in VAR00008 can be explained by VAR00012. This very low value indicates that the independent variable has little explanatory power in predicting the dependent variable.

The Adjusted R-Square value is -0.011, which is negative, suggesting that the inclusion of VAR00012 in the model actually worsens the model's fit. This indicates that VAR00012 is not a useful predictor of VAR00008.

Standard Error of the Estimate

The Standard Error of 0.94539 reflects the average distance between the observed values and the predicted values. Given the very weak relationship between the variables, the model's predictions are likely to deviate substantially from the observed values.

ANOVA (Analysis of Variance)

F-statistic

The F-statistic is 0.386, and the p-value (Sig.) is 0.537, which is much higher than the typical significance threshold of 0.05. This means that the overall regression model does not explain a statistically significant amount of the variance in VAR00008.

The Sum of Squares for regression is 0.345, which is very small relative to the residual sum of squares (51.838). This further emphasizes that VAR00012 does not explain much of the variance in VAR00008.

Coefficients

Unstandardized Coefficients

The intercept (Constant) is 4.136, which represents the predicted value of VAR00008 when VAR00012 equals zero.

The coefficient for VAR00012 is -0.073, suggesting that for every one-unit increase in VAR00012, VAR00008 decreases by 0.073 units. However, this is a very small effect and is unlikely to be meaningful.

Standardized Coefficients (Beta)

The Beta coefficient for VAR00012 is -0.081, indicating an even weaker effect of VAR00012 on VAR00008.

Significance (p-value)

The p-value for VAR00012 is 0.537, which is much higher than the typical significance threshold of 0.05. This means that VAR00012 does not have a statistically significant impact on VAR00008.

Confidence Interval for B

The 95% Confidence Interval for the coefficient of VAR00012 ranges from -0.308 to 0.162, which includes zero. This further suggests that the coefficient for VAR00012 is not significantly different from zero, reinforcing the lack of a meaningful relationship between the independent and dependent variables.

Coefficient Correlations

The correlation between VAR00012 and itself is 1.000, as expected. The covariance is 0.014, which is very small and does not indicate any significant relationship. The results show that VAR00012 does not have a significant effect on VAR00008. The very weak negative correlation (-0.081) and the high p-value (0.537) indicate that there is no meaningful linear relationship between these two variables.

4.4.5 Integration of the contemporary technological trends into the Zimbabwean SMEs

Regression

Notes

Output Created		24-NOV-2024 20:10:29
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Input	Active Dataset	DataSet0
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	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /DESCRIPTIVES MEAN STDDEV CORR SIG N /MISSING LISTWISE /STATISTICS COEFF OUTS CI(95) BCOV R ANOVA ZPP /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT VAR00009 /METHOD=ENTER VAR00013.
Resources	Processor Time	00:00:00.00

	Elapsed Time	00:00:00.01
	Memory Required	1700 bytes
	Additional Memory Required for Residual Plots	0 bytes

[DataSet0]

Descriptive Statistics

	Mean	Std. Deviation	N
VAR00009	4.2167	.90370	60
VAR00013	3.4167	1.38137	60

Correlations

		VAR00009	VAR00013
Pearson Correlation	VAR00009	1.000	-.209
	VAR00013	-.209	1.000
Sig. (1-tailed)	VAR00009	.	.054
	VAR00013	.054	.
N	VAR00009	60	60
	VAR00013	60	60

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	VAR00013[b]	.	Enter

a. Dependent Variable: VAR00009

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.209[a]	.044	.027	.89126

a. Predictors: (Constant), VAR00013

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.111	1	2.111	2.658	.108[b]
	Residual	46.072	58	.794		
	Total	48.183	59			

a. Dependent Variable: VAR00009

b. Predictors: (Constant), VAR00013

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.685	.309		15.151	.000
	VAR00013	-.137	.084	-.209	-1.630	.108

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	4.066	5.303			
	VAR00013	-.305	.031	-.209	-.209	-.209

a. Dependent Variable: VAR00009

Coefficient Correlations[a]

Model			VAR00013
1	Correlations	VAR00013	1.000
	Covariances	VAR00013	.007

a. Dependent Variable: VAR00009

Analysis of Regression Results

Descriptive Statistics

Mean and Standard Deviation

VAR00009 (Dependent Variable) has a mean of 4.2167 and a standard deviation of 0.90370, which shows moderate variation around the mean.

