



**The Role of Digital Design and Technology in the Development of
Entrepreneurship in Gokwe, Zimbabwe**

by

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Signed

10 March 2021

Date

ABSTRACT

The successful integration of digital design and technology into rural entrepreneurial activities in most developed countries has ushered in an era of digital innovation and rural empowerment. It has also contributed significantly to the development of entrepreneurship in rural areas. By contrast, a great deal still needs to be done to achieve similar results in the rural areas of many developing countries, such as the district of Gokwe in Zimbabwe. Although the quality of the product and services of rural entrepreneurs in Gokwe is generally high, the markets which are available to local entrepreneurs are, in most cases, extremely limited, owing to inadequate technological infrastructure and a lack of financial resources to modernise their business practices. As a result, many rural entrepreneurs who have the potential to run thriving businesses either cease trading or relocate to countries or regions in which prospects for success are better, such as the neighbouring countries of South Africa or Botswana. The research study on which this thesis is based entails an assessment of the role of digital design and technology in the development of entrepreneurship in the rural district of Gokwe in Zimbabwe. The extensive literature review which preceded the conduct of the study included a survey of rural entrepreneurship in regions in which it is thriving as a result of the integration of digital technology into entrepreneurial activities in Africa, Europe, the United States, and China. The findings of the study were evaluated in relation to the Net-Enabled Business Innovation Cycle and People DealContext Opportunity analytical frameworks, in order to develop a suggested strategy for integrating digital design and technology into entrepreneurial activities in Gokwe.

The study took the form of a case study, which was guided by the radical humanist paradigm. A mixed methods research design was developed and the qualitative data which was obtained from semi-structured interviews and a focus group discussion was analysed by means of thematic analysis. The quantitative data was obtained from the administration of a questionnaire and used to corroborate the findings of the qualitative study. Although it was ascertained that digital design and technology did not play a role in the development of rural entrepreneurship in Gokwe at the time of the conducting of the study, there were definite indications that preparations were being made to integrate digital technology and access to the internet into at least one sector of the rural economy of the district. Possibility of getting funding based on return on investment and probable adoption of technology if resources are made available. It is to be hoped that the findings of this study will provide an adequate basis for enabling the rural entrepreneurs in other sectors, such as agriculture to avail themselves of the significant

advances which have accompanied the digital revolution in the rural regions of other countries throughout the world.

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DEDICATION

This work is dedicated to my late Mother, Miss Irene Muzarahwa, who instilled in me the value of hard work, the need to be independent and, above all, to consider my relationship with God in every decision which I make in life.

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ABBREVIATIONS AND KEY TERMS

B2B	-	Business -to- business
B2C	-	Business -to- consumer
B2G	-	Business -to- government
C2B	-	Consumer -to- business
C2C	-	Consumer -to- consumer
C2G	-	Consumer -to- government
CV	-	Customer value
DA	-	Digital advertising
DD	-	Digital design
DM	-	Digital marketing
DT	-	Digital technology
EC	-	Electronic commerce
EO	-	Economic opportunities
ES	-	Electronic systems
ET	-	Enabling technology
G2B	-	Government -to- business
G2G	-	Government -to- government
IBP	-	Innovative business practices
MM	-	Mobile marketing
RA	-	Rural area
RE	-	Rural entrepreneurship
UA	-	Urban area
UE	-	Urban entrepreneurship
UI	-	User interface
UX	-	User experience

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1. Introduction

This study takes the form of an investigation to assess the influence which digital design and technology exert on entrepreneurship in rural areas. In order to appreciate the scope of the study, it is necessary to understand the significance of the rapid growth of digital entrepreneurship in rural areas and the immense potential of digital design for improving the livelihoods of members of rural communities, particularly those of young people. Digital design is a field of graphic design which is predicated on the use of electronic devices such as computers and tablets to create visual designs for applications such as television and the internet. As they have demonstrated in urban environments, computers, mobile phones and tablets can be used to promote entrepreneurship in rural areas. A broad definition of entrepreneurship is provided by Mokaya, Namusongwe and Sikalieh (2012), who characterises it as an endeavour to create new businesses for the purpose of generating profits in specific markets which have been identified. In this context, rural entrepreneurship refers to trade or business between rural entrepreneurs and urban or international markets. Rural entrepreneurs also denote people who use local resources to engage in business activities in rural settlements or outside of cities, while Gandhi and Mohan (2014) emphasise in their study the ability of rural entrepreneurs in India to generate profits and earn a decent living through the adoption of technology in the domain of digital design.

The 21st century brought about the development of the technology which facilitated the introduction of the internet and other forms of digital communication, rural areas in Zimbabwe and most other African countries have tended to lag behind in making adequate use of the technology to increase the efficiency of business operations and to improve the overall general standards of living of the inhabitants of rural areas. The benefits of the internet and digital technology have not been realised in the rural areas of most African countries. One of the principal objectives of this study is to shed light on concerns which have tended to be neglected in relevant research to date, in order to facilitate an understanding of how rural entrepreneurship can be promoted through online entrepreneurship or e-commerce (Khan, 2016). Insights which are obtained from this endeavour will be used to develop a comparative analysis of the degree to which e-commerce practices are exploited by purposively selected groups of rural and urban

entrepreneurs, in order to quantify the significance of digital design as a means of revitalising and promoting successful rural entrepreneurship. The comparison between rural and urban areas is fundamental to an appreciation of the extent to which digital design is being developed in both types of areas. The degree to which how rural entrepreneurs are able to realise the potential of digital design and technology to improve their entrepreneurial activities can draw level with that of their urban counterparts (Deshwal, 2016). This research study concludes with recommendations that are made on the basis of the findings for enabling rural entrepreneurs to exploit the advantages which the digital age confers to the fullest extent.

1.1. Background to the research problem

In urban areas, digital marketing and e-commerce have necessitated the development of effective business systems whose functioning is predicated on access to the internet, which, in turn, requires making optimal use of both digital design and relevant technology. Although the systems could be used equally gainfully in rural areas, the potential for doing so is often hampered by a lack of experience and, in many cases, limited exposure to trading with urban and international markets (Vutete, 2016). Despite the ready availability and the ubiquitous adoption of digital technology throughout the world, the rural areas of Zimbabwe are plagued by a resistance to change and an adherence to analogue methods and traditional forms of marketing. One of the most debilitating disadvantages of the use of traditional marketing techniques in rural areas in regards to the way in which they confine entrepreneurs to small local markets and effectively preclude their ability to reach wider markets. As a direct consequence, rural entrepreneurs are unable to generate the profits which should be possible, owing to being unable to expand their markets. They are severely limited by both unemployment and a lack of opportunities for obtaining employment. In a great many instances, their businesses fail within the first year of operating and they are prevented from contributing to the economies of their regions (Roberts & Townsend, 2016).

1.1.1. Digital design and rural entrepreneurship

The potential benefits and the usefulness of digital design and technology for rural entrepreneurship have not been adequately investigated; to a large extent they remain both unknown and untapped. Consequently, numerous factors have impeded the adoption of digital design in rural areas and most continue to rely on traditional analogue media, including print media, to market and advertise their products. These methods of marketing and advertising

usually fail to stimulate growth in the businesses of rural entrepreneurs, as their reach is confined to small geographical areas and miniscule markets (Todor, 2016). In addition, owing to the global shift from analogue to digital methods, entrepreneurs who continue to eschew digital technology are effectively isolated from the world in which they live. In contrast, digital design technology permits entrepreneurs to extend their operations beyond the specific geographic areas in which their businesses are located and to participate in online or e-commerce business transactions with anyone who has access to the internet. Digital design technology has almost unlimited potential for fostering mutually beneficial relationships between rural entrepreneurs and both their urban counterparts and international markets. In order to expand their horizons in a manner this could not have been remotely feasible even in the relatively recent past. It is imperative that rural entrepreneurs should draw on the gains which their urban counterparts have made, by integrating digital design technology into their daily operations (Shareef, 2017).

1.2. Digital design and urban entrepreneurship

The rural entrepreneurship has lagged behind; urban entrepreneurs have made significant gains with respect to increasing their shares of both local and international markets and their roles in both local and global economies, through the adoption and exploitation of digital design and technology. Digital design has also prompted the opening up of unprecedented opportunities for employment, owing to the new and expanded markets which it has permitted entrepreneurs to enter (Ayandibuand Houghton 2017). Digital design and technology have encouraged investors from many different business sectors to make substantial investments in the digital sector, in response to the demonstrably large profits which have been reaped from related business activities. In addition, the ability to thrive, that digital design and technology confer on businesses in urban areas, stems in the main from the innovative and different online digital environment that they have created, which facilitates the conducting of almost any type of business activity. Online digital systems facilitate networking activities, connect users with one another, and create an enabling system for entrepreneurs to interact with their suppliers, distributors, customers, and markets (Villares-Varela, 2017).

1.2.1. The effects which access to the internet has had on rural and urban entrepreneurship in Zimbabwe

Reliable access to the internet and the technology which enables entrepreneurs to make optimal use of it continue to be among the principal factors which have enabled some businesses to develop at a faster rate than others. It would be almost impossible to overemphasise the crucial role which access to the internet plays in increasing the turnover of businesses and the development of sound business principles in the digital age. Zimbabwe has witnessed a significant growth in the use of the internet for business purposes. The present state of the digital landscape of Zimbabwe is evident from 16.7 million population, 103% indicates mobile penetration in the use of mobile telephones in rural areas and the positive efforts which have been made to ensure that the whole country remains connected (Chifamba, 2013; Musungwini, 2018).

Mobile devices remain the most widely used digital devices by the rural populations of Zimbabwe. In most cases, a smart phone is owned by at least one or two members of every household in the rural areas that they use to communicate by means of WhatsApp, Facebook, and other social media platforms to which they have access (Zimbabwe National Statistics Agency, 2012). Furthermore, the devices permit Zimbabweans in rural areas to make e-commerce transactions. Online marketplaces such as Hammer and Tongues, Ownai, Zim Tuckshop, and 10ngahoffer both rural and urban Zimbabweans an opportunity to buy and sell goods online, as opposed to going to shops in person to do so (Todor, 2016). This new phenomenon has resulted from the widespread penetration by the internet in both urban and rural areas of Zimbabwe. According to Digital Zimbabwe (2020), there are 4.81 million internet users as of January 2020, while Nigeria, with its population of over 150 million people (Kemp, 2015). Although both Nigeria and Zimbabwe, along with South Africa and other countries in sub-Saharan Africa, have made great strides in making the internet accessible to their citizens at affordable costs, entrepreneurship in rural Zimbabwe is not thriving and there are very few successful entrepreneurs. As little effort appears to have been given to assisting rural entrepreneurs to exploit the proliferation of digital technology that are available to them, products and services that may benefit rural communities are not marketed sufficiently well to enable them to reach wider markets (Chitotombe, 2014).

1.3. Statement of the research problem

Disparities between the opportunities in the marketplace and the benefits which are available to rural entrepreneurs and their counterparts in urban and international sectors appear to be increasing. Although there have been some positive developments in the form of rural entrepreneurs producing products of estimable quality, the products seldom reach wider markets for a number of reasons, including the limited use of digital design and technology to facilitate the transmission of relevant information to advertise and market rural products effectively (Batani, 2015). The present impasse appears to be centred on a general failure to maximise the gains which digital design and technology have made available to entrepreneurs throughout the world in rural entrepreneurial activities. This assessment is borne out by Reuschke and Mason (2020) who contend that rural entrepreneurship will achieve significant growth through the development of an appropriate digital platform to facilitate the marketing of rural products and the transmission of relevant information, communication, and advertising.

Although the relevant available literature suggest that digital design and technology drives successful entrepreneurship in both urban and international settings, the claim does not appear to apply to most rural areas in Africa, including Gokwe in Zimbabwe. Nonetheless, digital design and technology has enormous potential to promote the development of rural economies in several different ways (Deshwal, 2016). As it has been pointed out, digital technology facilitates the creation of networks and an enabling system for entrepreneurs to communicate with their suppliers, distributors, customers, and markets. Although an online presence stands to enable rural entrepreneurs to increase their revenue streams and incomes and expand their markets, online activity has yet to stimulate the local economies of most rural areas in most parts of the African continent (Howe, 2015).

The development of appropriate platforms by making use of digital design and technology could effectively reduce disparities with respect to the levels of success, which, are possible for rural entrepreneurs in relation to their urban and international counterparts. Rural entrepreneurs in the fields of information, marketing, and advertising would have ready access to urban and international business opportunities through the use of digital e-systems. Many countries with large rural populations have succeeded in promoting rural entrepreneurship by creating networking opportunities to facilitate the growth of their rural entrepreneurial communities by enabling them to find new markets and other opportunities to increase profits through the use of

technology (Roberts & Townsend, 2016). While digital design and technology have created entrepreneurial opportunities through the development of effective and efficient business systems to enable rural entrepreneurs to gain access to urban and international markets. In other parts of the world, the purpose of this study is to determine the role which they have played in promoting rural entrepreneurship in Gokwe in Zimbabwe.

1.4. Main research question

What is the role which digital design and technology play in the development of rural entrepreneurship in Gokwe?

R.Q.1

How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

R.Q.2

How does digital design and technology influence customer satisfaction?

R.Q.3

What are the factors which inhibit entrepreneurs in Gokwe from adopting digital design and technology to increase the success of their businesses?

R.Q.4

Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

R.Q.5

How do digital design and technology influence opportunities for funding for rural entrepreneurs in Gokwe?

1.5. Aim of the research study

The aim of the study is to assess the role of digital design and technology in the development of rural entrepreneurship in Gokwe and to suggest appropriate strategies which can be used to develop and promote rural entrepreneurship through the use of digital technology.

1.5.1.Objectives of the research study

To conduct an evaluation of the role which digital design and technology play in the development of entrepreneurship in Gokwe.

R.O.1

To assess the influence of digital design and technology in the identification of entrepreneurial opportunities and communicating with potential markets.

R.O.2

To determine the influence of digital design and technology on customer satisfaction.

R.O.3

To identify the factors which inhibit entrepreneurs in Gokwe from adopting digital design and technology to enable successful commerce.

R.O.4

To identify the ways in which digital design and technology influence opportunities for funding for rural entrepreneurs in Gokwe.

R.O.5

To suggest strategies which could be formulated and implemented to promote the successful adoption of digital design and technology by rural entrepreneurs in Gokwe.

1.6. Rationale

Although digital design and technology have great potential for facilitating the identification and expansion of markets, they remain underexploited in rural entrepreneurship and their potential for improving the livelihoods of members of the rural communities has yet to be realised. Consequently, this research study was conducted to investigate the phenomenon within a rural Zimbabwean context, in order to determine the extent to which it could play a significant

role in increasing the earning power of a rural community. In addition, the other potential gains through the creation of opportunities for employment and the contributions which could be made to the local and national economies through the earning of foreign currency remain abysmally under-investigated. If rural entrepreneurs are not permitted to have access to the advantages which the digital age confers, it is highly likely that they will be left behind and never maximise their potential or participate in thriving and sustainable rural entrepreneurship. The inevitable consequences of the failure of rural entrepreneurs to generate adequate profits by expanding their markets to facilitate the growth of rural businesses are likely to be a lack of self-sufficiency and a dependency on assistance from the government, on the part of a sector which should contribute to both feeding the nation and economic growth.

This research is premised on the contention that if digital design and technology are not introduced in rural areas, rural entrepreneurs will continue to produce products which conform to international standards, but continue to be deprived of markets on which to sell their wares. Enabling rural entrepreneurship to be driven by digital technology and digital design is essential because if rural entrepreneurs lack access to the proliferation of information, advertising, and methods of marketing which digital technology permits, rural entrepreneurship will never become a viable economic force. Introducing digital design and technology in rural areas would benefit not only rural entrepreneurs through the expansion of their markets, the growth of their businesses, and increased profits, but the government would also benefit from the creation of employment and economic growth. Graphic designers and digital designers have a crucial role to play in the designing of interactive websites and digital designs which facilitate communication and the marketing, advertising, and promoting of the products of rural entrepreneurs.

1.7. Definitions of key terms

Digital design

The defining characteristic of digital design is the format in which it is produced, which is digital, rather than in print. Digital designers participate in the creation of online, mobile, or virtual environments or artworks and also develop designs for web pages, email marketing, and digital presentations (Dziobczenski, 2017).

Digital technology

For the purposes of this study, digital technology refers to the devices and equipment which are used to obtain access to the internet, such as smartphones, tablets, or computers. The use of digital technology is coordinated by means of infrastructure and platforms (Nambisan, 2016). Digital infrastructure is the means upon which the information technology capabilities of individual nations, regions, cities, or organisations are predicated. It comprises both the equipment which is needed and the services which permit different platforms, systems, and applications to work together and share information. The social media and digital maker spaces both facilitate interaction and collaboration to support invention and entrepreneurship. Smartphones operate by means of mobile operating systems or platforms, of which the two most prominent are Android and iOS, and which enable specific applications to be installed to enable users to participate in an ever-expanding range of online activities (Chen, 2016).

Mobile marketing

Mobile marketing can be defined as a form of communication which permits companies to advertise their products or services to clients or potential clients by means of a mobile medium, device, or technology (Hofacker, 2016). The term denotes any short message service which enables advertisements, promotional offers, or relationship marketing themes to be disseminated through virtual mobile channels (Shareefa, 2017).

Rural areas

Penrhys-Evans (2019) defines rural areas as communal areas where most of rural people reside in; the population is estimated to be 1.1 million households and a land area of 16.4 million hectares. (Zimbabwe: Land use in Dry Tropical Savannas. n.d) describes it as communal areas are where communal farmers reside and practice agriculture for subsistence purposes.

Entrepreneurship

Several working definitions of entrepreneurship have been advanced. Peneder, (2009) characterises it as the realisation and development of opportunities to make goods and services available. Conversely, Eckhardt and Shane (2003) portray entrepreneurship as the discovery and evaluation of goods and services which can be exploited in the future, while for Gutterman (2012) it embodies the ability to offer goods and services which consumers desire in constantly changing markets.

Rural entrepreneurship

Rural entrepreneurship can be considered as entrepreneurship which evolves at the village level and can entail any of several types of business activities, such as commerce, manufacturing, or agriculture. As it serves to establish rural entrepreneurs financially, rural entrepreneurship is effectively a precondition for rural industrialisation (Basha & Subbareddy, Nagabhaskar, 2017). Rural entrepreneurship is, in effect, entrepreneurship which is predicated on the adding of value to the resources of rural areas, largely through the efforts of inhabitants of the areas (Bad, Patel, Patel, & Tare, 2013). Rural entrepreneurship is essentially manifested in the creation of business organisations or companies in areas which lie outside of the urban areas of countries.

Urban entrepreneurship

The phenomenon of urban entrepreneurship has developed from entrepreneurs who were usually members of low-income minority groups in the inner cities. Entrepreneurs used the limited resources at their disposal to meet the needs of their neighbourhoods and communities, to entrepreneurs who work in and for cities. The essential character of contemporary urban entrepreneurship stems from a widespread recognition of the need to develop strong local economies in cities, which has resulted in substantial investments being made by a number of different sectors and institutions. Conversely, the essential functions of urban entrepreneurship remain largely unchanged. Entrepreneurs are encouraged by civic and political leaders to develop products and services which meet the specific needs of their communities from the limited local resources which are available to them, as urban entrepreneurs are not usually

aligned with large corporations or the scions of financial dynasties. Economic empowerment is a cornerstone, as the businesses are intended to have lasting value for the communities which they serve. Another defining facet of the phenomenon is a centrality of the notion of the pioneering role in commerce which urban entrepreneurs play in their areas and communities, as the creators of both business and employment (Munoz & Cohen, 2016).

1.8. Outline of the thesis

Chapter One

The first chapter of the study provides a general introduction to the research topic. The discussion of the background to the study proceeds to a formal statement of the research problem, the research questions, and the objectives of the study. The researcher provides a concise rationale and justification for undertaking the research, before elucidating the significance of the specific concepts which are fundamental to understanding the discourse which is presented in the chapters which follow.

Chapter Two

The literature review develops the concept of rural entrepreneurship and the discussion of the role which digital design and technology has to play in facilitating the emergence of vibrant entrepreneurship in rural areas. The second component of the literature review is devoted to a discussion of the theories from which the concepts of rural entrepreneurship and digital design and technology have evolved.

Chapter Three

The third chapter takes the form of an in-depth discussion of the research methodology which the researcher developed to assess the role of digital design and technology in the emergence of rural entrepreneurship and the factors which militate against the adoption of digital technology. It includes a discussion of the radical humanist research paradigm upon which the researcher chose to base the study and the qualitative character of the data. The last part of the chapter is devoted to a discussion of the strategy which the researcher developed in order to conduct the study and covers sampling techniques and the methods for collecting and analysing the data. The chapter concludes with an enumeration of the ethical standards for professional

research in the social sciences, to which the researcher intends to adhere scrupulously at all times during the conducting of the study.

Chapter Four

The fourth chapter takes the form of a presentation of the findings which the data generates and a discussion of the findings in relation to Wheeler's Net-Enabled Business Innovation Cycle (NEBIC) and the people, context, deal, and opportunity (PCDO) framework (Sahlman, Howard, Roberts & Amar, 1996). The researcher analysed the data by means of thematic analysis.

Chapter Five

The final chapter takes the form of a presentation of the conclusions which have been drawn from the findings, the recommendations which are made on the basis of them, and an assessment of whether the objectives of the study have been met.

Summary

As this chapter has provided a comprehensive context for the conducting of this study. The following chapter will be devoted to a detailed discussion of the crucial role which digital design plays in business, digital marketing, and advertising. It will also provide an appraisal of the factors which inhibit the adoption of technology in Gokwe, an overview of the adoption of technology in urban areas, discussions of strategies to promote the universal adoption of digital design and technology and the role which they play in the economies of China and African and European countries, and an elucidation of the Net-Enabled Business Innovation Cycle and the PCDO framework, which will be used to evaluate the findings of this study.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

The literature review is concerned not only with the beneficial effects of digital design and technology on rural entrepreneurship, but also with the opportunities which are available to rural entrepreneurs and the obstacles which they encounter with respect to starting and running sustainable businesses. Countries which have successfully integrated digital design and technology into rural entrepreneurship add a global dimension to the discussion; while the second part of the literature review is devoted to an overview of the theoretical framework which the researcher developed in order give the study an adequate grounding in relevant contemporary theories.

2.2. Digital design and technology and rural entrepreneurship

This section is devoted to an elucidation of the notion of creating designs for digital information. The world of graphic design has undergone a transition from designing for traditional print media to participating in endeavours such as the designing of online campaigns, animated logos, and digital artworks, all of which are able to reach the public through the latest digital media devices (AbuShawali, Lim, & Bedu, 2013). A crucial attribute of designing to transmit information for the development of rural entrepreneurship is the ability of digital information to allow the data of which it is composed to be creatively reused for social benefit in applications such as the most up-to-date methods for making electronic commercial transactions (Paskin, 2006). Mandl (2017) expands upon this point by explaining that digital information provides users with instant gratification. The truth of this observation is ably borne out by the ability of users to obtain instant access to any information which they may desire at any time, at the lowest possible cost. Accordingly, the significance of digital design and technology for fostering rural entrepreneurship cannot be overstated, as it plays a crucial role in content creation and the development of new digital systems to facilitate digital marketing.

2.2.1. Designing for digital marketing

According to Kotler and Armstrong (2012), digital marketing can be defined as a system for publicising the products or services of any business through forms of electronic media such as the internet, the social media, electronic billboards, and mobile phones. Digital marketing provides information concerning particular products or services to target audiences which are likely to purchase the products or make use of the services. As Ngoasong (2015) explains, digital marketing allows businesses to upload promotional videos online, to attract potential customers to particular digital platforms.

Rural entrepreneurship cannot be effectively promoted through digital marketing without adequate attention being accorded to customer satisfaction. Chang and Chen (2009) characterise customer satisfaction as an effectual response to a purchase which exerts an influence over the future purchasing choices of purchasers or customers. They maintain that customer satisfaction is an indispensable element of successful business relationships in both traditional commerce and also between businesses and consumers in electronic commercial transactions. Dagger, Elliot & Bowden-Everson (2013) emphasises that customer satisfaction entails providing goods and services whose worth is perceived by customers to be sufficiently great that they feel motivated to continue their dealings with the organisations which supply them (Wicks & Roethlein, 2009). Conversely, Rasli, Khairi, Ayathuray, and Sudirman (2018) characterise customer satisfaction in terms of the positive attitudes which customers express in relation to the products or services which business organisations supply to them.

Digital marketing is also able to influence customer satisfaction through the effective use of the internet, which enables customers to communicate with suppliers of products and services and to make suggestions concerning how particular products or services could be improved. Digital design influences customer satisfaction through the creation of content pertaining to the services which rural entrepreneurs provide (Batani, Denhere & Mawere, 2015), while digital advertising also plays a pivotal role in ensuring the success of the digital marketing which fosters the growth of rural entrepreneurship through the expansion of available markets.

2.2.2. Designing for digital advertising

Digital advertising is widely acknowledged as the mainspring for advances in mobile and internet technology (Chen, Cox, Uluagac & Copeland, 2016). Chen, et al. (2016) contend that digital advertising is now the new predominant means of marketing, as it allows businesses to reach a far wider audience through the internet than had been possible before the advent of the internet. They explain that digital advertising consists of activities and marketing information which facilitates communication among users, advertisers, and publishers in a user-friendly advertising environment. Although publishers make advertising spaces available on their websites, advertisers are nonetheless required to pay to have their advertisements displayed in those spaces (Chen, et al, 2016).

The way in which information is laid out and presented to customers on online platforms significantly influences their impressions of websites and can be a decisive factor in subsequent shopping online on particular websites. Ghaffari and Ashkiki (2015) maintain that the extent to which websites are user-friendly is a significant determinant of customer satisfaction, particularly among new users. Biswas, Nusari, and Ghosh(2019)emphasise that if the websites of business organisations are attractive in appearance and user-friendly, their interface design features will usually appeal to prospective customers. Consequently, the design elements through which products and services are marketed and advertised and essential information is communicated are crucial facilitators of successful online entrepreneurship (Reuschke & Mason, 2020).

In addition, as digital design is responsible for the creation and generation of online content for customers, the image which a website projects is a significant determinant of online relationships and represents the principal means of influencing customer satisfaction, perceptions of brands, and customer loyalty (Choi, Jeong, & Choi, 2014; Işoraitè, 2018). While visual design to a large extent determines the image which a website projects and strongly influences the decisions of customers to make initial purchases or return to make subsequent purchases, the appearance of the designs of homepages exerts an equally significant influence in determining the preferences of users to visit particular websites (Al-Nasser, Islam, Abidin, Azam, & Prabhakar, 2015). Other significant determinants of customer satisfaction are the arrangement of products, the layout of websites, and their overall designs. The way in which elements such as advertising content, text, and graphics are combined and presented on websites also influence the perceptions of customers and, ultimately, their choice whether to

make a purchase or not. Consequently, it is possible to conclude that the perceptions of potential customers of the images which websites project exert a definite influence on both their satisfaction with their online purchases and their decisions to make them.

It follows from this discussion that the principal function of digital design and technology is to provide as much detail as possible on websites by making relevant content available. The findings of studies which were conducted by both (Kabango & Asa, 2015; Rasliet *al.* 2018) revealed that the availability of detailed relevant content served as the main motivation for customers to elect to shop online. The findings also suggested that the quality of information, combined with the ability of websites to render searches for products and prices effortlessly intensifies satisfaction and motivation to make subsequent purchases and revisit particular websites (Kabango & Asa, 2015; Rasliet *al.*, 2018) The innovative advertising and marketing practices which digital design and technology have made possible have significantly influenced the purchasing behaviour of customers and, in turn, resulted in a proliferation of entrepreneurial opportunities in the e-commerce industry. Entrepreneurial opportunities are typically circumstances which facilitate the making available and exploitation of innovative services, goods, markets, raw materials, and organising procedures, through the creation of correspondingly innovative ends, means, or means-ends relationships (Casson, 1982; Casson, 2003; Shane & Venkataraman, 2000). As Casson (1982) explains, entrepreneurial opportunities are opportunities to exploit innovative raw materials, goods, services, and organising procedures in a manner which permits outputs to be purchased at prices, which exceed production costs. In this instance, the opportunities arise as a result of specific groups of people having access to information concerning digital technology which permits them to exploit innovative business practices.

2.3. Designing for digital technology

Relevant studies left the researcher in no doubt that the successful adoption of digital design and technology is crucial to the development of rural entrepreneurship. The use of tablets, computers, smartphones, or any other kind of digital electronic device which allows users to be connected to the internet in rural regions of third world countries provides an optimal means of facilitating participation, the dissemination of crucial information, and the sharing of expertise and knowledge (Nambisan, 2016). Trendov, Varas and Zeng (2019) emphasise that the

electronic communications which the internet and other forms of digital technology make possible effectively transform social groups, in that people are able to interact with one another, irrespective of their geographical locations.

Rural development is predicated on the successful coordination of efforts to increase the revenue of rural areas through the production of goods and services from local resources. Although achieving this end is likely to increase prospects for obtaining employment and social advancement in rural communities (LSBM, 2016) and also to result in increased political awareness, participation, adherence to sound business ethics, general contentment, and responsibility (Ezeibe, Diogu, Eze, Chiaha, & Nwokenna, 2013), attempting to do so is equally likely to be accompanied by severe obstacles. Among the obstacles which are associated specifically with the adoption of digital design and technology to promote rural entrepreneurship are fears concerning returns on investments, a lack of opportunities for participating in e-commerce, and a lack of experience in relation to using digital technology and the internet.

2.3.1. User experience

Digital design and technology play a significant role in enabling companies and entrepreneurs to develop the reputations of their products or services by optimising the experience of users and facilitating interaction among users by designing appropriate platforms for users. User interface (UI) and user experience (UX) are complementary processes which design teams use to develop products and services which meet the needs of users in an optimal manner. The concept of user experience has been developed to evaluate the emotions which users experience and the attitudes which they express in relation to using a particular product, service, or system. In a work-related context, it also refers to the ways in which the experiences and attitudes of users shape the perceptions of users of themselves as professionals (Kaasinen et al., 2015). User experience is conceptualised as an intricate and socially situated experience in which technology functions as a mediator between individual users and the activities in which they engage; it is essentially the effect of the interaction among three components, namely, the user, the system, and the context (Lallemand Koenig, & Gronier, 2014; ISO, 2010). It is “the combined experience of what a user feels, perceives, thinks, and physically and mentally reacts to before and during the use of a product or service”. Roth (2017) provides an alternative explanation of user experience by characterising it as a collection of concepts, guidelines, and workflows for thinking analytically concerning the design and utilisation of an interactive product.

User experience is predicated on the experience of a wide range of attributes, such as the visual, tactile, and auditory experiences which users have when they operate a particular system. It is concerned principally with evaluating the functioning of systems in appropriate environments or contexts (Kim, 2015). The main purpose of the process of user experience is to engender positive feelings towards products among users, such as satisfaction, enjoyment, excitement, motivation, and amusement and to reduce negative feelings such as boredom, frustration, annoyance, and irritation (Mandl, 2017). User experience is closely allied with the concept of usability. Usability is essentially the extent to which a product or service can be used effectively and efficiently by particular users to attain specific goals in a manner which enables them to derive satisfaction in a specific context and also falls within the concerns of the field of human-computer interaction (HCI) (International Standard Organisation, 2010; Mandl, 2017). Mandl (2017) contends that the principal concerns with respect to the usability of a product are that it should be easy for users to acquaint themselves with the procedures for using it and to become competent at doing so during the course of their first encounter with the product, easy for users to attain their specific objectives by using it, and that it should be simple for users to recall the user interface and to use it on subsequent visits. The steps which UX designers need to be able to accomplish include UX wireframing, UX prototyping, visual and interactive UI design, and User Testing (Biswal, 2019). As all of these procedures are back-end procedures, they are the responsibility of web developers or graphic designers.

2.3.2. User interface

A user interface is both the point at which users and computer systems interact and the means which enables them to interact (Biswal, 2019). Professional graphic designers and web developers are responsible for designing the visual elements of interfaces, a task which requires a firm grasp of both aesthetics and the fundamental principles of design (Brown, 2008). The visual appearance of a UI design sets the tone for the overall experience of users, from creating a welcoming mood and eliciting receptive emotional responses from users to maximising perceptions of usability and subjective satisfaction. User interface design requires high levels of creativity and a unique visual message to users depends on an iterative refinement of design decisions pertaining to considerations such as the layout and responsiveness of interfaces, visual affordances, application navigation, feedback, colour schemes, typefaces, and local design decisions (Roth, 2017). In its broadest context, user interface design refers to a method of researching and developing all of the facets of the interactions between users and the products or services which a business organisation offers, in order to maximise the satisfaction

which users experience (Biswal, 2019). The overall objective of a user interface is to attract users and to optimise their experience of interacting with it. As it is imperative to consider usability-related criteria such as effectiveness, efficiency, and satisfaction (Kaasinen et al., 2015), digital design entails the conducting of relevant research to make necessary design interventions. As a user proceeds and begins to navigate a particular interface, the conversation between a human user and a digital object is characterised either by questions and answers between the two interacting players or requests and results, which is mediated by means of a computing device (Roth, 2012). Consequently, although people use interfaces, they experience interactions and it is the quality of an experience of an interactive transaction which determines its success (Chin, Diehl, & Norman, 1988).

2.3.3. Factors which inhibit the adoption of digital design and technology

Although digital design and technology offer a great many highly desirable benefits for rural entrepreneurship, several factors militate against the universal adoption which is essential to the successful promotion of rural entrepreneurship. Fears concerning returns on investments, a general lack of opportunities for engaging in e-commerce, and a lack of internet technology have already been cited, although other factors also exert a negative influence (International Trade Centre, 2016). In many parts of the developing world, the adoption of digital design and technology is effectively hamstrung by a lack of return on investment, a lack of access to the internet, and a lack of technological investment to support the growth and development of entrepreneurial activities in rural areas (UN Broadband Commission, 2017). The governments of many developing countries are saddled with severe economic hardships which effectively preclude the possibility of encouraging the successful exploitation of digital technology in rural areas. From this perspective, the widespread adoption of e-commerce in rural areas is impeded by its dependence on the success or failure of governments in overcoming the effects of crippling debt traps.

For Turban, King, Lee, Liang, and Turban (2015) and Vargas-Hernández (2015) the defining characteristic of e-commerce is the buying and selling of goods and services through the internet. They also explain that businesses make several different kinds of electronic transactions to facilitate the placing of orders, payment, and distribution and that in those instances in which the transactions are made in person, rather than by means of digital media,

they do not fall within the ambit of e-commerce (Turbanet *al.*, 2015). There are several categories of e-commerce transactions, to facilitate the making of e-commerce payments by consumers, businesses, and governments. Consumer-to-consumer (C2C) transactions entail consumers trading directly with one another, while consumer-to-business (C2B) transactions are made between consumers and businesses, and consumer-to-government (C2G) transactions take the form of transactions between consumers and governments, through either cooperatives or private sites which are devoted solely to direct transactions with consumers (Anuj, Fayaz & Kapoor, 2018).

Business-to-consumer (B2C) transactions occur between businesses and consumers, in which businesses such as Amazon mediate in buying and selling transactions. By contrast, business-to-business (B2B) transactions occur between corporations and other businesses, in the manner of organisations such as Eurooffice. Business-to-government (B2G) transactions concern the sale of goods and services by businesses to government agencies at the national, provincial, or local level, while government-to-business (G2B) e-commerce entails governments supplying business organisations with information and services, and government-to-government (G2G) transactions concern the exchanging of information and the shared use of information systems between government agencies, departments, or organisations (Kabango & Asa, 2015). The types of businesses whose medium for making transactions is e-commerce range from online retailers, online auction sites, entertainment sites, to commercial switch selling products and services among companies (Franco & Regi, 2016).

Making the transition to e-commerce in the rural regions of many developing countries is often delayed by a lack of access to the internet and suitable infrastructure to facilitate its promotion on a large scale in rural areas (Bataniet *al.*, 2015; Chivasa & Hurasha, 2016). Bataniet *al.* (2015) explain that these problems are further compounded as a consequence of a tendency for the economies of many rural areas to be based on mining and farming. As a result, businesses in those areas not thriving, owing to restricted markets, an inability to expand, and insecure systems for making and receiving e-payments, owing to the instability of local banks. Other impediments include inadequate access to wireless technology and the means to adopt it, traditional cultures which tend to eschew technology and to regard its proliferation in their social systems with misgivings, and also resistance to change, which often stems from circumstances such as a lack of bargaining power. Factors such as cultural beliefs and norms, irregular power supplies, class, and social and religious affiliations all tend to discourage the adoption of technology in rural areas (Makiwa & Steyn, 2016).

Factors that discourage the adoption of technology in rural areas include a lack of opportunities for training, a lack of confidence, technophobia, resistance to change, and a lack of proper planning. In the case of digital design and technology, there are the additional obstacles of rendering their inherently modern urban conventions intelligible in local language communications and establishing and maintaining trust in the system in the rural areas of many developing countries. In addition, many rural entrepreneurs lack essential bargaining skills and knowledge of the prices which their products or services should fetch in wider markets (Kabango & Asa, 2015). In some instances, products or services are even sold at a loss. As a consequence of the inability of many rural entrepreneurs to market their products and services effectively and to develop and operate profitable businesses, rural entrepreneurs find themselves mired in a self-perpetuating difficult situation, as financial institutions are usually unwilling to extend credit to them to develop their businesses and business acumen (Maramura, Clementine & Shava, 2016). A lack of security also plagues payments which are made by means of the internet, owing to the instability of the banking sectors of many developing countries. In the absence of measures to ensure the security of transactions which are made through the internet, entrepreneurs in rural areas tend to shy away from e-commerce, for fear of internet fraud, thereby compounding the effects of the factors which militate against the adoption of e-commerce still further.

2.4. Factors which motivate the adoption of e-commerce

Although the combined effects of the factors which undermine the successful adoption of e-commerce to encourage the growth of rural entrepreneurship are considerable, several significant factors have been found to exert a positive influence on its adoption in rural areas. It was concluded that factors which promote the adoption of e-commerce in rural entrepreneurship can be evaluated in relation to four specific contexts, namely, the technological, environmental, individual and organisational contexts (Rahayu & Day 2015). Each is discussed separately in the sections which follow.

2.4.1. Technological context

The technological context focuses the following factors; perceived benefit, cost, and compatibility, which motivate the adoption of e-commerce technology in a rural environment. Rahayu and Day (2015) explain that perceived benefit pertains to an evaluation of the extent to

which entrepreneurs accept that the adoption of e-commerce technology is likely to benefit their businesses in significant ways. Chandra and Kumar (2019) drew similar conclusions from the findings of their study and maintain that the advantages of adopting e-commerce can promote a sense of innovation and encourage entrepreneurs to allocate resources to meet the needs of specific target audiences with respect to supply and demand. Achieving this objective requires compatibility between the allocation of financial resources and the availability of suitable technology. From the findings of their study, Nazir and Zhu (2018) conclude that compatibility can be conceptualised as the extent to which e-commerce stands to benefit business organisations in relation to their existing technology infrastructure, working practices, and value. They elaborate by maintaining that compatibility between the policies of business organisations and technological innovations facilitates the simplification of the adoption of e-commerce and enables it to be visualised in recognisable context. Consequently, it can be concluded that a well-organised technological environment positively influences the adoption of e-commerce by small and medium-sized enterprises in rural areas. A well-structured organisational environment is equally crucial (Chivasa & Hurasha, 2016).