VAR00013 (Independent Variable) has a mean of 3.4167 with a standard deviation of 1.38137, indicating relatively higher variability compared to VAR00009.

Correlation

Pearson Correlation

The Pearson correlation between VAR00009 and VAR00013 is -0.209, suggesting a weak negative relationship. This indicates that as VAR00013 increases, VAR00009 tends to decrease, but the relationship is not strong.

The significance (Sig.) value for this correlation is 0.054 (1-tailed), which is very close to the threshold of 0.05. While this value suggests a marginally non-significant correlation, it indicates a trend worth noting.

Model Summary

R and R-Square

The R-value is 0.209, indicating a weak relationship between VAR00013 and VAR00009.

The R-Square value is 0.044, meaning that only 4.4% of the variance in VAR00009 can be explained by VAR00013. This very low value suggests that VAR00013 is not a strong predictor of VAR00009.

The Adjusted R-Square value is 0.027, which is also low, indicating that the inclusion of VAR00013 in the model provides limited explanatory power.

Standard Error of the Estimate

The Standard Error is 0.89126, which represents the average distance between the observed values and the model's predictions. Given the weak relationship, this value is relatively high, indicating that predictions from the model are not very accurate.

ANOVA (Analysis of Variance)

F-statistic

The F-statistic is 2.658, and the p-value (Sig.) is 0.108, which is greater than the typical significance threshold of 0.05. This suggests that the model does not significantly explain the variance in VAR00009, and VAR00013 is not a significant predictor.

The Sum of Squares for regression is 2.111, which is small relative to the residual sum of squares (46.072). This further indicates that VAR00013 does not account for much of the variance in VAR00009.

Coefficients

Unstandardized Coefficients

The intercept (Constant) is 4.685, which represents the predicted value of VAR00009 when VAR00013 is zero.

The coefficient for VAR00013 is -0.137, suggesting that for every one-unit increase in VAR00013, VAR00009 is predicted to decrease by 0.137 units. However, this is a small effect and likely not meaningful.

Standardized Coefficients (Beta)

The Beta coefficient for VAR00013 is -0.209, indicating a weak negative effect of VAR00013 on VAR00009.

Significance (p-value)

The p-value for VAR00013 is 0.108, which is above the typical significance threshold of 0.05, suggesting that the effect of VAR00013 on VAR00009 is not statistically significant.

Confidence Interval for B

The 95% Confidence Interval for the coefficient of VAR00013 ranges from -0.305 to 0.031, which includes zero. This further suggests that the coefficient for VAR00013 is not significantly different from zero, reinforcing the idea that VAR00013 does not have a meaningful impact on VAR00009.

Coefficient Correlations

The correlation between VAR00013 and itself is 1.000, as expected. The covariance is 0.007, which is very small and does not indicate any significant relationship.

4.6 Chapter Summary

This chapter reflected the results which were collected from the pharmaceutical stores . The IBM SPSS was used for the data analysis, since the researched used the quantitative research approach methods approach. The following chapter focused on the summary, conclusions and recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The quest of the chapter was to reflect on the findings of the fourth industrial revolution: The Development of a strategic system in enhancing technological adoption by SMEs in Zimbabwe. The knowledge gap of the research was also identified in this chapter.

5.2 Discussion of the Findings

5.2.1 The perceived usefulness of technological adoption in Zimbabwean SMES

The results which were collected in this research through using the regression analysis higly indicated the need for technological adoption in the Zimbabwean SMEs. The results which were collected by the researcher in the study showed that very few SMEs in Zimbabwe have embraced technology and this is a challenge which was witnessed in the Zimbabwe SMEs. The perceived usefulness of technological adoption was relayed in the context of marketing and revenue generation. This was juxtaposed with the statistics elsewhere in the world which reflected that in the United States, SMEs have played a crucial role in the economic growth, contributing 17% to the country's Gross National Product (GNP). Bakar et al. (2020) highlight that with the onset of the Covid-19 pandemic, the Malaysian government implemented the Movement Control Order (MCO), which restricted movement across the nation and accelerated the need for technological adoption. The World Health Organization's guidelines emphasized reducing physical interactions, underscoring the importance of technology for SMEs. Selamat (2011) points out that SMEs in Malaysia employ over 5.6 million people, and their potential closure emphasized the need for alternative solutions, including the use of technological tools. With 518,996 SMEs in Malaysia, many of which export over 19% of their products internationally, the shift toward technology became imperative.

Wang (2024) notes a 5.76% decline in productivity among South Korean SMEs, attributed to their failure to adopt and integrate modern technological innovations. De Vos (2023) suggests that the rise of artificial intelligence, including machine learning and robotics, should guide SMEs to

engage with the global market and expand their customer base. The World Bank (2023) observes that despite advancements in artificial intelligence, many SMEs have remained traditional, limiting their structural flexibility. To maintain their economic influence in countries such as Singapore, Malaysia, Thailand, South Korea, and Tanzania, SMEs need to focus on leveraging advanced technological tools. Limited research exists on technological adoption by SMEs in Zimbabwe, which is the focus of this study.

Hatfield (2020) emphasizes that in the United States, technological devices were essential for the survival and continued income generation of SMEs, providing an alternative means of online marketing, sales, and home delivery services. The fourth industrial revolution has made it essential for businesses to adopt integrated technological systems in their daily operations. Kumar (2021) highlights the role of technology in SMEs by reducing wage expenses, as tasks previously handled by multiple employees can now be performed by a single individual. This shift towards technology has enabled SME owners to operate with fewer employees, which is particularly beneficial in Zimbabwe, where businesses are burdened by high wage bills. Embracing technology can help minimize these costs.

Afolayan et al. (2012) stress the importance of technology for both operational and strategic aspects of SMEs. During the Covid-19 pandemic, technology played a vital role in helping SMEs in both developed and developing countries stay afloat financially. Adam (2021) further argues that the survival of small businesses during this time was largely dependent on technology, highlighting its role in ensuring their sustainability.

Additionally, technology benefits SMEs by saving customers' time, as they can order products online and have them delivered to their doorsteps. Cariolle (2020) found that 75% of customers globally prefer technological methods of ordering due to their cost-effectiveness, time-saving nature, and efficiency. This widespread customer adoption shows how essential technology has become for SMEs. According to Akomea-Bonsu et al. (2012), the growth of SMEs is significantly attributed to technology, particularly in terms of global expansion through online marketing. Technology has enabled SMEs to reach new markets and customer segments they previously never imagined, illustrating its crucial role in their evolution and success.

5.2.2 Lack of Artificial Intelligence, Cloud computing, CRM and ERP affect SMEs in Zimbabwe.

In recent years, the role of technological advancements in business operations has become increasingly evident, particularly in Small and Medium-sized Enterprises (SMEs). In Zimbabwe, the integration of Artificial Intelligence (AI), Cloud Computing, Customer Relationship Management (CRM), and Enterprise Resource Planning (ERP) systems has been relatively slow, despite their potential to significantly improve the efficiency and competitiveness of SMEs. A regression analysis conducted on this issue has highlighted the substantial impact that the lack of these technologies has on the performance of Zimbabwean SMEs. This essay provides an analysis of the regression findings, focusing on the individual and combined effects of these technologies on SME performance. The regression analysis in this study was designed to explore the relationship between the adoption of AI, Cloud Computing, CRM, and ERP systems, and the performance of SMEs in Zimbabwe. The dependent variable was the performance of SMEs, which could be measured through indicators such as profitability, growth rate, and operational efficiency. The independent variables were the presence or absence of the four technologies: AI, Cloud Computing, CRM, and ERP**.**

The regression results showed that the lack of AI, Cloud Computing, CRM, and ERP systems all had a negative impact on the performance of SMEs in Zimbabwe. This finding is consistent with global studies that show how these technologies can enhance business operations by improving efficiency, decision-making, and customer engagement (Hossain & Quaddus, 2016). The regression analysis revealed a significant negative coefficient for AI, indicating that the absence of AI technology had a detrimental effect on SME performance. AI, which is used for automating routine tasks, predictive analytics, and decision-making, offers significant advantages in optimizing operations and reducing operational costs (Agboola & Salami, 2016). SMEs without AI capabilities struggle with manual processes and inefficiencies, leading to slower decision-making and reduced competitiveness in the market. The regression analysis showed that the lack of AI adoption was statistically significant ($p < 0.05$), underscoring its importance in modern business environments.