2.4.2. Organisational context

The organisational context concerns the attributes of business organisations which could influence the adoption of e-commerce technology. In the case of small and medium-sized enterprises, one of the decisive factors concerns their readiness to adopt e-commerce technology. Readiness is reflected in the extent to which the technology infrastructure, technical skills, and important systems in business will encourage the adoption of e-commerce (Nazir & Zhu, 2018). Ramdansyah and Taufik (2017), they maintain that technological readiness is predicated on adequate IT, human resources, and technology infrastructure, all of which are essential for business organisations which intend to introduce e-business as a crucial linking their value chains. The findings of the studies of both Rahayu and Day (2015) and Chandra and Kumar (2019) suggest that technological readiness is also a significant determinant of the likelihood that business organisations will adopt information technology. As the sizes of business organisations play a significant role in their ability to allocate both human and financial resources, they also represent a factor which influences the adoption of e-commerce technology.

2.4.3. Environmental context

The environmental context refers to exterior influences such as pressure from customers, suppliers, or competitors, and exterior assistance which influence the adoption of e-commerce. In a number of different scenarios, customers and suppliers are able to exert pressure which obliges small and medium-sized enterprises to make use of particular types of technology. A pertinent example can be provided by the adoption of e-commerce technology by multinational corporations in their branches and their urging of their suppliers to follow suit, in order to optimise efficiency in their global production networks (Nantembelele & Gopal, 2017). Conversely, pressure from competitors takes the form of either the loss of business, or an awareness of the imminent likelihood of the loss of business as a consequence of lagging behind competitors, as a consequence of failing to exploit e-commerce technology (Rahayu & Day, 2015; Chandra & Kumar, 2019). The adoption of e-commerce by competitors obliges business organisations to follow suit, in order to maintain their competitive advantages (Rahayu & Day, 2015). Exterior pressures from the government and IT suppliers also influence the adoption of e-commerce technology by small and medium-sized enterprises. The policies of governments can exert both direct and indirect influences. Formulating and promulgating appropriate legislation can encourage the use of the internet by making it a safe medium for transactions and obliging businesses to make use of e-procurement in transactions with governments can also serve as an inducement (Kabango & Asa, 2015).

2.4.4. Individual context

Individual contexts are determined by the individual owners of businesses, because they play a leading role in the making of decisions (Rahayu & Day, 2015; Nantembelele & Gopal, 2017). Consequently, the entrepreneurial flair and knowledge of IT of proprietors both exert a significant influence on decisions to adopt e-commerce in small and medium-sized enterprises. The adoption of e-commerce usually commences with the establishing of a web presence, which is followed subsequently by development and communication stages, as enterprises expand their e-commerce capabilities to enable them to make business transactions and electronic payments. Accordingly, e-commerce provides business organisations with the means to graduate from simple transactions to a more comprehensive exploitation of the capabilities which it confers and to combine technologies in a manner which permits them to perform a

variety of advanced level commercial tasks which are established procedures in larger enterprises (Eichler Inwood & Dale, 2019).

2.4.5. Internet penetration

Most developing countries have witnessed substantial increases in the use of the internet, the adoption and, exploitation of Information and Communications (ICT) facilities, and e-commerce. Conversely, limiting factors have been the availability of sufficient Information and Communications Services (ICTS) facilities, a lack of communication infrastructure, problems pertaining to network connectivity, insufficient bandwidth, and, the financial resources which are available to the public. Technology has emerged as the main driver of economic expansion for e-commerce, by allowing enterprises to prevail in the face of obstacles which stem from information asymmetry (Zimbabwe Infrastructure Report, 2019). Successful e-commerce is highly reliant on technologies such as automated data collection systems, electronic data interchange systems, and inventory management systems and the ability to make electronic funds transfers, to engage in internet marketing, and to enjoy the benefits of online transaction processing, while some enterprises are excluded from the advantages which e-commerce confers by connectivity problems.

2.5 Global overview of government investment strategies to promote rural entrepreneurship

2.5.1 Efforts to promote rural entrepreneurship in Africa

According to the Information Economy Report (2011), most governments of developing countries have invested in strategies to increase or promote rural entrepreneurship in their countries. The increased use of social media in agriculture in Africa has resulted in a corresponding increase in the adoption and use of ICT and it is transforming the manner in which farmers communicate and obtain access to information, particularly among young farmers (Odiaka, 2015). The social media have enabled farmers to have a voice and opportunities to deal directly with clients, which, in turn, have enabled them to engage in direct marketing and to increase the profitability of their businesses (Carr & Hayes, 2015).

It is estimated that, to date, USD19 million have been made available for agri-tech start-ups in Africa and it is reported that annual figures are increasing rapidly. In 2017, the total funding increased by 121% by comparison with the total for 2016 (Disrupt Africa, 2018). Nigeria was the principal beneficiary of investment on the continent in 2018, with 58 start-ups, with South Africa in second place with 40, while Kenya was ranked third with a significant but unspecified number (Disrupt Africa, 2018). In Uganda, the digital platform Ensibuuko has been responsible for fostering financial inclusion. The young social enterprise has become a profitable company, by developing digital solutions to make financial services easily accessible to unbanked and underserved populations.

In Kenya, the use of digital technologies is facilitated by M-farm, which provides entrepreneurs with information concerning prices and assists farmers to improve the planning of their production procedures and to decide which crops to grow and when to harvest them. This platform has enabled many agropreneurs to increase the efficiency of their cropping patterns, obtain better prices for their produce, and increase their incomes (Baumuller, 2015). By 2018 the Kenya Agricultural and Livestock Research Organisation (KALRO) had introduced 14 mobile applications to assist farmers to avail themselves of technologies which increase agricultural productivity and trade in the production of fruits and vegetables such as cassava, maize, guavas, cowpeas, avocados, bananas, and potatoes. The applications are playing a significant role in providing accurate information and also in promoting the democratisation of research data and providing relevant insights for formulating and implementing policies whose specific aim is to improve the livelihoods of smallholder farmers.

2.5.1.1. The use of mobile applications by rural entrepreneurs in Rwanda and Senegal

Mobile applications provide agripreneurs with vital information pertaining to concerns such as markets, nutrition, weather, and caring for livestock. Weather and calendar applications have been merged to enable them to provide details of weather forecasts and crop schedules and to warn them of potential hazards. The Cure and Feed Your Livestock application assists farmers with information to enable them to tend their livestock, in respects such as the diagnosis and treatment of animal illnesses, feeding routines, and preventing diseases (Trendovet *et al.*, 2019). The Agri Marketplace is a digital platform which supplies farmers with information concerning suppliers of agricultural materials, marketplaces to sell their products and services, and market

prices. The e-Nutrifood application was launched with the intention of educating rural people concerning producing, conserving, and consuming the nutritious foods which are produced by farmers in the sub-Saharan region. The Fall Armyworm Monitoring and Early Warning System (FAMEWS) application and its platform were launched by the Food and Agricultural Organisation (FAO) of the United Nations to combat the widespread decimation of maize crops by the fall armyworm in areas such as Asia, the Americas, and Africa. The FAO also developed the EMA-i application to improve the efficacy of the reporting of livestock diseases in developing countries by means of data which is obtained in real time in the field (Trendovet *al.*, 2019).

In Zimbabwe, as the country is better equipped with ICT infrastructure than many other African countries and internet penetration is relatively high, the government has adopted the use of technologies such as ICT. Most of the businesses which are owned by the government of Zimbabwe use e-commerce methods for communication and communicate with suppliers by means of Skype. They also use the e-mail system to communicate directly with suppliers and to forward catalogues of products and information pertaining to the products and services which they offer to customers (Zanamwe, Bere, & Zungura, 2012). Although e-mail messages are used to make comparisons of prices from suppliers, place orders online, and finalise orders with suppliers, making use of e-commerce to perform functions such as electronic data interchange, transferring money, and processing transactions is still relatively uncommon. Zanamwe *et al.* 2012, contend that as the pharmaceutical sector of Zimbabwe is not making full use of some of the functions of e-commerce technology such as the online purchasing and payment system, the industry is still at the entry-level with respect to e-commerce.

Websites are used in Zimbabwe to provide business organisations with an online presence, promote products, facilitate product personalisation, seek international business opportunities, and increase revenue through online banner advertisements. Maintaining an online presence facilitates business operations by enabling customers to have permanent access to information pertaining to the products and services which business organisations offer (Zanamwe *et al.* 2012). According to Kabir (2017), relatively few agricultural enterprises are able to receive e-payments, which make it exceedingly difficult for them to make international transactions by means of the internet. Several factors tend to discourage agricultural enterprises in Zimbabwe from making maximal use of e-commerce. Apart from widespread perceptions of e-commerce entailing insufficient privacy and security, perceptions of the transparent character of the platform tend to make some entrepreneurs reluctant to disclose too much information, for fear of providing competitors with intelligence which they could use to gain a competitive advantage. In

addition, many continue to be leery of online transactions, owing to widespread internet fraud (Kabir, 2017; Mbunge, Makuyana, Chirara, & Chingosho, 2015).

2.5.2. Efforts to promote rural entrepreneurship in China

According to the Information Economy Report (IER) (2015), the government of China has prioritised providing access to the internet in the rural areas of the country in response to a proliferation of entrepreneurial activities in them. The government has taken several measures to reduce disparities in access to digital technology in the country. The Ministry of Industry and Information Technology began to implement an initiative to provide administrative villages with telephone and broadband services and by 2012, 88% of villages had access to the internet.

The government also provided funds for constructing a 3,000 square-metre distribution centre, funding and training to establish e-commerce, and also preferential financing. The commitment which the government has made to provide the rural villages with access to the internet resulted in a rapid proliferation of successful entrepreneurial activities (Luo & Niu, 2019). One of the significant successes which the interventions by the government generated was the formation of an online platform by villagers themselves to market furniture throughout the country and also abroad. Its success has significantly increased the incomes of villagers and reduced rates of unemployment, as an average of six workers are employed by a single retailer.

The growths of the middle class and easy access to the internet through mobile devices have resulted in China becoming the largest e-commerce market in the world. The Taobao website, which is owned by the Alibaba Group, has been the principal beneficiary of the surge of online trading in China (Anthony, 2017). In 2016, more than 70% of online transactions were made on the Taobao site. In 2015, the Chinese government introduced the Internet Plus scheme, which is supported by policies to develop e-commerce throughout the country. This initiative was motivated by a significant shift in the national financial policy in relation to financial prudence, which entailed moving away from an economy which was predicated on overseas trade and exports to one which was driven by domestic consumption (Banjo & Fickling, 2017).

The government also envisaged the establishment of e-commerce in the rural areas as an optimal means of promoting rapid economic growth and development, in order to eradicate

poverty and the abject conditions in which many rural Chinese people lived (Fang, 2016). Other favourable government policies in China have resulted in the success of Taobao villages, which have achieved rapid growth by selling agricultural and non-agricultural goods cooperatively to urban markets through e-commerce. In 2017, Taobao, as China's largest e-commerce platform, had proprietary rights over 2,000 markets in the rural areas, owing to the large concentration of online sellers and the high volumes of sales which they made through the website (Zhan & Karl, 2016).

2.5.2.1. The Taobao e-commerce platform

The Taobao.com website is a consumer-to-consumer platform which is operated by Alibaba, the largest e-commerce company in China (Xubei, 2019; Luo & Niu, 2019). At present it dominates the online marketplace in China and three out of four online sales in China are made through Taobao. The rise of e-commerce villages in rural China has facilitated the emergence of digitally-enabled entrepreneurship at the most fundamental levels of Chinese rural society. The crucial role which the website has played in fostering rural entrepreneurship in Chinese villages is borne out by an Alizila Staff (2014), which reveals that employment had been created for 280,000 inhabitants of rural China by the end of 2014. In 2014, Taobao publicised a multi-billion-renminbi (RMB) scheme to develop two-tier service centres, in conjunction with the village and county levels, to link villages with an e-commerce platform. Alibaba signed a tactical alliance accord with a number of government agencies, at different levels of government, in particular districts, to promote rural e-commerce in addition to the implementation of a scheme to reduce poverty (Liyun, 2016). Since March of 2017, Taobao villages have been established in 29 districts, which comprise more than 600 counties and 30,000 rural areas. More than 90% of Taobao villages are concentrated in eastern districts of China and more than 70% are in southern China (Alizila, 2016). Rural entrepreneurs in other Taobao villages, which are located in the central provinces and situated close to traditional hubs of industry, are able to benefit from the proximity of established industries and service centres in their e-commerce transactions.

As a result of the investment by Alibaba in internet in the rural areas and small towns to facilitate the adoption of e-commerce, China has witnessed the birth of rural e-tailers, a phenomenon which has transformed the financial environments of Taobao villages. Rural e-tailers exploit local resources and offer their agricultural products, customary handicrafts, and products acquired from wholesale markets for sale through websites such as Taobao (Leong, 2016).

Most of the entrepreneurs begin to ply their trade through e-commerce at the household level and consolidate their positions by forming mutually beneficial associations with entrepreneurs in other fields. Successively, they establish agricultural industry clusters of e-commerce activity, which, in turn, results in the formation of embryonic e-commerce environments in which entrepreneurs interact and cooperate with counterparts who provide allied services, such as delivery services (Chen, Huli, Yiwu, & Hongdong, 2018).

The introduction of the Internet Plus plan in 2015 was an expression of the vision of the government of China of a digital future, in which members of the general public could be encouraged to adopt innovative practices and start their own businesses. The five-year strategy prioritised the development of infrastructure and technical innovation, specifically in relation to the development of hardware and networks, which necessitated the supplying of capital and skills by government-funded organisations and schemes (Yu, 2017). The Taobao villages in China exemplify the community-driven approach in ICT-enabled development (Li, 2017). The rural e-commerce ecosystem, which comprises e-retailers, partners in e-supply chains, third-party e-commerce service providers, and supportive institutions, has developed from the bottom up, as a result of both individual initiatives and those which originate within rural communities.

Digital entrepreneurship represents a crucial driving force of bottom-up social development. The success of e-commerce in China reflects sound digital financial prudence. The Taobao platform coordinates the entrepreneurial activities of all sectors, from rural entrepreneurs to retailers of luxury goods. It also serves to coordinate the activities of players as diverse as fashion designers, retailers, producers of e-commerce products, and individual entrepreneurs who use the internet to reduce digital disparities between urban and rural areas and between those who have access to information and those who do not (Leong *et al.*, 2016).

2.5.3. Efforts to promote rural entrepreneurship in other parts of the world

The Australian government has been making concerted efforts to make its sparsely populated rural areas as economically vibrant as their urban counterparts by promoting rural entrepreneurial activities. Rural businesses in Australia have been making use of the internet for purposes such as communicating by means of e-mail, internet banking, and paying taxes and levies to local authorities. Rural enterprises in Australia use websites and the social media to

improve the efficacy of the methods which they use to advertise the goods which they produce or the services which they offer, in order to provide information to consumers and to develop a global presence (ABS, 2017).

Farmers in Serbia make use of digital technologies to obtain information to assist them in activities such as accounting, sales, and electronic banking (Trendovet *al.*, 2019), while the government of Serbia also uses social media to disseminate information to the population. Digital technologies play a crucial role in identifying new markets, particularly for the organic farming community in Serbia. Rural entrepreneurs in Cambodia also use digital technologies to obtain access to information. It is estimated that 88% use agricultural applications and 82% Facebook pages to obtain information concerning markets and market prices for their products and services (Trendovet *al.*, 2019).

In the United States, the studies conducted in 2018 revealed that video and audio content were perceived by farmers to be beneficial for educational purposes, as more than half of the farmers who were surveyed listened on their mobile phones to the audio content made available once a day, while a further 25% listened to it more than once a day (Trendov, Varas & Zeng, 2018). The agricultural sectors of the United States, Canada, Europe, and countries such as Brazil, India, and China make extensive use of innovative technology, such as block chain technology, Artificial Intelligence, robotics, and drones. Precision agriculture is an approach to the management of farms which makes use of IT to ensure that the exact needs of crops and soil are met, through technological innovations such as remote sensing and the gathering of proximal data, to reduce operating costs, protect the environment, and ensure optimal profitability and sustainability (Schimmelpfennig, 2016).

The increased use of digital technologies in rural agribusiness is reflected in the widespread adoption in countries such as India and Indonesia of MyCrop, a technology-enabled initiative which is facilitated by the assistance which Farmer Mitras, or village-level entrepreneurs, provide to farmers to use the application (Trendovet *al.*, 2019). The information and expertise which it makes available to rural smallholder farmers can be customised to meet the specific needs of individual farmers, to increase productivity, profitability, and their livelihoods. It makes use of innovative technology such as Big Data, machine learning, and smartphones and tablets to provide agricultural insights to make and implement decisions on the basis of information which is obtained through procedures such as geo-mapping, crop planning, individual farm

plans, and automation, to yield crucial almost real-time data pertaining to weather, soil, pests, and crops (Trendovet *et al.*, 2019). MyCrop is an agrifood system which is sustainable, data-driven, self-taught, scalable, intelligent, and collaborative, which functions as a management system for both farms and farmers. It facilitates the making of predictive evaluations and supervising operations and also acts as a support system for decisions and an e-commerce platform for purchasing agricultural supplies and marketing produce (Trendovet *et al.*, 2019).

2.6. Strategies to promote the adoption of digital design and technology in Gokwe

Maramura, Clementine and Shava (2016) and (Saleminik, Strijker, and Bosworth 2017) contend that laws and regulations should be changed to facilitate the dissemination of information and the use of technology in rural enterprises. These objectives could be achieved through the formulation of a national budget which attracts direct foreign investment as a strategy for reducing and eradicating poverty. Collaboration between government agencies and departments and private organisations is essential to accelerating the implementation of information technology in rural areas outside of cities. Several crucial stages need to be successfully negotiated to make it possible to promote the adoption of digital design and technology by rural entrepreneurs in Zimbabwe.

According to Maramura, Clementine and Shava (2016), private companies such as NetOne and Econet Wireless Zimbabwe Limited have introduced Communication Booster training courses in rural areas to enable rural populations to make use of information technology. They explain that Econet has introduced 3G technologies, which allows users to have wireless access to the internet by means of mobile phones, tablets, computers, and other portable electronic devices and enables entrepreneurs to use e-commerce to increase the speed and efficiency of their business transactions. The wireless mobile phone banking service which Econet offers is known as EcoCash. It is widely used to make transactions and many rural entrepreneurs have welcomed the new banking system for making and receiving payments, as all transactions are made online and are no longer subjected to the risks which often accompany carrying large amounts of cash (Munongo & Dzikamai, 2017).

At present there is a need to reduce the costs which using the internet in rural Zimbabwe entail, as the costs of becoming connected to the internet are high and increased bandwidth and data bundles are expensive, which places them beyond the reach of many rural entrepreneurs. High

costs effectively preclude emerging rural entrepreneurs from actively marketing their products and services online. Reducing costs sufficiently would enable most rural entrepreneurs to exploit the opportunities which the internet affords, to increase the reach of their businesses as their urban counterparts have done. Accordingly, it is incumbent on the government to facilitate access to affordable ICT infrastructure and to technological and financial investments in rural businesses (Munyoro, Chikombingo, & Nyandoro, 2016; Chivasa & Hurasha, 2016).

Other measures which the government needs to take to encourage rural entrepreneurship include making substantial improvements to the security of information which is provided in online transactions. As most rural entrepreneurs fear cybercrime, in the absence of adequate measures to prevent it, their reluctance to use e-commerce in their businesses is likely to become entrenched (Chivasa & Hurasha, 2016). Awareness campaigns in rural areas and communities to promote the adoption of e-commerce as an optimal means of making business transactions in the digitally connected world of today would also further the cause of rural entrepreneurship (Maramura, Clementine and Shava, 2016). It would be necessary to ensure that the managers of rural businesses and local entrepreneurs are given adequate training to acquire ICT skills to enable them to recognise the significance of e-commerce for their businesses (Munyoro *et al.*, 2016).

In addition, it is imperative that the government should also increase the access which rural entrepreneurs have to computer hardware and other necessary electronic devices through subsidisation, in order to encourage the use of e-commerce. An initiative of this nature would also require the government to lead by example, by demonstrating both how e-commerce functions and how it stands to benefit the public. Appropriate legislation and regulation of e-commerce transactions should be formulated and implemented to protect entrepreneurs from cybercrime and to compensate those who fall prey to it, in order to reduce negative perceptions of the dangers of online trading. The government could also encourage the use of Mobile ICT to increase productivity and facilitate effective marketing, as it is estimated that 103% of the population own mobile phones in Zimbabwe (Musungwini, 2018; Nyamba & Mlozi, 2012; Oladele, 2015). Enabling mobile phone technology to facilitate the development of rural entrepreneurship allows entrepreneurs to have instant access to up-to-date information and to make informed decisions (Tadesse & Bahiigwa, 2015). The findings of studies which have been conducted in Tanzania and South Africa reveal that entrepreneurs make extensive use of mobile phones to obtain information by means of SMS systems (Pew Research Centre, 2015). Mobile phones allow entrepreneurs to engage with the international community through the

internet and eliminate the costs which would be incurred by travelling to city centres to conduct business (Costopoulou, Ntaliani & Karetos, 2016). Mobile technology allows entrepreneurs to transmit and receive information to and from customers, suppliers, and markets (Nyamba & Mlozi, 2012; Tadesse & Bahiigwa, 2015).

At present, entrepreneurs in Zimbabwe are able to receive payments and insure crops by making use of mobile services (Econet, 2015). In addition, they are able to receive updated information concerning the prices of products from sources such as suppliers and markets, through the SMS-based EcoFarmer platform. The adoption of digital design and technology by making use of ICT also stands to empower rural entrepreneurs by increasing their access to microfinance (Trendovet *al.*, 2019) and to facilitate economic growth in several different sectors, such as handicrafts, tourism, and agriculture (Rao, 2011). Strategies to encourage the adoption of digital design and technology in Gokwe can be implemented successfully only through the formulation and implementation of favourable policies and regulations which provide inducements for investment, through arrangements such as private or public partnerships and universal service schemes. The participation of rural entrepreneurs in development partnerships with the private sector could encourage the emergence of new and innovative business activities, while shared responsibilities could serve to minimise any inherent potential risks.

2.6.3. Funding opportunities for entrepreneurs in Gokwe

Although there are relatively few funding opportunities available in most rural areas of Zimbabwe for developing entrepreneurial activities, there are microfinance organisations in Gokwe which assist new entrepreneurs and small business start-ups to establish their businesses and to finance their daily business operations. Microfinance represents an attempt to increase access of loans to prospective entrepreneurs who are poor or subjected to discrimination by the banks by being considered as unworthy of receiving loans (Machingambi, 2014). Microfinance institutions are established in Zimbabwe to provide financial assistance to people either to start or expand their businesses, if they provide employment and represent a sufficiently sustainable means of generating incomes for their families (Swamy & Tulasimala, 2013).

Among the microfinance institutions which operate in Gokwe are Savings and Credit Cooperative Societies (SACCOs), which are run under the auspices of the Posts and Telecommunications Corporation of Zimbabwe and the Zimbabwe Teachers' Association. Branches of these microfinance institutions are located in townships, rural areas, and growth points, to provide financial assistance to budding entrepreneurs. SACCOs are controlled and governed by the Ministry of Small and Medium Enterprises and Cooperative Development and listed under the Cooperative Societies Act (Chigara & Matesasira, 2001) and provide loans at low rates of interest. Five SACCOs operate in Gokwe South District, namely, Gokwe South Youth Savings, Mapfungautsi, Gokwe Founders, Chitekete, and Tatenda Progressive.

By contrast, Rotating Savings and Credit Associations (ROSCAs) are informal groups of people who agree to meet to contribute prearranged amounts to a common fund, from which individual members receive lump-sum payments in rotation until each member has received a payout, at which point the ROSCA reaches the end of its life cycle (Hugh, 2006). ROSCAs are also further subdivided into bidding, investment, and marketplace ROSCAs. While the members of investment ROSCAs receive amounts, which are equal to the sums of their contributions, while the order in which members of bidding ROSCAs are awarded loans is determined by means of a series of auctions (Mbizi & Gwangwava, 2013).

The benefits that ROSCAs provide to its members are the ability to put money together from all members. The last recipient receives an amount that is equal to the sum of their contributions at an earlier time than if they had accumulated it themselves. They are able to use to purchase goods or invest in income-generating activities. Internal Savings and Lending Schemes (ISALs) also provide funding opportunities for rural entrepreneurs. They were introduced by CARE International in 1999 in a scheme which was known as KupfumaShungu (KI) (Allen, 2007). ISALs are also known as Accumulating Savings and Credit Associations (ASCAs), which are self-sufficient groups, in that the funds from which members are able to make small flexible loans are generated entirely by the members themselves (Brannen, 2010). The principal purpose of ISALs is to assist their members to develop micro businesses and income-generating activities (Gudza, 2014). The assets of ISALs comprise two separate funds, namely, the loan fund and the social fund. Members borrow from the loan fund to start new businesses or expand their income-generating activities and loans are repaid with interest. Conversely, the social fund is reserved for essential needs such as education and healthcare and emergencies such as deaths in the families of members. In Gokwe South District, the Ministry of Women Affairs, Gender, and Community Development and non-governmental organisations are among

the principal facilitators of ISALs as a means of funding entrepreneurial activities and promoting the development of entrepreneurship. Consequently, it is possible to conclude that although microfinance institutions provide opportunities for funding in the Gokwe region, they are nonetheless limited by the regulations of the funding mechanism which govern the awarding of loans at present (Mbizi & Gwangwava, 2013).

2.7. Research gap

The literature review revealed that relatively little research has been conducted specifically to investigate the role which digital design and technology have to play in the development of rural entrepreneurship in rural Zimbabwe.

The studies of Zanamwee *et al.*, (2012) have conducted concerning the use of digital technology in the pharmaceutical sector, and Mupfiga (2015) has conducted of its use in the tourism sector have shed some light on the extent to which e-commerce has been integrated into business practices in Zimbabwe. It appears to be a relative dearth of research on the potential of digital design and technology to stimulate entrepreneurship in rural areas. There are definite obstacles that need to be overcome to increase access to and adopt digital technology in rural areas (Pavez & Correa, 2016). Despite the widespread exploitation of digital systems and e-commerce throughout the world, little research appears to have been conducted to evaluate the success with which they have been integrated into business practices in rural areas of Zimbabwe and other sub-Saharan African countries whose conditions are similar. The literature which has been reviewed showed that digital design and technology have revolutionised business systems in urban areas through the universal adoption of the internet (Whitacre, Gallardo, & Strover, 2014), it remains to be seen whether the trend has been even remotely replicated in rural Gokwe in Zimbabwe.

The literature review has revealed a gap between the potential of rural entrepreneurship and access to global markets, owing to failure to make full use of digital design and technology through the internet in the rural areas of countries such as Zimbabwe. Although digital design and technology are being used to disseminate information, market, and advertise rural areas' products and services in other countries; rural entrepreneurship is developing rapidly (Turuk, 2018). It appears that it cannot be said of Zimbabwe's rural areas; consequently, it is necessary

to make an accurate determination of the factors that continue to slow the emergence of rural entrepreneurship in areas such as Gokwe in Zimbabwe.

2.8.Theoretical framework

The section which follows takes the form of a discussion of the theoretical framework which the researcher developed to guide the conduct of this study.

2.8.1. Development of a theoretical framework to underpin the study

A theoretical framework is essentially to support to explain the research against generally accepted theories and theoretical models in their particular fields of inquiry. The theoretical frameworks for this study are the Net-Enabled Business Innovation Cycle (NEBIC) (Wheeler, 2002) and the people, context, deal, and opportunity (PCDO) analytical framework developed by Sahlman, Howard, Roberts and Amar (1996). Both theories are elucidated in the sections which follow.

2.8.1.1. The Net-Enabled Business Innovation Cycle (NEBIC) (Wheeler, 2002)

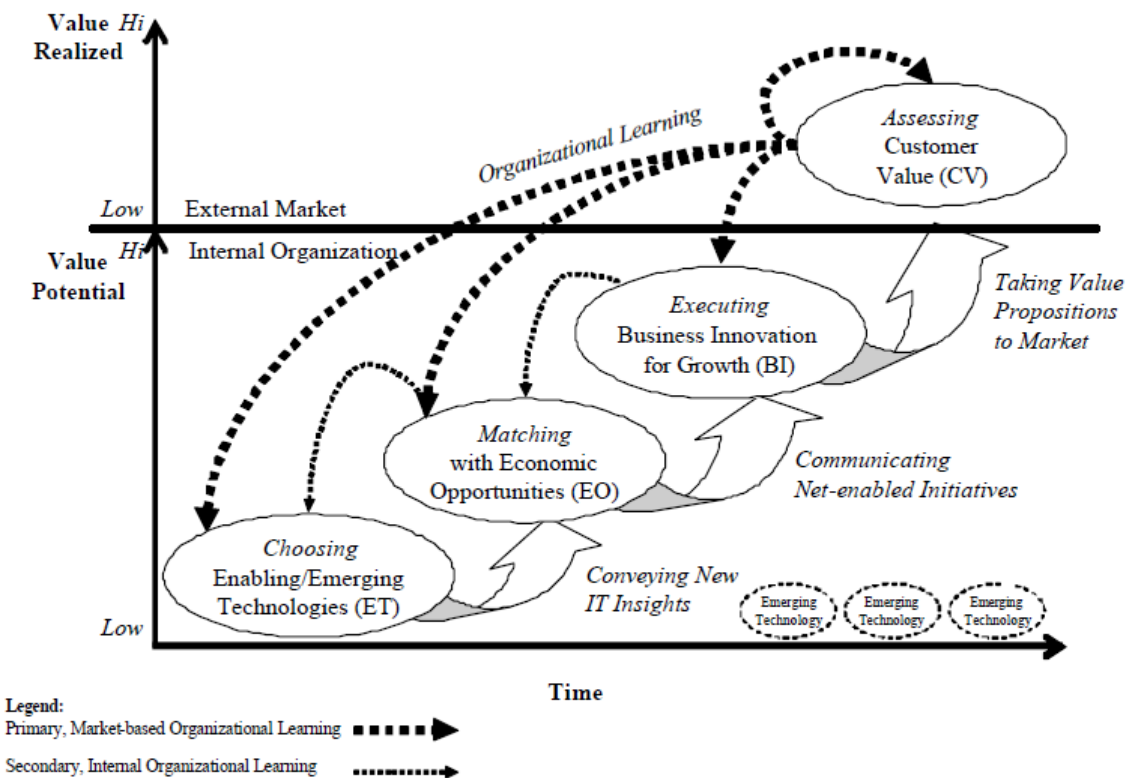


Figure 2.1: The Net-Enabled Business Innovation Cycle (Wheeler, 2002)

The Net-Enabled Business Innovation Cycle theory is based upon the assumption that a network is comprised of social systems, organisations, private personnel, and groups which are connected for a single common goal. It holds that networks which are created by business organisations which have access to the internet, or net-enabled business organisations, enable them to make transactions, exchange information, and innovate by exploiting new business processes more rapidly than had ever been possible before (Wheeler, 2002). Accordingly, net-enablement reduces the obstacles which time and distance had previously imposed by enabling clients, suppliers, and associate partners to collaborate with one another over great distances, as efficiently and effectively as if they were all together in the same rooms.

In addition, the Net-Enabled Business Innovation Cycle theory also suggests that the successful invention and development of technology to facilitate the growth of businesses correlates strongly with increased net-enabled capacity. The Net-Enabled Business Innovation Cycle framework stipulates that net-enablement is predicated on four specific competences, namely, the abilities to select emergent enabling technologies (ET), synchronise the introduction and use of relevant technologies with the exploitation of economic opportunities (EO), formulate and introduce innovative business practices to facilitate expansion (BI), and measure customer value accurately (CV) (Tahir & Mushtaq, 2015). The central tenet of the framework concerns the optimal use of the continuous evolution of information technology to generate customer value. In the context of the Net-Enabled Business Innovation Cycle framework, emergent and enabling information technology have specific meanings. Emergent information technology refers to technologies which are undergoing development, while enabling information technology refers to technology which enables business organisations to exploit the economic opportunities which they have identified (Pesceet *al.*, 2019; Duspara, Knežević & Duspara, 2016). Formulating and introducing innovative business practices to facilitate expansion refers to the ability of business organisations to rearrange their services, products, and resources in a manner which permits them to put the technology which is needed to facilitate expansion effectively into operation.

2.8.2. The people, context, deal, and opportunity (PCDO) analytical framework

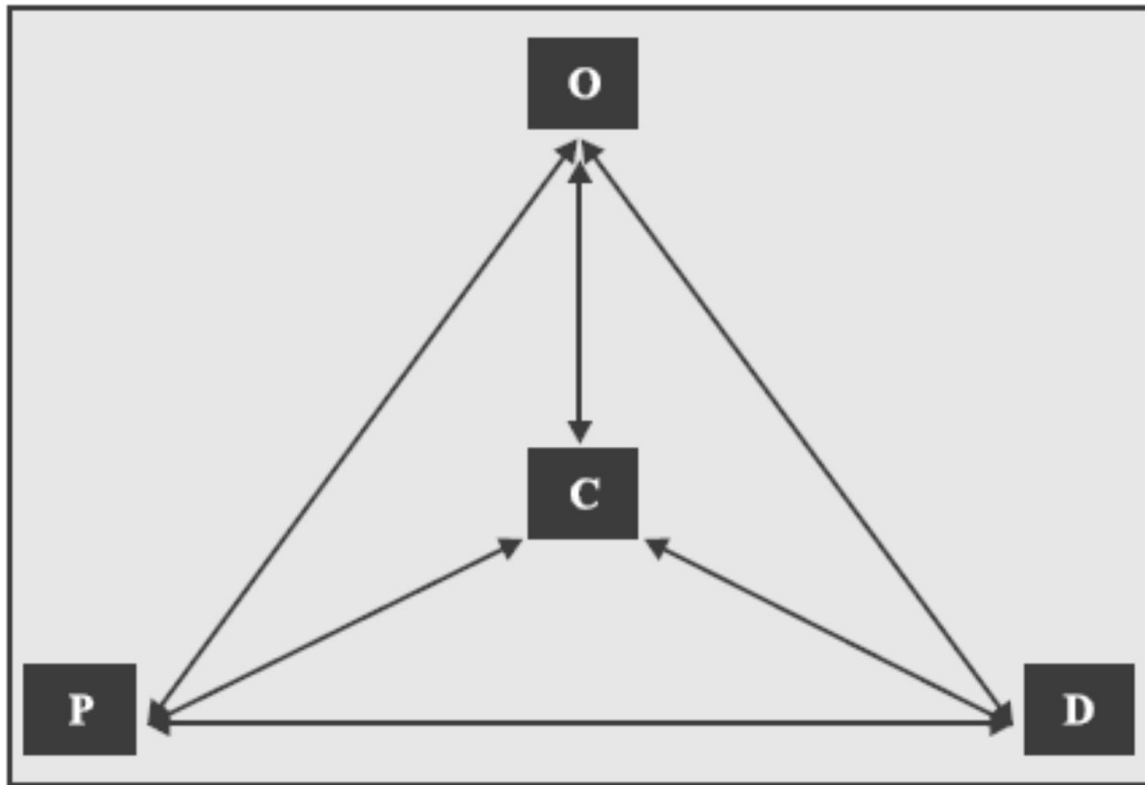


Figure 2.2: The people, context, deal, and opportunity (PCDO) analytical framework (Sahlman, Howard, Roberts & Amar, 1996).

In this framework, people are characterised as participants in a business enterprise, which consists of people both within and outside of an association who play an active role in ensuring the success of the business enterprise (Sahlman *et al.*, 1996). Context can be conceptualised as the factors which are beyond the control of individual entrepreneurs, but influence the success of their businesses. Contextual factors include the macro economy, taxes, and governing structures. Economic environments, tax policies, employment levels, technological advances, and social movements such as those that concern labour, religion, or politics; these are examples of specific contextual factors that can influence both the opportunities that are available to new ventures and the inherent risks to which they may be exposed (Austin, Stevenson, & Wei-Skillern, 2006).

The deal is predicated on the level of affluence in a particular line of trade, which determines the person in a business enterprise who provides a particular product or service to a customer and

when the purchase takes place. The factors which exert an influence on its outcome include economic benefits, social recognition, autonomy and decision rights, the need to satisfy deep personal needs, social interactions, and the fulfilment of desires pertaining to families and personal legacies, and the achieving of altruistic goals. Opportunity can be defined as any potential course of action which requires the investment of scarce resources in the hope of a return in the future (Sahlman *et al.*, 1996). As opportunities tend to be perceived according to a number of different possible contexts, it is possible that the amending of a deal could attract new players and drive away existing ones.

2.8.3. Applying the NEBIC theory and PCDO frameworks in the study

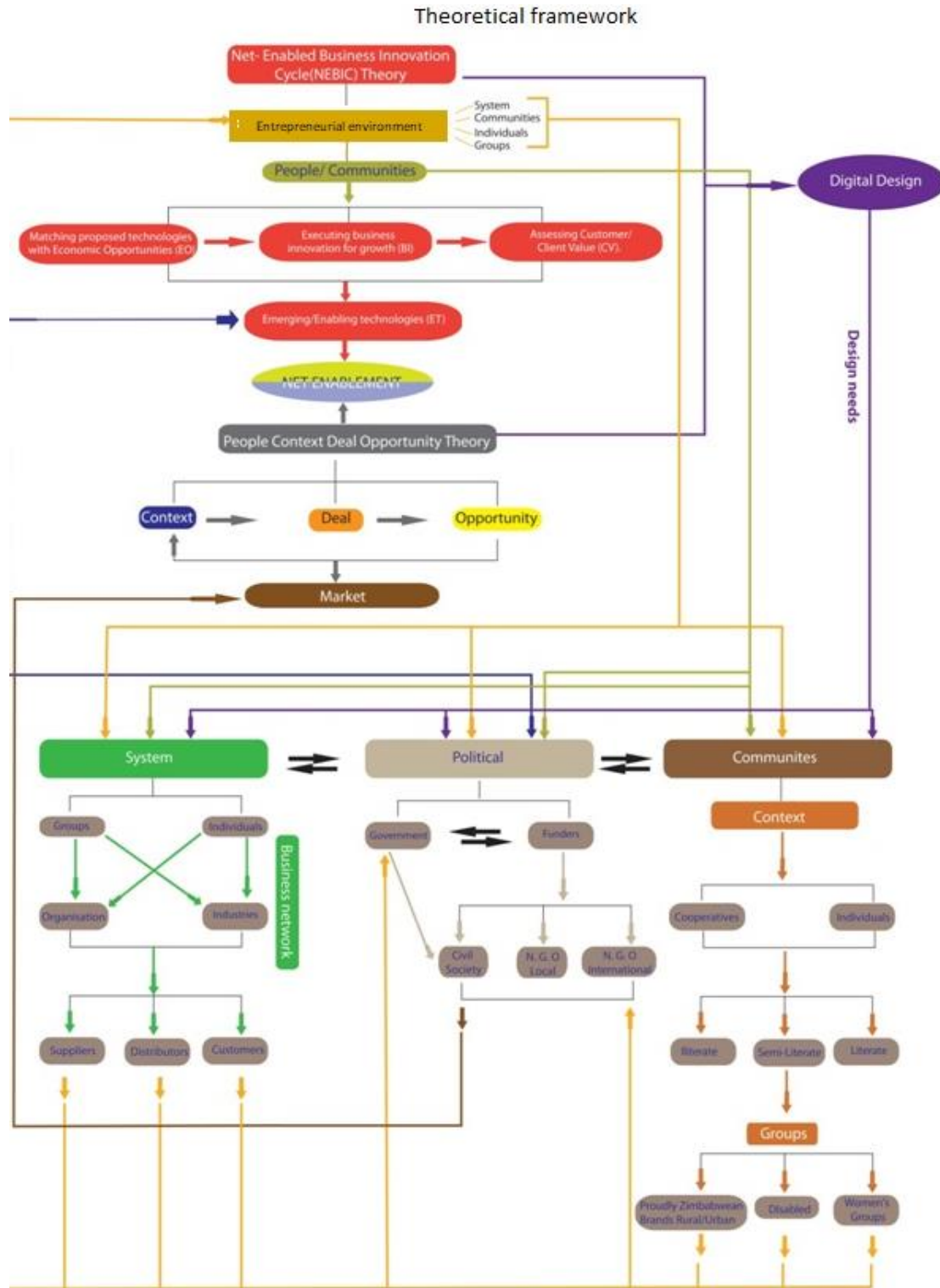


Figure 2.3: NEBIC theory and PCDO frameworks

Together the NEBIC and PCDO frameworks provide a theoretically sound basis for both investigating the factors which at present inhibit the adoption of e-commerce by rural entrepreneurs and, in turn, retard the success of rural entrepreneurship, and facilitating the designing of an appropriate intervention to promote the adoption of e-commerce (Biswal, 2019; Roth, 2017). As the NEBIC framework is predicated on economic growth through the continuous development of innovative business practices in entrepreneurial environments which function as business networks, through the interactions of systems, communities, individual participants, and groups, it is highly relevant to the workings of all entrepreneurial environments, even rural environments such as Gokwe. Business networks are essentially systems which are comprised of individual people who staff the organisations of particular industries and are also customers of organisations in other industries, and groups which function as organisations, in the roles of suppliers and distributors (Ngoasong, 2015).

The NEBIC framework becomes functional in entrepreneurial environments which are comprised of entrepreneurs who are positively disposed towards availing themselves of new opportunities for stimulating the growth of their businesses, by generating client value through the adoption of technology which is influenced by the specific context in which they and their businesses operate (Van Welsum, 2016). The system in which net-enabled entrepreneurs and enterprises operate not only affords them instant and direct access to distributors and customers, but also facilitates collaboration for mutual benefit, in ways such as combining their resources to obtain favourable prices for bulk purchases from distributors. Net-enablement facilitates the creation of a system which enables communities to interact with and obtain resources from the political environment, which comprises the government, funders, and civil society organisations. The communities in question comprise both cooperatives and individual entrepreneurs, in either urban or rural areas, and their members may be illiterate, semi-literate, or literate. In addition, they can be groups which manufacture and promote local brands such as Proudly Zimbabwean or other types of groups, such as women's groups or groups whose members are disabled people. Funders comprise local and international non-governmental organisations and civil society organisations. The organisations disburse their funding through the government, which, in turn, distributes it to the communities (Austin *et al.*, 2006).

The PCDO framework plays a complementary role to that of the NEBIC framework. If it is applied in a net-enabled context, the contextual component of the equation becomes fundamentally changed, which, in turn, will exert a significant influence on the deal and opportunity components (Trendovet *et al.*, 2019). For the purposes of this study, 'people' has three components, namely, the system, the political environment, and the communities of entrepreneurs. Contexts are supplied by the locations from which the rural and urban entrepreneurs operate their businesses. The deal concerns the economic benefits in terms of profits which business ventures generate, while opportunity refers to the amount of business which is potentially available in particular contexts. Digital design and technology facilitate the development of environments which are conducive to rapid economic growth and networks which enable entrepreneurs, irrespective of whether they operate in urban or rural areas to have direct access to suppliers, distributors, customers, and markets. In order to fulfil their potential in these respects, digital design and technology requires an effective and efficient digital system which can facilitate networking in entrepreneurial communities such as Gokwe.

2.9 Summary

This chapter has provided a cogent rationale, from the available relevant literature, for the necessity of making full use of digital design and technology to promote the development of rural entrepreneurship; and also identified a significant lack of relevant research pertaining to the use of digital design and technology in specifically rural contexts. It emerged from the studies which were reviewed that rural entrepreneurs in most sub-Saharan African countries tend to lag behind their urban counterparts in respects such as proximity to markets, poor and unreliable access to the internet, and inadequate funding to establish sustainable businesses. Unlike the governments of many European and Asian countries, the governments of most African countries appear not to be making sufficient effort to promote and modernise rural entrepreneurship. As a consequence, rural entrepreneurs in African countries are often at a severe disadvantage to their counterparts in other countries in respects such as access to markets and contributing to economic growth. Owing to these constricting circumstances, a great many rural businesses fold up within a year of having been established, while others seldom endure for more than two years before they are obliged to close their doors and relocate to urban areas. The underlying causes of this discouraging scenario are usually a lack of effective and appropriate policies and a failure to develop adequate mechanisms for encouraging the growth of businesses in rural areas. The following chapter is devoted to a

detailed discussion of the research paradigm which the researcher chose to give the study a sound moral core and a comprehensive overview of the methodology which was used to collect, analyse, and interpret the data which the inquiry generated.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

A research methodology is essentially the sum of the approach which is adopted to conducting a particular study. The theoretical assumptions which guide it, the methods which are used and the procedures which are followed to collect and analyse the data which it generates; it is an assessment of how appropriate the methods which are chosen are for conducting research in a particular environment (Kumar, 2011; Williman, 2011). The principal purpose of this chapter is to provide a critical appraisal of the procedures which the researcher elected to follow to collect, analyse, and interpret data to obtain a comprehensive empirically-based understanding of the factors which restrict the access which rural entrepreneurs have to markets and militate against the adoption of digital design and technology in rural areas. The discussion of the research methodology is accompanied by an overview of the ethical standards which apply to all research in which human beings participate.

3.1.2. The research setting

The participants in the study were rural entrepreneurs in Gokwe and urban entrepreneurs in Harare. Gokwe is located in the Midlands province of Zimbabwe. As agriculture is the backbone of the economy, most owners of small businesses and entrepreneurs participate in farming activities. Although the products of small to medium-sized enterprises in the district meet international standards, the market which is available to them at present is small. Several of the entrepreneurs who participated in the study operated in sectors of the economy other than agriculture, such as manufacturing, in order to enable the researcher to obtain data from as broad a spectrum of business activities in the district as possible. The participants who were based in Harare were selected because they had access to larger markets and their businesses were thriving. The significant difference in the circumstances of the two groups of participants was intended to provide insights into both how the successful integration of digital design and technology contributes to the success of thriving businesses and the potential which they have for facilitating the development of entrepreneurship in Gokwe.

3.2. Research paradigms

Irrespective of whether qualitative, quantitative, or mixed methods are used to conduct research studies, specific research paradigms provide their philosophical basis. Both Creswell(2007) and Neuman(2014) explain that research paradigms are, essentially, sets of shared beliefs of particular schools of thought, by means of which researchers interpret and assign meaning to the data which they collect in the research studies. The interpretive, positivist, humanist, and structuralistparadigms are among the best-known research paradigms. A paradigm has epistemological, ontological, and methodological dimensions.

3.2.1. Ontology

Ontology is concerned with the essential nature of reality and, traditionally, its two opposing poles have been represented by realism and nominalism (Mchunu, 2013; Neuman, 2014). As Rehman and Alharthi (2016) explain, ontology is an inquiry into “the nature of our beliefs about reality”. When ontology is applied to research, it concerns the implicit assumptions which researchers make concerning the nature of reality and what can be known about it (Rehman&Alharthi, 2016). A relevant ontological assumption for qualitative research is that as there are numerous social realities and subjective individual realities, reality cannot be described by means of concrete facts pertaining to behaviour which emerge from the observations of a detached observer (Gunbayi, 2020).

3.2.2 Epistemology

Epistemology is concerned with sources of knowledge and epistemological assumptions are derived from conclusions which are drawn concerning the types of knowledge which are possible, how knowledge is acquired and verbalised, and, ultimately, what it means to know something (Bezuidenhout, Davis, & Du Plooy-Cillers, 2014). In addition, epistemology could be conceptualised as an inquiry into the possible relationship between a would-be knower and what can be known (Neuman, 2014). The epistemological dimension of qualitative research covers appropriate methods, procedures for validation, potential means of acquiring knowledge of social reality, what it could be understood to be, and the extent to which what is assumed to exist can be known (Neuman, 2014; Ryan, 2018). As an inquiry into the nature of knowledge

and the ways in which it can be acquired, epistemology facilitates the development of models and concepts by means of which social reality can be understood. In research, epistemology explains how researchers can be said to know something, how they know the truth or reality, and what counts as knowledge of the world (Cooksey & McDonald, 2011; Rehman & Alharthi, 2016).

3.2.3. The positivist paradigm

Neuman (2014) characterises the positivist paradigm as the approach of the natural sciences and describes it as “an organised method for combining deductive logic with precise empirical observations of individual behaviour, in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity”. Positivists maintain that reality exists independently of human observers. Accordingly, social scientists who are proponents of the positivist paradigm endeavour to comprehend the social world from a similar standpoint to the one which they use to understand the natural world, through the use of language and symbols to explain phenomena as they exist in what they believe to be objective reality, uncoloured by subjective human perceptions (Rehman & Alharthi, 2016).

3.2.4. The interpretivist paradigm

The fundamental tenet of the interpretivist paradigm is that owing to the essentially complex nature of a reality, phenomena can be interpreted in any number of different ways. It also holds that individual people construct their own meanings of phenomena which they experience and that perception which are shared by groups of people result from social constructions of reality (Leavy, 2017). Researchers who base their studies on the interpretivist paradigm endeavour to understand how society functions by analysing the subjective perceptions, beliefs, and opinions which individual participants express (Gemma. 2018; Gunbayi & Sorm, 2018).

3.2.5. The research paradigm which underpins this study

The researcher adopted the radical humanist paradigm to underscore the findings of this study. The paradigm emphasises human consciousness and functions both to critique the status quo and to provide a subjective appraisal of radical change, systems which are characterised by domination and deprivation, and potentiality in relation to emancipation and socioeconomic

advancement (Gunbayi & Sorm, 2018). It also endeavours to provide a critical evaluation of media-created realities and the effects of information technologies (Callaghan, 2016). Radical humanists emphasise awareness as the basis for a radical critique of society, while the paradigm characterises modern society as being driven by necessary conflicts which have the potential to facilitate radical change through political and economic crises. The liberation of people from the social structures which bind them in servitude is predicated on both the conflicts and the transformation which can result from them (Hartley, 2010).

Callaghan (2016) explains that the radical humanist paradigm represents an inquiry to facilitate the development of a sociology of radical change with an inherently subjectivist perspective, to overcome the limitations of existing social arrangements. Its ability to challenge the status quo lies in its ability to provide a “frame of reference that beholds in the society to be transformed the limitations of existing social arrangements and is concerned with securing release from the constraints which existing social arrangements place upon human development” (Gunbayi & Sorm, 2018). Inherent in the radical humanist approach is the belief that social transformation can occur through the rapid revolutionary transformations which are exemplified by social research methods and guide the conducting of social research (Gunbayi & Sorm, 2018). Furthermore, Gunbayi & Sorm (2018) contend that the tenets of the radical humanist paradigm are rooted in political and economic contradictions and predicated on the structural relations which determine the social realities of countries.

The paradigm increases the ability to gain a comprehensive understanding of human capability, by facilitating the investigation of existing social norms (Myers & Klein, 2011). As its principal concerns include freedom and social monitoring principles, it can be profitably applied to the use and influence of information systems technology, in this instance digital technology and design. The appropriateness of the radical humanist paradigm is underscored by the intention behind the conducting of this study to change the lives of rural entrepreneurs through the adoption and effective use of digital design and technology.

3.2.5.1. The Net-Enabled Business Innovation Cycle (NEBIC)

The radical humanist research paradigm is compatible with the NEBIC framework because while the paradigm advocates the changing of lives through socioeconomic development, the framework facilitates economic growth through the optimal use of information technology. The NEBIC framework prioritises the role of technology in entrepreneurial environments to create

economic opportunities, promote the growth of business, and create customer value through the effective exploitation of the enabling technologies which are constantly being developed. The NEBIC promotes entrepreneurship through the common access to the internet which all of the partners in a particular enterprise enjoy, which, in turn, drives successful commerce. Digital design represents the means through which digital technologies can be effectively used to market, advertise, and disseminate information concerning the high-quality products and services which rural entrepreneurs need to make available to wider markets.

3.2.5.2. The People, Context, Deal, and Opportunity (PCDO) analytical framework

The PCDO analytical framework plays a complementary role to that of the NEBIC framework in the context of this study, as it represents the means by which rural entrepreneurs are able to structure their business activities in a net-enabled environment to maximise the opportunities which are available to them. For the purposes of this study, the PCDO framework will be used to perform a demographic analysis of the people in the system, political environment, and communities which are represented schematically in the diagram in section 2.8.3, in an overall strategy for promoting rural entrepreneurship through the integration of digital design and technology into net-enabled environments in rural areas.

3.3. Research methodology

The research methods which are used to conduct studies are usually categorised into three principal categories, namely, qualitative, quantitative, and mixed methods. Qualitative research usually entails the use of procedures and techniques to collect and analyse information through explanations and interpretations of particular contexts (Taylor & Bogdan, 1984; Neuman, 2014; Onwuegbuzie, 2003; Silverman, 2015). It is concerned with the meanings which people ascribe to particular events, occurrences, or phenomena, by investigating how people define, describe, and metaphorically characterise their experiences of them (Vanderstoep & Johnston, 2009). Yin (2018) explains that the purpose of qualitative research is to understand social phenomena by obtaining answers to questions which begin with 'how', 'why', or 'what', while quantitative research entails a deductive procedure which is concerned with the gathering of numerical data and analysing it by means of mathematically based methods (Silverman, 2015; Rovai, Baker & Ponton, 2014; Aliaga & Gunderson, 2002, Muijs, 2011).

3.3.1. Research methods employed to conduct this study

The researcher elected to make use of both qualitative and quantitative research methods, by developing a mixed methods research design (Guest, 2013; Almalki, 2016). Doing so enables researchers to obtain insights from collecting and analysing both qualitative and quantitative data and making use of a range of different inference techniques, to increase the breadth and depth of the understanding which emerges of the phenomenon which is being studied and also to generate two mutually corroborating sets of data (Burke, Onwuegbuzie, & Turner, 2007; Morse & Niehaus, 2009).

Johnson *et al.* (2007); Kowalczyk, 2016 maintain that mixed methods enable researchers to counterbalance intrinsic weaknesses of either qualitative or quantitative methods with the intrinsic strengths of the other and also to compensate for the unavoidable biases which are inherent in either type. Mixed methods also permit researchers to develop their research strategies during the course of conducting their studies, by using the findings from the data which either qualitative or quantitative methods generate to inform the use of other research methods (Creswell, 2006; Azorin & Jose, 2016). Among the other benefits of mixed methods research is complementarity, by means of which the findings which emerge from the use of one method are explained and expanded upon by the findings which emerge from using the other method.

3.4. Research strategy

A research strategy is essentially a step-by-step plan for conducting a research study. Among the forms which research studies can take are experiments, surveys, archival analyses, histories, and case studies. Each entails its own methods and procedures for collecting and analysing data. The researcher elected to conduct a case study, which is often appropriate when relatively little relevant literature pertaining to a particular research topic is available.

3.4.1. Case studies

A case study is an empirical inquiry into a contemporary phenomenon within its real-life context; particularly in instances in which the boundaries between the phenomenon and its context are not obviously clear (Creswell, 2007; Vanderstoep & Johnston, 2009). The ability of case studies

to permit researchers to interpret, analyse, and evaluate data within specific contexts distinguishes them from other earlier types of studies. A case study is an investigation of a contemporary real-life phenomenon by means of a comprehensive contextual evaluation of a small number of conditions and events and their relationships (Yazan, 2015; Yin, 2018). Kumar (2011) explains that a case study is “based upon the assumption that the case being studied is a typical of cases of a certain type and therefore, a single case can provide insight into the events and situations prevalent in a group from where the case has been drawn”. The researcher considered a case study to be appropriate owing to the exploratory nature of the study, as it is articulated in the main research question and the sub-questions which were formulated in order to answer it.

3.5. Techniques and procedures

Sampling is a procedure for choosing participants for research investigations on the basis of their ability to provide information which is relevant to the research problems on which they are based (Leavy, 2017). Sampling is the traditional manner of selecting and obtaining data from a small group people, who are representative of the larger populations from which they are drawn in respects in which particular researchers are interested (Creswell, 2009). Conversely, Kumar (2011) characterises sampling as a process of selecting a few participants from a larger group to become the source of information which is not known prior to the conducting of a particular study. The nature of the two target populations determined the choices which the researcher made concerning the use of probability and non-probability sampling methods.

3.5.1. Sampling for qualitative research

As Kumar (2011) explains, in most cases it is impossible to gather information from all of the members of a population which has characteristics which are of interest for the purposes of a research inquiry.

3.5.1.1. Probability sampling

Probability sampling can be defined as a method for choosing an appropriate number of people from a particular population, when the person who is conducting the research is aware of the exact number and location of its elements (Bhattacharjee, 2012). Kumar (2011) emphasises

that the main purpose of probability sampling is to choose a sample whose members have the same attributes which the overall population has. Members of the research sample are randomly selected, to ensure that each member of the population has the same probability of being selected (Ritchie, Lewis, & Elam, 2013; Etikan, Musa, & Alkassim, 2016). As the data which is obtained from samples which have been selected by means of probability sampling are usually subjected to statistical analysis, probability sampling was not considered to be appropriate for this study. Instead, the researcher made use of non-probability sampling.

3.5.1.2. Non-probability sampling

Non-probability sampling is a method of choosing participants from a population in a setting in which the number and location of the elements of the population are not known to the researcher for certain (Ritchie *et al.*, 2013). Accordingly, as Bhattacharjee (2012) explains, when non-probability sampling is used, the members of the population do not have the same probability of being chosen for the sample. The decision to use purposive sampling in this study was prompted by the need to collect data which would be relevant to the study, as the researcher understood that the analysis could be compromised by obtaining data from participants who were not sufficiently knowledgeable concerning the research topic (Etikan *et al.*, 2016). Consequently, in qualitative studies researchers often use either their own judgement, or that of reliable informants, to select participants whom they know would be able to provide the information which they require, through judgemental sampling (Kumar, 2011).

3.5.3. Sampling methods used in this study

Yin (2011) defines purposive sampling as the deliberate selection of members of samples on the basis of their ability to provide specific information. This method of sampling is utilised when researchers are aware of the specific characteristics of participants in which they are interested for the purposes of their studies, to obtain a small representative subsection of the target population, from which the findings can be generalised to the population as a whole (Bhattacharjee, 2012). The target populations for this study were all of the rural entrepreneurs in the rural district of Gokwe and all of the urban entrepreneurs in the city of Harare. Each participant in the qualitative study was purposively selected in accordance with the main aims and objectives of the study. The business activities of the participants who were based in Gokwe included farming, manufacturing, and crafts.

3.6.Methods employed to collect data and research instruments

The collecting of data refers to the procedures which are followed to gather information as a result of conducting an experiment, the making of observations, or direct experience, and the data which is obtained can be in the form of pictures, text, or audio recordings (Yin, 2011). Conversely, Kabir (2016) describes it as “the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes”. The qualitative study was conducted by means of interviews and a focus group discussion and based on suggestions from literature; the researcher augmented the data which they yielded with direct observations of the participants, appropriate visual material, and document analysis (Kabir, 2016; Creswell, 2007). The quantitative data was obtained through the administration of a questionnaire.

3.6.1. Methods for collecting data

In order to obtain rich information in the qualitative study, the researcher conducted one-on-one interviews and held a focus group discussion, in order to obtain an understanding of the perceptions, beliefs, and opinions of urban and rural entrepreneurs concerning digital design and e-commerce. The quantitative data which the administration of the questionnaire generated was used to validate the findings which emerged from the interviews and the focus group discussion by means of concurrent triangulation, through the concurrent collection of the quantitative and qualitative data and by assessing the two sets of data to determine whether they merged or were either dissimilar or sequential (Creswell, 2009). This procedure is carried out during the interpretation of the data and the ability to make detailed comparisons between sets of quantitative numerical and detailed qualitative verbal data is unique to mixed methods studies (Creswell, 2009). The value of concurrent triangulation to this study lies not only in enabling findings to be independently verified, but also in reducing the time which needs to be allocated to collecting the data (Creswell, 2009).

3.6.1.1 Interviews

Although interviews have traditionally tended to take the form of face-to-face conversations between interviewers and either individual or groups of interviewees, they can also be conducted over the telephone, by e-mail, or other means, such as online applications (Kabir,

2016). Individual researchers are able to decide whether interviews should be structured, semi-structured, or completely open-ended (Kumar, 2011). Establishing rapport between interviewers and interviewees enables interviewees to feel relaxed and self-confident and is likely to increase the ability of interviews to generate relevant and significant data. Appropriate interview guides can comprise either open-ended or closed-ended questions or a combination of both (Kumar, 2011). Based on the suggestion of Vanderstoep and Johnston (2009), the researcher conducted structured interviews in this study, in order to be able to put precisely the same questions to each interviewee, in order to compare the information which the interviewees provided and, possibly, to identify emerging themes and patterns, which may be generalisable to the respective target populations. In this instance, the advantage of structured interviews enabled the researcher to confine the discussions to the specific concerns of the research topic and to avoid irrelevant digressions.

Individual interviews were conducted with nine participants, from August to October of 2019. The participants were entrepreneurs who were based in either Gokwe or Harare, in order to perform a comparative analysis of the role which digital design and technology play in the success and growth of businesses in both areas. The criteria for participating in the study, by completing a questionnaire or participating in the focus group discussion or the interviews, required prospective participants to be entrepreneurs who operated small to medium-sized enterprises which had been in existence for five years or more and be based in either Gokwe or the urban district of Harare. The interviews had durations of from between forty-five minutes to an hour and a half. The researcher prioritised the level of education of the participants because the adoption of technology in business requires basic knowledge such as reading and writing.

3.6.1.2. Descriptions of the participants in the interviews

Entrepreneur 1: Public speaking coach TRY is a male who owns a business whose activities are centred on public speaking. The services which it offers include training in public speaking and it also operates a school which provides instruction in entrepreneurship and public speaking. He has authored a number of published books whose subjects are entrepreneurship and speaking and his business has been operating for more than five years. He exudes self-confidence and hosts a show which appears on national television.

Focus group 2: The group comprised eight participants, five of whom were women and three were men. The discussion was held at a crafts centre in Gokwe. The centre had been built by the government in an initiative to assist crafters in the area to produce high quality products. It has been in operation for more than twenty years and the crafters whose activities it supports manufacture a wide range of different types of products, such as baskets and ornaments.

Description of the participants in the focus group discussion

Crafters 1, 2, 3, 4, and 5 were female, while Crafters 6, 7, and 8 were male. All had been manufacturing crafts at the centre for over five years.

Entrepreneur 3: Farmer GD: Entrepreneur 3 is a male who has been an agripreneur for many years. As he works in a family business, he has been able to grow into his role as its owner. His father handed the farm over to him six years ago and he has been running it since then. Although the main product of the farm is paprika, it also produces a number of different types of vegetables. The entrepreneur has a sound knowledge of the area and academic qualifications and the business appears to be prospering.

Entrepreneur 4: Farmer TL: Entrepreneur 4 is a male farmer who grows crops such as maize, tomatoes, cabbages, and onions. He has been farming for more than five years, appears confident and enthusiastic. He is young and highly energetic. The researcher observed the frequency with which he consulted his tablet and concluded that he was aware of the new and emerging technologies and the role which they have to play in facilitating the growth of rural businesses.

Entrepreneur 5: Farmer MO: Entrepreneur 5 is a young man whose business activities centre on producing tobacco and cattle ranching. The business is owned by his family and he has been running it for six years. He appears to have sound organisational skills and business ethics. Tobacco is among the products which contributes the most to the economic backbone of Zimbabwe. He is acutely aware of the opportunities which are available for marketing products or services online, because he desires to sell his tobacco outside of Zimbabwe; as he believes that doing so would enable him to sell at higher prices than he is able to receive from the local tobacco board.

Entrepreneur 6: Advertising guru NY: Entrepreneur 6 is a male who operates a printing business in the urban district of Harare. He is aware of the extent to which technology is able to contribute to developing his business, as he makes use of digital marketing practices. It is evident, from the numbers of customers who are constantly either arriving at or departing from his premises, that he has a large customer base.

Entrepreneur 7: Carpenter BNY: Entrepreneur 7 is a male who manufactures furniture. He expressed dissatisfaction with the methods of marketing and advertising his products which were available to him before the advent of the internet, as they could not provide him with access to customers outside of Zimbabwe and he wished to expand his business. He learnt his trade from his late father, who had also been a carpenter and subsequently inherited the business. At the time of his interview, he had been running his business for more than five years.

Entrepreneur 8: Manufacturer of polyether-derived foams CHY: Entrepreneur 8 is a male qualified engineer whose business specialises in the manufacture of foam materials from polyethers, which are used in the manufacturing of furniture and bedding and also in the automotive industry. Although he appeared to be using digital technology to expand his business through activities such as marketing through the social media, he maintained that he needed to do a great deal more, because he was well aware of the crucial role which technology needed to play in modern industry. He drew on his engineering background to explain several relevant technical points to the researcher.

Entrepreneur 9: Farmer RCY: Entrepreneur 9 is a confident young cattle rancher who also produces several different vegetable crops. Before he took over the running of the family-owned farm, he acquired the knowledge and experience which he needed to do so from his parents, by working in several different capacities on the farm. Although he is acutely aware of the potential role of technology to enable him to adopt modern methods of marketing and also of the impossibility of obtaining access to customers outside of his district without doing so, he is nonetheless reluctant to make a definite commitment to making the transition to e-commerce. He fears that his community is not ready for it and believes in the necessity of implementing awareness programmes as a precondition for the widespread adoption of e-commerce in the district.

Entrepreneur 10 TRJ: Entrepreneur 10 is a confident and ambitious man who owns a farm. He grows maize, the staple food of Zimbabwe, which is ground into maize meal, which becomes sadza when it is cooked. His farming activities also include cattle ranching and the production of crops such as groundnuts, round nuts, and vegetables. He has been running his business for more than a decade. Although he appeared to be aware, to a limited extent, of the role of technology in modern business practices, he also initially appeared to exhibit a degree of complacency in his apparent satisfaction with the way in which he had been running his business. By contrast, as the interview progressed, he became increasingly interested in the potential which he saw that technology had for expanding his markets and significantly increasing the revenue which he could earn from his farming activities.

The table which follows provides a summary of the participants and the periods of time which the researcher spent conducting the interviews, moderating the focus group discussion, and administering the questionnaires. Initials have been used in order to protect the identities of the participants, in accordance with the ethical standards which apply to research in the social sciences.

Table 3.1:Data collection guide

Harare	TRY	15:30-16:30	21 August 2019
Harare	Administering questionnaire Respondent 1	09:00-09:45	22 August 2019
Harare	Administering questionnaire Respondent 2	09:00-09:45	23 August 2019
Harare	Administering questionnaire Respondent 3	13:20-13:50	28 August 2019
Gokwe	GD	12:15-13:15	30 August 2019
Gokwe	Focus group discussion	12:00-14:00	1 September 2019
Gokwe	Administering questionnaire Respondent 4	10:00-10:45	2 September 2019
Gokwe	Administering questionnaire Respondent 5	12:00-12:40	3 September 2019
Gokwe	Administering questionnaire Respondent 6	08:00-08:30	4 September 2019
Gokwe	TL	16:10-17:00	5 September 2019
Gokwe	MO	15:00-16:00	14 September 2019
Harare	NY	07:00-08:00	20 September 2019
Gokwe	BNY	12:10-12:55	27 September 2019
Harare	CHY	18:00-19:00	5 October 2019
Gokwe	Administering questionnaire Respondent 7	08:00-08:30	7 October 2019

Gokwe	Administering questionnaire Respondent 8	14:10-14:45	8October 2019
Gokwe	Administering questionnaire Respondent 9	08:00-08:30	9October 2019
Gokwe	RCY	14:20-15:30	11October 2019
Gokwe	TRJ	09:00-10:00	30 October 2019

3.6.1.3. Questionnaire respondents

Respondent 1: is a young man who works in the hospitality sector and runs a small restaurant in Harare. He appears to be very ambitious and his familiarity with new technology is evident in both his office and the equipment at his premises and office. He has more than ten years of experience in the hospitality industry.

Respondent 2: is a young male who owns a boutique in Harare and is a fashion designer by profession. All of the clothes which he makes are sold from his shop. He has had his business for more than five years and his intelligence and confidence are immediately discernible from the way in which he carries himself.

Respondent 3: is a young man who is a property developer in the real estate industry in Harare. He appears to be well acquainted with modern technology and has been operating his business for at least five years.

Respondent 4: is a male agripreneur who produces cotton, which he has been selling to the Cotton Company of Zimbabwe Limited, which is also known as Cottco, in Harare. He has been growing cotton for more than ten years and appears to be a very ambitious man.

Respondent 5: is a very confident and ambitious man who owns the land on which his farm is located. Although cotton is his main crop, he also produces ground nuts, round nuts, and a number of different types of perishables, to facilitate crop rotation. His many years of experience as a producer of cotton began when he worked with his father, who is also a cotton farmer.

Respondent 6: is a male farmer who raises livestock. He keeps cattle, goats, pigs, indigenous chickens, and turkeys. He also grows maize and several types of vegetables, both for resale

and to feed his family. He has been a producer of livestock for more than ten years and cattle and goats are his chief source of income.

Respondent 7: is another male livestock farmer, who raises cattle and goats. He also grows food such as maize and vegetables to feed his family. He has been selling goats and cattle for more than five years.

Respondent 8: is a vibrant and ambitious farmer, who has been producing millet, sorghum, sunflowers, and cotton for more than a decade. Cotton is one of the main cash crops in the area and, as it does in the case of many other farmers, it represents his main source of income.

Respondent 9: is also a farmer, who produces bambara nuts, beans, sweet potatoes, maize, sunflowers, and cotton. The crops are alternated, in order to maintain the fertility of the soil, and the demand for particular crops determines the sequence of rotation.

3.6.1.4. **Protocols and procedures followed to conduct the interviews**

Before the interviews could commence, it was necessary to obtain ethical clearance from the Faculty Ethics Committee (FREC) of the Cape Peninsula University of Technology. The participants were selected by means of purposive sampling. Appointments were scheduled with the participants according to when it would be convenient for them to be interviewed, as the researcher was aware that it would seldom be easy for entrepreneurs to spend time away from the running of businesses. Telephone calls were made or messages were sent to each participant on the day before the interview was scheduled to take place, to remind them of the appointment. Follow-up calls were made two hours before each interview. The researcher ensured that the audio recorder was working prior to each interview, to avoid unnecessary delays. Once the purpose of the research had been explained, the interviews commenced.

3.6.1.5. **Administration of the questionnaire**

A questionnaire is essentially a list of questions, which can be either open-ended or closed-ended, which respondents are required to answer (Kabir, 2016). From a similar standpoint, Kumar (2011) characterises a questionnaire as a list of written questions to which respondents

are required to record their responses. Questionnaires can be administered in a number of different ways, including in public places or on the premises of particular organisations, or they can be administered to prospective respondents by e-mail or fax (Kabir, 2016). The researcher began by explaining the purpose of the study to each individual respondent, before handing him or her copy of the questionnaire. The respondents either took the questionnaires to complete in their own time, which required the researcher to collect them later, or they completed them in the presence of the researcher. They contained closed-ended questions and the quantitative data which they generated was analysed by means of the Statistical Package for the Social Sciences (SPSS) software package version 26.

3.6.1.6. Focus group discussion

Focus group discussions can be regarded as dynamic group discussions which generate information through the interactions of their participants. They are commonly used in qualitative research, as they permit groups of people to be interviewed together in a relaxed and informal setting which is conducive to lively debate (Neuman, 2014). They usually comprise from six to ten participants, while the discussion is directed by a moderator (Vanderstoep & Johnston, 2009). Focus group discussions allow researchers to make appraisals of the subjective perceptions, beliefs, and opinions of groups of people in relation to specific events, occurrences, or phenomena which affect all of them (Kumar, 2011). They enable researchers to obtain information which might not emerge from discussions with single interviewees (Lune & Berg, 2017). The essential purpose of a focus group discussion is to encourage the active participation of all of the participants in a lively discussion from which a full spectrum of perceptions, beliefs, and opinions emerges (Nared & Bole, 2020).

3.6.1.7. Preparation for the focus group discussion

A list of semi-structured questions which centred on the research questions of the study was compiled to guide the moderator in leading the discussion effectively, to ensure that all relevant points were covered during the time which was allocated to the discussion (Omar, 2018). The discussion was held in September of 2019 and it was recorded by means of an audio recorder. The recording was subsequently transcribed and excerpts are presented in Chapter Four. The discussion played a significant role in facilitating the emergence of relevant topics whose

significance was not apparent from the data which had been collected from the interviews and the administration of the questionnaire.

3.6.1.8. Selection and recruitment of participants

The researcher elected to assemble a focus group of experts in the field of handcrafts, in order to stimulate discussion among participants whose entrepreneurial activities were similar. The leader of the crafts centre assisted with the recruitment of participants, either by telephoning potential participants or sending text messages. Five of the eight participants in the discussion were female, while the remaining three were male and all were from 40 to 60 years of age.

3.6.1.9. Setting in which the focus group discussion was held

As the participants resided in different localities within Gokwe, the researcher considered the crafts centre to be the most convenient venue for the focus group discussion, in that it was familiar to all of the participants, centrally located, quiet, comfortable, and private. The participants appeared to enjoy the discussion and would certainly have benefited from hearing the opinions of other entrepreneurs in their field and becoming aware of the opportunities which e-commerce could provide.

3.7. Procedures followed to analyse the data

Leavy (2017) and Onwuegbuzie and Combs (2011) explain that the analysis of data is a process which enables researchers to interpret their findings and determine their significance. It is a process which ultimately enables researchers to answer the question “what does it all mean?” and to develop “intelligible accounts” of data. Consequently, it enables researchers to sum up and classify data and to discover meaning by interpreting it (Leavy, 2017).

Creswell and Plano Clark (2007) explain that analysing data in mixed methods research entails using different methods to analyse the sets of quantitative and qualitative data. The researcher began the analysis by analysing the qualitative data from the interviews and the focus group discussion by performing a thematic analysis, before proceeding to analyse the data which the administration of the questionnaire generated. The exploratory research design of the qualitative study enabled the qualitative data to inform the gathering of the quantitative data (Creswell & Plano Clark, 2007; Schoonenboom & Johnson, 2017). Among the advantages of exploratory designs are the ease with which the different phases can be carried out, the acceptability of

qualitative data to quantitative researchers, and the high degree of flexibility which they allow in the answering of crucial questions.

The process which is known as data integration entailed the integration of both the qualitative and quantitative data into a coherent whole (Onwuegbuzie & Teddlie, 2003). As Schoonenboom and Johnson (2017) explain, the integration is performed by merging the findings which emerge from the first set of data with those which emerge from the second. The qualitative data was analysed by means of thematic analysis. The ATLAS.ti proprietary software was used to code the data, a step which provided the foundation of the overall analysis. The software has a proven record for facilitating the accurate analysis of qualitative data (Verma, 2016). It enables researchers to maintain rigour in their analyses by simplifying the recording of the steps which are taken to organise and analyse the data and, as a result, it eliminates a great many needlessly time-consuming procedures (Verma, 2016). As it has been explained, the quantitative data was evaluated by means of the Statistical Package for the Social Sciences (SPSS) software version 26.

3.7.1. Data analytics frameworks

In qualitative research, frameworks for analysing data usually fall into one of three categories, namely, thematic analysis, narrative analysis, and discourse analysis. While thematic analysis was used in this study to identify themes and patterns of living and behaviour, the emphasis in narrative analysis is somewhat different, as it entails researchers analysing the stories which the participants in their studies relate to them in the course of providing qualitative data (Neuendorf & Kumar, 2016). Conversely, discourse analysis is concerned with investigating how language functions in everyday real-life contexts and how meanings are created in specific contexts.

3.7.2. Data analytics framework used in this study

Thematic analysis can be defined as a technique which enables researchers systematically to identify, organise, and obtain insights into patterns of meaning which emerge as themes from sets of data (Given, 2008). It enables researchers to observe and make sense of the meanings which individual members of groups ascribe to the events, occurrences, or phenomena in which the researchers are interested. Javadi & Kourosh, 2016; Jason & Glenwick (2016) characterises thematic analysis as a technique for evaluating qualitative data, which entails searching for

recurring ideas which emerge from sets of data as themes. The procedure is premised on the assumption that as reality is socially constructed, the meanings which groups of people assign to particular events, occurrences, or phenomena result from their interactions (Jason & Glenwick 2016).

The value of thematic analysis for interpreting data lies in the ability which it gives researchers to distinguish and identify features or variables pertaining to the subjective perceptions, beliefs, or opinions of the participants in their studies. It enables researchers to establish the significance of specific pieces of data in relation to the research topic which is being investigated and the research question which is to be answered (Braun & Clarke, Camic, Long, Panter & Rindskopf, 2012). It is also suitable for evaluating sets of data which are collected during the conducting of longitudinal studies, as it enables researchers to discern differences and similarities in subjective perceptions, beliefs, and opinions over time (Creswell, 2009).

Thematic analysis entails following sequences of discrete steps to identify recurring themes or motifs in sets of data (Jason & Glenwick, 2016). The themes which emerge during the performing of a thematic analysis are meaningful expressions of the hopes, fears, concerns, or aspirations of the participants of qualitative studies and themes can be qualitatively different from one another (Given, 2008). Researchers also use thematic analysis to analyse data which is generated by interviews (Pistrang & Barker, 2012). Themes can be either implicit or explicit ideas which are found in a set of data and the ideas are often expressed a number of times in every interview in a qualitative study (Jason & Glenwick, 2016).

3.7.3. Data coding

Data coding in qualitative research is a procedure of reducing data during the course of organising it (Vaismoradi, Jones, Turunen, & Snelgrove, 2016). Creswell (2015) explains that coding is a procedure for evaluating qualitative data by disassembling it to determine what it may yield, prior to reassembling it in a meaningful manner. Levy (2017) explains that the coding procedure enables researchers to reduce and classify the data which has been generated, by assigning single words or phrases to sections of data. Smith and Davies (2010) offer a similar explanation, by characterising coding as a method of organising data for the purpose of reducing it to the essential ideas which are expressed in it. The reduction of raw data leaves researchers with information which is relevant to the research questions which they are

endeavouring to answer, allows it to be converted into a manageable form, and enables researchers to transform it to yield insights which facilitate the development of meaningful themes (DeCuir-Gunby, Marshall, & McCulloch, 2011). The procedure enables researchers to review and combine their data and also to re-evaluate it in the light of the themes which have begun to emerge from it. Although coding is of great significance to the analysis of qualitative data, not all data should be coded. Conversely, in order to perform a sufficiently comprehensive analysis of the data, all exceptions should be accompanied by appropriate justifications (Elliott, 2018). Throughout the process of coding, the frequency with which particular codes are applied can be indicative of emerging patterns and similarities among codes can, in turn, generate categories. Themes can emerge from coding, analytical reflection, or categorisation (Saldaña, 2016). Jason and Glenwick, (2016) contends that a theme is essentially a precise and concise encapsulation of the idea which is expressed by the text from which it is derived.