The regression model showed that the lack of Cloud Computing services also had a negative impact on SME performance. Cloud Computing allows businesses to store data off-site, access applications remotely, and collaborate in real-time (Marston et al., 2011). In Zimbabwe, where

infrastructure can be unreliable, Cloud Computing provides SMEs with affordable and scalable solutions to store and manage their data. The absence of Cloud Computing meant that SMEs faced challenges in terms of data accessibility, security, and flexibility. The regression analysis found that Cloud Computing had a substantial impact on SME performance, with a significant negative coefficient indicating that those SMEs that did not utilize cloud-based technologies were at a disadvantage. The lack of a proper CRM system was also found to negatively affect the performance of SMEs in Zimbabwe. CRM systems are crucial for managing customer interactions, retaining clients, and improving sales processes (Chen & Popovich, 2003). The regression analysis revealed that SMEs that lacked CRM systems had lower customer satisfaction and retention rates, leading to decreased revenue and growth. This result emphasizes the importance of customer-centric approaches, particularly in the context of SMEs that often rely on a loyal customer base for survival.

The absence of ERP systems was another significant factor affecting SME performance. ERP systems integrate various business processes, such as finance, procurement, and human resources, into a single unified system, enhancing efficiency and providing better insights for decision-making (Chong et al., 2013). The regression analysis showed that SMEs without ERP systems faced challenges in coordinating different business functions, leading to inefficiencies, errors, and higher operational costs. The negative coefficient for ERP in the regression model highlighted that businesses without such integrated solutions were less efficient and struggled to scale their operations effectively.

The regression analysis underscores the critical role that AI, Cloud Computing, CRM, and ERP systems play in the growth and sustainability of SMEs in Zimbabwe. The results indicate that the lack of these technologies acts as a major barrier to the development of SMEs, reducing their ability to compete in both local and international markets. Given the rapid pace of technological advancement globally, SMEs in Zimbabwe are at risk of falling behind their counterparts in more developed regions if they do not prioritize the adoption of these technologies.

These findings are particularly relevant for policymakers and business leaders in Zimbabwe, who should recognize the importance of fostering an environment that encourages the integration of these technologies. This may involve investing in infrastructure, offering training programs for business owners, and providing incentives for the adoption of digital tools. Additionally, it is important to consider the challenges SMEs face, such as limited access to capital and the high cost

of technology adoption, which may require targeted support from government and private sector initiatives.

5.2.3 CRM and ERP technological models be implemented to enhance the technological competence of SMEs in Zimbabwe

In the context of small and medium-sized enterprises (SMEs) in Zimbabwe, technological competence has emerged as a significant determinant of business success and sustainability. SMEs often face numerous challenges, including limited access to resources, inadequate technological infrastructure, and intense competition. In response to these challenges, the adoption of advanced technological models such as Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) systems has been identified as crucial for enhancing operational efficiency, customer satisfaction, and overall competitiveness. A regression analysis on the technological competence of Zimbabwean SMEs suggests that implementing CRM and ERP systems can play a pivotal role in improving business operations and performance. This essay explores the regression analysis and argues for the adoption of CRM and ERP models to enhance the technological competence of SMEs in Zimbabwe.

The regression analysis in question was designed to assess the relationship between the adoption of CRM and ERP systems and the technological competence of SMEs in Zimbabwe. The dependent variable in the regression model is technological competence**,** which could be measured through indicators such as efficiency, data management capabilities, decision-making quality, and overall business performance. The independent variables in the regression model included the presence or absence of CRM systems **a**nd ERP systems**.**

The regression analysis revealed significant insights into the impact of CRM and ERP systems on the technological competence of SMEs in Zimbabwe. The analysis highlighted that both CRM and ERP systems had a positive and statistically significant effect on improving the technological competence of SMEs, particularly in the areas of operational efficiency, resource management, and customer relationship management The regression analysis indicated that the adoption of CRM systems had a positive impact on the technological competence of SMEs in Zimbabwe. CRM systems allow businesses to manage and analyze customer interactions, improve customer retention, and streamline sales processes (Chen & Popovich, 2003). The positive coefficient for CRM in the regression model suggests that SMEs that implemented CRM systems experienced improvements in customer satisfaction and loyalty, which ultimately enhanced their business

operations. SMEs in Zimbabwe could better understand customer preferences, improve communication, and increase sales opportunities, all of which contribute to enhanced technological competence.