Thematic analysis is predicated on closely following a predetermined number of steps:

Stage 1, the initial step, requires researchers to immerse themselves in the data which they have collected, by reading and re-reading it until they are completely conversant with it and transcribing it. This step provides a sound foundation for coding the patterns which begin to be discernible in the data (Jason, 2016; Rubin & Rubin, 2011).

Stage 2 entails the creation of initial codes and the data can be coded either manually or by using a computer.

Stage 3 is to search for themes from the data which has been coded, after data which falls under the similar codes has been combined (Saldaña, 2015; Jason & Glenwick, 2016).

Stage 4 entails reviewing the themes, discarding those which are not relevant, combining some to create single broad themes, or dividing others into separate themes.

Stage 5, the naming and defining of the themes, requires researchers to identify the main idea in each theme. According to Braun and Clarke (2013), at this stage researchers need to perform a detailed analysis of each individual theme and its relevance to the overall picture which emerges from the analysis.

Stage 6 entails writing a sufficiently cogent report of the analysis, in a manner which ensures that any potential reader would consider it to be inherently trustworthy. This procedure enabled the researcher to clarify her findings concerning the role which digital design and technology play in developing entrepreneurship.

3.8.Triangulation

Triangulation is a strategy which is often used when data has been obtained by using several different research methods or sources to answer a particular research question (Leavy, 2017). In this study the researcher triangulated the findings which emerged from the use of three different research methods, namely, semi-structured interviews, a focus group discussion, and the administration of a questionnaire, in order to make relevant comparisons, confirm the findings, and maximise their credibility.

As Yin (2011) explains, triangulation is a procedure for confirming the validity of data which has been obtained from several different sources and through the use of several different research methods. In this study, the triangulation was not confined to comparisons of data which had been obtained from different sources and through the use of different methods, but also entailed a comparison between qualitative and quantitative data (Kelle, Kuhberger & Benhard, 2019). Conversely, Flick (1998) maintains that triangulation is known less as a strategy which is used to validate results and procedures than a substitute for validation which intensifies scope, depth, and uniformity in the application of particular research methods (Flick, 1998). The mixed methods research design which was used to guide the conducting of the study facilitated the clarification of the findings which emerged from the quantitative study, the identification of potential factors which could undermine their validity, and the generalisation of the qualitative findings (Kelle, Kuhberger & Benhard, 2019).

3.9 Measures taken to meet the criteria for credible findings

3.9.1 Reliability and validity

In order to ensure that the findings of this study would be credible to any knowledgeable person who peruses it, the researcher placed a great deal of emphasis on the criteria of validity and reliability. Validity is the measure of the extent to which a study has succeeded in assessing or measuring what it had been conducted to assess or measure (Kumar, 2011). Although there are

several different classes of validity, such as content validity, external validity, internal validity, construct validity, and face validity, the overall validity of the findings of this study is premised on triangulated findings concerning the role which digital design and technology play in the success of urban entrepreneurial activities by comparison with the results of relatively low levels of adoption in a rural area.

Conversely, reliability is predicated on the accuracy or precision with which the research instruments have enabled the researchers concerned to measure what they intended to measure (Kumar, 2011). In order to ensure that the questions in both the interview guide and the questionnaire would be understandable and relevant to the interests of the interviewees and the respondents to the questionnaire, the researcher conducted pilot tests, using different participants and respondents from those who participated in the study, and made changes according to the problems which the pilot tests permitted her to identify.

3.10.Limitations of the study and measures taken to manage them

As the research was primarily concerned with the role which digital design and technology can play in the development of entrepreneurship in Gokwe, the researcher placed a great deal of emphasis on information, marketing, advertising, and technology, as they are widely acknowledged to be among the main drivers of entrepreneurship. A more detailed study could have included an assessment of the influence of other drivers. There are inherent limitations in case studies, one of which concerns the doubtful likelihood of necessarily being able to generalise their findings even to similar settings. Another concern the unquantifiable subjectivity of individual qualitative researchers, whose influence the researcher endeavoured to minimise through a mixed methods research design and triangulation (Creswell, 2007).

3.11.Ethical considerations

Vanderstoep and Johnston (2009) explain that the ethical standards which apply to research in which there are human participants are intended to ensure that their rights are not infringed upon or violated, during the conduct of research studies and also with respect to the confidentiality which is accorded to the information which they provide. Ethics are essentially principles which apply to the conduct of people, either in specific professions or in society (Kumar, 2011). Ethics in research refers to equalising the good of many with participants and

the right to confidentiality. The core standards are to contribute to the public good and to avoid all forms of possible harm.

Informed consent is a cornerstone of research ethics in the social sciences. Consequently, it is imperative that prospective participants in research studies should be informed of their rights, the nature of the study in which they are requested to participate, what their participation is likely to entail, and the possible advantages and potential risks which are associated with their participation, to enable them to make informed decisions concerning whether or not they wish to participate (Vanderstoep & Johnston, 2009). The principle of voluntary consent expressly prohibits all forms of coercion. The ethical standards for professional research in the social sciences require prospective participants to read and sign consent forms and to be informed that as their participation is strictly voluntary, they have the right to withdraw at any time, without incurring penalties of any sort whatsoever (Creswell, 2009).

3.11.1. Measures which the researcher took to comply with ethical standards

- The researcher obtained permission to conduct the study from the Ethics Committee of the Faculty of Informatics and Design of the Cape Peninsula University of Technology.
- The participants were informed that they would be at liberty to ask questions at any time if they felt that they did not understand any aspects of the study or their participation in it.
- The participants were informed that they would be at liberty to withdraw from the research at any time, as the researcher did not wish to interfere with their business activities.
- The participants were informed that they would be at liberty to refrain from answering any questions which they did not wish to answer.
- The dates and times which were chosen for the interviews took into account the busy schedules of the participants.
- Upon completing the dissertation, the researcher will hand all of the findings of the study to the library of Cape Peninsula University of Technology.

3.11.2. Confidentiality

The principle of confidentiality obliges researchers not to publish any material which is likely to reveal the identities of the participants in their studies without obtaining their permission to do so (Bhattacharjee, 2012). Researchers are obliged to take all reasonable measures to preserve the

anonymity of participants and to refrain from discussing information which they provide with anyone outside of their research teams (Kumar, 2011). Conversely, the principle of privacy requires researchers to act in a manner which ensures the dignity, autonomy, and overall well-being of participants. The requirement for privacy accords with accepted social norms and the expectation that information pertaining to individual participants should not be divulged to others (Lounsbury, Reynolds, Rapkin, Robson & Ostroff, 2007). The researcher took particular care to prioritise the following considerations:

- The participants were to be assured that the information which they provide would be treated as strictly confidential.
- The participants were to be informed that the information will be used for academic purposes only, to complete a Master's degree in the field of graphic design at the Cape Peninsula University of Technology.

Summary

This chapter has taken the form of a comprehensive discussion of the philosophical assumptions which underpinned the methodology which the researcher developed to conduct the study and covered the research design, the methods which were used to collect, analyse, and interpret the three sets of data, and the ethical standards to which the researcher strove to adhere scrupulously at all times during the conducting of the study. The following chapter is devoted to a detailed presentation, discussion, and analysis of the findings.

CHAPTER FOUR: PRESENTATION, DISCUSSION, AND ANALYSIS OF THE FINDINGS

4.0. Introduction

This chapter takes the form of a presentation, analysis, and discussion of the findings of the study. The first part of the chapter is devoted to a presentation of the findings from the interviews, the focus group discussion, and the questionnaire, while the second is a discussion of the results. To recapitulate, the aims of the study were to evaluate the role of digital design and technology in the advancement of entrepreneurship in rural areas and to assess their influence on rural entrepreneurship and the opportunities which they create for rural entrepreneurs to obtain access to funding. The findings are analysed in relation to two analytical frameworks, namely, the Net-Enabled Business Innovation Cycle (NEBIC) and the People, Context, Deal, and Opportunity (PCDO) frameworks (Sahlman *et al.*, 1996).

4.1. The demographics of the respondents:

Table 4.1: Gender distribution among the respondents. As it can be seen in Table 4.1, all of the respondents to the questionnaire were males.

Male	9	100%
Female	0	0%
Total	9	100%

The research sample for the questionnaire comprised six rural entrepreneurs and three urban entrepreneurs, all of whom fell into the age range of from twenty to forty years, a finding which is depicted in the form of a bar graph in Figure 4.1.

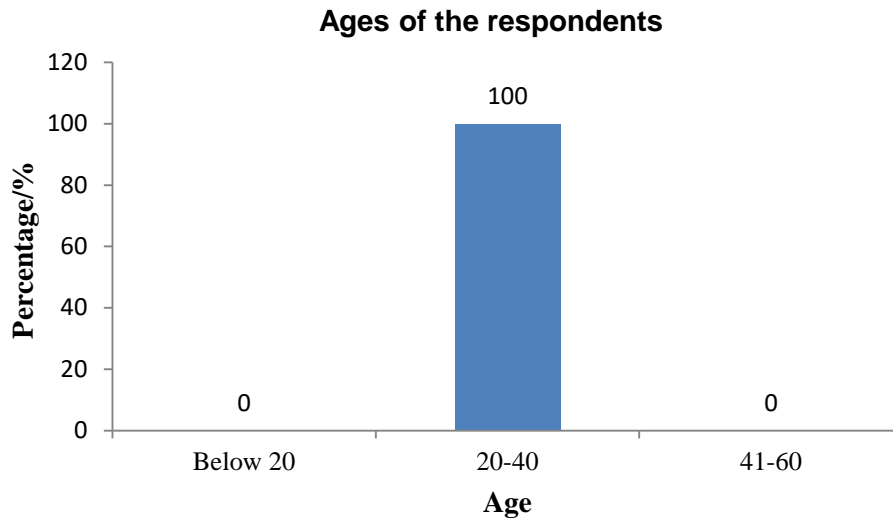


Figure 4 1: Distribution of the age ranges of the respondents

Of the six entrepreneurs who were based in Gokwe, three were married and three were single, while two of the urban entrepreneur’s were married and one was single. As it is reflected in the pie chart in Figure 4.2, 44% of the respondents were single and 56% were married.

Marital status of the respondents

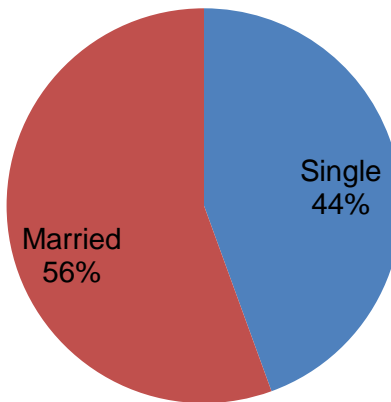


Figure 4.2: Distribution of the martial statuses of the respondents

Four of the rural entrepreneurs held bachelor’s degrees, one had received some university education, and one had not progressed beyond high school, while all three of the urban entrepreneurs held bachelor’s degrees. As it is summarised in Table 4.2, a large majority of

78% held bachelor's degrees, while 11% had received some university education and 11% had not progressed beyond high school.

Table 4.2: Distribution of levels of educational attainment among the respondents

Secondary/High school	1	11%
University	1	11%
Bachelor's degree	7	78%
Total	9	100%

All six of the rural entrepreneurs in Gokwe were farmers, while one of the urban entrepreneurs owned a real estate company, one was a fashion designer who operated a boutique, and one owned a restaurant and also provided catering for private functions such as weddings. The summary in Table 4.3 reveals that a large majority of 67% of the respondents were farmers, while the other sectors which were mentioned were evenly distributed.

Table 4.3: Types of businesses owned by the respondents

Agriculture	6	67%
Real estate	1	11%
Fashion designer/Boutique	1	11%
Restaurant owner	1	11%
Total number	9	100%

All of the businesses of the respondents had been in operation for more than five years. A large majority of 78% had started with from two to four employees, while only one (11%) had started his business alone. The numbers of employees are summarised in Table 4.4.

Table 4.4: Distribution of numbers of employees when the business started

None	1	11%
2-4	7	78%
5-19	1	11%
20-49	0	0%
50-199	0	0%
Total	9	100%

The growth of the businesses of the respondents becomes apparent when the figures which are reflected in Table 4.4 are compared with those in Table 4.5. While a majority of 78% of the businesses had started with from two to four employees, the same number of businesses now had from five to nineteen employees and one (11%) from 30 to 199 employees.

Table 4.5: Distribution of numbers of employees at present

2-4	1	11%
5-19	7	78%
20-49	0	0%
50-199	1	11%
Total	9	100%

The pie chart in Figure 4.3 depicts the spread of annual turnover figures of the businesses of the respondents in US Dollars and reveals that the annual turnover of a small majority of 56% was from USD 50,000 to USD 200,000, while for 44% it was less than USD 50,000.

Distribution of annual sales turnover

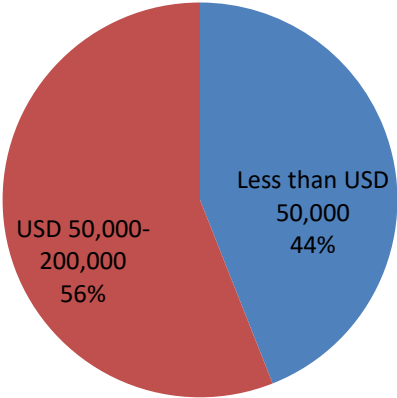


Figure 4.3: Distribution of annual sales turnover

As it can be seen in Table 4.6, a significant majority of 67% of the respondents rated the role of digital design and technology in the development of entrepreneurship as being very important and the remaining 33% as extremely important. It is of some significance that none of the respondents rated it as unimportant, somewhat important, or moderately important.

4.1.1. Thematic presentation of the findings

The findings are presented in accordance with the main themes and sub-themes which emerged from the thematic analysis of the qualitative data, whose procedure was described in the previous chapter. The main themes were:

- The role which digital design and technology play in facilitating the development of rural entrepreneurship.
- The extent to which digital design and technology increase the ability of rural entrepreneurs to identify entrepreneurial opportunities and to expand their markets.
- The extent to which digital design and technology influence customer satisfaction.

The sub-themes were:

- The factors which discourage the adoption of digital design and technology by rural entrepreneurs in Gokwe and the opportunities which are afforded to them to integrate digital design and technology into their business practices in order to achieve sustainable growth in their businesses.
- The strategies which entrepreneurs in Gokwe are able to use in order to integrate digital design and technology effectively into their business practices.

The findings from the interviews concerning the first theme enabled the researcher to answer the first main research question, namely, “What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?”

4.2. Presentation of qualitative findings from the interviews

The role of digital design and technology in the development of entrepreneurship in Gokwe

The findings which are presented in this chapter need to be understood in relation to three concepts which are fundamental to the study, namely, digital design, technology, and entrepreneurship. Although the data which the interviews with urban entrepreneurs generated revealed that the participants were acutely aware of the crucial role which technology plays in facilitating communication, the dissemination of information, and marketing and advertising products and services. It was equally evident that the interviewees who were rural entrepreneurs in Gokwe were still largely reliant on traditional channels of communication. The

telephone remained the principal means of communicating with customers, whose awareness of their products or services stemmed largely from analogue advertising. Entrepreneur 9, a farmer, contended that as his customers were not well versed in IT, there was no need for him to invest in expensive technology to market his products and services. Another entrepreneur in Gokwe explained that although he made little use of Facebook to communicate with his suppliers and customers, he made extensive use of WhatsApp. He had even created a group to share trading information such as prices and levels of demand for particular products. Entrepreneur 5, another farmer, informed the researcher that he communicated by telephone and did not advertise his products owing to the nature of his business, as he sold to a single buyer, who acted as the middleman between the producer and the customers who purchased the products. The following three excerpts are relevant to these findings:

“.. it’s phone calls, you cannot write a mail especially to the kind of customer that we still have ...they are not IT literate, they do not even know what an e-mail is.suppliers, yes we communicate with them via e-mails, via phone calls, yah.” (Entrepreneur 9, farmer)

“Ok, so usually I use the available resources, such as Facebook, and also we have WhatsApp groups, for example we have a WhatsApp group for Aspindale markets, where the suppliers, they have a mediator.” (Entrepreneur 3, farmer)

“Suppliers, we normally use telephone calls because where we are, because of network problems, you would find that WhatsApp at times is not effective. The customers have access to the products and services by physically having to visit the site and even through the records of either the TIMB [Tobacco Industry and Marketing Board] or the distributor that you are dealing with.”(Entrepreneur 5, farmer)

It was also evident that many of the interviewees in Gokwe believed that technology would enable them to increase the efficiency of their business activities in several different respects and expressed a strong desire to use it to improve the running of their businesses. They emphasised the convenience of online payment systems and also the ability of technology to eliminate trial and error in their agricultural activities. The findings suggested that digital technology infrastructure is already making its presence felt in entrepreneurial activities, through activities such as crowdsourcing and crowdfunding and social media platforms, as many entrepreneurs in Gokwe appear to be participating in them to create opportunities for entrepreneurial activities. The following three excerpts bear out these findings:

“.....am quite aware we really need technology to improve our business and also even the crop unit to invest in technology and also to reach our customers....” (Entrepreneur 3, farmer)

“....when you are farming minus plants you can monitor the growth using temperature if you put a thermometer on the vegetables in the swap repeat....you can actually monitor the harvest and everything using temperature if we could get a system where we could just put a thermometer.”(Entrepreneur 9, farmer)

“I plan to have technology such as a website and mobile application for my business...” (Entrepreneur 4, farmer)

The urban entrepreneurs who were interviewed all maintained that digital technology was crucial to the success of their businesses and expressed a strong desire to develop their capabilities with respect to digital design and technology, for purposes such as expanding their markets through a visible online presence, the use of advanced machinery, and the digitisation of business practices and manufacturing procedures, in accordance with the tenets of the Industrial Revolution 4.0 model. Relevant excerpts were:

“... I have to incorporate to move forward for more efficiency, more reliability, and much greater outreach to more clients, because technology just closes the gap between us and clients and stuff, so I think it's very important.”(Entrepreneur 1, motivational speaker)

“We use the internet a great deal, to keep abreast of the new technology that is used in the industry, if there are new machines or new material that we can use for our print industry....” (Entrepreneur 6, advertising guru)

“.... having that idea of the Industrial Revolution 4.0 as my business model, I actually want it to run without a fixed premise.” (Entrepreneur 8, manufacturer of polyether-derived foams)

Although the excerpts which were cited previously confirmed that most of the rural entrepreneurs who were interviewed expressed the desire to integrate digital technology into their businesses practices, several revealed that they were unable to use digital technology to communicate with customers, as most of the inhabitants of their rural district were not

conversant with the technology. By contrast, the urban entrepreneurs who were interviewed made use of advanced technologies to communicate with customers and suppliers and market their products or services. One of the interviewees said:

“WhatsApp does play a very big role, umm, e-mail, a lot of e-mails, phone calls... in terms of two-way communication and then for marketing as well, there’s social media platforms that we use at times.” **(Entrepreneur 1, motivational speaker)**

Other urban entrepreneurs emphasised the extent to which he used the social media for marketing purposes, which had resulted in significant growth for his business and increased profits:

“We have a Facebook page, so that is where we advertise mostly, and we also use WhatsApp statuses. We try and update our Facebook page because our target markets are the youths” **(Entrepreneur 6, advertising guru)**

The urban entrepreneurs expressed similar perceptions to those of the rural entrepreneurs concerning the role of entrepreneurship as a means of becoming employed and reducing the rate of unemployment. Two relevant excerpts were:

“A lot of people are doing it and it’s one of the best ways out too, with the state of the economy, where companies are not able to provide jobs, even for graduates. That then makes it very important...” **(Entrepreneur 1, motivational speaker)**

“It is of high significance because most people are not formally employed, so we are now resorting to entrepreneurship” **(Entrepreneur 6, advertising guru)**

4.3. The extent to which digital design and technology increase the ability of rural entrepreneurs to identify entrepreneurial opportunities and expand their markets

The findings which are presented under this theme reveal that the markets which are available to rural entrepreneurs in the district generally do not extend beyond the surrounding areas within the Midlands region of the country and include towns such as Gweru, Kwekwe, and Kadoma. It emerged, from the analysis of the data, that although the markets of entrepreneurs in Gokwe could potentially include these towns, the markets of very few of the interviewees extended to nearby towns or urban areas. It was evident that the markets of most of the rural

entrepreneurs in the district did not extend beyond Gokwe itself, despite the high quality of the goods which they produced or manufactured. The finding that some of the interviewees had customers who purchased in bulk from them for resale purposes suggested that their produce was of a sufficiently high standard to meet the quality of international markets, as is the case in rural districts of China and some neighbouring African countries. The inability of the interviewees to expand their markets at present is reflected in the following excerpts:

“.....we do not have a market outside Zimbabwe, yah. But we do supply the likes of Choppies shop, you know the supermarket, then Food World, those are the two major customers we have, then the community as a whole.” **(Entrepreneur 4, farmer)**

“My market is the auction floor that is TIMB; it is the middleman.... I have no interaction with the client whatsoever.... I think the Asian market; I would want to try sell in our neighbouring countries as well, such as Botswana, South Africa, Angola.” **(Entrepreneur 5, farmer)**

“At the moment our clients are locally based.....” **(Entrepreneur 9, farmer)**

“I have customers here in Gokwe, Gweru, Kwekwe, because those are the closest cities near me.... I think for starters the Southern African region, going upwards...” **(Entrepreneur 7, carpenter)**

Although most of the interviewees were unable to expand their markets to include nearby towns and cities or other urban areas in the country, it emerged from the findings that one even had customers and clients outside of the country. The ability of his business to market its product in other countries stems largely from the nature of the product itself. The researcher learnt that the entrepreneur sold and distributed paprika, not only in local markets, but also exported it to other countries. In his own words:

“Yes, we have customers outside Zimbabwe, in South Africa; in South Africa we supply paprika so we supply paprika in Zimbabwe and South Africa, due to the fact that our paprika has no chemical residue, yah.” **(Entrepreneur 3, farmer)**

It was evident from the findings that most of the interviewees were unable to expand their markets to include other towns and districts owing to the limitations which their methods of advertising imposed, as most local entrepreneurs appeared to rely mainly on referrals, which

restricted numbers of potential customers and impeded the growth of their businesses. Although it was found that most relied almost exclusively on outmoded methods of advertising, some had begun to use alternative forms of advertising to market and sell their products to their target markets, as the following excerpts confirm:

“I have managed to also market my business, through word of mouth and by distributing flyers, business cards, brochures, posters, and catalogues.” **(Entrepreneur 7, carpenter)**

“Sometimes we make use of flyers and word of mouth: those are the two we can afford at the moment.” **(Entrepreneur 4, farmer)**

“.....we only market through referrals, where so-and-so tells so-and-so that if you go there you will find A, B, C... In our business, besides TIMB, the regulating board, we also have Tobacco Sales Floor and Boka, those are the tobacco auction companies.” **(Entrepreneur 5, farmer)**

By contrast, the urban entrepreneurs who were interviewed had access to markets in far larger geographical areas by making effective use of digital marketing to advertise and market their products or services. In the words of two of the interviewees:

“So far it has just been mainly Harare and a few in Masvingo, Bulawayo, a bit of engagement in Mutare, that’s it.” **(Entrepreneur 1, motivational speaker)**

“Yes, we do actually, there is Mozambican government and also the Frelimo party from Mozambique... in Zimbabwe I have clients here in the city, I have walk-ins, companies and sometimes schools and colleges.” **(Entrepreneur 6, advertising guru)**

The entrepreneurial opportunities which are available to entrepreneurs in Gokwe differ significantly from those of their urban counterparts. The greatest disparities are to be found in returns on investments when the government channels resources on the basis of performance and invests in technology to stimulate economic growth. For rural entrepreneurs such as those who operate businesses in Gokwe, the difficulties which are entailed in obtaining access to desired markets are compounded by the physical distances between their rural locations and markets and decision makers, because most of the head offices of institutions or companies

from which they could obtain access to funding and information pertaining to markets are located in urban areas. As a consequence, their access to information which could enable them to increase the efficiency of their business practices is severely restricted. Other factors which adversely affect the viability of their businesses include the high cost of transporting produce to the markets outside of their immediate vicinities, which significantly increases their production costs. Salient points from this discussion are borne out in the following three excerpts:

*"...entrepreneurs that are in town, the urban areas they have got wider network area, they are networking with a lot of people, a lot of suppliers, a lot of buyers, more than us who are in the rural area due to the fact that we are not visible where we should be visible...."***(Entrepreneur3, farmer)**

*"Those closer to TIMB and auction companies do not incur transport costs...the farmers that make sales of their product first because they have access to any information from the auction floor quicker than us."***(Entrepreneur 5, farmer)**

*"Yes, they are very different, we wish we could have a farm in Harare CBD, because next door is Pick and Pay, next door is OK, next door is Spar, it's the Central Business District"***(Entrepreneur 9, farmer)**

The findings which have been presented concerning this theme all suggest that digital design and technology exert a pronounced influence on the ability to identify entrepreneurial opportunities and expand markets, as the digital marketing which websites facilitate is crucial to both fields of endeavour. Conversely, other findings suggested that entrepreneurs in Gokwe were becoming aware of the opportunities which digital marketing could present to locate new markets. Although tobacco farmers had been resigned, in the past, to selling their produce through one of a very limited number of auction companies, the following excerpt suggests a growing awareness of the unsatisfactory nature of marketing through monopolies:

*"..tobacco auctioning side of things there is a huge problem, there are only a few players that are monopolising the auctioning space, the rest are at the primary level of farming the crop."***(Entrepreneur 5, farmer)**

As the next excerpt demonstrates, the flow of information which the digital media facilitate has made rural entrepreneurs, who had previously had little or no access to information concerning

ways to diversify the forms in which their produce was sold, aware of a range of new possibilities to increase the revenue which they are able to earn and to eliminate wastage:

*“When we supply tomatoes to the market, some of the tomatoes, I think 80% of the tomatoes, are bought, but 20% they rot and they are thrown away, but then the opportunity now is to develop a plant for tomato puree.”***(Entrepreneur 3, farmer)**

Nonetheless, the entrepreneurial opportunities which are available to urban business are generally fundamentally different from those which are available to rural entrepreneurs, in that they have the potential to enable them to diversify their business activities into other sectors and even to penetrate global markets, as is evident from the following three excerpts:

*“... creating a stable ground using expanded polystyrene, that type of expanded polystyrene called Geofam, so this one is an untapped market, especially here in Africa.... construction of walls we have what we call soundproof walls, all those things are done using styrofoam.”***(Entrepreneur 8, manufacturer of polyether-derived foams)**

*“...there is an untapped market for printing Afrocentric designs on t-shirts in our country.... creating these Afrocentric designs and selling to countries such as the UK, America, France.... I want to attract the Chinese market as well.”***(Entrepreneur 6, advertising guru)**

*“I was training in public speaking and then after writing a book on entrepreneurship and I was like, can't you train in entrepreneurship as well? We went into it and it came out.”***(Entrepreneur 1, motivational speaker).**

4.3.1. The role of digital design in expanding markets

The use of digital design for marketing entails the creating of marketing or advertising content for the specific purpose displaying it to potential customers by means of electronic digital devices. Kotler and Armstrong (2012), characterises digital marketing as a system for publicising products or services through electronic media. The findings from the interviews which were conducted in Gokwe revealed that although most of the interviewees designed their own marketing and advertising material because they could not afford to enlist the services of

professional designers, some hired design professionals to create digital content for them. Most of the rural entrepreneurs who were interviewed emphasised the need to obtain assistance from professionals to make optimal use of digital design for marketing. The following excerpts typify the resources which most of the interviewees had at their disposal for advertising and marketing and the types of problems which they encountered:

*“...we follow up these public gatherings and make sure that at every farming gathering that is there, someone is there, someone has to give a phone number, someone has to give a flyer, someone has to make us known...”***(Entrepreneur 8, farmer)**

*“.....a problem with reaching out to your target market, talk about communication, talk about perception, just simple perception will really be a problem when you are trying to reach out to your market.”***(Entrepreneur 9, farmer)**

“Sometimes we make use of flyers and word of mouth, those are the two we can afford at the moment.....”

*“..... to make use of flyers, you have to consider walking long distances actually and the other thing is about the number of people that you reach is limited.”***(Entrepreneur 4, farmer)**

By contrast, one of the interviewees explained that he used Facebook and WhatsApp to advertise and market his produce. Although he was not making use of the most sophisticated forms of digital marketing, the advertising had nonetheless been effective, as his sales had increased significantly. As he explained:

*“...we use digital marketing, which is basically Facebook, the fact that with Facebook you do not need a domain...”***(Entrepreneur 3, farmer)**

The NEBIC framework has enormous potential to enable entrepreneurs in Gokwe to develop their entrepreneurial capabilities through the careful selection and systematic integration of appropriate emerging digital technology into their business practices, in a manner which facilitates the emergence of an entrepreneurial environment which functions as a highly effective mutually supporting entrepreneurial ecosystem. The ecosystem is a business network which is predicated on the relationships of individual entrepreneurs with particular industries and groups with particular organisations, and the optimised interactions between suppliers,

distributors, and customers. The framework emphasises matching technologies with existing economic opportunities, as opposed to identifying new entrepreneurial opportunities. Instead, it is premised on a life cycle in which technologies are selected on the basis of the economic prospects of specific entrepreneurial competencies and appropriately matched up to exploit the possible economic opportunities which can be created for companies by selecting a particular technology (Wheeler, 2002). Accordingly, the NEBIC provides a coherent blueprint for exploiting emerging and existing technologies to develop entrepreneurship in net-enabled entrepreneurial ecosystems.

4.4. The extent to which digital design and technology influence customer satisfaction

4.4.1. Digital Design for advertising or digital marketing

Customer satisfaction is expressed through the positive attitudes of customers after they have purchased a particular product or service from a business organisation (Rasliet *al.*, 2018). The widespread adoption and use of modern communication technologies in the rural areas of third world countries can significantly increase levels of participation and facilitate the distribution of information and the sharing of expertise and knowledge (Nambisan, 2016). It was evident throughout the collecting of the data that entrepreneurs in Gokwe endeavoured to assess the satisfaction of their customers through telephone calls, personal visits, or by questioning customers when they returned to make subsequent purchases. In no instances did they make use of digital design and technology for this purpose. The following two excerpts are typical of the responses of the interviewees in Gokwe:

*“It’s by phone call and Whatsapp, we do follow up as well to the customers, just to make sure they were happy with the previous deliveries.”***(Entrepreneur 4, farmer)**

*“At times I would like if someone gets a service from me and they go and recommend someone come to me, that’s a positive feedback....verbally mostly and by referrals.”***(Entrepreneur 9, farmer)**

Business operating hours in Gokwe are typically from eight o’clock in the morning to five o’clock in the afternoon. As entrepreneurs are unable to sell their products or services twenty-four hours a day, in instances in which customers encounter problems with products, they are often

required to wait until the following day to remedy or resolve them, which can have an adverse effect on customer satisfaction. Relevant responses from three of the interviewees were:

*“No, it’s impossible, we have not reached that level, but one day, all things being equal.”***(Entrepreneur 5, farmer)**

*“On a twenty-four-hour basis? uumm the laws of the country do not require us to do that...”***(Entrepreneur 8, carpenter)**

*“No, I can’t.”***(Entrepreneur 8, manufacturer of polyether-derived foams)**

It emerged from the findings that the interviewees were acutely aware of the need to retain the loyalty of their customers by ensuring that they were satisfied with their purchases. Several adhered to the tried and trusted practice by providing additional incentives. Some offered to transport purchases for free, while others ran promotions for particular periods to encourage customers to purchase slow-moving stock. As Ramees Rahman and Safeena (2016) explain, “Customer satisfaction is the best indicator of how likely a customer will make a purchase in the future”. It was evident throughout the collecting of the data that entrepreneurs in Gokwe believed in the necessity of rewarding loyalty to ensure that their customers remained satisfied, as the following three excerpts bear out:

*“...we also engage some of the companies which we work with who supply us with other things which we use, so we team up and make a promotion together... we have a certain company that got desks from us recently.... We have given them three top class bookshelves for their managers’ offices.”***(Entrepreneur 7, carpenter)**

*“...we have clients that are so reliable to us and they are loyal to us, so to keep loyalty, the only promotion that we do is we give them an extra from what they ordered....”***(Entrepreneur 3, farmer)**

*“..... for example, when we are selling tomatoes, we put an extra product, which is an onion. And we run them for two weeks.... We offer them a discount, the maximum is a35% discount that we offer them.”***(Entrepreneur 4, farmer)**

As the three excerpts which follow serve to confirm, several of the urban entrepreneurs who were interviewed favoured maintaining their relationships with their customers through well-

timed discount periods, promotional prices, discounts for referrals which result in sales, and promotional gift packages:

“What I have actually done is for those regular customers, ones who have been buying so many products from me, I normally do discounts, for instance if someone has bought some pillows and refers three or four people.” **(Entrepreneur 8, manufacturer of polyether-derived foams)**

“Price promotions obviously... normally short periods to keep it more enticing it could be monthly promotion, weekly... Free books, freebies, free sessions at times, free training.” **(Entrepreneur 1, motivational speaker)**

“...the first week of December we offer 20% discounts on each and every product of ours... Yes, we have what we call our customer pack. Like, at the end of the year, we give them something like a branded t-shirt and branded watch.” **(Entrepreneur 6, advertising guru).**

4.5. Sub-theme: Factors which discourage the adoption of digital design and technology by rural entrepreneurs in Gokwe and opportunities which are afforded to them to integrate digital design and technology into their business practices to enable them to achieve sustainable growth in their businesses

4.5.1. A lack of opportunities owing to low returns on investments

The lack of investment in digital technology, which results directly from the economic problems with which the government is faced, is hindering the adoption of e-commerce in the rural areas of Zimbabwe. Consequently, it is possible to contend that the failure of e-commerce to stimulate rural economies stems directly from the inability or unwillingness of the government to make a sufficiently substantial commitment to enabling rural entrepreneurs to expand their markets and increase the contribution which they are able to make to the economy of the country. As it has been noted, although the produce of many entrepreneurs in Gokwe meets international standards, their markets remain limited, for reasons which seem to differ from area to area. In the words of three of the interviewees:

“..we are not reaching to the maximum that we are looking for and believe that using digital technology we can actually reach them and, you know, with a large base of customers a business can grow.”(Entrepreneur 3, farmer)

“If we get a good market, our business is going to be successful, so market expansion, we want our market to expand..... I am far away from those who want to buy my thing. I am affected...” (Entrepreneur 9, farmer)

“...you might have the product, but if you do not have the market, there is no way that you are going to be successful.... Yes, it’s totally different because you cannot compare our rural area with the urban area. Businesses in urban areas are close to the market.”(Entrepreneur 4, farmer)

In addition, one of the tobacco farmers who were interviewed blamed the lack of modern equipment for less-than-optimal productivity and quality:

“ ..in the tobacco industry we need to upgrade the way we dry the tobacco and the set-up of the drying hall. These days of modern technology there are modern drying halls that are set up to be efficient and easy.”(Entrepreneur 5, farmer)

Although entrepreneurs in Harare appear to be better positioned to benefit from the channelling of resources by the government owing to the return on investment which doing so generates, it was evident that financial concerns represented one of the main stumbling blocks to making complete transitions from analogue to digital methods:

“...my company going digital fully: it requires money to make websites, internet designs, all these things, even if you want better quality pictures, it’s either you have to buy the camera or you have to hire someone.....all these things they all come back to the problem of finance .” (Entrepreneur 8, manufacturer of polyether-derived foams)

“...these problems of cash flow in my company, having money that I can channel towards the adoption of digital design and technology to enable my business to be successful, the probability of that happening is very slim.”(Entrepreneur 6, advertising guru)

Although several of the entrepreneurs in Gokwe who were interviewed were aware of innovative new systems such as e-commerce and advertising by means of digital media and wish to avail

themselves of the advantages which they provided, they lacked the resources to do so. E-commerce has not taken hold in the rural areas of Zimbabwe, although they cover 70% of the country (Batani et al., 2015). The following two excerpts reflect a general hesitancy to make extensive use of digital media and technology:

“.. it’s moderate in terms of the knowledge that I have..... I was only posting flyers on Facebook and I got some sales through that, but I do not do that anymore.”
(Entrepreneur 4, farmer)

“...I wouldn’t say I have some information of how to do these things, but I feel we need to be taught, we need to be shown how really to get effective in a way.....No we haven’t.”
(Entrepreneur 9, farmer)

The mixed perceptions of the interviewees of the benefits of trading online are evident in the following four excerpts:

“...I don’t need to travel from Gokwe to Harare to order something that I know I can do it online ...agribusiness strategy is to reduce the costs for you to maximise the profit.”
(Entrepreneur 3, farmer)

“Efficiency, I feel like we get more efficient, uumm, and security: I feel like technology it might give us security...” **(Entrepreneur 9, farmer)**

“I tried to sell these products using my personal account, but the response was not huge and I stopped.” **(Entrepreneur 5, farmer)**

“Marketing and running our business digitally at our farm, up to when the product reaches the customer.” **(Entrepreneur 3, farmer)**

Although the interviewees who were urban entrepreneurs were able to make purchases online and used the social media to advertise, they have not reached the operational level which would permit them to use e-commerce in their transactions with customers, mainly for currency-related reasons. The following three excerpts were of particular relevance to this finding:

“..if we are to make full use of the digital platform, where we can process online payments via PayPal, MasterCard, and other online payment systems. As a result, our business we cannot sell twenty-four hours a day.” **(Entrepreneur 8, manufacturer of polyether-derived foams)**

*“... through Alibaba and Amazon as well, like some of the material that we bought outside we used Alibaba, so I have conducted business buying from some, using those platforms”***(Entrepreneur 6, advertising guru)**

*“Yah, we started now trying to create a lot of stuff on the digital platform.... we conduct our business on social media platforms, WhatsApp, a lot of communication takes place, e-mail.”***(Entrepreneur 1, motivational speaker)**

The urban entrepreneurs believed that they needed to make specific technological advances in their businesses, such as exploiting artificial intelligence, increasing their client bases by providing their services online, and making effective use of modern machinery:

“....we really want our products to become digital, where we have training courses online, we have books online....” **(Entrepreneur 1, motivational speaker)**

*“Artificial intelligence.”***(Entrepreneur 8, manufacturer of polyether-derived foams)**

“Effective and efficient machinery that can reduce the time it takes to put the product out there to clients and also expand our market and create growth in the business...”
(Entrepreneur 6, advertising guru).

4.5.2. Opportunities for obtaining funding to acquire digital technology

It was evident from the interviews with the urban entrepreneurs that they believed that the government had made an adequate investment in ICT infrastructure for entrepreneurial purposes. Two relevant responses were:

*“Yes, they are, our infrastructure is good, I have no doubt.”***(Entrepreneur 8, manufacturer of polyether-derived foams)**

*“Yes, the buildings are suitable for information technology and internet purposes.”***(Entrepreneur 6, advertising guru)**

Conversely, it was also evident from the interviews with the rural entrepreneurs that there were severe disparities in investments in infrastructure for digital technology in rural and urban areas. Several contended that the lack of funding for digital technology infrastructure by the government in rural areas stemmed from the channelling of funds to sectors such as agriculture

and mining. The issue of funding for digital technology is the same for both rural and urban entrepreneurs. The government has no funding towards digital technology; funds are being channelled for other areas such as agriculture and mining but not technology. Entrepreneurs had the following opinions concerning funding for digital technology. An entrepreneur from the city stated that funding opportunities are there from other organisations that are not the government, but the conditions are that you might end up losing your business. The following excerpts are representative of the opinions which were expressed:

“...there are no opportunities for funding, as far as am concerned, out there.”(Entrepreneur 3, farmer)

“There is no funding for digital technology in the tobacco industry that I have heard of.”(Entrepreneur 5, farmer)

“There is no funding that I know of and I haven't received anything in regard to that.”(Entrepreneur 4, farmer)

“...there are some successful entrepreneurs who now have capital and who would love to invest in upcoming entrepreneurs that are out there...”(Entrepreneur 1, motivational speaker)

Most of the rural entrepreneurs complained that the collateral which lending institutions required represented an obstacle of almost insurmountable magnitude. It was evident that they believed that if a rural entrepreneur were to consider borrowing money from a bank to invest in digital technology for his or her business, in most cases it would be impossible to meet the requirements of the bank and the rates of interest which banks charged were extremely high. The following excerpts provide a representative spread of the perceptions which the interviewees expressed:

“They require maybe trading references which is quite difficult to get, they require registration in terms of being registered with some regulators. They also require collateral, this includes ownership of land and cars.”(Entrepreneur 5, farmer)

“..... what they look at is your asset base and they also look at usually, they would want to attach the land, so if you have the title deeds of the land that you are using, they use it as collateral.....”(Entrepreneur 3, farmer)

“As per what I have experienced in the past, they said they need collateral and the collateral would be equivalent to a medium-sized business...”(Entrepreneur 4, farmer)

“The charges and interest that these financial institutions have are extremely high and the idea of losing all your assets if you do not pay.”(Entrepreneur 7, carpenter)

As the following excerpts demonstrate, the rural entrepreneurs appeared to belong to cooperatives of any sort:

“Right now I am not part of any, they could be there but I think it’s something that I will look into.”(Entrepreneur 4, farmer)

“In our area they are no cooperatives and I am not part of any.”(Entrepreneur 3, farmer)

“No, I am not in a group.” (Entrepreneur 9, farmer)

By contrast, the interviews revealed that one of the urban entrepreneurs belonged to a cooperative:

“Yes, actually we have a group of printers and designers and also a group of suppliers of raw materials.”(Entrepreneur 6, advertisingguru)

4.6.Strategies which entrepreneurs in Gokwe are able to use in order to integratedigital design and technology effectively into their business practices

Some of the rural entrepreneurs maintained that they were not aware of legislation or policies which had been formulated and promulgated to develop entrepreneurship in their respective fields:

“...I would like to think they are there...I think my not knowing any shows they are not properly implemented.”(Entrepreneur 7, carpenter)

“Currently we do not know anything about these laws.... I do not know of any policies, hey.”(Entrepreneur 4, farmer)

“There is no framework that I know of.... they are not effective because there is no follow-through, there is no follow-through at all.”(Entrepreneur 5, farmer)

Conversely, others were aware of legislation and regulations which were intended to promote rural entrepreneurship, although they were not specifically premised on the adoption of digital technology. Although the government is in favour of technology-driven commerce, significant changes would need to occur in the socioeconomic landscape of the country for it to become the predominant means of transacting business in both urban and rural areas. Although the following two excerpts are indicative of an awareness of policies which the government has enacted to encourage entrepreneurship in the rural areas, neither policy explicitly entails the use of digital technology:

“...we have what is called command agriculture. It’s one of the models that are being used by the government and the policy is to give the farmer or agriprenuer inputs and then he pays for them with the crops he has produced.”(Entrepreneur 3, farmer)

“Yah, there is it’s a programme that was passed by the government back then. It’s called land reform programme... it encouraged rural entrepreneurship basically, that’s the most brilliant part about it...”(Entrepreneur 9, farmer)

Both the urban and rural entrepreneurs believed that it was imperative that the government should play an active role in promoting the adoption of digital design and technology, particularly by requiring all transactions with government departments to be made by means of e-commerce. They also maintained that internet tariffs should be reduced, through the joint use of infrastructure and that the government should provide inexpensive access to infrastructure for the functionalities of ICT, by providing technological and financial assistance to businesses. Another concern which they raised was the need to ensure the security of information, as cybercrime-related fears could discourage many people from making use of e-commerce. Some suggested that the government should launch public awareness campaigns to encourage the adoption of e-commerce as a preferred business practice and implement policies to increase the confidence of entrepreneurs and the rates at which they make the transition to e-commerce. The following excerpts typify the suggestions which the interviewees made:

“...the availability of devices that can provide the services, for example, smartphones and so forth, and if you are using smartphones or computers to have access to the internet....” (Entrepreneur 3, farmer)

“Cheap internet and electronic devices that are affordable to everyone. Availability of electricity twenty-four hours a day, because if your business cannot be online and you cannot access it for eighteen-hours...” (Entrepreneur 5, farmer)

“If only the government would actually realise the potential which is there in this industry and then, digital technology: they could realise how profitable it is. I think they would invest much in that, definitely it will boost the market, even the inflow of the foreign currency.”(Entrepreneur 7, carpenter)

“We need to reduce the cost of data bundles for cheap access to the internet. I think that’s the major contradiction to this digital platform thing, whereby in some places the internet, it’s inaccessible...”(Entrepreneur 8, manufacturer of polyether-derived foams)

As emerged from the interviews, that it could be concluded that the presence of e-commerce in Gokwe was not a limited one, but rather a non-existent one. Several of the interviewees maintained that the infrastructure needed to be overhauled and reconfigured by professionals to permit e-commerce transactions to be made. The essential infrastructural preconditions for e-commerce are functional telecommunications and a reliable supply of electricity. As it is evident from the following two excerpts, the rural entrepreneurs who were interviewed in Gokwe contended that although they considered that e-commerce was desirable, they had no access to it:

“Umm, I would say the current state is non-existent even for.... you cannot trade online, you have to physically access the product that you want and even the payments...” (Entrepreneur 5, farmer)

“Currently e-commerce is not being used at all.”(Entrepreneur 3, farmer)

Conversely, the urban entrepreneurs maintained that although the infrastructure in their area for e-commerce functions, their businesses were still unable to process payments online, as the present currency prevented the banking system from facilitating the processing of electronic payments. Two relevant excerpts were:

“In South Africa people are ordering take-away food at home and then it’s delivered by Uber Eats. They are buying almost everything at home online - it’s delivered to their doorstep, even bread.”(Entrepreneur 1, motivational speaker)

*“Actually, I would consider e-commerce as a lost opportunity in industry... my business, I haven’t as yet put the e-commerce into my business, the reason being I am still working on my website...”***(Entrepreneur 8, manufacturer of polyether-derived foams)**

At the time of the conducting of the study, there were no training facilities for digital marketing in Gokwe. The interviews revealed that some of the rural entrepreneurs became aware of digital marketing by conducting their own research. One explained that he had hoped to be taught by someone who had received training. Two relevant excerpts were:

*“Yes, they are some short courses being offered, but not in my area. They are quite pricy and an average person cannot afford it.”***(Entrepreneur 5, farmer)**

*“Yes, actually I didn’t receive it. I requested training from someone, so that I could be educated concerning digital marketing.”***(Entrepreneur 4, farmer)**

By contrast, while training facilities were available in Harare, several of the urban entrepreneurs considered them to be excessively expensive. Some of the interviewees had received instruction in digital marketing in university courses, while others had taught themselves. In the words of two of the interviewees:

*“I have done a one-day course with the company 143 Communications. It was a brilliant one, but I think I can have more of those. Then, in South Africa, I just had a bit of training as well.”***(Entrepreneur 1, motivational speaker)**

*“Like I said earlier on, I did a programme, a short course for about three months, of ICT and development.”***(Entrepreneur 6, advertising guru)**

4.7. Presentation of qualitative findings from the focus group discussion

4.7.1. The role of digital design and technology in the development of entrepreneurship in Gokwe

The findings from the focus group discussion revealed that although the crafters were not fully aware of the potential of modern technology to increase the viability of their businesses, they expressed a desire to learn and make effective use of the technologies. As one crafter explained:

“We are trying, we are not very....as you know, every business you have to have one member who’s fully fledged in these IT things. Personally, I can say that I am aware, but there is room for improvement”. (Crafter 3)

4.7.2.The extent to which digital design and technology improve the ability of rural entrepreneurs to identify entrepreneurial opportunities and expand their markets.

It emerged from the focus group discussion that some of the crafters had identified new entrepreneurial opportunities, by collaborating with graphic designers to enter the field of interior design:

“.....handcrafts we think there’s quite a huge opportunity in terms of interior décor, uuum.... ..we also look at roping in graphic designers to look at product concepts that will link up with this niche of interior décor.” (Crafter 3).

4.7.3.The influence of digital design and technology on customer satisfaction

As it was found from the interviews with the rural entrepreneurs, the crafters did not use digital design and technology to ensure that their customers were satisfied with their purchases. Instead, they tended to rely on the unique designs of their crafts to maintain the interest of their customers:

“We get our feedback via phone calls and messages and sometimes if customers come back to buy more, we know that is positive feedback.”(Crafter 3).

4.7.4.Factors which discouraged the crafters from adopting digital design and technology and opportunities which are afforded to them to do so in order to enable them to achieve sustainable growth in their businesses

The crafters were aware that they lacked training in digital skills and believed that acquiring the skills would result in increased sales and profits for their businesses:

“Digital skills, we need to be trained and I mean extensive training, for this to be successful.”(Crafter 1).

4.7.5. Opportunities in relation to return on investment

The findings pertaining to the theme of opportunities in relation to return on investment which emerged from the focus group discussion were significantly different from those of the interviews. The crafters explained to the researcher that the government has invested in the crafts centre in Harare, which is supported by a website. Consequently, the handicrafts which are produced at the centre are a great deal more visible to the outside world than those which are made in Gokwe and other crafts centres in rural areas:

“...day-to-day crafts business at the centre in Harare is operating online. They have a system where you view the product, select delivery dates, and track deliveries online.”(Crafter 3).

4.7.6. Opportunities for obtaining funding to acquire digital technology

Opportunities for obtaining funding are often more readily available to groups of entrepreneurs than they are to individuals. Although the members of the focus group had benefited from funding from the government, it did not enable them to acquire digital technology. The crafters had also received support in the form of having their products advertised. The following two excerpts explain the types of support which they received in their entrepreneurial activities:

“..in terms of advertising the crafts business internationally in embassies and also when it comes to exhibitions, they also support the business.”(Crafter 1)

*“Here in Gokwe we have managed to upgrade the crafts centre also through the assistance of the Ministry of Women’s Affairs, Gender, and Community Development.”
(Crafter 1)*

The crafters have also been given the opportunity to showcase their work and increase their sales at the annual exhibition parks which are held in several provinces of the country:

“...these are sometimes in exhibitions such as the ZITF in Bulawayo and the Harare Agricultural Show, that’s where we get to make our sales as well.” (Crafter 2)

4.7.7. Supports available to crafters in Gokwe in order to integrate digital design and technology effectively into their business practices

One of the members of the group revealed that although the government supported providing the handicrafts industry with online facilities, the plans of the ministry which was tasked with the implementation of the initiative were still underway. Nonetheless, crafts centres throughout the country in districts such as Gokwe and Binga were being renovated in preparation for the acquisition of digital technology. In the words of two of the members of the focus group:

“It’s in full support because right now, the ministry is actually moving in to assist to get some consultancy for IT and all other areas of digital marketing.” (Crafter 7)

“Like here, in Gokwe, in Binga, the centre has recently been renovated” (Crafter 8).

4.8. Presentation of quantitative findings from the questionnaire

4.8.1. Digital design technology

As it has been explained, digital design technology is the means by which advertising and marketing content is created to be displayed on electronic devices such as smartphones, tablets, or computers. A principal concern for the successful transmission of digital design through digital infrastructures and platforms is the elimination of digital artifacts or undesired errors which occur in the transmission of digital images (Nambisan, 2016). In Gokwe entrepreneurs have not started to use digital technology to market and advertise their products and services, despite the almost limitless ability of the technology to facilitate obtaining access to global mass markets by means of the internet, the fostering of lucrative trading relationships, coordinating supply chains, improving communication with stakeholders, and ensuring competitiveness. The effective use of digital design technology provides an optimal foundation which enables businesses to develop sustainable direction, effective communication, and content and design for marketing, and also to optimise their procedures for maintenance, ensuring the quality of their service, and monitoring their growth. One of the most salient findings from the questionnaire revealed that the respondents who owned smartphones did not use them for business purposes.

Table 4.6: Distribution of responses concerning the importance of the role of digital design and technology in the development of entrepreneurship

Not important	0	0%
Somewhat important	0	0%
Moderately important	0	0%
Very important	6	67%
Extremely important	3	33%
Total	9	100%

Most of the respondents owned Android phones, which they used for the purposes of communication and obtaining information. Although the rural entrepreneurs in the sample had access to social media applications but hardly made use of any of them, the urban entrepreneurs made extensive use of applications such as Facebook, Instagram, and Twitter. Although people in Zimbabwe are able to buy and sell products or services online through platforms such as Ownai and Tengah, these platforms are unable to process electronic payments and are websites which enable prospective customers to contact sellers. Table 4.8 portrays the websites available 44% of the business people said that they have ownai and the other 56% highlighted they do not have either ownai or tengah.

Table 4.7: Distribution of e-commerce platforms which were available to the respondents

Ownai	4	44%
Tengah	0	0%
Neither of the above	5	56%
Total	9	100%

As it can be seen in Table 4.8 only two (22%) of the respondents used Ownai, while a large majority of 78% had never used either of the two platforms which were listed in the question. Both of the respondents who used Ownai were urban entrepreneurs. The researcher included the questions concerning Ownai and Tengah in the questionnaire to enable her to assess the

awareness of the respondents of the platforms as potential online outlets for marketing their products or services.

Table 4.8: Distribution of e-commerce platforms used by the respondents

Ownai	2	22%
Tengah	0	0%
Neither of the above	7	78%
Total	9	100%

Figure 4.8 illustrates the distribution of respondents who had conducted business through either Alibaba or Amazon. While 11% had transacted business through Alibaba and 33% had done so through Amazon, a slight majority of 56% had not used either.

Use of international e-commerce platforms

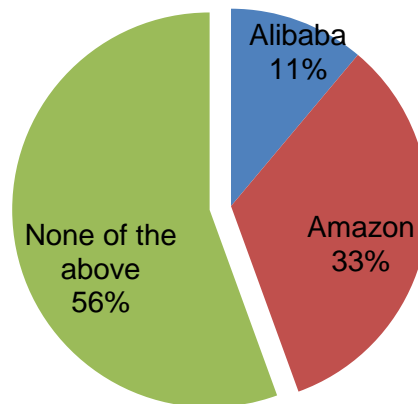


Figure 4.4: Distribution of the use of international e-commerce platforms

The bar graph in Figure 4.4 illustrates that 78% of the respondents believed that digital design and technology played a very important role in enabling entrepreneurs to identify entrepreneurial opportunities and expand their markets, while the remaining 22% characterised their role as extremely important.

The importance of the role of digital design and technology in enabling entrepreneurs to identify entrepreneurial opportunities and expand their markets

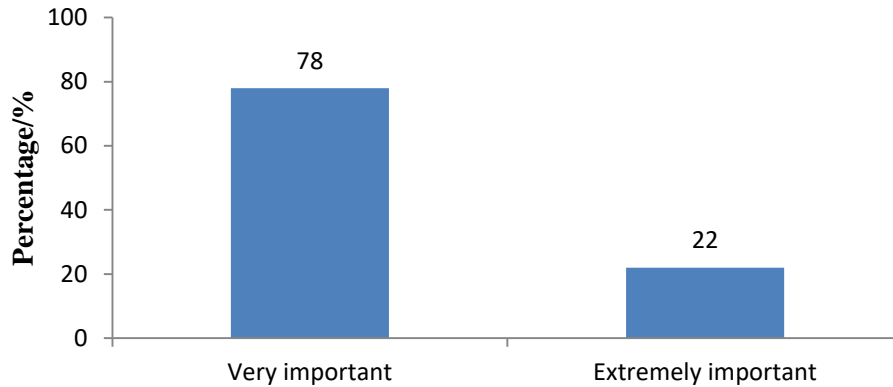


Figure 4.5: The importance of the role of digital design and technology in enabling entrepreneurs to identify entrepreneurial opportunities and expand their markets

Table 4.8.9 provides a summary of the distribution of the responses of the respondents when they were required to rate the importance of the role of digital design and technology in influencing customer satisfaction. While a large majority of 78% rated it as very important, the remaining 22% rated it as extremely important.

Table 4.9: The importance of the role of digital design and technology in influencing customer satisfaction

Unimportant	0	0%
Somewhat important	0	0%
Moderately important	0	0%
Very important	7	78%
Extremely important	2	22%
Total	9	100%

Table 4.10 summarises the responses of the respondents when they were asked to rate importance of the influence of the factors which discourage the adoption of digital design and technology. It highlighted the challenges they were facing were complex and they required intervention of the government or civil societies to be solved. While 22% rated the importance of

their influence as somewhat important, 11% rated it as being of moderate importance, 33% as very important, and 33% as extremely important.

Table 4.10: The importance of the influence of the factors which discourage the adoption of digital design and technology

Unimportant	0	0%
Somewhat important	2	22%
Moderately important	1	11%
Very important	3	33%
Extremely important	3	33%
Total	9	100%

Table 4.11 reveals that 22% of the respondents ascribed moderate importance to strategies to promote digital design and technology use by rural entrepreneurs in Gokwe, while 44% rated them as very important and 33% as extremely important.

Table 4.11: The importance of strategies to promote the adoption of digital design and technology

Unimportant	0	0%
Somewhat important	0	0%
Moderately important	2	22%
Very important	4	44%
Extremely important	3	33%
Total	9	100%

As it can be seen in Table 4.12, 22% of the respondents rated the influence of digital design and technology in identifying opportunities to obtain funding as being of moderate importance, while 44% rated it as very important and the remaining 33% as extremely important.

Table 4.12: The importance of the influence of digital design and technology on the ability to identify opportunities to obtain funding

Unimportant	0	0%
Somewhat important	0	0%

Moderately important	2	22%
Very important	4	44%
Extremely important	3	33%
Total	9	100%

4.8.2.Summary of the findings

Although the rural entrepreneurs who participated in the interviews and the focus group discussion in the qualitative study expressed a general awareness of the benefits to their businesses which would accompany the adoption of digital technology, they were unable to avail themselves of the benefits. Instead, they were obliged to rely on traditional methods of communication, advertising, and marketing. The findings which emerged from the quantitative study revealed that the respondents were aware of the potential of digital design and technology to increase the efficiency and profitability of their businesses and also of the factors which prevent many entrepreneurs, particularly those in rural areas, from having access to digital technology.

Several of the interviewees expressed dissatisfaction with the small sizes of their markets and their inability to expand them at present. Both the urban and rural entrepreneurs were interested in the prospect of new entrepreneurial opportunities. Two of the tomato farmers explained that they wished to manufacture tomato puree from the tomatoes which they would otherwise be obliged to discard, although they conceded that becoming capacitated to do so would require a substantial investment in the necessary technology. The urban entrepreneur who manufactured polyether-derived foams expressed his desire to increase productivity and profitability in his business by incorporating artificial intelligence into his manufacturing processes.

All of the interviewees acknowledged the need to maintain the satisfaction of their customers and the role of goodwill in their ability to do so. Many of the farmers rewarded loyalty by supplying customers with additional produce, while the urban entrepreneurs tended to favour promotional gifts as a means of expressing appreciation to regular customers. The researcher learnt from the rural entrepreneurs who were interviewed that a range of different factors contributed to their inability to expand their markets beyond Gokwe through the successful integration of digital design and technology into their business practices. Not only did a lack of knowledge and experience preclude them from using the technology and establishing websites,

but a lack of infrastructure represented a further stumbling block, as the government generally channelled resources on the basis of the likely return on investment. Conversely, the urban entrepreneurs cited the high cost of investing in digital technology as one of the main factors which prevented them from successfully basing their business operations on it. One of the principal findings of the focus group discussion was that although the government had made substantial investments in handicrafts centres but the stage at which the crafts could be advertised and marketed to global markets had not yet been reached, preparations for entering the online market were under way. Nearly all of the participants in the qualitative study expressed the wish to modernise their business practices through the integration of digital design and technology. The three most-cited preconditions for making a successful transition to digital technology were training in running online businesses, affordable electronic devices, and inexpensive access to the internet.

4.9. Discussion of the findings

The main aim of the discussion in the sections which follow is to evaluate the findings in relation to the NEBIC and PCDO analytical frameworks, in order to determine the role which digital design and technology have played to date in the development of entrepreneurship in Gokwe and to assess their potential for enabling entrepreneurs in Gokwe to take their rightful place in the global trading community in the future.

4.9.1. Discussion of the findings concerning the role of digital design and technology in developing entrepreneurship

4.9.1.2. The role of technology in effective business practices

It was evident from the findings that although digital design and technology have a crucial and decisive role to play in the development of both rural and urban entrepreneurship, the urban entrepreneurs who participated in the study were not exploiting their capabilities to the fullest extent and the rural entrepreneurs in Gokwe had yet to attain the capabilities to enable them to make use of digital technology to any appreciable extent. The component of the Net-Enabled Business Innovation Cycle (Wheeler, 2002) which entails choosing appropriate enabling technologies is predicated on the ability to gain acute insight into the capabilities of enabling

technologies. By contrast, the findings demonstrated conclusively that there was a general lack of insight among entrepreneurs in Gokwe of the benefits which the adoption of new technologies could afford their businesses. Conversely, although the urban entrepreneurs in Harare who participated in the study were aware of the pivotal role which digital design and technology play in modern commerce, their use of digital technology tended to be confined to communications, such as the sending and receiving of e-mail messages.

This limitation stems largely from the instability of the banking sector in Zimbabwe, which, in turn, has precluded the possibility of processing online payments, as a consequence of the demise of the Zimbabwean dollar. Although the urban entrepreneurs were able to communicate with customers and suppliers by means of e-mail messages, their rural counterparts were obliged to rely on traditional methods of communication, disseminating information, and advertising. While some used e-mail messages to communicate with suppliers, most of who were based in urban areas, they hardly ever did so to communicate with customers, because very few inhabitants of the district were sufficiently well versed in modern methods of communication. Nonetheless, the participants frequently encountered problems in communicating with either suppliers or customers, owing to undesirable occurrences such as the failure of networks or load shedding.

4.9.1.3. Demographic profile of the respondents to the questionnaire

As the respondents to the questionnaire were all male, from twenty to forty years of age, and had levels of educational attainment which were significantly higher than the national average, it could be concluded that they were a group of energetic young entrepreneurs, an assessment which is ably borne out by the finding that a high proportion had started their businesses with from two to four employees and employed from five to nineteen at the time of the conducting of this study. Accordingly, although the businesses were relatively small, they possessed the potential to expand if they had adequate exposure to receptive markets. Their awareness of the potential of digital design and technology to facilitate the growth of their businesses was reflected in their unanimous rating of either “very important” or “extremely important” in response to each statement in the questionnaire concerning the role of digital design and technology.

4.9.1.4. Awareness of modern technology

Most of the entrepreneurs who participated in the study were aware of the ability of modern technology to increase the efficiency and profitability of their business, a goal which some were eager to achieve in specific respects, such as by increasing and expanding their markets. In the case of the members of the focus group, although they were not aware of the full extent to which modern technology could enable them to expand their markets and diversify their entrepreneurial activities, they were willing to learn to use the technologies in order to develop their businesses.

The findings of previous research studies provide ample evidence of the beneficial role which digital technology plays in business practices. One of the crucial benefits of digital information stems from its use of processable data, which allows information to be re-used in applications such as new forms of electronic commerce, thereby providing new avenues for creativity and the social benefits which result from the creative use of technology. As it is necessary to develop appropriate programmes to encourage the adoption and use of digital design and technology in specific contexts, the component of the NEBIC framework pertaining to the choosing of emergent enabling technologies for any particular context needs to be taken adequately into account (Wheeler, 2002).

4.9.2. Discussion of the findings concerning the extent to which digital design and technology increase the ability to identify entrepreneurial opportunities and expand their markets

4.9.2.1. The size of present-day markets of entrepreneurs in Gokwe

The findings from the interviews suggested that entrepreneurs in Gokwe tended to be restricted by small markets and that very few of those who had even the most widespread markets inside the country had customers outside of Zimbabwe. Earlier research has demonstrated conclusively that the effective use of digital technology, specifically the internet, can enable small and family-owned enterprises to overcome the limitations of small local markets and reach consumers in countries throughout the world (Trendovet *et al.*, 2019). Small businesses are able to expand their business activities by entering global markets through the internet if their products or services are more competitively priced or of higher quality than those of local

entrepreneurs (Trendovet *al.*, 2019). The ability of new business enterprises to intensify their specialisation by means of strategies which enable them to optimise their marketing, production, and distribution makes an impeccably cogent case for digital platforms as a highly effective locus for the development of entrepreneurship (Huang, Ceccagnoli, Forman, & Wu, 2013).

The tobacco farmers among the interviewees explained that as they were obliged to sell their produce through the very few auction companies, they were precluded from selling directly to buyers outside of the country. By contrast, one of the farmers who produced paprika had a loyal customer in South Africa who had been buying paprika from him for many years because his paprika was organic, rather than processed. Although it would appear to be unlikely that the use of digital technology would enable tobacco farmers to bypass the TIMB and the auction companies in the foreseeable future, it could definitely play a significant role in enabling producers of highly desirable agricultural products such as organic paprika to expand their markets by exporting to countries throughout the world.

4.9.2.2. Exposure for cooperatives through assistance from the government

It emerged from the focus group discussion that the crafts centres not only enabled handcrafters to sell their products locally, but also made them visible to customers in other countries, to whom they could be sold on behalf of the cooperative and ministry under whose auspices the centres operated. The plans which were under way to enable crafts centres to sell their products online further underscore the crucial role of digital design and technology in expanding markets, although in this instance they are to be used to expand the markets of collectives, as opposed to those of individual entrepreneurs or enterprises.

4.9.2.3. The potential benefits of owning digital electronic devices for entrepreneurs

A significant finding from the study was that although most of the entrepreneurs who responded to it owned smartphones with social media applications installed on them, the rural entrepreneurs made very little use of them in their business activities. By contrast, the urban entrepreneurs used applications such as Facebook, Instagram, and Twitter to advertise their products or services. The findings also revealed that relatively few of the respondents had made use of local digital platforms such as Ownai or Tengah or international platforms such as

Amazon or Alibaba to expand their markets or obtain resources for their businesses online. The inability of entrepreneurs to make or receive payments online owing to currency regulations undoubtedly constitutes a significant impediment to increasing entrepreneurial activity through the use of digital design and technology. Although ownership of digital electronic devices is a necessary precondition to trading online, Zimbabwean entrepreneurs will inevitably continue to lag behind their counterparts in other countries until it becomes possible for them to receive and make payments online.

The component of the NEBIC framework which conceptualises the matching of emergent enabling technology to economic opportunities, which have been identified requires the development of a clear strategy and sound policy to ensure that the integration of modern technologies, it allows new entrepreneurial opportunities to be optimally exploited to facilitate the expansion of existing markets. The economic opportunities which net-enabled business innovations have provided have resulted in the development of highly versatile websites, which are characterised by innovative functions such as real-time personalisation, direct communication with customers, online self-service, reconfigurations of supply chains through electronic exchanges, and location-based mobile commerce systems for handheld devices. According to the World Economic Forum (2017), enabling technologies frequently generate new sales, substantially improve service, and facilitate the identification of opportunities for profits which had remained concealed until the new capabilities which the technologies confer permit them to be exploited. The cycle which the NEBIC framework conceptualises of necessity requires the successful alignment of the capability to match the meticulously evaluated technologies with the choosing capability, the present business strategy, and environmental scanning to identify changing trends concerning either customers or business priorities (Pesceet *al.*, 2019; Dusparaet *al.*, 2016). The overall objective is an optimal matching of specific technologies with particular economic prospects and entrepreneurial competence, in order to match the assistance which, the technology provides with the possible economic opportunities which could be generated for the companies which choose the technology, for the ultimate purpose of making accurate assessments of customer value (Van Welsum, 2016).

4.9.2.4. Entrepreneurial opportunities

It emerged from the interviews that although some of the entrepreneurs had identified potential new entrepreneurial opportunities, they lacked the technological means to exploit them

sufficiently to transform them into income-generating strategies and activities. There is ample evidence from relevant research to confirm that enabling technologies have proved to be invaluable to businesses during the past decade, particularly owing to their ability to facilitate the development of successful business strategies and new business models (Bechtel, Briggs, & Buchholz, 2020). A significant finding in this respect was that several of the rural entrepreneurs appeared to be aware that the opportunities which were available to them effectively constricted the growth of their businesses and precluded them from increasing their income. One of the tobacco farmers expressed an interest in attempting to market his produce independently, owing to the paucity of players in the tobacco auctioning industry. As a direct consequence, selling prices are determined by the holders of a virtual monopoly and tobacco farmers are obliged to accept the prices which they are offered, irrespective of their implications for the viability or sustainability of their businesses.

Among the findings from the focus group discussion was the potential for handcrafters to diversify their entrepreneurial activities in sectors such as interior design, by collaborating with graphic designers. Accordingly, the component of the NEBIC framework which entails matching capability with suitable technology needs to be taken adequately into account, as does the precondition that doing so is predicated largely on the willingness of individual businesses to take calculated risks. The integration of technologies into entrepreneurial activities has resulted in technological entrepreneurship, which, in turn, has fostered “scientific results, new technologies, learning, and bringing new value to the customer, in the form of advanced products and services brought to the market” (Jaksic, 2016). In this manner, the matching of capability integrates competitive advantage through enabling technologies rapidly and efficiently to enable identification of new opportunities in business (UNIDO, 2016).

Entrepreneurial opportunities inevitably differ in accordance with both industrial sectors and the areas in which businesses operate. All of the entrepreneurs in Gokwe who were interviewed displayed an awareness that the differences between the entrepreneurial opportunities; which were available to them in their district and those which were available to urban entrepreneurs, stemmed largely from the distances which separated them from urban areas. Not only did the cost of transporting their produce place them at a disadvantage to farmers who operated closer to towns and cities, but a lack of opportunities for in-person communication with suppliers and customers also contributed significantly to precluding the expansion of their markets.

4.9.2.5. The context in which rural entrepreneurs in Gokwe operate their businesses

It was crucial to make an accurate assessment of the environment in which rural entrepreneurs in Gokwe operated, in order to evaluate the findings in relation to the PCDO analytical framework. The contextual component of the framework is predicated on a number of different factors which influence the success of business enterprises which are specific to the contexts in which they operate, some of which are beyond the control of individual entrepreneurs. Contextual factors such as governing structures, economic environments, or the influence of social movements can exert a significant influence on the opportunities which are available to new ventures and the risks with which they are faced (Sahlman *et al.*, 1996). Although distances from markets, customers, suppliers, and relevant decision makers constitute one of the most adverse contextual factors over which entrepreneurs in Gokwe have no control, digital design and technology could play a significant role in mitigating effects of distance, by facilitating the coordinating of their entrepreneurial activities in a manner which enables transport costs to be shared and making their products and services visible online. The degree of atomisation in the entrepreneurial community in Gokwe at present was underscored by the finding that owing to the state of the economy, most of the interviewees felt obliged to neglect their social responsibility to their community and to make the survival of their businesses their main priority.

4.9.3. Discussion of the findings concerning the influence of digital design and technology on customer satisfaction

4.9.3.1. Customer satisfaction

As it has been explained, it is a fundamental tenet of all sound business practices that the satisfaction which customers feel in relation to their purchases is crucial to the success of business relationships in both traditional commerce and business-to-consumer electronic commerce (Rasliet *al.*, 2018). Although the findings revealed that the participants did not use digital design and technology to assess customer satisfaction at the time of the conduct of the study, the concept lies at the heart of the NEBIC framework, whose principal objective is to facilitate the making of accurate assessments of customer value (CV) in net-enabled

entrepreneurial environments. Customer value is accessed in relation to three specific dimensions, namely, the financial, perceptual, and behavioural dimensions. The financial dimension of customer value is measured by means of accounting and financial reporting systems (Wheeler, 2002). By contrast, the perceptual and behavioural dimensions are measured by means of customer satisfaction or product evaluation surveys which use psychometric tests to measure beliefs, attitudes, and intentions (Wheeler, 2002). The aim of the tests is to assess the attitudes of customers towards the products or services of businesses in respects such as the intention to buy again, feelings of distrust towards particular brands or services, levels of satisfaction, and the likelihood of recommending products or services to friends, colleagues, or associates.

4.9.3.2. The significance of perceptions of customers

The findings revealed that the participants in the study were acutely aware of the need to maintain their relationships with their customers in order to ensure that they continued to patronise their businesses in the future. It is almost universally accepted that the positive perceptions of customers of the products or services which they purchase increase the likelihood of customers desiring to continue their relationships with the organisations from which they have purchased them (Dagger *et al.*, 2013). Although the participants adhered to traditional practices to express their appreciation of the loyalty of their customers, the factors which encourage customers to make additional online purchases from particular organisations are somewhat different. The designs of the homepages of websites play a crucial role, as visually attractive websites are a precondition for engaging prospective customers and the ease with which they can be navigated and purchases can be completed also exerts decisive influence on the retaining of online customers (Ghaffari & Ashkiki 2015).

It flows from the NEBIC framework that companies or businesses with exceptional capabilities with respect to choosing enabling technologies, matching them with entrepreneurial opportunities, developing innovative business practices to stimulate growth, and assessing customer value are most likely to generate high levels of customer value consistently (William, 2002). Digital design plays a crucial role in facilitating the smooth communication of value propositions to customers and influencing them to make subsequent purchases. In addition, the communication of value propositions needs to be supported and accompanied by satisfactory experiences with respect to the level of service which is extended to customers, the quality of the products or services which they purchase, and the support which they receive from the

company whose website they have patronised (Kabango & Asa, 2015; Rasliet *et al.*, 2018). As Al-Nasser (2015) explains, when customers are highly satisfied with their online purchases, their prior expectations are surpassed, which is correspondingly likely to result in their making subsequent purchases, in relationships which have developed from initial experiences of well-designed websites.

4.9.3.3. Operating hours of the businesses of the participants

It emerged from the interviews that interactions between entrepreneurs in Gokwe and their customers were confined to normal working hours. Although one of the tobacco farmers explained that during the drying season it was necessary for work in the drying hall to continue twenty-four hours a day, this information was not germane to the thrust of this study. While it is generally impracticable for entrepreneurs to sell their products or provide their services twenty-four hours a day, digital design and technology provide customers with the means to complete transactions online at any time.

4.9.3.4. The need for customer satisfaction

The findings from the questionnaire revealed that all of the respondents expressed the belief that the ability of digital design and technology to influence customer satisfaction was either “very important” or “extremely important”. These ratings were indicative of a general awareness that internet technology contributes to customer satisfaction by enabling customers to communicate to suppliers their perceptions of products or services which are marketed through websites and the quality of the service which they received when they purchased them online.

The NEBIC framework holds that choosing appropriate enabling technologies precedes the other components, which act collectively to convert enabling technologies into customer value (Wheeler, 2002). As there can be no doubt that customer satisfaction is the cornerstone of any strategy for maintaining and expanding business enterprises, it is necessary to develop and make use of the most effective and efficient methods of determining and quantifying customer satisfaction.

4.9.4. Discussion of the findings concerning the factors which discourage the adoption of digital design and technology by rural entrepreneurs in Gokwe and the opportunities which are afforded to them to integrate digital design and technology into their business practices in order to achieve sustainable growth in their businesses

4.9.4.1. Opportunities in relation to return on investment

It is a widely accepted maxim that development cannot occur in the absence of sufficient return on investment. It was found that access to markets for all of the businesses of all the entrepreneurs who were interviewed in Gokwe was severely restricted by factors such as; the costs of transporting produce over great distances, an inability to use modern technology to market and advertise their products sufficiently effectively to enable them to expand their markets. Relevant research has enumerated the benefits of introducing modern communication technologies in the rural areas of developing countries to increase participation and facilitate the dissemination of information and the sharing of expertise and knowledge (Trendov *et al.*, 2019; United Nations, 2016). Consequently, the potential of digital platforms to stimulate entrepreneurial activity in the rural regions of developing countries is only beginning to be understood in the developed countries of the world (Ngoasong, 2015).

Most of the rural entrepreneurs who participated in the study lacked the necessary knowledge and experience to integrate online capabilities into their business practices, owing to a lack of training facilities in their district. The “people” component of the PCDO analytical framework refers to both the active participants in entrepreneurial ventures and external providers of resources, the contributions of all of whom are vital for their success. Consequently, the successful integration of e-commerce into the rural economy of Gokwe would depend on the aptitude of local entrepreneurs for acquiring digital skills and a sufficiently substantial investment by the government in necessary infrastructure. A telling finding from the interviews was that one of the farmers had tried to advertise his products online during the era of the unity government, when data had been relatively affordable, but had found the practice to be ineffective. If this finding were to be considered against the backdrop of the rapid proliferation of online entrepreneurial activities throughout the world at the same time, the magnitude of the anomaly which it represents would become immediately apparent. Conversely, the finding should not be a surprising one in a district in which very few inhabitants were sufficiently well versed in the use of digital technology to be able to send or receive e-mail messages. The “people” component of

the PCDO analytical framework necessitates an optimal combination of the skills, capabilities, and resources which constitute the necessary precondition for the emergence of a digital ecosystem in which the growth of local businesses is encouraged through steadily expanding digital networks.

4.9.4.2 Factors which inhibit the adoption of digital design and technology

A significant majority of the respondents to the questionnaire rated the influence of the factors which discourage the adoption of digital design and technology to increase the efficiency and effectiveness of their business practices as being either “very important” or “extremely important”. This finding is indicative of a shared perception that inability to engage in e-commerce placed their businesses at a distinct disadvantage to those which were able to do so. The responses to the questionnaire also suggested a general perception among the respondents that the successful adoption of digital technology would make a significant contribution to attracting funding from international institutions. It emerged from both the interviews and the focus group discussion that the participants were generally aware that a lack of digital skills and training and the ability to market their products or services through websites placed severe restrictions on their ability to expand their markets. Conversely, the findings also revealed a definite resistance to using digital technology among some of the rural entrepreneurs, for reasons which ranged from a distrust of modern technology to perceptions that it was irrelevant to their traditionally-based entrepreneurial activities and not worth the costs which investing in it entailed. In another instance, a participant explained that it was pointless to try to communicate with customers through e-mail messages, as very few people in the district were able to receive them.