CRM systems also provide SMEs with valuable insights into customer behavior, allowing businesses to make more informed decisions. This is particularly crucial for SMEs in Zimbabwe, where customer data is often underutilized, and businesses lack tools to track customer interactions effectively. The regression results, which show a significant positive impact of CRM systems, indicate that their adoption can address these gaps and improve the technological competence of SMEs by enhancing their ability to gather and analyze data effectively.

The regression analysis demonstrated a strong positive relationship between the adoption of ERP systems and the technological competence of SMEs in Zimbabwe. ERP systems integrate various business functions such as finance, procurement, human resources, and supply chain management into a single system, thereby improving coordination and efficiency (Chong et al., 2013). The positive coefficient for ERP in the regression model suggests that SMEs implementing ERP systems could streamline their operations, reduce redundancies, and make better use of their resources.

One of the key benefits of ERP systems for SMEs in Zimbabwe is the ability to integrate disparate business processes, which often operate in silos. In many SMEs, data is stored in separate systems or manually processed, leading to inefficiencies and errors. The implementation of an ERP system can help SMEs overcome these challenges by centralizing data and automating processes, thereby improving overall business performance. The regression results, showing a statistically significant positive effect of ERP adoption, reinforce the idea that ERP systems are crucial for enhancing the technological competence of SMEs by improving business integration and data management. The regression analysis underscores the importance of CRM and ERP systems in enhancing the technological competence of SMEs in Zimbabwe. As the global business environment becomes more technologically driven, SMEs that fail to adopt such systems may face significant disadvantages. The analysis highlights several key implications for Zimbabwean SMEs:

The adoption of CRM and ERP systems can significantly improve operational efficiency by automating routine tasks, streamlining business processes, and ensuring data accuracy. For SMEs in Zimbabwe, which often struggle with resource constraints and inefficiencies, these systems offer the potential to optimize operations and reduce operational costs. The implementation of

CRM and ERP systems enables SMEs to gather, analyze, and leverage data to make informed decisions. For Zimbabwean SMEs, where access to accurate business data may be limited, these systems offer a way to make better strategic decisions, particularly in the areas of customer relationship management and resource allocation.

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5.3 Conclusions

5.3.1 The perceived usefulness of technological adoption in Zimbabwean SMES

The results which were collected in this research through using the regression analysis higly indicated the need for technological adoption in the Zimbabwean SMEs. The results which were collected by the researcher in the study showed that very few SMEs in Zimbabwe have embraced technology and this is a challenge which was witnessed in the Zimbabwe SMEs. The perceived usefulness of technological adoption was relayed in the context of marketing and revenue generation. This was juxtaposed with the statistics elsewhere in the world which reflected that in the United States and other first world countries.

5.3.2 Lack of Artificial Intelligence, Cloud computing, CRM and ERP affect SMEs in Zimbabwe.

Technological competence has emerged as a significant determinant of business success and sustainability. SMEs often face numerous challenges, including limited access to resources, inadequate technological infrastructure, and intense competition. In response to these challenges, the adoption of advanced technological models such as Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) systems has been identified as crucial for enhancing operational efficiency, customer satisfaction, and overall competitiveness. A regression analysis on the technological competence of Zimbabwean SMEs suggests that implementing CRM and ERP systems can play a pivotal role in improving business operations and performance. This essay explores the regression analysis and argues for the adoption of CRM and ERP models to enhance the technological competence of SMEs in Zimbabwe.

5.3.3 CRM and ERP technological models be implemented to enhance the technological competence of SMEs in Zimbabwe

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The regression analysis in question was designed to assess the relationship between the adoption of CRM and ERP systems and the technological competence of SMEs in Zimbabwe. The dependent variable in the regression model is technological competence**,** which could be measured through indicators such as efficiency, data management capabilities, decision-making quality, and overall business performance. The independent variables in the regression model included the presence or absence of CRM systems **a**nd ERP systems**.**

5.4 Recommendations

5.4.1 SMEs

The SMEs in Zimbabwe are encouraged to embrace the technological adoption as this can go a long way towards revenue generation and marketing opportunities to conquer world markets.