As both Rahayu and Day (2015) and Nantembelele and Gopal (2017) explain, when the factors which either encourage or discourage the adoption of e-commerce are evaluated in relation to the PCDO analytical framework, individual contexts are largely determined by the owners of business enterprises, owing to the leading roles which they play in the making of decisions (Nguyen & Waring, 2013). In the case of Gokwe, the overall context is determined by the nature of the local economy, the tax and governing structure, and the social structure and the environment of the district. The contextual profile which the researcher was able to develop from the interviews characterised the district as being served almost exclusively by small-scale businesses. In addition, the affiliations of the councillors in the district confirmed that it was

governed by the ruling party and most of the entrepreneurs who participated in the study had benefited from the land reform programme.

New opportunities need to be evaluated in relation to the deal component of the PCDO framework. As it has been explained, the deal is predicated on the level of affluence in a particular line of trade. In the context of Gokwe, the factors on which it is predicated include the entrepreneurs who supply goods to the local population, the financial resources of their customers, and the suppliers whose products or services are available to local entrepreneurs. Aligning the NEBIC and PCDO frameworks with respect to entrepreneurial opportunities requires an adequate appreciation of the priority of the NEBIC framework to match emerging technology in an optimal manner with economic opportunities and the characterisation of opportunities by Sahlman et al., (1996) as any activity which requires the investment of scarce resources in the hope of a future return. The interviews with urban entrepreneurs revealed that although they understood the need to invest in digital design and technology to expand their markets and achieve growth in their businesses, the high costs which making the transition from analogue to digital business practices represented a severe obstacle, owing to the need to enlist the services of professionals in fields such as IT, photography, and graphic design, to create and update their online platforms regularly, in order to maintain the interest of their customers. This finding provides a compelling illustration of the complex interrelationship of the deal component of the PCDO framework as a manifestation of the level of affluence in a particular line of trade and the new entrepreneurial opportunities which are likely to emerge from the successful matching of emerging technologies with existing economic opportunities in the NEBIC framework.

4.9.5. Discussion of the findings concerning the strategies which are available to entrepreneurs in Gokwe to enable them to integrate digital design and technology into their business practices effectively

4.9.5.1. Legislation to promote the adoption of digital technology

All of the rural entrepreneurs who were interviewed believed that no legislation or policy had been formulated or implemented in Zimbabwe specifically to promote the development of entrepreneurship through the adoption of digital design and technology. By contrast, several

were aware of legislation and policy which were intended to promote agricultural productivity, such as the launching of Command Agriculture, under whose auspices farmers receive a discount of 10% on all agricultural inputs. As one of the interviewees explained, this initiative has not only enabled rural entrepreneurs to purchase inputs at reduced prices, but the use of high-quality inputs has resulted in bumper harvests in the area and the country as a whole. As a result of the land reform programme which the government pioneered, a great many ordinary Zimbabweans have become landowners. The government is aware of the benefits which could accompany the widespread adoption of e-commerce in the rural areas, in forms such as increased tax revenue and foreign currency and increased contributions to the GDP of the country. From the standpoint of the NEBIC framework, the desired outcome of Business Innovation for Growth would ultimately be the emergence of sustainable net-enabled entrepreneurial ecosystems in the rural areas of Zimbabwe.

4.9.5.2 Recommendations of the participants to facilitate the adoption of digital technology

As Franco and Regi (2016) explain, e-commerce has fostered the formation of electronic trading floors, on which suppliers and potential customers meet in a virtual environment to participate in mutually beneficial transactions. The rural entrepreneurs who were interviewed in Gokwe offered several suggestions for promoting the adoption of digital design and technology to permit transactions to be made by means of e-commerce. One of the farmers believed that rural entrepreneurs should be taught to operate digital electronic devices and to make online business transactions. This piece of information served to confirm that there was an awareness among the interviewees that although they wished to avail themselves of the benefits of trading online, they needed to acquire the knowledge and skills which would enable them to do so.

The Business Innovation for Growth component of the NEBIC framework is exemplified by the proliferation of Digital Innovation Hubs throughout the world, which is a support organisation whose purpose is to increase the ability of businesses to become competitive through the adoption of digital technology. Agri-Hubs could play a particularly vital role in developing rural entrepreneurship in Gokwe and were suggested by some of the participants, along with inexpensive access to the internet and a reliable supply of electricity. At present, data for obtaining access to the internet is extremely costly, which effectively places it beyond the reach of a large portion of the population, while data for communicating by means of WhatsApp is

considerably more affordable to most people and more widely used. In addition, as electricity is unavailable for as many as eighteen hours a day owing to severe load shedding, it becomes exceedingly difficult to operate online businesses. Nazir and Zhu (2018) explain that readiness for technology is predicated on the extent to which technological infrastructure, human resources in the form of technical skills, and business systems which are based on IT facilitate the adoption of e-commerce. At the time of the conducting of the study, it was not possible to engage in e-commerce. Several of the interviewees were unable to initiate sales online because they did not have websites. In addition, the banking sector in the country could not process electronic payments, as the currency which was in use could not be used to trade with other countries owing to inflation and, as a consequence of highly volatile markets, prices are prone to extreme fluctuations.

The NEBIC framework emphasises that in the taking of net-enabled initiatives from ideas to becoming a significant force in highly competitive markets in which competitive advantage times tend to be short, the integration of appropriate digital systems facilitates the smooth flow of business to the point of making transactions, thereby maximising profits and driving growth. As the urban entrepreneurs who were interviewed were able to make use of the digital infrastructure to enable their businesses to have an online presence, but were unable to make or receive electronic payments, their recommendations tended to be similar to those of their rural counterparts. As the Business Innovation for Growth component of the NEBIC framework is predicated on the ability of business enterprises to reconfigure their products, services, sales channels, and supply chain in a manner which optimises their potential for growth, the respective positions of the rural and urban entrepreneurs who participated in the study are apparent.

While the rural entrepreneurs had not received any training in digital marketing owing to a lack of training facilities in their district, most of the urban entrepreneurs had received some training. A common assessment among the urban entrepreneurs was that making a full transition to digital design and technology and e-commerce would be viable only if they were able to process online payments, as it would not be cost-effective to invest in websites solely to advertise. Consequently, the ability of business enterprises in Zimbabwe to achieve the growth and levels of customer value which are possible from a rigorous application of the NEBIC framework is dependent on the ability of the government to achieve a sufficiently stable currency to permit the full exploitation of e-commerce.

4.9.5.3.Preparations by the government to support crafters with digital technology

It emerged from the focus group discussion that preparations are under way by the government ministry which is responsible for attending to the needs of handcrafters in the rural areas to enable them to sell their products online, by means of digital marketing. The preparations have taken the form of renovating the crafts centres to enable them to be equipped with digital technology. These findings tended to be supported by the responses to the statement in the questionnaire concerning the importance of financial and technological assistance from the government to increase the adoption of digital design and technology by entrepreneurs, as the responses were significantly skewed in favour of “very important” and “extremely important”.

Summary

This chapter has taken the form of a detailed presentation, discussion, and analysis of the findings of the study in relation to the NEBIC and the PCDO analytical frameworks. Particular emphasis was given to the role of digital design and technology in raising standards and modernising the concept of customer satisfaction. The factors which inhibited the adoption of digital design and technology and the opportunities which they could provide to increase the success of entrepreneurial activities in Gokwe were comprehensively evaluated and the strategies which were available to entrepreneurs in Gokwe to integrate digital design and technology effectively into their business practices were also covered. The decisive finding which emerged from the analysis was that most entrepreneurs in Gokwe did not have access to the means to benefit from the advantages which the effective exploitation of digital design and technology confer. Accordingly, the inescapable conclusion is that an appropriate digital system needs to be developed to enable rural entrepreneurs to interact with customers, suppliers, distributors, and markets, in a manner which permits them to enjoy the advantages which the successful integration of digital design and technology in the rural areas of other countries have provided. The final chapter is devoted to a discussion of the conclusions which were drawn from the findings and the recommendations which are made on the basis of them.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The literature review which preceded the conducting of this study revealed that digital design and technology have become the backbone for developing entrepreneurship throughout the world. There can be little doubt that digital media provide the means for enterprises to reach the largest and most widespread markets and maximize growth, profits, and customer satisfaction. Although the understanding which the findings of this study have generated could not be expected to provide instant solutions to the dearth of online commerce in Gokwe, it nonetheless provides a credible baseline for formulating interventions to promote the adoption of digital design and technology in a manner which accords with both the specific needs and the readiness for technology of local entrepreneurs. This chapter brings the study to a close by providing cogent answers to the main research question and the sub-questions, before proceeding to enumerate the recommendations that are made on the basis of the conclusions. The conclusions were drawn from the findings, evaluating the possible contribution that the study has made to the existing body of knowledge, discussing the inherent limitations of the study, and offering suggestions for future related research.

5.2. Summary of the principal implications of the findings

The research problem was developed from a comprehensive survey of literature pertaining to rural entrepreneurship and the findings of relevant studies. As the findings of the study revealed that digital design and technology played no role in the development of entrepreneurship in Gokwe at the time, it was evident that there was no efficient business system in the district and that there were also no effective mechanisms for supporting and coordinating the efforts of local rural entrepreneurs. Another significant finding was that although most of the rural entrepreneurs who participated in the study experienced difficulty in identifying new entrepreneurial opportunities and expanding their existing markets, they expressed a strong desire to do so. As it has been explained (Reuschke & Mason, 2020) emphasises the crucial role which digital designing for the purposes of marketing, advertising, communication, and disseminating information plays in the success of online entrepreneurship. Customer satisfaction is a crucial component of online business, as it was not possible before the era of online trading to express satisfaction or dissatisfaction as publicly as it is the norm to do so today. Although the entrepreneurs in Gokwe were acutely aware of the need to maintain the

positive engagement of their customers (Dagger *et al.*, 2013), they had yet to avail themselves of the benefits which can accompany digitally communicated expressions of customer satisfaction or the ability to reach national or even international markets. Many of the obstacles which precluded local entrepreneurs from expanding their markets at the time of the conducting of the study could be overcome through the use of digital design to create content to inform their prospective markets of their products and services and to advertise them effectively. The perceptible return on investment could significantly increase the likelihood of obtaining funding from relevant organisations and institutions, thereby fast-tracking the emergence of vibrant self-supporting and self-sustaining rural sectors. The findings also suggested that strategies which could be formulated and implemented to facilitate the effective adoption of digital design and technology in rural areas could also stimulate the adoption of modern technology in all facets of rural entrepreneurial activities.

5.2.1. Conclusions in the light of the NEBIC and PCDO analytical frameworks

As it has been emphasised, the NEBIC (Wheeler, 2002) and PCDO (Sahlman *et al.*, 1996) analytical frameworks are complementary schematic representations which can be used to formulate appropriate strategies for integrating digital design and technology into entrepreneurial activities. While the former details the developmental stages through which emerging technology is selected, acquired, matched with economic opportunities, and integrated into net-enabled business practices for growth for the ultimate purpose of permitting accurate assessments to be made of customer value, the latter provides a cogent means of analysing the interplay among the necessary preconditions for achieving growth.

The findings suggest that the imperatives of the ET component of the NEBIC framework in the context of rural districts such as Gokwe would best be satisfied by granting inexpensive access to the internet to rural entrepreneurs and enabling them to purchase the electronic digital devices which would enable them to advertise, transact business online, and make effective use of digital hubs. Subsidies for these specific purposes, along with adequate training, could certainly contribute to replicating the successes of rural entrepreneurship through digital technology in other countries. Conversely, the EO component, which entails matching technology to economic opportunities, needs to be assessed in relation to the, as yet, largely untapped potential for Zimbabwean rural entrepreneurs to expand their markets. There can be fewer more sound investments than investing in communities which have real potential for making significant contributions to the national economy, apart from their role as feeders of the

nation. The BI or Business Innovation for Growth component represents the nexus at which innovative practices stimulate growth and the lessons which need to be learnt from the successes which have been achieved by rural entrepreneurs in other countries need to become an urgent priority for all relevant stakeholders who are committed to rescuing and developing the economy of the country. Assessments of customer value (CV) would inevitably play an increasingly crucial role as growth and expanded markets are achieved and provide the business intelligence upon which the retaining of vital markets depends.

The findings revealed that the markets of Gokwe were limited at the time of the conduct of the study, while the quality of the products and produce of rural entrepreneurs met international standards (Esterhuizen, 2017; Tausha & Zengeni, 2017), were of particular relevance to the people component of the PCDO analytical framework. Not only does it provide credible evidence that the precondition which the people component represents has been fulfilled, but it also has direct and obvious implications for the EO component of the NEBIC framework and underscores the need to stimulate economic growth through facilitating the adoption of digital design and technology. The context component has implications for both the ET and EO components of the NEBIC framework. In the first instance, the context determines the types of emerging technology which should be selected to create a net-enabled entrepreneurial environment in Gokwe. In the second, it entails matching the technology to the economic opportunities which exist at present, in a manner which facilitates the growth of businesses through innovative practices and achieving the desired goal of expanding markets. The deal component of the PCDO framework is a potentially limiting factor, as it is dependent on prevailing levels of affluence in particular sectors. Conversely, it is also a component whose influence can change significantly if growth is achieved through the successful integration of innovative technology. As the opportunity component entails the allocation of scarce resources with the intention of generating significant returns on investment, it represents a crucial opportunity for the government to invest in income-generating activities in which growth has been conclusively demonstrated to have been stimulated through the successful integration of digital design and technology throughout the world.

5.3. Summary and discussion of the principal findings of the study

The sections which follow are devoted to summaries of the principal findings of the studying relation to the themes and sub-themes which emerged from the thematic analysis of the qualitative data.

5.3.1. The role which digital design and technology play in facilitating the development of rural entrepreneurship

The participants were asked how they made and received payments in their business transactions, which methods they used to communicate with customers, and how they disseminated information concerning their products or services. It was found that most relied on money transfers through either EcoCash or ZIPIT or cash transactions, owing to their inability to make or receive payments online. Although most of them communicated with customers by making calls, some communicated with suppliers through e-mail messages. All of the rural entrepreneurs used traditional methods to advertise their products or services, while several of the urban entrepreneurs maintained that they could not justify the expense of having websites professionally designed and developed if they were unable to make business transactions online. Accordingly, it could be concluded that digital design and technology played no role in the development of entrepreneurship among the rural entrepreneurs and a severely limited role among the urban entrepreneurs. As nearly all of the participants expressed the desire to integrate digital technology into their business practices and emphasised the role of entrepreneurship in contributing to the GDP of the country and creating employment, it was evident that in all entrepreneurial sectors growth was predicated on two crucial preconditions, namely, the development of net-enabled ecosystems and the ability to make and receive payments online.

5.3.2. The extent to which digital design and technology increase the ability of rural entrepreneurs to identify entrepreneurial opportunities and expand their markets

The participants were asked whether they had customers outside of Zimbabwe, whether they had been able to identify new entrepreneurial opportunities, and whether they perceived any essential differences between the entrepreneurial opportunities which were available in Gokwe and those in urban centres. These questions were put to the participants to discover the methods which they used to market their products or services and their perceptions of entrepreneurial opportunities in their respective areas. It emerged from the interviews that only one of the rural entrepreneurs exported his produce to a country outside of Zimbabwe, namely, South Africa. In addition, although the products of the crafters who participated in the focus

group discussion were sold on their behalf from Harare, they themselves were unable to sell their products outside of Gokwe, other than through the crafts centre. Although it was envisaged that the collective marketing of their crafts would continue online, they stood to be exposed to a far wider market than would have been conceivable previously. By contrast, the findings revealed that the markets of the rural entrepreneurs in Gokwe who participated in the study were, generally, extremely small and confined to their district, as very few had customers even in the Matabeleland region. This finding appears to be consistent with their reliance on traditional methods of marketing and advertising. Although some were aware of potential new entrepreneurial opportunities, they were equally aware that they lacked access to the types of technology which could enable them to exploit them. As it has already been noted, while the entrepreneurs also expressed the desire to expand their markets and were able to identify promising opportunities, they felt that they could not afford to create websites solely for the purpose of advertising.

5.3.3. The extent to which digital design and technology influence customer satisfaction

It was evident from the findings that most of the rural entrepreneurs relied on telephones to communicate with their customers, as most of the local population was not sufficiently well versed in using digital technology to send and receive e-mail messages. Although they were aware of the need to ensure that their customers remained satisfied with their transactions, as both the rural and the urban entrepreneurs lacked websites, they were unable to use the comments of satisfied customers as additional advertising to expand their customer bases.

5.3.4. The factors which discourage the adoption of digital design and technology by rural entrepreneurs in Gokwe and the opportunities which are afforded to them to integrate digital design and technology into their business practices in order to enable them to achieve sustainable growth in their businesses

Among the principal factors which discouraged the adoption of digital design and technology as a preferred means of transacting business among the rural entrepreneurs were a lack of knowledge of online entrepreneurial activities, an inability to afford to pay graphic designers or other relevant professionals to develop websites for them, perceptions that integrating digital

design and technology into their business practices were unlikely to result in increased turnover or expanded markets, and, in some cases, a distrust of modern technology. None of the rural entrepreneurs who participated in the qualitative study believed that any opportunities were available to assist them to acquire digital technology or develop websites and some maintained that there were no training facilities in the district to enable them to become proficient in using digital technology. From these findings it is evident that unless a substantial investment is made in both digital infrastructure and training, rural areas in Zimbabwe such as Gokwe are likely to remain backwaters and rural entrepreneurship is unlikely to flourish. The handcrafters represented the sole exception to this prognosis, as moves were afoot to enable them to sell their crafts online to global markets.

5.3.5. The strategies which entrepreneurs in Gokwe are able to use in order to integrate digital design and technology effectively into their business practices

It emerged from the findings that no legislation or policies had been promulgated specifically to encourage the use of digital design and technology, although the government appeared to be favourably disposed towards the widespread adoption of e-commerce, owing to the likelihood of garnering increased revenue as a result. Both the urban and rural entrepreneurs maintained that it was incumbent on the government to assist entrepreneurs through funding, training, and favourable policies to enable them to make effective use of e-commerce, digital marketing and technology and also to introduce affordable data and internet tariffs. As it has been emphasised in several other contexts, the transition to digitally-based business practices is unlikely to gain any significant traction until it becomes possible to make and receive payments online.

5.4. Recommendations

The specific recommendations which are made on the basis of the conclusions which have been drawn from the findings of the study are enumerated in the sections which follow.

5.4.1. Increasing the efficiency of entrepreneurial activities through digital design and technology

At present, entrepreneurs in Zimbabwe are obliged to rely on money transfers, bank transfers, or cash to pay suppliers or receive payments from customers. While carrying substantial amounts of cash often entails considerable risks, mobile money transfers tend to be affected by network failures and bank transfers can be slow and unreliable, owing to inefficient systems. Although the point has been raised several times, the researcher feels compelled to emphasise the urgent need for the banking sector to take all reasonable measures to make it possible to process transactions online, by increasing security against cybercrime and encouraging the circulation of currency.

It is abundantly evident from the findings that the enormous proven benefits for rural entrepreneurship which digital design and technology are capable of providing are unlikely to be felt without a substantial investment and concerted efforts to implement policies which have been formulated with the specific aim of fostering the development of entrepreneurial ecosystems in particular rural areas. Accordingly, the researcher recommends that the government should prioritise the ET component of the NEBIC framework to determine the specific needs of each rural community, to select the most appropriate technologies for the entrepreneurial activities in which it specialises, as an initial step prior to the implementation of entrepreneurial policies.

5.4.2. Expanding markets and identifying entrepreneurial opportunities

Some of the literature which the researcher consulted prior to the conducting of the study was highly relevant to the finding that most of the rural entrepreneurs who participated in the study were confined to small and restricted local markets. Chen *et al.* (2016) explain that making use of modern digital technology has enormous potential for enabling small and family-owned businesses to overcome the limitations of their small local markets, as unique and competitively priced products and services which are marketed through digital advertising on the internet are able to attract customers throughout the world. Accordingly, the study recommends that the government should formulate and implement appropriate interventions to enable rural entrepreneurs to avail themselves of the benefits of digital marketing and advertising. The formation of digital marketing platforms would not only enable them to expand their existing markets, but also to identify and evaluate new entrepreneurial opportunities. These initiatives

would fulfil the requirements of the EO component of the NEBIC framework, as facilitating the matching appropriate emerging technologies with economic opportunities would contribute to the development of rural entrepreneurship by expanding existing markets and, in turn, enabling rural entrepreneurs to identify and exploit new entrepreneurial opportunities.

5.4.3. Digital design and technology and customer satisfaction

It was evident from the findings that digital design and technology can enable entrepreneurs to raise levels of customer satisfaction significantly. Innovative and visually attractively designed content and easily navigated websites engage customers in ways which were not possible prior to the advent of the internet (Al-Nasser, 2015). In addition, the ability of customers to view products, obtain information, and complete transactions without being confined to the working hours of businesses is another significant contributor to customer satisfaction. Accordingly, enabling rural entrepreneurs to achieve the same levels of customer satisfaction as their counterparts in other sectors would also increase the profitability of their businesses and contribute to the development of sustainable rural entrepreneurship. The recommendation which is made on the basis of this assessment inevitably reflects the need to facilitate the development of an appropriate online entrepreneurial environment for rural entrepreneurs. The researcher also recommends that rural entrepreneurs should use modern methods to reward the loyalty of customers, such as by introducing loyalty cards, an innovative practice which is dependent on the use of digital technology. The ability of rural entrepreneurs to maintain and monitor levels of customer satisfaction in net-enabled transactions would fulfil the requirements of the CV component of the NEBIC framework, by permitting accurate assessments of customer value.

5.4.4. Increasing opportunities for successful commerce

A significant finding was that the adoption of digital design and technology by entrepreneurs in Gokwe was hindered by an inability to attract funding from the government, civil society, and NGOs on the basis of a demonstrable likelihood that there would be a significant return on investment. By contrast, the use of digital design and technology in similar entrepreneurial environments has contributed to the development of rural entrepreneurship by enabling rural entrepreneurial communities to obtain access to resources from the government and civil society institutions and also to markets and opportunities. The finding that while the quality of

the produce of entrepreneurs in Gokwe was of a high standard, they lacked access to sufficiently large markets underscores the recommendation that they should be provided with access to modern methods of marketing and advertising. In addition, as it was evident that they lacked both knowledge and experience in digital marketing and advertising and online business transactions, it is recommended that training programmes which meet the specific needs of rural entrepreneurs should be adapted from programmes which have proven to be successful in rural areas in other parts of the world and introduced in rural districts such as Gokwe (Maramura, Clementine & Shava, 2016). Training should be provided free of charge, to encourage participation by all local entrepreneurs. As all of the participants expressed concern that no funding had been made available and no legislation or policies had been formulated or implemented to encourage the adoption of digital design and technology, it is recommended that the government should take appropriate remedial action. As Trendovet *al.* (2019) point out; facilitating the integration of digital design and technology into IT applications stands to empower rural entrepreneurs by increasing their access to microfinance.

5.4.5. Strategies for ensuring the effective use of digital design and technology

It is recommended that the government should assist rural entrepreneurs by providing resources such as digital technologies, either free of charge or at subsidised prices, and experts in the fields of IT and digital design, to facilitate the development of infrastructure to upgrade the rural entrepreneurial sector to one whose business operations are entirely digitally based (Munyoroet *al.*, 2016; Chivasa & Hurasha, 2016). To provide universal access to inexpensive and affordable internet, the government could commission the construction of internet booths with computers in designated areas. A coherent and effective strategy is imperative for enabling rural entrepreneurs to join the global online trading community and make a meaningful contribution to the national economy.

5.5. Contributions which the study could make

The study was conducted in order to apply generally accepted modern analytical frameworks to rural entrepreneurship, specifically through the creation of net-enabled entrepreneurial ecosystems which are driven by creative applications of digital design and technology. Accordingly, the literature which was consulted prior to the conducting of the study covered the concepts of urban and rural entrepreneurship, relevant applications of information technology,

and the entrepreneurial advantages which can be derived from the effective use of e-commerce. Although the literature provided a sound background to the research topic, relatively little published research appears to be available concerning the role of graphic design as a driver of the development of entrepreneurship in specifically Zimbabwean or African contexts. Consequently, the findings of this study could make a contribution to the development of an African model for integrating digital design and technology into business practices which is informed by the NEBIC and PCDO analytical frameworks, specifically for providing appropriate guidelines for understanding the requirements of technology driven commerce in rural areas and Africa as a whole.

5.6. Limitations of the study and suggestions for future research

The entrepreneurs who participated in this study were based in Gokwe and Harare in Zimbabwe only. The overall sample comprised only twenty-seven members, of whom twenty-one resided in Gokwe and six in Harare. A significantly larger sample size would undoubtedly have afforded more detailed insights into the role of digital design and technology in the development of entrepreneurship in Gokwe. In addition, the sample comprised only entrepreneurs who had been operating their business for five years or longer, no consideration was given to the significance of gender as a factor, and most of the entrepreneurs who participated in the study operated family-owned businesses and very few had started their own businesses. Although these limitations stemmed largely from constraints which time and financial resources imposed, they nonetheless could compromise the extent to which the sample could be considered to be representative of the target populations.

5.6.1. Suggestions for further research

In the light of the limitations of the study, a number of specific recommendations for future research could be made. As rural areas comprise 70% of the country, much larger research samples would be needed to obtain a detailed understanding of the drivers of the development of rural entrepreneurship in relation to those of urban entrepreneurship, specifically from the standpoint of integrating digital design and technology into business practices. Additional research would be required to evaluate the patterns according to which digital technology is adopted and used in relation to demographic factors such as gender and age, in order to place the phenomenon which this study was conducted to investigate in a context which takes

considerations such as gender equality adequately into account. Future research should also include individual case studies, in order to make it possible to arrive at an overall assessment of the role of graphic design in the development of entrepreneurship in a number of different specific contexts.

Summary

Although the findings of the study revealed that digital design and technology played no role in the development of rural entrepreneurship at the time of the conducting of the study, the finding that preparations were under way to enable handcrafters to sell their products on the global market served to demonstrate that an awareness of the need to adapt business practices in accordance with global trends had reached the rural district. It is to be hoped that this exploratory study will provide sufficient initial orientation for the formulation of appropriate interventions to modernise business practices in rural areas such as Gokwe in order to provide rural entrepreneurs in all sectors with access to the largest possible markets.

5.8. The researcher's personal reflections on the conducting of the study

As the researcher's academic background is in the field of graphic design and her working experience is in that of advertising, conducting a study concerning entrepreneurship and information technology whose methods were largely rooted in the social sciences entailed a considerable investment in extra disciplinary research, while working within a deadline for completing a master's degree course. It was necessary to acquire a sound working knowledge of both qualitative and quantitative research methods and also to become acquainted with the philosophical assumptions on which both types of research are based.

The researcher encountered problems during the course of collecting data, as not every potential participant was available to be interviewed. In some instances, entrepreneurs who had agreed to be interviewed were obliged to cancel interview sessions owing to pressure of work. Frequent trips to Gokwe from Harare were time-consuming, expensive, and tiring, as meetings needed to be scheduled at times and on days which were convenient for the participants. Nonetheless, a great deal of valuable data was collected and the researcher was able to answer all of the research questions which had guided the conducting of the study.

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APPENDIX A: Invitation letter to prospective respondents to the questionnaire



QUESTIONNAIRE COVERING LETTER

Dear Sir/Madam

Request for your participation in a survey questionnaire

My name is Patience ZenzileMoyo. I am a student at the Cape Peninsula University of Technology who is studying towards a Master of Technology degree in graphic design. In order to fulfil some of the conditions for the awarding of the degree, at present I am carrying out a research project which is titled 'The role of digital design and technology in the development of entrepreneurship in Gokwe, Zimbabwe'.

The aim of the study is to evaluate the role which digital design and technology play in the development of entrepreneurship in rural areas and to enable appropriate strategies to be formulated and implemented.

It will take less than 45 minutes to complete the questionnaire and you are kindly requested to contribute to the study by answering all of the questions which it contains. The findings of the study will be used **strictly for academic purposes** and all of your responses will be treated as **strictly confidential**.

If you have any specific questions or require more information, please contact either Prof R.K. Tengeh, my supervisor, at +27825408558, or myself, the researcher, at +27747361211.

Please indicate your responses to the questions in the questionnaire with a tick in the appropriate box or write in the spaces which have been provided.

Agreement to participate in the study (Please place an X in the appropriate box only)

1. I understand that my contribution to the study is completely voluntary and that I am at liberty to withdraw at any time.	Yes		No	
2. I understand that I will not be identified by my answers and that my name will not appear in any discussions of the findings.	Yes		No	
3. I understand that I am not obliged to answer any question I do not desire to answer for any reason.	Yes		No	
4. I understand that the information which I provide will be used for research purposes only and that my personal identity will not be disclosed.	Yes		No	
5. I understand the information concerning my contribution to the study and agree to participate.	Yes		No	

Thank you, in advance, for your cooperation in my research.

Yours sincerely

Prof R.K. Tengeh (Supervisor researcher) Miss P.Z. Moyo (Researcher)

APPENDIX B: Interview questions for entrepreneurs



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

The aim of this research is to evaluate the role which digital design and technology play in the development of entrepreneurship in Gokwe. Data was collected from entrepreneurs who operated in a number of different sectors in Gokwe and Harare, in order to perform a comparative analysis.

Main research question: What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?

1. Which type of payment system do you use in your business? Do you encounter problems in receiving payments from customers or making payments to your suppliers? Could you please provide me with some examples?
2. What type of communication medium do you use to communicate with your customers? How do you inform them about your products or services? How do your customers obtain information about your products or services? Do you experience problems in communicating with your customers?
3. To what extent are you aware of the ability of technology to improve the efficiency and effectiveness of your business? How do you perceive that making use of technology could enable you to develop your business?
4. What is the significance of entrepreneurship in Zimbabwe? How have you contributed to the economy of the country since you started your business?
5. From your knowledge, experience, or research, what are the principal benefits which technology could provide to your business? In which ways would you like technology to contribute to the development of your business? In which respects would you like technology to contribute to the development of your business?

Sub-question 1: How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

1. How far does your market extend? Do you have customers outside of Zimbabwe? Which specific markets would you like to reach?
2. Which new entrepreneurial opportunities have you been able to identify recently? What are the entrepreneurial opportunities which are available to you at present?

3. Which methods do you use to market your products or services? Could you please provide me with some examples? Do you encounter problems in reaching your target market?
4. Are you aware of any essential differences between the entrepreneurial opportunities which are available to your business and those which are available to businesses in the city? Do you have any information concerning the customers of your competitors?
5. How would you characterise your relationship with the community? Do you participate in any cooperative activities for the benefit of the community as a whole?

Sub-question 2: To what extent do digital design and technology influence customer satisfaction?

1. Which media do you use to disseminate information? How many customers do you reach? How efficient are the methods which you use? Could you please provide me with examples? Could you please characterise your post-purchase relationships with your customers?
2. How do you obtain feedback from your customers? Which methods do they use to provide you with feedback? Which communication media do you use to communicate with your customers?
3. What do you think could be done to keep your customers positively engaged?
4. What types of promotions do you offer in your business? For how long do you run them? How do you reward the loyalty of your customers?
5. For how many hours each day does your business operate? Are your customers able to make transactions with your business 24 hours a day? Do you have loyal customers who always buy your products or make use of your services?
6. Do you offer transport services to your customers? If so, how do you track your delivery vehicles?

Sub-question 3: What are the factors which inhibit entrepreneurs in Gokwe from adopting of digital design and technology to increase the success of their businesses?

1. What are the main obstacles which you need to overcome in order to ensure the success of your business? Could you please provide me with some examples? Are these obstacles significantly different outside of your area?
2. Do you have any knowledge or experience concerning conducting business on digital platforms? Could you please give me some examples?
3. In which respects can technology significantly change business practices? For how long have you been an entrepreneur? Have you ever tried conducting business on digital platforms? If so, which platforms have you used? Do you have a website?
4. In which respects would you like technology to contribute to the growth and development of your business? Could you please provide me with some examples?
5. Which distribution and logistics channels do you use? How do you deliver your products to your customers? How do you keep track of deliveries?

Sub-question 4: Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

1. What do you know about existing legislation, regulations, and policies to encourage the development of rural entrepreneurship? How does the government perceive technology-driven commerce? What is the government doing to encourage the growth of rural entrepreneurship?
2. To what extent are existing legislation, regulations, and policies implemented? How effectively are policies implemented?
3. Would you like to make any recommendations for increasing the adoption of digital design and technology by rural entrepreneurs? Which interventions could be implemented by the government to increase the use of technology-driven commerce?
4. To what extent is e-commerce used in your area? Is it used significantly more or less than in other areas?
5. What type of training have you received in digital marketing? If you have received training, could you please describe the form which it took?
6. What is the present state of digital infrastructure in your area? Are the buildings suitable for installing information technology business systems or digital equipment which provides access to the internet?
7. Who is responsible for the creation of content for your marketing and advertising material?

Sub-question 5: How do digital design and technology influence opportunities for funding for rural entrepreneurs in Gokwe?

1. Are there any opportunities for obtaining funding for digital technology for entrepreneurial purposes in your area? Do you know of any organisations which provide funding to entrepreneurs?
2. What are the requirements of financial institutions for extending loans to entrepreneurs? Do you or other entrepreneurs whom you know meet all of the requirements? To what extent are entrepreneurs refused loans because they lack the necessary documentation?
3. Which criteria are applied to lend money to entrepreneurs? How much capital would you require if you were to consider investing in digital technology?
4. Do you have any investors at present? How did you attract investors if you have any?
5. What are the most severe obstacles which you encounter in obtaining funding or borrowing money? Are these obstacles unique to your area?
6. Which forms of support does the government offer? Have you received any financial support from the government to enable you to invest in digital technology? What type of support, if any, would you need to integrate digital technology into your business practices to the fullest extent?
7. Which cooperatives or groups operate in your area? Could you provide me with examples? Are you a member of any cooperative or group and, if so, do you find these cooperatives or groups helpful?
8. What other obstacles have you encountered in obtaining funding?

APPENDIX C: Interview response from urban entrepreneur



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

The aim of this research is to evaluate the role which digital design and technology play in the development of entrepreneurship in Gokwe. Data was collected from entrepreneurs who operated in a number of different sectors in Gokwe and Harare, in order to perform a comparative analysis.

Main research question: What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?

1. Which type of payment system do you use in your business?

Ecocash.....I use mobile money a lot bank like cooperates and companies use bank. Like today I got an order am using a payment because these guys are doing Ecocash but Ecocash and mobile money I think its 99% now. Then I was in South African for the past two months doing book sales as well that was paying cash so in Zimbabwe its Mobile money and bank and sometimes cash in US Dollars.

Do you encounter problems in receiving payments from customers or making payments to your suppliers? Could you please provide me with some examples?

Not really except for network here and there for bank payments no problem maybe just a bit of a delay sometimes in the money reflecting in our accounts but not that I can complain about maybe here and there and then sometimes when the Ecocash is down that the only challenge. But if it's not down then there's no other challenge that we face or that we are facing.

2. What type of communication medium do you use to communicate with your customers? How do you inform them about your products or services?

On mobile devices we have got WhatsApp, WhatsApp do play a very big role uum email, a lot of emails, phone calls I think those are the main forms of communication in terms of

two-way communication and then for marketing as well there's social media platforms that we use at times but many phones calls texts here and there and WhatsApp a lot.

How do your customers obtain information about your products or services?

Umm for advertising they actually see it for the first time through social media platforms that's the main form of marketing that we are using and then references. Referrals, like the speaking business is very referral, like when you provide mocking services you bank a lot on referencing. It's very referral and even training they have been very referral; I think more than fifty percent of business comes from people that you have trained before they have provided a lot of information in terms of awareness and marketing as the first point and when people want more information, we then send them information via email WhatsApp mainly yeah which then details the either profiles or contact information.

Do you experience problems in communicating with your customers?

Uum the challenges maybe on responses at times we really trying to aim for potential clients we get a lot of them but some do not respond or some you are training them and on these WhatsApp groups they do not respond at times and you are wondering then you have to make more follow ups its either phone call and stuff then people respond. I think that will be the challenge I can highlight to have faced other than that its quite convenient and reliable.

3. To what extent are you aware of the ability of technology to improve the efficiency and *effectiveness of your business?

With the time that I had in South Africa in the past two months my awareness has been massively increased uuum to realize that technology can play a huge role in my business so I must say over the past two months I managed to get enlightened with travel to South Africa.

How do you perceive that making use of technology could enable you to develop your business?

I think it's a key that I have to incorporate to move forward for more efficiency, more reliability and much greater outreach to more clients because technology just closes the gap between us and clients and stuff so I think it's very important.

4. What is the significance of entrepreneurship in Zimbabwe?

Very significant there high unemployment rate I don't know what the rate is formal employment were people are like employed in companies and jobs which has resulted in a lot of people resorting to having to create their own incomes. Consequently, they buy and sell or run some form of a business. Yes you can then define entrepreneurship

deeper to encompass being more innovative the growth aspect but just in terms of business side of it to say running your own business a lot of people are doing it and its one of the best ways out to with the state of the economy were companies are no able to provide jobs even for graduates. That then makes it very important in Zimbabwe at the moment to have people educated on it especially a lot of unemployed people who are sitting at home.

How have you contributed to the economy of the country since you started your business?

In terms of the provision obviously of the goods and services uuum providing our services has made people more effective communicators, sales people because you really need to be a dynamic sales person in such a volatile economy and move products such that pitching to investors. Some wanted to pitch to investors outside the country to have more money coming in and boost. So we have given people a voice, you need a voice to run a business to sale your products so we contributed to the economy in that sense that people are now running their business marketing. We also provide entrepreneurship trainings those have been phenomenon because those give people some skills and abilities to be able to start running their own business and also with our books were we teach about entrepreneurship so we provide the education that helps people to start and I feel that the small contribution we have started to make to the economy.

5. From your knowledge, experience, or research, what are the principal benefits which technology could provide to your business?

There is communication side of it, marketing side of it, money management side of it, and people management. There's better technology in terms of I.T that's now available to manage our money to communicate. They are so many amazing applications that are now there for example having to create your own website much cheaper a lot of software's available, a lot of applications available to help in marketing on reaching out beyond the country and also providing our products. We do training we do not have to be there anymore physically there's video there's YouTube. There's so much in terms of media that is advanced that we can we use to reach out to more people. Get paid electronically via visa or master card with an Ecocash and still have our product reaching far more markets within the country and even outside the country.

In which respects would you like technology to contribute to the development of your business?

Products number one definitely, we have products where we provide training for example as I have mentioned. We really want it now to be more advanced in terms of being more available on more technological platforms like podcast training online courses instead of traditional courses that were we have our master classes' physical

market classes we have physical trainings everything available online. Our books are not available online will be better if they are available online and soft copy. Amazon local platforms available, young people in universities have created platforms. We have books that can now be available on soft copy online. So I think going digital or going online I think it's a key thing. Products we already have them physically but we can now do better if we have them online and then obviously marketing as well.

Sub-question 1: How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

1. How far does your market extend? Do you have customers outside of Zimbabwe?

So far it just has been mainly Harare and a few in Masvingo, Bulawayo a bit of engagement in Mutare that's it. It's mainly Harare. For some products we have provided for example I went to on a book tour to South Africa I sold books in S.A. I have provided a bit of training in S.A but it's just a first thing to were I have were I was more creating the networks trying to find what I can get in S.A in terms of business. That's the only thing that I have done outside Zimbabwe.

Which specific markets would you like to reach?

Absolutely, my immediate vision would be is Southern Africa step by step. Perhaps before that Zimbabwe that's Gweru, Kwekwe, Bulawayo and Vic Falls to reach out in terms of providing all our services and our products and from there expand to beyond the country because I have already tasted South Africa there is business there.

2. Which new entrepreneurial opportunities have you been able to identify recently?

The opportunities I have identified even sometimes in terms of diversifying already were you have got this line of business but you start seeing other avenues for example when we started off there were no issues of books but then I decided to write a book. Write books and now we have a new line all together were we have passive income in terms of books. So the entrepreneurial opportunities I saw is was once you have just started something you start seeing a lot other things to spread more the risk and have different products perhaps different from the ones you started with. So ideally for me once someone has started they start seeing what I have seen even some of the entrepreneurship trainings, those came about because of a client I was training in public speaking and then after writing a book in entrepreneurship and I was like can't you train entrepreneurship as well. We went into it and it came out.

What are the entrepreneurial opportunities which are available to you at present?

I think there's plenty uuummmm in terms of us exercising entrepreneurship plenty because we already have plans to start other things like uuum farming, providing solar products. Entrepreneurship is solving problems like electricity problems in the country.

So in South Africa I saw solar panels in going for a R100 and I thought do you know what we can with a bit of money or reserves we can go and buy the solar lights and sell them here for resell as part of our business we can get into retailing as well of products that are in need sort of like a side income just to boost and cushion our finances.

3. Which methods do you use to market your products or services? Could you please provide me with some examples?

To market our business, we are really pushing for online WhatsApp status, profile picture uuummm podcast we have created a lot of flyers, we continue to create a lot of flyers that are posted frequently on WhatsApp, Facebook, twitter, Instagram. Am a technophobe I was really far from these things but am personally am starting now to incorporate them to use. I remember the past couple of months we were not yet there but we use this a lot for our marketing, then word of mouth: am in a number of clubs and groups toast masters, Junior Chamber International. I have heard opportunities to get in touch with ZNCC and stuff. I do a lot of word of mouth now in these groups and platforms. Goal achievers a lot of groups that I have joined intentionally with the purpose to network and then also market products. I really market through the groups, clubs and platforms and networks that I am.

Do you encounter problems in reaching your target market?

Ummm maybe natural challenges of just trying to reach the numbers that you want to reach like for example that were talking that we wanted to reach outside Harare. It is part of our target market were we have clients that we want to target outside our area. The challenge is perhaps has been time constraint and uumm were you really have so much in our area so you might want to have to build more teams so the constraint has been time and man power to really reach out because of some of the marketing has to be door to door and word of mouth and then maybe by default am on TV ZBC so the Zimbabwe marketing that goes on there because when then people see me they be like aaahh you the guy from TV and then take it from there.

4. Are you aware of any essential differences between the entrepreneurial opportunities which are available to your business and those which are available to businesses in the city?

I guess so there could be different like for example uum things like we do not have stock and stuff like that so maybe our opportunities are easier to jump on to because it's really services and I think services have a different dynamic from products so if you are running a retail shop uumm maybe they might be too many entrepreneurial opportunities that you can jump on to..uumm yah I think there's a bit of difference with other industries compared to us in terms of what we can create in our minds let's say okay go and start creating adverts, verbal adverts for people. Or maybe we can start creating skits on

Facebook for people it's all to do with public speaking. So there are a lot of entrepreneurial opportunities especially in my business.

Do you have any information concerning the customers of your competitors?

Yes we try get a lot of that I have approached people that would then say ahh you seem better priced than so and so who's in our competition clearly just by saying that one we are aware that's our competitor, two you get some information like how much do they charge you in this case it was clear that they will tell you their charge is. Okay how long is their course, public speaking course and stuff so yah we took that information and sometimes we try and go out and look for it yah.

5. How would you characterise your relationship with the community? Do you participate in any cooperative activities for the benefit of the community as a whole?

Umm my community nothing much yet uum maybe even in terms of form of cooperate social responsibility stuff but we do have thoughts of working with the community but we have done this like uumm voluntary trainings at church, free m.cing services in the community like church and a few schools that we have reached out to provide free services. And on top of those books, we donated several books so far to individuals, to schools and to churches yah.

Sub-question 2: To what extent do digital design and technology influence customer satisfaction?

1. Which media do you use to disseminate information?

Social media platforms, phone calls texts, emails, word of mouth at times when we meet with them because when you are with them, then we disseminate information through announcements because when we do trainings after every training after every class we provide information that's how we communicate with our clients.

How many customers do you reach?

How efficient are the methods which you use? Could you please provide me with examples?

On social media now I have had an organic growth were I have grown my personal Facebook to seven hundred people but on average when I post something I get between uumm two hundred to five hundred responses on WhatsApp then on my phone book about a thousand contacts which I reach out to and then yah I think basically that's the one I can make numbers on. And then in terms of word-of-mouth I can't put a number.

Could you please characterise your post-purchase relationships with your customers?

It's been fantastic so far it's been great because I do follow up that's the first form of after sales relationship and then after follow up get comments I must say we have worked so much on creating and making our products and making sure they are world class it's been some very good comments thus far with a few recommendations.

2. How do you obtain feedback from your customers? Which methods do they use to provide you with feedback? Which communication media do you use to communicate with your customers?

So at trainings we give out forms, evaluation forms that are immediate feedback. So after training after M.Cing I normally call for feedback I have a form, forms that I have created that provide feedback almost like a questionnaire and then afterward through social media I get feedback then follow up on the attendance uum on getting feedback on what they liked and what they didn't like.

3. What do you think could be done to keep your customers positively engaged?

Reliability and convenience and that constant communication with them can keep them engaged and constant provision of material to do with our business and what we provide.

4. What types of promotions do you offer in your business? For how long do you run them?

Prize promotions obviously uumm I think almost always. They are normally short periods to keep it more enticing it could be monthly promotion, weekly: register now get a discount it will only last a week with our industry its really short term.

5. For how many hours each day does your business operate?

We really started mad hours like myself I was trying this nineteen hours a day thing but I think normal is the usual eight hours but as an entrepreneur you spill over you find yourself hitting twelve thirteen hours in a day but I also have a lot of other responsibilities so I just combine but I think business you can give it eight hours.

Are your customers able to make transactions with your business 24 hours a day?

Online yes, you get to like we have flyers and stuff but no website no payments online.

Do you have loyal customers who always buy your products or make use of your services?

Yes we do like there's people that always wait when we do seminars: when is the next one. We do have a number of those.

6. Do you offer transport services to your customers? If so, how do you track your delivery vehicles?

So far we haven't. Were we providing transport is when I do door to door deliveries at a forty kilometres radius within my area there I have been providing free deliveries. By default I will be tracking them because am the one doing the deliveries because I have done a lot of deliveries personally.

Sub-question 3: What are the factors which inhibit entrepreneurs in Gokwe from adopting of digital design and technology to increase the success of their businesses?

1. What are the main obstacles which you need to overcome in order to ensure the success of your business? Could you please provide me with some examples?

Markets disposable incomes from clients the economy is tough it has changed it has shrunk so people do not have so much money to spend because incomes have sought of gone down that then means business is not as high as it can possibly be. You have a lot of potential clients who want the product they love it but they just can't afford it even if you try and go down their incomes have been affected so their priorities have just been basics like food and shelter. Then our products come after that list so the economy is affected in terms of business.

Are these obstacles significantly different outside of your area?

Maybe they can be a bit different for those that are providing basics salt, food and fuel they have a better demand because people need those things to survive. Our products you do not need them to survive they are more of enhancement products and once, so I think those that are provide basics have it a bit better in an economy like this for us it's a bit of a tough situation.

2. Do you have any knowledge or experience concerning conducting business on digital platforms? Could you please give me some examples?

Fairly new to it so I think just basic there could be room for more because as I said I used to be on the other side where I was a technophobe not into this stuff but I think am getting awareness and appreciation so yah just there at the beginning were I can get more.

3. In which respects can technology significantly change business practices?

Massive changes before technology you had to do maybe door to door marketing you had to go out there literally physically to sale, to inform, to do business and stuff now you can conduct a work shop or a master class or a seminar entirely marketed on WhatsApp

and Facebook and Instagram, so it has really brought up massive change because you can do things from your mobile device now. Which you had to do either via phone calls, physical visits and stuff.

For how long have you been an entrepreneur?

I think practicing I started around 2013 I can say it's the fifth year engaging in entrepreneurial activities, yes.

Have you ever tried conducting business on digital platforms? If so, which platforms have you used?

Yah we started now trying to create a lot of stuff on the digital platform but lot of it it's still work in progress we haven't been really concluded anything in terms of that. We conduct our business on social media platforms WhatsApp a lot of communication takes place, email.

Do you have a website?

We do not have a website, not yet.

5. In which respects would you like technology to contribute to the growth and development of your business? Could you please provide me with some examples?

As I mentioned before on the products we really want our products to become digital were we have courses training online, we have books online, we have... I think most of if not all of our stuff available online for people to access just as well as they access physically and then also on marketing we really want to be able to maximize and get the most out of marketing on the digital platforms to really have more leads and leads converted into actual clients.

5. Which distribution and logistics channels do you use? How do you deliver your products to your customers?

Books we really distribute these physically so far uummm door to door deliveries so these are really physical were you have to do door deliveries of the books by car and then they are some that are out of our area we do DHL and FEDEX we have had a number of those clients outside Harare who buy books and then we deliver via FEDEX so it's all been physical.

How do you keep track of deliveries?

WellDHLandFEDEXthere is no follow up that we had to do. There is no been need for follow up or anything if I can put it that way but I have been involved in the physical distribution of in Harare I think most if not all of the time.

Sub-question 4: Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

1. What do you know about existing legislation, regulations, and policies to encourage the development of rural entrepreneurship?

Well perhaps uuum... Maybe lack of if I can put it that way. There not being any tight rules and laws that I know that forbid us from conducting our services for example like our speaking side it really has no boundaries and restrictions in terms of even conducting it outside the country or going beyond so I think the nature of there being no too many rules and laws to hinder certain aspects of what we do that's in itself is the best things that actually naturally then promotes to say we do not have too many or much red tape or too many restrictions on what we do.

How does the government perceive technology-driven commerce?

I think it is catching onto and adopting an awareness and appreciation that it is actually very important to adopt technology in our field and it probably now trying to have some policies and implementations and systems to have technology fully implemented through its relevant ministry so I think they do appreciate and probably creating some support policies after all that's our government through policies, through government institutions and stuff but there is an appreciation of the importance.

What is the government doing to encourage the growth of rural entrepreneurship?

It's doing a lot of programs for example in agriculture, there's a lot of agriculture support mechanism which include funding and access to markets that they government is doing and rolling out. There's a lot of support in terms of, they have a segment when they talked about training and development in their plan that they have not much detail has been done about it but they do want to create support for education. We are in the education sector in terms of educating people about how to speak better and also educating them about entrepreneurship how to start and all. I think the government is trying to put in place support structures educating the rural people on starting a business and also on finance.

2. To what extent are existing legislation, regulations, and policies implemented?

I think it's trying they are starting out but I think more can be done first of all to fine tune it to be more relevant to the Zimbabwean entrepreneur. Ours is different from a normal economy out there and I think they are being fed general information so I think it's to find people like us in our space or other seasoned entrepreneurs to bring in practical and more realistic strategies and techniques they can be taught like rural entrepreneurs in terms of how to survive in such an economy with the bond, the USD how best can you,

you know get buy as the economy goes through transition. So it's more of awareness and education.

How effectively are policies implemented?

I think more can be done they are effective to an extent but more can be done to fine tune them and customize them to be more specific to help a Zimbabwean entrepreneur as opposed to just generally. So more can be done to research and find how best because we can't run away from the current environment. How do you operate in that environment you can't go about it in the normal day to day where you wake up in the morning and find out that what's the rate because it changes every day so all am saying is more can be done to research and find how best because the answers are there in those that are doing it

3. Would you like to make any recommendations for increasing the adoption of digital design and technology by rural entrepreneurs?

Education first try and teach entrepreneur number one awareness for them to know about it that's the first point and knowing about and how to use it, why should we use it, when do you use it and then after that getting support in terms of funding to invest in the technology so I think those are the three key steps. Creating awareness, educating which is a continuous process buy the way because even when I went to South Africa number one they are advance compared to us technology keeps moving actually faster than anything else so there is that continuous upgrading of information and knowledge and then finally the support in terms of financial support to invest in the technology.

Which interventions could be implemented by the government to increase the use of technology-driven commerce?

I think put in schools. Schools are already set up institutions in all rural areas countrywide. So we can work with schools, engage organizations like italk communications to provide trainings as early as primary school for our students some of who are going to be entrepreneurs and then tertiary institutions polytechnics. So I think that's one of the best strategies to put in already set up institutions and create programs which provide trainings and education on technology and modernizing and digital and so on and so forth yah.

4. To what extent is e-commerce used in your area? Is it used significantly more or less than in other areas?

Let me compare to South Africa it has a long way to go. In S.A people are ordering take away at home and then it's delivered by Uber eats. They are buying almost everything at home online it's delivered to their door step even bread. We are far from that I think the

nearest we have now is Vaya am not sure if Vaya is providing the service. There is still so much more and then coming back to Zim we are not yet using online as much as South African is. Online payments and stuff in fact how many people have visa and master cards to pay for online? Yah so I think there is more room for it.

5. What type of training have you received in digital marketing? If you have received training, could you please describe the form which it took?

I have done a one-day course with the company 143 communication. It was a brilliant one but I think I can have more of those. Then in S.A I think I just had a bit of training as well.

6. What is the present state of digital infrastructure in your area? Are the buildings suitable for installing information technology business systems or digital equipment which provides access to the internet?

Let me state a big challenge that I had forgotten to talk about electricity. I don't know how I skipped that but maybe I have gotten so used to it. Electricity means availability of mobile devices that are charged, it means network that is strong and available because it cannot also affect network so that's I don't know if that fall under infrastructure but we need electricity. In fact even the government, when we are talking about government they need electricity. Electricity drives digital marketing.

7. Who is responsible for the creation of content for your marketing and advertising material?

Currently I am, that's why am now at a stage of setting up a team and have people do that. I do have people I work with like I have a graphic designer, I have consultancy I engage who do that who help on content creation as well but I have been leading most of it which I now want to have someone do it.

Sub-question 5: How do digital design and technology influence opportunities for funding for rural entrepreneurs in Gokwe?

1. Are there any opportunities for obtaining funding for digital technology for entrepreneurial purposes in your area?

I think there is some successful entrepreneurs who now have capital and who would love to invest in upcoming entrepreneurs that are there and some of them are really passionate now to want to invest specifically in technology and digital space in terms of providing capital to start ups like for our business there is a number of entrepreneurs who are interested in funding my business so that it becomes more technologically

advanced. They are some financial institutions that are actually more interested in that in funding.

Do you know of any organisations which provide funding to entrepreneurs?

Uuum for us again here and there mainly its investors, venture capitalists or angel investors so those are the ones that are popping up here and there and some small financial institutions that are particularly interested in what we do and nothing much from the banks.

2. What are the requirements of financial institutions for extending loans to entrepreneurs?

Like the banks and stuff, they need collateral they do not invest in ideas they invest in something that's on going so those ones there's nothing much for start-ups and then they also require collateral it's a no brainer they require collateral.

Do you or other entrepreneurs whom you know meet all of the requirements?

For start-ups no but some here and there can special programs that can invest in start-ups sometimes C.B.Z coming with some special program where they provide mentorship as well. Yaah those are the unique cases maybe you can get that funding but generally you need to have some collateral or income.

To what extent are entrepreneurs refused loans because they lack the necessary documentation?

I think to a large extent because a lot of them they do not even bank their money, it's a very volatile economy were people do not want to put their money in the bank unless you receive from the bank but as soon as it comes you are taking it out. So those for example that deals with Ecocash they won't deposit to the bank, they might not even have a bank account they just have mobile money. The more reason they do not need the bank generally yah.

3. Which criteria are applied to lend money to entrepreneurs?

Not that I know of but ultimately but it has to do with some form of a track record especially with banking with the bank. So if you started a business now right and open a business bank account with the bank and you go for the next twelve months banking with that bank that gives you a very good fighting chance to get a loan. Some form of a loan or support from that bank so means you must have found another source somewhere to at least kick start the business to ensure some form of activity so a lot of people require some form of track record with them.

How much capital would you require if you were to consider investing in digital technology?

Ummm yah you need capital eventually to invest in the gadgets, devices if they are any that are needed and even us for speaking a lot of modern technology like for our projectors and stuff we do not need to be carrying those big projectors there is new technology that's coming in, in terms of projectors, mobile devices being able to project, mouth pieces that we use and stuff. So yah it can come with a bit of a cost especially the better the quality you need more money. In Zim at the moment it is very difficult to say, whether you are using USD you can say you need a thousand USD which is like what ten thousand rands. But again it goes down to your business plan what is it that you want to invest in, like we are in the speaking business we need mainly good quality pictures for our events for our marketing, good quality sound pieces your microphones, your wireless devices, you need some projecting devices and some good laptops and stuff that's about a few thousands of dollars or tens of RTGS dollars.

4. Do you have any investors at present?

There is no investors that I have engaged and are putting money there's just potential investors some are willing to invest but I do not want to give away any chunk of my company for the investment and some of them that's what they are looking for. Am looking for a loan at the moment I wouldn't want any dilution of ownership.

How did you attract investors if you have any?

It showing some proof of concept, showing some mileage the investors, I talked to who them want a chunk of the company its showing them what I have done with what I had if I had no money, their question is okay have you even go out to library to find information speaking especially in Zimbabwe. So what they look for or what they want to invest in it's someone who has shown a bit of commitment even without money because they will then list things that are for free for example finding information about which companies provide speaking services that can be free at the information centre in Samora. I think they just want that commitment in someone who's passionate and if you have the ability to run a bit of something they want to see that and how you have grown but not an idea.

5. What are the most severe obstacles which you encounter in obtaining funding or borrowing money?

Obviously collateral, obviously some track record because am saying I have been in the industry for over five yearshow can I have anything I don't then that's the main challenge that's there and that convincing and persuading with a start-up sometimes you need a bit of that finance to go to the next level which can make you eligible for the funding for you want a bit of more lenient capital if you can get an investment from entrepreneur its

better because they have gone through the journey they understand it might fail but it needs a bit of patience.

Are these obstacles unique to your area?

Yah it is because ours are intangibles I think I mentioned sometime more to say intangibles are more difficult because how do you show that this work but with products you can show to say okay we need ten thousand dollars plus to buy a hundred thousand solar latent's at hundred rand and then sell them at two hundred rand. It's a bit clearer but am trying to convince that I want to go out and get trained yah.

6. Which forms of support does the government offer?

Nothing specific that I know at the moment besides the general support they can provide for entrepreneurs generally in the country but there's nothing specific that I can think of right now.

What type of support, if any, would you need to integrate digital technology into your business practices to the fullest extent?

Financial is obvious were just some financial support to invest in the specific equipment and technology that you want to get in and then I think further it might be good to get more support even access to markets that's the revenue you then use to repay, to build and to maximize on technology and also maybe education on the use of technology and more education on how most effective to make use of the technology for my business.

7. Which cooperatives or groups operate in your area? Could you provide me with examples? Are you a member of any cooperative or group and, if so, do you find these cooperatives or groups helpful?

Nothing that I know of besides the clubs that I have mentioned toast masters clubs and stuff no cooperatives.

8. What other obstacles have you encountered in obtaining funding?

Ummm sometimes age it just makes it uum really you can tell that you are thirty something ok you want to get these loans it's just stereotypes that can be based on age but I think if we move and if you have your collateral you can easily get that maybe the general challenge of the economy that the economy is in a tight space so I don't think there is actually much disposable income there disposable capital to be given to people so there it becomes a bit tighter on the conditions which they place.

APPENDIX D: Interview response rural entrepreneur



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

The aim of this research is to evaluate the role which digital design and technology play in the development of entrepreneurship in Gokwe. Data was collected from entrepreneurs who operated in a number of different sectors in Gokwe and Harare, in order to perform a comparative analysis.

Main research question: What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?

1. Which type of payment system do you use in your business?

Okay so I would say for now the system that is there will mainly focus on how we deal with our suppliers and the customer part of it mostly we are still trying to gain customers as much as we can so as to grow the business and gain more profit. The most that is established between us, customers and the supplier so when we are doing payments for instance for us in Zim Ecocash, transfers, swiping and cash at times depending with cash if we are buying from like peasants like these local guys who are in the area usually probably they do not even have bank account so you have to have hard cash to pay yah.

Do you encounter problems in receiving payments from customers or making payments to your suppliers? Could you please provide me with some examples?

Yah of course they are problems that are there when you are paying suppliers and receiving payments from our customers for instance we have got limits. You want to buy something then ummm Ecocash has got a limit of five thousand limits recently it was added its now five thousand RTGS Zimbabwe dollars you want to pay twenty thousand or you want to pay thirty thousand that means that's already a limitation that is there. So you cannot use that platform for instance we once had a situation where we wanted to do facing of our piece of land so the supplier wanted their money not into their bank account they wanted it as an Ecocash we couldn't really do that because the amount that is charged on Ecocash limits was too much that's one of the challenges. We also

had an instance where we wanted to withdraw...we wanted to withdraw some money from the Ecocash and purchase a few animals Ecocash has limits...bank limits you cannot withdraw over by that time I think it was a thousand I think, you could not do a cash out of more than a thousand in a day so it means automatically it's now a problem yah.

2. What type of communication medium do you use to communicate with your customers? How do you inform them about your products or services?

Well basically its phone calls you cannot right a mail especially the kind of customer that we still have at the moment most of them they are not IT literate they do not even know what an email is suppliers yes we communicate with them via emails, via phone calls yah basically that's the best mode of communication that we have between us the suppliers and the customers and even word of mouth at some point that's what we use.

How do your customers obtain information about your products or services?

So how we do that...we make use of public shows for instance in Zimbabwe we have got the Agricultural show which holds once a year Bulawayo and Harare but we go to the one in Bulawayo because it is closer so you make sure that in such kind of shows you are there you make sure that we would really say we hardly do Facebook you know the problem with these things relaying information to specific kind of people it will be really much of a problem we are taking for instance Zimbabwe we have got data problems everyone knows things are now hard so for someone to get data go on Facebook look for...they have got already established people in the industry that they already know their website...so we are still trying to advertise on internet but basically for now attending Agricultural shows. Most of our communication we are also making use of what are called field days so what we do with these we follow them practically we have got some contacts that we have of these agricultural rural workers that are in Zimbabwe so we make sure we have got a schedule this week they are there, they are there so what happens is these people come to these agriculture shows to these field days to make use of interaction you interact as much as you can with the people there was something that I wanted to say oohh...we make use of what are called cattle sales or animal shows. Cattle sales those ones that people will be bidding you come with a cow then you bid so at times you don't really go there with a beast or something you just go there identify who is buying identify who is selling connect with those people inform them on what's happening probably get contacts.

Do you experience problems in communicating with your customers?

Definitely they are a lot of problems communication some people are so remote...they are so remote that the place we experience network problems. I will give you an example there is place which is called Debcha it is some few kilometres between Zvishavane and Shangani I can guarantee you that's the most rural area you can ever

find in Zimbabwe there is nothing there is no bus no network roads are destroyed for some reason those people have got very nice cattle let's say I want to buy or am going to a cattle sell their communication in itself it's a problem in the rain season you cannot go there you can't travel the roads are so bad you can't drive you can't do anything so that's really a communication barrier.

3. To what extent are you aware of the ability of technology to improve the efficiency and effectiveness of your business?

With me personally am so much aware of how technology can really impact my business model I will give you a practical example something that we are trying to develop. Okay so they are these.... when you are farming minus plants you can monitor the growth using temperature if you put a thermometer on the legume in the swap repeat. You can actually monitor the harvest and everything using temperature if we could get a system where we could just put a thermometer because at times these farms get too big and these lands get too big you can get a system that you put thermometers. The fact that they transmit that data to an internet source or something or to my phone or something I can manage to monitor that thing anywhere that I go thus one practical example.

How do you perceive that making use of technology could enable you to develop your business?

Okay it has got two side to it to tell you the truth for me implementing technology it means am going to fire some people, people are going to lose jobs that's a fact because if I can monitor the temperature of my stuff if I can keep track of where my animals are using maybe GPS trackers or something why would I need a herd man why would I need someone to round up the cattle so that's a really a disadvantage because someone is going to lose a job but on the other hand I think it's a smart way of doing things it keeps me everything at a...I do not have to struggle effort is reduced when technology is implemented yah.

4. What is the significance of entrepreneurship in Zimbabwe?

Okay uumm to start off in Zim our current Zim we really need a lot of entrepreneurs for the following reasons: unemployment rate is so high we need someone who is going to start up something to create employment, number two uummm we have to increase our Gross Domestic Product and desist from importing stuff so if we could be having people who are willing to invest or to start up something in the nation that will mean we are now producing our own stuff back home we are no longer importing so the GDP issue so uuummm also well foreign currency we need it we have to export so as much as we can export as much as we can get foreign currency so basically I think in Zimbabwe that's the significance.

How have you contributed to the economy of the country since you started your business?

Honestly I would want to think myself to have contributed that much why because we haven't really reached full market penetration out there we are still trying to reach more customers and building ourselves so I think the only contribution that we have made is at least to create employment just those ten people that are there that's the employment. One thing with our kind of business that we do its designed in such a model that we pay taxes as you start production so at the moment I wouldn't want to say we are doing this because of taxes no but in the fact that we are employing people we have really contributed to the economy in a way. We are being engaged in government schemes which in a way are contributing to the economy because they give you fifty cows and they give you a time span (lease) so to give them back maybe sixty cows at the end of that lease but in that time I would have made...I will be left with something on my part on the other hand I would have made more for the government so that I give back I will consider myself in that way as someone who has contributed to the economy yah.

5. From your knowledge, experience, or research, what are the principal benefits which technology could provide to your business?

I have a very good example for you recently we had an instance whereby foot and mouth was detected in the animals they thought they had symptoms of foot and mouth they reported it to the local veterinary personnel. The local veterinary personnel did not show up for the next five days and as a result we lost a lot of cattle so if we could have had you know a pregnancy test kit right if we could have had a strip that looks like a pregnancy test kit that could just say we are suspecting foot and mouth here we just test that kit we could take just a blood sample we take whatever maybe saliva from the cattle and just deep it on that thing and immediately we know that this is a positive test for foot and mouth. We could have quarantined the animals that we have diagnosed with foot and mouth that they do not infect the whole of the flock so if we could get such kind of technology at the disposal of a rural farmer like me I think that would really help to save losses.

In which ways would you like technology to contribute to the development of your business?

I would want technology to develop in increasing my clientele I have a dream of having clients outside the country. It would be nice to export that is if the political trading issues are resolved as well.

In which respects would you like technology to contribute to the development of your business?

I would want technology to extend between me and my customers I would really love if there was a situation where by I and my customer, we would interact via technology that would really help me I would sell products online like now it was going to be easy for me and I think it was going to be easy for them too.

Sub-question 1: How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

1. How far does your market extend? Do you have customers outside of Zimbabwe?

At the moment our clients are locally based yah they are just...in Zimbabwe most of them. We haven't had an instant whereby we had someone from South Africa and other from Zambia and also Malawi and they will say am interested in such and such product but most of them they are local people.

Which specific markets would you like to reach?

Yes I do everyone okay let me explain...uummm the way we are designing our business model we want to provide food cheaply for everyone so we really do not have a specific kind of group that we would say okay this is the specific market that we are specifically targeting everyone eats yah. So basically we really do not have a specific focus to say okay we try maybe the upper class...actually our business model is designed in such a way that even the lowest income earner family must get something to eat that's how the model is designed so that's why I said everyone yah.

2. Which new entrepreneurial opportunities have you been able to identify recently?

We have got some certain kinds of breeds that are not available in Zimbabwe for instance let's start talking about for goats, a fast-growing goat resistant to diseases. Goat farming is really a business that is much profitable that would make meat be available to almost everyone you be amazed how much that thing is it's so cheap yet it takes a very short time really mature up. Let's go into sheep we have got a few players but they are some specific breeds which take a very short time span to grow which can give people the desired product at a...at less expense. Uumm let's get into cattle most of the Zimbabweans that we have they are doing cattle there is still a gap in the sense that the breeds that we are mainly working with they are either in a way expensive to maintain or they take an awesome amount time to really get to where to a farmer or wherever the farmer is producing them will manage to supply some into the market so those are the specific areas that we are trying to target okay. We got an interesting market that rose recently we call them uummm the small livestock which includes kind of rabbits those things they are very healthy, those things multiply enormously in a very short amount of time you see those are some of the areas that are not ventured into you see so those are some of the business opportunities, those are some of the areas that we are considering to venture into fully.

What are the entrepreneurial opportunities which are available to you at present?

Currently we agriculture specifically crop farming and animal farming...we are trying to do that so that we currently we have on the ground and in that specific kind of animal farming we have got some fields are we really hoping will manage to get hold of.

3. Which methods do you use to market your products or services? Could you please provide me with some examples?

We really make use of public gatherings yah we do make use of public gatherings a lot we follow up these public gatherings and make sure that on every farming gathering that is there, someone is there, someone has to give a phone number, someone has to give a flyer, someone has to give make us known yah.

Do you encounter problems in reaching your target market?

Yes of course generally you definitely have a problem with reaching out to your target market talk about communication; talk about perception just simple perception will really be a problem when you are trying to reach to your market. I would want to go into perception that much because at time it might end up getting political but just perception will be a problem in reaching out your market. Financially you need money to reach out to your market and that's a limited resource we find ourselves at times wanting so that we fully reach out to our market and make them know that this is what we are offering.

4. Are you aware of any essential differences between the entrepreneurial opportunities which are available to your business and those which are available to businesses in the city?

Yes they are very different we wish we could have a farm in Harare CBD because next door is Pick and Pay next door is OK next door is Spar it's the Central Business District everything is happening there. So my farm is located in Gokwe it means I will have to transport my goods that's money that is a bit limited you see that means resources which might be channelled otherwise into production are now being channelled into facilitating the offering of a service so the opportunities are definitely not the same yah.

Do you have any information concerning the customers of your competitors?

Yes, definitely when you are starting something you need to know who is doing that thing who is doing better than you and who is trying to get into it we really do have information of who is who in the business yah.

5. How would you characterise your relationship with the community? Do you participate in any cooperative activities for the benefit of the community as a whole?

I would like to think I am yah the fact that we are employing people within the community to help us to do several things I think I would like to think of myself as reaching out to the community and also have its still a very small program but we also have something that is like a funding opportunity for the less privileged who are bright still very small we are still helping two children at the moment at primary school but I would like to think that can be considered as some help.

Sub-question 2: To what extent do digital design and technology influence customer satisfaction?

**How many customers do you reach? How efficient are the methods which you use?
Could you please provide me with examples?**

Our customer base is around sixty seventy there about, it is efficient to some extent not so....what can I say it's not so efficient to tell you the truth because of network problems and infrastructural problems it's not so efficient.

Could you please characterise your post-purchase relationships with your customers?

The relationship is good it's more like a connection or a link when they buy from you and they are satisfied with the product they will always refer someone to you they will always be in communication with you. To some extent some of them they actually come to take our produce then they will pay later that's how good the relationship can get.

2. How do you obtain feedback from your customers?

At times I would like if someone gets a service from me and they go and recommend someone come to me that's a positive feedback and at times I feel like someone can even say it out if they like my services at some point they will just say it out.

3. What do you think could be done to keep your customers positively engaged?

For now to tell you the truth its word of mouth it's just telling them that the cows are now on thirty-seven weeks they are about to come out for sale and we have a new produce this side come check out my sheep and pigs so that's how am doing it but I would have liked it if we had something like a website when you buy online you know you just get it instant notifications of okay this is what is happening we have got his promotion we have got this service.

4. What types of promotions do you offer in your business? For how long do you run them?

If you buy a lot of kg's we reduce the prize for you. They are like open twenty-four seven three sixty-five every day of the year as long as you buy in bulk. We have got certain targets that we have that if you buy this amount of kg's we discount by how many cents per kg.

How do you reward the loyalty of your customers?

It's not really documented or professionally put down but we have instances whereby we give customers on credit I feel like it's a reward really. We had a good relationship with you we really use mutual understanding like okay you took how many kg's so you going to pay this much without even any collateral. I feel it's risky it's a bit unorthodox but I feel like it's a way of saying we appreciate you.

5. For how many hours each day does your business operate?

I think it's open like twenty-four hours it's always open anytime we do not have like offices where you walk in its always open.

Sub-question 3: What are the factors which inhibit entrepreneurs in Gokwe from adopting of digital design and technology to increase the success of their businesses?

1. What are the main obstacles which you need to overcome in order to ensure the success of your business? Could you please provide me with some examples?

If we get a good market our business was going to be successful so market expansion, we want our market to expand.

Are these obstacles significantly different outside of your area?

They are very much different you see how this thing works its am closer to who wants to buy my product I am better, I am far away from who wants to buy my thing am affected we are let's say....we are at the outskirts at times there's someone who is closer to them than me that will definitely affect me.

2. Do you have any knowledge or experience concerning conducting business on digital platforms? Could you please give me some examples?

Well I think I...you I wouldn't say I have some information of how to do these things but I feel we need to be taught we need to be cautioned on how really to get effective in a way.

3. In which respects can technology significantly change business practices?

Efficiency, I feel like we get more efficient uumm and security I feel like technology it might give us security let me give you an example it's really a common example if someone can manage to get on our website and then they purchase fifty kg's of ram meat and then they pay there and there then we deliver that in itself its secure its online its automated its fast no one had to carry money to where it's just happening right there I feel like I can introduce the aspect of security.

For how long have you been an entrepreneur?

Yah I have been there for a long time I was born into the family business we just grew in these things it's not like I started out and say I want to buy a farm no I was just rose in a family whereby there is ABCD and we are doing this now.

4. In which respects would you like technology to contribute to the growth and development of your business? Could you please provide me with some examples?

I would want to develop my business in the area of modern ways of marketing that is number one, two processing of online payment this will be determined by the government and the currency that will be using and I think the general running of my business I want to incorporate technology.

5. Which distribution and logistics channels do you use? How do you deliver your products to your customers?

It now depends on the customer if he/she is in the vicinity or if they are closer to my area we transport. If they are out of town the courier service they will help me to do that if it is local I have got my own truck I will just ferry the products to the customer.

How do you keep track of deliveries?

We really do not have sophisticated technology for that there is just one person who will be having a truck that we just load meat into some clean buckets then straight they got to deliver and our trust is with them that they reach there in time we are actually have sophisticated administration for managing it.

Sub-question 4: Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

1. What do you know about existing legislation, regulations, and policies to encourage the development of rural entrepreneurship?

Yah there is it's a program that was passed by the government back then it's called land reform program, it had its serious adverse effects how wrong it was done but the one thing that was right about it, it allowed rural entrepreneurship basically that the most brilliant part about it. It had a lot of disadvantages but that program was really meant to encourage rural entrepreneurship I won't mention command farming, I won't mention contract farming, I won't mention this cattle livestock thing the government is doing to enhance...so on that one those are some of the things that are in place to make sure that entrepreneurship in the rural areas is happening.

How does the government perceive technology-driven commerce?

I think the government at the moment, our government in Zim they have got some serious issues that they think they need to attend to they feel like okay we cannot be wasting money attending to these kinds of issues they are so petty we have got bigger issues to attend to I think it's not recognized.

What is the government doing to encourage the growth of rural entrepreneurship?

There is this facility that they have its an agricultural research extension handle for the government whereby you go with your soil samples DRSS close to state house there. You submit your soil samples, you pay a very small amount of money, they analyze your soil samples, and you tell them what you want to farm. They give you recommendations for how to do your farming and what type of fertilizer to put so that one thing that they are doing.

2. To what extent are existing legislation, regulations, and policies implemented? How effectively are policies implemented?

They are implemented to a greater extent though you know we have got...you find some cases whereby they do not get really implemented as they are written on paper they get selective at times you end up not getting the land which you must get because of some reason that is there so to a lesser extent we have got such cases but to a greater extent they are being implemented yah. They are effective if they are implemented I mean you can do wonders they are very effective.

3. Would you like to make any recommendations for increasing the adoption of digital design and technology by rural entrepreneurs?

Firstly let's fix communication, when I mean communication am referring to cheap internet availability one. Two uummm people need to know, people need to be informed about these things, three the government has to support us as farmers in implementing these things because at the moment I cannot go to the bank and say I want to adopt...I want to set up a e-commerce website where I will be selling my produce you know what I mean no one will give you money for that they are not...it's not supported you see now. That's the kind of support I mean, we need technical advice, and technical expertise as a recommendation to make that come to life we just need technical help to help us through with that yah I think basically that's it.

Which interventions could be implemented by the government to increase the use of technology-driven commerce?

Well they can make funding available to start with, they can make technical expertise to be available yah I think so funding and even letting the farmers know about these things for instance how good are they at some point you know even us farmers we do not even appreciate technology and everything yah.

Is it used significantly more or less than in other areas?

E-commerce in Zimbabwe honestly guys that thing it's unheard of in every sector not only farming e-commerce is really thwarted one of the major reasons why it is thwarted it's because of economic sanctions our money does not move out of Zimbabwe so its limited that way its only if it's there...if ever it's there it's just me maybe trading with one or two people of which in farming honestly I have never heard of it in my line of business okay...I have never heard of it really that you go to a website you click you receive a verification text push it and you pay and then good are received I have never heard of it. So it's really something that would make a huge difference it's something that is at infant stage.

Sub-question 5: How do digital design and technology influence opportunities for funding for rural entrepreneurs in Gokwe?

1. Are there any opportunities for obtaining funding for digital technology for entrepreneurial purposes in your area?

At the moment to tell you the truth there is none like we do not have any specifically for digital technology I would want to be open and say at times the funding doesn't really get limited to what you do with the kind of funding but specifically to revert our digital technology the funding that is specially for digital technology in our business in Zimbabwe there is none.

Do you know of any organisations which provide funding to entrepreneurs?

Yes banks do they need collateral which some people do not have

2. What are the requirements of financial institutions for extending loans to entrepreneurs?

The requirements are there but personally I haven't gone to ask for a loan but the requirements are there they would want are collateral. If you are getting a loan depending on how much you want and they will give you a timeline to pay it back for example a year if you have got a house they will require the title deeds of the house if you have got a car they will require the book for that car, but as of me I have managed to just bring it up slowly selling a car which I had so that I can invest in the business but in the near future I will see myself going to apply for land because the vision is big I would need to acquire machinery as far as from China.

Do you or other entrepreneurs whom you know meet all of the requirements?

The requirement that these lending institutions need to borrow money the problem is these institutions is they need collateral they need title deeds for land, they need bank records they practically need everything about you and what you own like what do you have so that we can get entitled to it if in the event that you fail to pay back our money. No I do not.

To what extent are entrepreneurs refused loans because they lack the necessary documentation?

To a very greater extent am telling you it's to a very greater extent let me be open and say I think it's the most difficult part about entrepreneurship is to get capital and you can't get capital you are an entrepreneur and sometimes you are still starting and if you try to approach someone who won't want collateral from you they will steal your business they will get into your business they will take ninety-six percent shares and you get four percent and your business is gone.