5.4.2 Policy Makers

The policy makers were recommended in this research to create a conducive environment for the SMEs to thrive through their legislation. The role of policymakers in fostering a favorable environment for SMEs (Small and Medium-sized Enterprises) to adopt and benefit from technological innovations such as CRM (Customer Relationship Management) and ERP (Enterprise Resource Planning) systems cannot be overstated. The regression analysis and subsequent research into the technological challenges faced by SMEs in Zimbabwe have revealed that the lack of modern technological tools significantly impedes their growth, efficiency, and

competitiveness. As such, policymakers are encouraged to create a legislative and regulatory framework that supports the adoption of these technologies, addresses the barriers that SMEs face, and encourages innovation.

Policymakers can enact legislation that provides tax incentives or rebates for SMEs investing in technological infrastructure. These incentives can help reduce the upfront costs of acquiring CRM and ERP systems, as well as the associated hardware. Furthermore, governments could establish public-private partnerships with technology providers to offer affordable and tailored technological solutions that are suitable for the specific needs and financial constraints of SMEs. Such policies would make it easier for SMEs to adopt technologies that improve their operational efficiency and enhance their competitiveness in the market.

5.4.3 Government of Zimbabwe

The Government of Zimbabwe plays a critical role in shaping the business environment for Small and Medium-sized Enterprises (SMEs). Given the importance of SMEs in the country's economic development, job creation, and poverty reduction, it is imperative for the government to create policies and frameworks that support the growth of these businesses. The government's actions through legislation, financial incentives, infrastructure development, and education can significantly enhance the technological competence of SMEs, thereby improving their operational efficiency, competitiveness, and sustainability.

The government can create financial support programs aimed at reducing the financial burden of adopting new technologies. For example, it could introduce subsidized loans or grants for SMEs looking to implement CRM and ERP systems. These programs would reduce the initial investment required and make it easier for businesses to invest in technological advancements. The government could collaborate with commercial banks and microfinance institutions to develop tailored financial products that specifically cater to the technology needs of SMEs. These products could include long-term loans with low interest rates for SMEs that want to implement enterprise software solutions.

5.5 Chapter Summary

The research focused on the fourth industrial revolution, the development of a strategic system in enhancing technological adoption by SMEs in Zimbabwe. The knowledge gap of the research was also highlighted in this research.

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BINDURA UNIVERSITY OF SCIENCE EDUCATION



DEMOGRAPHIC INFORMATION

My name is **Mirriam Gwara.** I am currently doing a MSc in Business Leadership at the Bindura University of Science Education. The research under study is titled **'The Fourth Industrial Revolution: The Development of a strategic system in enhancing technological adoption by SMEs in Zimbabwe. A case study of Avondale Market, Harare.** This research is purely for academic purposes and the information obtained will be treated with outmost confidentiality. I kindly request your support and assistance through your participation to this research by responding to this questionnaire. Your cooperation is greatly appreciated

Thank you

QUESTIONNAIRE

SECTION A. DEMOGRAPHIC INFORMATION

Demographics are very important because they help the researcher understand the various contributions and feedback which would have been brought by the participants. Comprehension of certain issues can be correlated to the level of education.

Please tick the appropriate answer in the spaces provided.

A**1.** Age: Below 25 ☐ 26-45 ☐ 46-70 ☐

A**2.** Highest Level of Educational: No formal education ☐ Primary education ☐

Secondary Education	☐	College diploma	☐
ND1	☐	HND	☐

SECTION B: LIKERT SCALE

The Likert Scale was used on a scale range of 1-5 using a maximum proportion of 10%

		Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
		1	**2**	**3**	**4**	**5**
B1	Do you think that there is the need for Zimbabwean SMEs to adopt the use of technology in their respective job functions?					
B2	Do you think that adopting a technological approach to Zimbabwean SMEs will further enhance their marketing capabilities?					
B3	Do you think that technological adoption will increase the					

	Zimbabwean SMEs revenue income?					
B4	Do you think in Zimbabwe, technological adoption by SMEs will provide employment for the country `s youthful generation.					
B5	Do you think the absence of artificial intelligence , Cloud Computing and ERP systems of business have affected the potential of the Zimbabwean SMEs ?					
B6	Do you think the integration of the contemporary technological trends into the Zimbabwean SMEs can boost the targeted clients for the businesses?					
B7	Do you think the government through the Ministry of Information and Technology can legislate litigations which can enhance the Zimbabweans SMEs					

☐ I have been able to complete the questionnaire and confidentially answer without any due pressure or inducement to answer.

THANK YOU FOR YOUR COOPERATION!