3. Which criteria are applied to lend money to entrepreneurs?

So these institutions which lend money they do not like new ideas one they look at your business model usually they want a proven thing something that works so for a new idea to just pop up from the blue and say guys this is what I have its really a problem so I think uniqueness....ummm basically they want a proven concept firstly. Secondly assessment of your business model, they really assess it your business plan and everything your targeted market, your margins and everything like I think those ones are some of the issues that these lending institutions consider. I wouldn't want to accuse any institution for using corruption as a criteria or for using nepotism I wouldn't want to say that I understand in some institutions it's like that.

How much capital would you require if you were to consider investing in digital technology?

I wouldn't give you a specific figure why because I haven't sit down I haven't considered what is needed I haven't this and that but I think for a start if I could get a minimum of fifteen thousand US Dollars I think our digital world in our farming industry will be up and running.

How did you attract investors if you have any?

Yes we have tried to attract an investor we do pitching like basically at the moment we are targeting people, specific people that okay this is the kind of guy that we feel like they would invest in such and such a project that we are doing in farming so at the moment its hand selection and in some rare occurrences they are some people who show up who are pledging to invest like you go an agricultural show you are showcasing nice animals someone with big money comes and say okay guys I want to be part of this so that how we attract some investors.

5. What are the most severe obstacles which you encounter in obtaining funding or borrowing money?

Well the requirements that they need mostly are the biggest challenge that we are facing when trying to borrow money.

Are these obstacles unique to your area?

The challenges are....the challenges that we get are different but the problems that we have equal each other because I having a farm in Gokwe will mean that my cost of production is very low someone who has got a farm in Norton their cost of production is very high but its supplemented by a very good market close by I have a very low production but on transporting my goods that's were I have a problem we all have got different set of challenges which are counter balanced.

In borrowing money yes they are different; my business model entails a lot of money being wasted in transportation someone in Chitungwiza their business model is mainly based on production so their producing more they are going to have a higher chance of getting funding that I you see now because my business model is based on burning money for fuel from Gokwe to Harare like three hundred and forty-seven kilometres away someone in Norton they are already there you see they are likely to get funding before I do yah.

6. Which forms of support does the government offer?

They offer quite a number of services really honestly as weird as it sounds the government of Zimbabwe on farming specifically okay...if you are focused and you know what you do the government supports you. The problem is our liquidity challenge that we are facing with our currency. The government gives out cattle to people guys, they give you cattle not in a sense that you should be affiliated to a party or not am not even affiliated to any party but I think am actually affiliated to undesirable party but am part of it. So they give livestock, they have got specific banks which are specifically targeted to farmers, we have got Agribank specifically targeted to farmers and Econet have got some few programs that they have which are that's specifically aimed at helping the government empower farmers so they are really funding opportunities and some assistance that we are getting from the government. We have got the animal loan program they give people animals, they also do give people sheep, the government give people inputs under the command farming uuum the government gives people land umm they give you a lease like you do a contract of some form with them, they are giving land uuumm I think we can't undermine their human resource help they have got these guys who are employed in the rural areas that is the foremen that make sure that they work hand in glove with the farmers to help us achieve greater yields.

What type of support, if any, would you need to integrate digital technology into your business practices to the fullest extent?

Money to start with one, two I would want help in informing the public in making my kind of technology known you see I would want assistance in informing that so and so there is such and such type of technology especially in selling our stuff. We would want help in reaching our market instead of going there to buy stuff we can actually do it online so I

would want really assistance there yah. I would want help in technical expertise with people who know about digital marketing, we want to be taught how we can do it.

7. Which cooperatives or groups operate in your area? Could you provide me with examples?

I am not sure because I have not looked into it but now that you have mentioned you have given some homework to do I will definitely look into it.

8. What other obstacles have you encountered in obtaining funding?

I cannot think of any besides the ones that I have said, I think that's all.

APPENDIX E: Questionnaire



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

SECTION A: DEMOGRAPHIC INFORMATION

(Please place an X in the appropriate box only)

1. Are you the owner of or the principal partner in the business?

Yes		No	
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If your answer to question 1 is "no", kindly refer me to the owner or principal partner.

2. Has your business existed for more than 3.5 years?

Yes		No	
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If your answer to question 2 is "no", please do not proceed.

3. Gender:

Male		Female	
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4. Age group:

Less than 20 years		20 to 40 years		41 to 60 years		More than 60 years	
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5. Marital status:

Single		Married		Divorced		Widowed	
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6. What is the highest level of education that you have attained?

No formal education		Bachelor's degree	
Primary school		Master's degree	
Secondary/High school		PhD degree	

University		Other (Specify)	

If you answered "Other" above, please specify:

SECTION B BUSINESS PROFILE

1. In which year did you start your business?-----
2. In which type of business do you participate? **(You may give more than one response)**

Cotton	Tobacco	Gold panning	Tourism	Groundnuts
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If your business falls into a different category, please specify, e.g. restaurant owner

3. How many employees did you have when you started your business?

Alone	2-4	5-19	20-49	50-199
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4. How many employees do you have at present?

Alone	2-4	5-19	20-49	50-199
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5. What was your annual profit margin when you started your business?

Less than \$100	\$300-\$500	\$500-\$1000	\$1000-1500	\$1500-2000
\$2000-more				

6. What is your present sales turnover per year?

Less than \$50,000	\$50,001 - \$200,000	\$200,001 - \$5,000,000	\$5,000,001 - \$6,000,000	\$5,000,001 - \$6,000,000
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SECTION C

The role that digital design and technology play in the development of entrepreneurship in Harare

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
1.	I am interested in using digital design and technology to expand my business.					
2.	An online presence is essential/necessary/important for my business.					
	Modern methods of marketing and advertising increase my target market.					
4.	Apart from the benefits covered in the previous three statements, how important are the other roles that digital design can play in the development of entrepreneurship in Harare?					
5.	Contributing to the economy through the use of technology-driven commerce is essential for my business.					
6.	How important is it to increase trade between rural entrepreneurs and urban and international markets through the use of digital design and technology?					
7.	The creation of employment for young people in rural areas through the use of digital design and technology plays a significant role in the development of commerce.					
8.	Digital platforms provide opportunities for entrepreneurs to develop complementary products and services.					
9.	Making use of digital platforms for entrepreneurial activities increases the methods of marketing which are available to my business					

SECTION D:

The influence of digital design and technology on the ability to identify entrepreneurial opportunities and expand markets.

1. What type of digital electronic device or mobile phone do you own?

Android		iPhone		Vodafone	
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2. For which purposes do you use your digital device or mobile phone?

Communication		Information		Advertising	
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3. Which software or applications are available on your digital device or mobile phone?

WhatsApp		Twitter	
Facebook		Behance	
YouTube		Instagram	

4. How often do you use your digital device or mobile phone for entrepreneurial purposes?

Everyday		Twice a week	
Three times a week		Never	

5. Which digital platforms are available for entrepreneurial purposes on your digital device or mobile phone?

WhatsApp		Twitter	
Facebook		Behance	

YouTube		Instagram	
None of the above			

6. Which digital platforms do you use for entrepreneurial purposes, if any?

WhatsApp		Twitter	
Facebook		Behance	
YouTube		Instagram	
None of the above			

7. Which uncustomisable platforms are available to you for entrepreneurial purposes?

8. Which uncustomisable platforms do you use for entrepreneurial purposes, if any?

9. Are there any uncustomisable platforms which entrepreneurs are able to use for entrepreneurial purposes?

10. Which e-commerce platforms are available to you for entrepreneurial purposes?

Ownai		Tengah	
None of the above			

11. Which e-commerce platform do you use?

Ownai		Tengah	
Neither of the above			

12. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response:

13. Have you ever made business transactions using either of the following international e-commerce platforms?

Alibaba		Amazon	
		Neither of the above	

14. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response:

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
15.	There are obstacles to using technology-driven marketing in my business					
16.	Digital technology is essential to obtaining access to customers in urban centres and abroad.					
17.	Digital design and technology play a crucial role in expanding markets.					
18.	Digital design and technology play a crucial role in expanding markets and increasing customer satisfaction.					
19.	My business is unable to grow as a consequence of small profits from a small available market.					
20.	Digital technology would enable me to identify new entrepreneurial opportunities which could potentially facilitate the growth of my business.					

21.	To ensure the success of my business, it is necessary to acquire the digital electronic devices which make it possible to market products or services, make business transactions, and engage in other entrepreneurial activities online.					
22.	The ability to identify new entrepreneurial opportunities by using digital design and technology is crucial to the growth of my business					
23.	Digital design and technology are essential to identifying and exploiting new entrepreneurial opportunities in my business.					
24.	New entrepreneurial opportunities have the potential to expand my markets and increase the profitability of my business.					

The influence of digital design and technology on customer satisfaction

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
1.	Well-designed websites encourage positive attitudes towards products or services among customers and increase the likelihood of customers making subsequent purchases.					
2.	Customer satisfaction constitutes decisive determinant of successful business relationships.					
3.	Digital design and technology contribute to increased customer satisfaction from successful digital marketing.					
4.	Internet technology influences customer satisfaction by enabling customers to communicate with suppliers concerning the products or services which they have purchased on websites.					
5.	Ratings from customers concerning the service which they have received helps online					

	businesses to improve their performance.					
6.	Digital marketing practices which are supported by innovative digital design are likely to increase customer satisfaction.					
7.	Satisfied customers contribute to the expansion of markets by referring other potential customers to online suppliers.					
8.	Satisfied customers are likely to contribute to increased e-commerce transactions.					
9.	Digital marketing plays a significant role in influencing customer satisfaction.					
10.	Training is essential to the growth of e-commerce.					

Factors which discourage entrepreneurs in Harare from integrating digital design and technology into the business practices

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
1.	E-commerce is not used in my business.					
2.	I am unable to make e-payments owing to the instability in the banking sector.					
3.	Commerce is threatened by the frequent closures and going into liquidation of banks.					
4.	The risks which are inherent in making payments by means of the internet, mainly owing to the instability of the banking sector in the country, are of great concern.					
5.	Cultural factors which discourage the growth of online business transactions include unfamiliarity with online business practices and trading.					
6.	There are no buildings which are suitable for establishing e-businesses.					
7.	Inexpensive access to the internet is essential to the emergence of a thriving commercial sector.					
8.	The adoption of e-commerce is slow or non-existent owing to widespread fears concerning the failure of the government to maintain fiscal stability.					
9.	Poor infrastructure impedes digital design and technology from becoming an effective driver of successful commerce.					

10.	Cybercrime undermines the ability of digital design and technology to make a significant contribution to successful commerce.					
11.	The growth of my business is impeded by excessive reliance on traditional methods of marketing and networking.					
12.	A lack of avenues to reach potential customers impedes the growth of my business.					
13.	My inability to communicate effectively through advertising and marketing impedes the growth of my business.					
14.	My inability to take advantage of digital and technological innovations for effective marketing, advertising, and disseminating information has impeded the growth of my business.					
15.	Inability to make use of modern methods of networking impedes the growth of businesses.					
16.	A lack of access to external markets impedes the growth of businesses.					
17.	Inability to integrate digital design and technology into business practices is likely to preclude the possibility of expanding markets.					
18.	It is difficult to integrate digital design and technology into my business practices to increase the profitability of my business.					
19.	It is necessary to make use of modern methods of networking in my business.					

Apart from the obstacles which have been covered in the previous statements, which other obstacles have you encountered in attempting to integrate digital design and technology into your business practices?

Response:

Which strategies can be used to facilitate the adoption of digital design and technology by entrepreneurs in Harare?

Response:

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
1.	An internet presence is necessary for my business to make effective use of digital design and technology.					
2.	Reducing the cost of using the internet would result in increased use of the internet and e-commerce.					
3.	Education concerning ICT policy would result in increased adoption of e-commerce.					
4.	The provision of adequate ICTS infrastructure would facilitate the adoption of e-commerce.					
5.	Acceptance of technology by the owners of business enterprises facilitates the adoption of digital design and technology because owners play a significant role in decision making.					
6.	Customers or suppliers have the ability to exert pressure on entrepreneurs to adopt digital design and technology.					
7.	The adoption of digital design and technology by competitors is likely to encourage adoption by entrepreneurs to gain a competitive advantage.					
8.	Financial and technological assistance from the government, through appropriate policies, would significantly increase the adoption of digital design and technology.					
9.	Readiness for technology is an essential precondition for my business to adopt the use of digital design and technology.					
10.	Return on investment provides an incentive for adopting and making use of digital design and technology.					
11.	Government policies should be amended to allow direct foreign investment.					
12.	Cooperation between the state and private organizations would accelerate the adoption of digital design and technology.					
13.	Making use of shared infrastructure would make a significant contribution to successful commerce.					
14.	Improvements in the security of information would help to minimize cybercrime.					
15.	There is a need for awareness campaigns to promote the adoption of e-commerce as an effective business practice.					
16.	There is a need for training in ICT skills in order					

	to enable entrepreneurs to recognise the significance of digital technology.					
17.	The availability of computer hardware for my business at affordable prices would help me to adopt digital design and technology.					

The influence of digital design and technology on opportunities for obtaining funding

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
1.	Return on investment attracts funding from the government, NGOs, and civil societies.					
2.	Microfinance institutions play a crucial role in providing funding to entrepreneurs.					
3.	Banks and NGOs play a significant role in providing funding to entrepreneurs.					
4.	Stringent requirements of financial institutions limit the likelihood of obtaining funding.					
5.	The adoption of modern technology attracts funding from international institutions.					
6.	The periods over which financial institutions allow loans to be repaid contribute to whether entrepreneurs are able to borrow money or not.					
7.	Integrating digital design into business practices would increase the likelihood of attracting funding from the international community.					
8.	The widespread adoption of digital design and technology contributes to the creation of an entrepreneurial ecosystem.					

APPENDIX F: Questionnaire response urban entrepreneur



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

SECTION A: DEMOGRAPHIC INFORMATION

(Please place an X in the appropriate box only)

7. Are you the owner of or the principal partner in the business?

Yes	X	No	
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If your answer to question 1 is "no", kindly refer me to the owner or principal partner.

8. Has your business existed for more than 3.5 years?

Yes	X	No	
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If your answer to question 2 is "no", please do not proceed.

9. Gender:

Male	X	Female	
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10. Age group:

Less than 20 years		20 to 40 years	X	41 to 60 years		More than 60 years	
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11. Marital status:

Single	X	Married		Divorced		Widowed	
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12. What is the highest level of education that you have attained?

No formal education		Bachelor's degree	X
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Primary school		Master's degree	
Secondary/High school		PhD degree	
University		Other (Specify)	

If you answered "Other" above, please specify:

SECTION B BUSINESS PROFILE

7. In which year did you start your business?-----2014-----

8. In which type of business do you participate? **(You may give more than one response)**

Cotton	Tobacco	Gold panning	Tourism	Groundnuts
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If your business falls into a different category, please specify, e.g. restaurant owner

Boutique owner

9. How many employees did you have when you started your business?

Alone X	2-4	5-19	20-49	50-199
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10. How many employees do you have at present?

Alone	2-4 X	5-19	20-49	50-199
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11. What was your annual profit margin when you started your business?

Less than \$100	\$300-\$500	\$500-\$1000	\$1000-1500	\$1500-2000
\$2000-more X				

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12. What is your present sales turnover per year?

Less than \$50,000	\$50,001 \$200,000 X	\$200,001 – \$5,000,000	\$5,000,001 – \$6,000,000	\$5,000,001 – \$6,000,000
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SECTION C

3. The role that digital design and technology play in the development of entrepreneurship in Harare

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
3.	I am interested in using digital design and technology to expand my business.				X	
4.	An online presence is essential/necessary/important for my business.				X	
	Modern methods of marketing and advertising increase my target market.					X
6.	Apart from the benefits covered in the previous three statements, how important are the other roles that digital design can play in the development of entrepreneurship in Harare?	X				
7.	Contributing to the economy through the use of technology-driven commerce is essential for my business.				X	

10.	How important is it to increase trade between rural entrepreneurs and urban and international markets through the use of digital design and technology?					X
11.	The creation of employment for young people in rural areas through the use of digital design and technology plays a significant role in the development of commerce.					X
12.	Digital platforms provide opportunities for entrepreneurs to develop complementary products and services.					X
13.	Making use of digital platforms for entrepreneurial activities increases the methods of marketing which are available to my business					X

SECTION D:

The influence of digital design and technology on the ability to identify entrepreneurial opportunities and expand markets.

2. What type of digital electronic device or mobile phone do you own?

Android	X	iPhone		Vodafone	
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25. For which purposes do you use your digital device or mobile phone?

Communication	X	Information	X	Advertising	X
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26. Which software or applications are available on your digital device or mobile phone?

WhatsApp	X	Twitter		X
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Facebook	X	Behance	
YouTube	X	Instagram	X

27. How often do you use your digital device or mobile phone for entrepreneurial purposes?

Everyday	X	Twice a week	
Three times a week		Never	

28. Which digital platforms are available for entrepreneurial purposes on your digital device or mobile phone?

WhatsApp	X	Twitter	X
Facebook	X	Behance	
YouTube	X	Instagram	X
None of the above			

29. Which digital platforms do you use for entrepreneurial purposes, if any?

WhatsApp	X	Twitter	X
Facebook	X	Behance	
YouTube	X	Instagram	X
None of the above			

30. Which uncustomisable platforms are available to you for entrepreneurial purposes?

There are no un-customizable platforms.

31. Which uncustomisable platforms do you use for entrepreneurial purposes, if any? None

32. Are there any uncustomisable platforms which entrepreneurs are able to use for entrepreneurial purposes? There are no un-customizable platforms.

33. Which e-commerce platforms are available to you for entrepreneurial purposes?

Ownai X	None	Tengah	
None of the above			

34. Which e-commerce platform do you use?

Ownai X	None	Tengah	
Neither of the above			

35. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response: not applicable

36. Have you ever made business transactions using either of the following international e-commerce platforms?

Alibaba		Amazon	X
		Neither of the above	

37. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response: not applicable

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
38.	There are obstacles to using technology-driven marketing in my business					X
39.	Digital technology is essential to obtaining access to customers in urban centres and abroad.				X	
40.	Digital design and technology play a crucial role in expanding markets.				X	
41.	Digital design and technology play a crucial role in expanding markets and increasing customer satisfaction.				X	
42.	My business is unable to grow as a consequence of small profits from a small available market.				X	
43.	Digital technology would enable me to identify new entrepreneurial opportunities which could potentially facilitate the growth of my business.					X
44.	To ensure the success of my business, it is necessary to acquire the digital electronic devices which make it possible to market products or services, make business transactions, and engage in other entrepreneurial activities online.					X
45.	The ability to identify new entrepreneurial opportunities by using digital design and technology is crucial to the growth of my business					X

46.	Digital design and technology are essential to identifying and exploiting new entrepreneurial opportunities in my business.					X
47.	New entrepreneurial opportunities have the potential to expand my markets and increase the profitability of my business.				X	

The influence of digital design and technology on customer satisfaction

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
11.	Well-designed websites encourage positive attitudes towards products or services among customers and increase the likelihood of customers making subsequent purchases.					X
12.	Customer satisfaction constitutes decisive determinant of successful business relationships.				X	
13.	Digital design and technology contribute to increased customer satisfaction from successful digital marketing.				X	
14.	Internet technology influences customer satisfaction by enabling customers to communicate with suppliers concerning the products or services which they have purchased on websites.				X	
15.	Ratings from customers concerning the service which they have received helps online businesses to improve their performance.				X	
16.	Digital marketing practices which are supported by innovative digital design are likely to increase customer satisfaction.				X	
17.	Satisfied customers contribute to the expansion of markets by referring other potential customers to online suppliers.				X	
18.	Satisfied customers are likely to contribute to increased e-commerce transactions.				X	

19.	Digital marketing plays a significant role in influencing customer satisfaction.				X	
20.	Training is essential to the growth of e-commerce.				X	

Factors which discourage entrepreneurs in Harare from integrating digital design and technology into the business practices

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
20.	E-commerce is not used in my business.					X
21.	I am unable to make e-payments owing to the instability in the banking sector.				X	
22.	Commerce is threatened by the frequent closures and going into liquidation of banks.				X	
23.	The risks which are inherent in making payments by means of the internet, mainly owing to the instability of the banking sector in the country, are of great concern.			X		
24.	Cultural factors which discourage the growth of online business transactions include unfamiliarity with online business practices and trading.				X	
25.	There are no buildings which are suitable for establishing e-businesses.				X	
26.	Inexpensive access to the internet is essential to the emergence of a thriving commercial sector.				X	
27.	The adoption of e-commerce is slow or non-existent owing to widespread fears concerning the failure of the government to maintain fiscal stability.				X	
28.	Poor infrastructure impedes digital design and technology from becoming an effective driver of successful commerce.					X
29.	Cyber crime undermines the ability of digital design and technology to make a significant contribution to successful commerce.					X
30.	The growth of my business is impeded by excessive reliance on traditional methods of					X

	marketing and networking.					
31.	A lack of avenues to reach potential customers impedes the growth of my business.				X	
32.	My inability to communicate effectively through advertising and marketing impedes the growth of my business.				X	
33.	My inability to take advantage of digital and technological innovations for effective marketing, advertising, and disseminating information has impeded the growth of my business.				X	
34.	Inability to make use of modern methods of networking impedes the growth of businesses.				X	
35.	A lack of access to external markets impedes the growth of businesses.				X	
36.	Inability to integrate digital design and technology into business practices is likely to preclude the possibility of expanding markets.				X	
37.	It is difficult to integrate digital design and technology into my business practices to increase the profitability of my business.					X
38.	It is necessary to make use of modern methods of networking in my business.					X

Apart from the obstacles which have been covered in the previous statements, which other obstacles have you encountered in attempting to integrate digital design and technology into your business practices?

Response: financial assistance.

Which strategies can be used to facilitate the adoption of digital design and technology by entrepreneurs in Harare?

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
18.	An internet presence is necessary for my				X	

	business to make effective use of digital design and technology.					
19.	Reducing the cost of using the internet would result in increased use of the internet and e-commerce.					X
20.	Education concerning ICT policy would result in increased adoption of e-commerce.					X
21.	The provision of adequate ICTS infrastructure would facilitate the adoption of e-commerce.					X
22.	Acceptance of technology by the owners of business enterprises facilitates the adoption of digital design and technology because owners play a significant role in decision making.				X	
23.	Customers or suppliers have the ability to exert pressure on entrepreneurs to adopt digital design and technology.				X	
24.	The adoption of digital design and technology by competitors is likely to encourage adoption by entrepreneurs to gain a competitive advantage.					X
25.	Financial and technological assistance from the government, through appropriate policies, would significantly increase the adoption of digital design and technology.					X
26.	Readiness for technology is an essential precondition for my business to adopt the use of digital design and technology.					X
27.	Return on investment provides an incentive for adopting and making use of digital design and technology.					X
28.	Government policies should be amended to allow direct foreign investment.				X	
29.	Cooperation between the state and private				X	

	organizations would accelerate the adoption of digital design and technology.					
30.	Making use of shared infrastructure would make a significant contribution to successful commerce.				X	
31.	Improvements in the security of information would help to minimize cybercrime.					X
32.	There is a need for awareness campaigns to promote the adoption of e-commerce as an effective business practice.				X	
33.	There is a need for training in ICT skills in order to enable entrepreneurs to recognise the significance of digital technology.					X
34.	The availability of computer hardware for my business at affordable prices would help me to adopt digital design and technology.					X

The influence of digital design and technology on opportunities for obtaining funding

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
9.	Return on investment attracts funding from the government, NGOs, and civil societies.			X		
10.	Microfinance institutions play a crucial role in providing funding to entrepreneurs.			X		
11.	Banks and NGOs play a significant role in providing funding to entrepreneurs.					X
12.	Stringent requirements of financial institutions limit the likelihood of obtaining funding.					X
13.	The adoption of modern technology attracts funding from international institutions.					X
14.	The periods over which financial institutions allow loans to be repaid contribute to whether entrepreneurs are able to borrow money or not.				X	
15.	Integrating digital design into business practices would increase the likelihood of				X	

	attracting funding from the international community.					
16.	The widespread adoption of digital design and technology contributes to the creation of an entrepreneurial ecosystem.					X

APPENDIX G: Questionnaire response rural entrepreneur



Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in
Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

SECTION A: DEMOGRAPHIC INFORMATION

(Please place an X in the appropriate box only)

13. Are you the owner of or the principal partner in the business?

Yes	X	No	
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If your answer to question 1 is "no", kindly refer me to the owner or principal partner.

14. Has your business existed for more than 3.5 years?

Yes	X	No	
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If your answer to question 2 is "no", please do not proceed.

15. Gender:

Male	X	Female	
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16. Age group:

Less than 20 years		20 to 40 years	X	41 to 60 years		More than 60 years	
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17. Marital status:

Single		Married	X	Divorced		Widowed	
--------	--	---------	---	----------	--	---------	--

18. What is the highest level of education that you have attained?

No formal education		Bachelor's degree	X
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Primary school		Master's degree	
Secondary/High school		PhD degree	
University		Other (Specify)	

If you answered "Other" above, please specify:

SECTION B BUSINESS PROFILE

13. In which year did you start your business?-----2008-----

14. In which type of business do you participate? **(You may give more than one response)**

Cotton	Tobacco	Gold panning	Tourism	Groundnuts
--------	---------	--------------	---------	------------

If your business falls into a different category, please specify, e.g. restaurant owner

Agripreneur

15. How many employees did you have when you started your business?

Alone	2-4 X	5-19	20-49	50-199
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16. How many employees do you have at present?

Alone	2-4	5-19 X	20-49	50-199
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17. What was your annual profit margin when you started your business?

Less than \$100	\$300-\$500	\$500-\$1000	\$1000-1500	\$1500-2000
\$2000-more X				

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18. What is your present sales turnover per year?

Less than \$50,000	\$50,001 \$200,000 X	\$200,001 – \$5,000,000	\$5,000,001 – \$6,000,000	\$5,000,001 – \$6,000,000
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SECTION C

3. The role that digital design and technology play in the development of entrepreneurship in Gokwe

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
5.	I am interested in using digital design and technology to expand my business.				X	
6.	An online presence is essential/necessary/important for my business.				X	
7	Modern methods of marketing and advertising increase my target market.					X
8.	Apart from the benefits covered in the previous three statements, how important are the other roles that digital design can play in the development of entrepreneurship in Harare?	X				
9.	Contributing to the economy through the use of technology-driven commerce is essential for my business.	X				
14.	How important is it to increase trade between rural entrepreneurs and urban and international markets through the use of digital design and technology?					X
15.	The creation of employment for young people in rural areas through the use of digital design and technology plays a significant role in the development of commerce.					X
16.	Digital platforms provide opportunities for					X

	entrepreneurs to develop complementary products and services.					
17.	Making use of digital platforms for entrepreneurial activities increases the methods of marketing which are available to my business					X

SECTION D:

The influence of digital design and technology on the ability to identify entrepreneurial opportunities and expand markets.

3. What type of digital electronic device or mobile phone do you own?

Android	X	iPhone		Vodafone	
---------	---	--------	--	----------	--

48. For which purposes do you use your digital device or mobile phone?

Communication	X	Information	X	Advertising	X
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49. Which software or applications are available on your digital device or mobile phone?

WhatsApp	X	Twitter	X
Facebook	X	Behance	
YouTube	X	Instagram	

50. How often do you use your digital device or mobile phone for entrepreneurial purposes?

Everyday	X	Twice a week	
Three times a week		Never	

51. Which digital platforms are available for entrepreneurial purposes on your digital device or mobile phone?

WhatsApp	X	Twitter	
Facebook	X	Behance	
YouTube		Instagram	
None of the above			

52. Which digital platforms do you use for entrepreneurial purposes, if any?

WhatsApp	X	Twitter	
Facebook	X	Behance	
YouTube		Instagram	
None of the above			

53. Which uncustomisable platforms are available to you for entrepreneurial purposes?

None

54. Which uncustomisable platforms do you use for entrepreneurial purposes, if any? None

55. Are there any uncustomisable platforms which entrepreneurs are able to use for entrepreneurial purposes? No there are not any

56. Which e-commerce platforms are available to you for entrepreneurial purposes?

Ownai X	None	Tengah	
None of the above			

57. Which e-commerce platform do you use?

Ownai	None	Tengah	
Neither of the above	X		

58. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response: I have not had business that requires me to do so.

59. Have you ever made business transactions using either of the following international e-commerce platforms?

Alibaba		Amazon	
		Neither of the above	X

60. If you have not used either, have you considered using them and are there any reasons for not having done so?

Response: I think I will try because it could be lack of interest on my part and in Zim we hardly use e-commerce

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
61.	There are obstacles to using technology-driven marketing in my business					X
62.	Digital technology is essential to obtaining access to customers in urban centres and abroad.				X	
63.	Digital design and technology play a crucial role in expanding markets.				X	
64.	Digital design and technology play a crucial role in expanding markets and increasing customer satisfaction.				X	
65.	My business is unable to grow as a consequence of small profits from a small available market.				X	

66.	Digital technology would enable me to identify new entrepreneurial opportunities which could potentially facilitate the growth of my business.						X
67.	To ensure the success of my business, it is necessary to acquire the digital electronic devices which make it possible to market products or services, make business transactions, and engage in other entrepreneurial activities online.					X	
68.	The ability to identify new entrepreneurial opportunities by using digital design and technology is crucial to the growth of my business					X	
69.	Digital design and technology are essential to identifying and exploiting new entrepreneurial opportunities in my business.					X	
70.	New entrepreneurial opportunities have the potential to expand my markets and increase the profitability of my business.					X	

The influence of digital design and technology on customer satisfaction

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
21.	Well-designed websites encourage positive attitudes towards products or services among customers and increase the likelihood of customers making subsequent purchases.					X
22.	Customer satisfaction constitutes decisive determinant of successful business relationships.					X
23.	Digital design and technology contribute to increased customer satisfaction from successful digital marketing.					X
24.	Internet technology influences customer satisfaction by enabling customers to communicate with suppliers concerning the					X

	products or services which they have purchased on websites.					
25.	Ratings from customers concerning the service which they have received helps online businesses to improve their performance.					X
26.	Digital marketing practices which are supported by innovative digital design are likely to increase customer satisfaction.				X	
27.	Satisfied customers contribute to the expansion of markets by referring other potential customers to online suppliers.					X
28.	Satisfied customers are likely to contribute to increased e-commerce transactions.			X		
29.	Digital marketing plays a significant role in influencing customer satisfaction.				X	
30.	Training is essential to the growth of e-commerce.					X

Factors which discourage entrepreneurs in Gokwe from integrating digital design and technology into the business practices

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
39.	E-commerce is not used in my business.					X
40.	I am unable to make e-payments owing to the instability in the banking sector.					X
41.	Commerce is threatened by the frequent closures and going into liquidation of banks.				X	
42.	The risks which are inherent in making payments by means of the internet, mainly owing to the instability of the banking sector in the country, are of great concern.					X
43.	Cultural factors which discourage the growth of online business transactions include unfamiliarity with online business practices and trading.				X	
44.	There are no buildings which are suitable for establishing e-businesses.				X	
45.	Inexpensive access to the internet is essential to the emergence of a thriving commercial sector.				X	
46.	The adoption of e-commerce is slow or non-existent owing to widespread fears concerning			X		

	the failure of the government to maintain fiscal stability.					
47.	Poor infrastructure impedes digital design and technology from becoming an effective driver of successful commerce.				X	
48.	Cyber crime undermines the ability of digital design and technology to make a significant contribution to successful commerce.					X
49.	The growth of my business is impeded by excessive reliance on traditional methods of marketing and networking.					X
50.	A lack of avenues to reach potential customers impedes the growth of my business.		X			
51.	My inability to communicate effectively through advertising and marketing impedes the growth of my business.		X			
52.	My inability to take advantage of digital and technological innovations for effective marketing, advertising, and disseminating information has impeded the growth of my business.		X			
53.	Inability to make use of modern methods of networking impedes the growth of businesses.		X			
54.	A lack of access to external markets impedes the growth of businesses.		X			
55.	Inability to integrate digital design and technology into business practices is likely to preclude the possibility of expanding markets.		X			
56.	It is difficult to integrate digital design and technology into my business practices to increase the profitability of my business.				X	
57.	It is necessary to make use of modern methods of networking in my business.					X

Apart from the obstacles which have been covered in the previous statements, which other obstacles have you encountered in attempting to integrate digital design and technology into your business practices?

Response: None

Which strategies can be used to facilitate the adoption of digital design and technology by entrepreneurs in Gokwe?

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
35.	An internet presence is necessary for my business to make effective use of digital design and technology.					X
36.	Reducing the cost of using the internet would result in increased use of the internet and e-commerce.					X
37.	Education concerning ICT policy would result in increased adoption of e-commerce.					X
38.	The provision of adequate ICTS infrastructure would facilitate the adoption of e-commerce.					X
39.	Acceptance of technology by the owners of business enterprises facilitates the adoption of digital design and technology because owners play a significant role in decision making.				X	
40.	Customers or suppliers have the ability to exert pressure on entrepreneurs to adopt digital design and technology.				X	
41.	The adoption of digital design and technology by competitors is likely to encourage adoption by entrepreneurs to gain a competitive advantage.				X	
42.	Financial and technological assistance from the government, through appropriate policies, would significantly increase the adoption of digital design and technology.					X
43.	Readiness for technology is an essential precondition for my business to adopt the use of digital design and technology.				X	
44.	Return on investment provides an incentive for adopting and making use of digital design and technology.					X
45.	Government policies should be amended to allow direct foreign investment.				X	
46.	Cooperation between the state and private organizations would accelerate the adoption of digital design and technology.				X	
47.	Making use of shared infrastructure would make a significant contribution to successful commerce.				X	

48.	Improvements in the security of information would help to minimize cybercrime.				X	
49.	There is a need for awareness campaigns to promote the adoption of e-commerce as an effective business practice.				X	
50.	There is a need for training in ICT skills in order to enable entrepreneurs to recognise the significance of digital technology.					X
51.	The availability of computer hardware for my business at affordable prices would help me to adopt digital design and technology.					X

The influence of digital design and technology on opportunities for obtaining funding

	STATEMENT	No importance	Some importance	Moderate importance	Very important	Extremely important
17.	Return on investment attracts funding from the government, NGOs, and civil societies.				X	
18.	Microfinance institutions play a crucial role in providing funding to entrepreneurs.				X	
19.	Banks and NGOs play a significant role in providing funding to entrepreneurs.					X
20.	Stringent requirements of financial institutions limit the likelihood of obtaining funding.					X
21.	The adoption of modern technology attracts funding from international institutions.					X
22.	The periods over which financial institutions allow loans to be repaid contribute to whether entrepreneurs are able to borrow money or not.				X	
23.	Integrating digital design into business practices would increase the likelihood of attracting funding from the international community.				X	
24.	The widespread adoption of digital design and technology contributes to the creation of an entrepreneurial ecosystem.				X	

APPENDIX H: Questions for the focus group discussion

Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

Questions

The purpose of this research is to evaluate the role that digital design and technology play in the development of entrepreneurship in Gokwe. Data was collected from entrepreneurs from several different sectors in Gokwe, and also from urban entrepreneurs in Harare, in order to perform a comparative analysis.

Main research question: What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?

1. How do your customers pay for your services or products? Have you encountered problems in either receiving payments from customers or paying your suppliers? Could you please elaborate on those two points?
2. Which types of communication media do you use to communicate with your customers? How do customers obtain information concerning your products or service? Please try to think back over the past year and recall whether or not you encountered any problems in communicating with your customers? If there were problems, could you possibly describe them?
3. How do you think that using technology could increase the success of your business? What is your opinion of the potential for technology to contribute to the development of your business?
4. What do you think is the significance of entrepreneurship in Zimbabwe? How have you contributed to the economy since you started your business?
5. From your own knowledge, experience, or research, what do you think are the main respects in which technology could contribute to the development of your business? In which respects would you like technology to contribute to the development of your business? Of all of the points which we have covered, which are the most important to you?

Sub-question 1: How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

1. How far does your market extend? Do you have customers outside of Zimbabwe? Which specific markets would you like to reach?

2. Which new entrepreneurial opportunities have you been able to identify recently? What are the entrepreneurial opportunities which are available to you at present?
 3. Which methods do you use to market your products or services? Could you please provide me with some examples? Do you encounter problems in reaching your target market?
 4. Are you aware of any essential differences between the entrepreneurial opportunities which are available to your business and those which are available to businesses in the city? Do you have any information concerning the customers of your competitors?
 5. How would you characterise your relationship with the community? Do you participate in any cooperative activities for the benefit of the community as a whole?
- Does anyone have any final thoughts concerning existing entrepreneurial opportunities and expanding markets?

Sub-question 2: To what extent do digital design and technology influence customer satisfaction?

1. Which media do you use to disseminate information? How many customers do you reach? How efficient are the methods which you use? Could you please provide some examples? Could you please characterise your post-purchase relationships with your customers?
2. How do you obtain feedback from your customers? Which methods do they use to provide you with feedback? Which communication media do you use to communicate with your customers?
3. What do you think could be done to keep your customers positively engaged?
4. What types of promotions do you offer in your business? For how long do you run them? How do you reward the loyalty of your customers?
5. For how many hours each day does your business operate? Are your customers able to make transactions with your business 24 hours a day? Do you have loyal customers who always buy your products or make use of your services?
6. Do you offer transport services to your customers? If so, how do you track your delivery vehicles?

Sub-question 3: What are the factors which inhibit entrepreneurs in Gokwe from adopting digital design and technology to increase the success of their businesses?

1. What are the main obstacles which you need to overcome in order to ensure the success of your business? Could you please provide me with some examples? Are these obstacles significantly different outside of your area?
2. Do you have any knowledge or experience concerning conducting business on digital platforms? Could you please give me some examples?
3. In which respects can technology significantly change business practices? For how long have you been an entrepreneur? Have you ever tried conducting business on digital platforms? If so, which platforms have you used? Do you have a website?
4. In which respects would you like technology to contribute to the growth and development of your business? Could you please provide me with some examples?

5. Which distribution and logistics channels do you use? How do you deliver your products to your customers? How do you keep track of deliveries?

Of all of the points which we have covered, which do you consider to be the most important? Have we overlooked anything?

Sub-question4: Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

1. What do you know about existing legislation, regulations, and policies to encourage the development of rural entrepreneurship? How does the government perceive technology-driven commerce? What is the government doing to encourage the growth of rural entrepreneurship?

2. To what extent are existing legislation, regulations, and policies implemented? How effectively are policies implemented?

3. Would you like to make any recommendations for increasing the adoption of digital design and technology by rural entrepreneurs? Which interventions could be implemented by the government to increase the use of technology-driven commerce?

4. To what extent is e-commerce used in your area? Is it used significantly more or less than in other areas?

5. What type of training have you received in digital marketing? If you have received training, could you please describe the form which it took?

6. What is the present state of digital infrastructure in your area? Are the buildings suitable for installing information technology business systems or digital equipment which provides access to the internet?

7. Who is responsible for the creation of content for your marketing and advertising material?

Sub-question 5: How do digital design and technology influence the opportunities for funding for rural entrepreneurs in Gokwe?

1. Are there any opportunities for obtaining funding for digital technology for entrepreneurial purposes in your area? Do you know of any organizations which provide funding to entrepreneurs?

2. What are the requirements of financial institutions for extending loans to entrepreneurs? Do you or other entrepreneurs whom you know meet all of the requirements? To what extent are entrepreneurs refused loans because they lack the necessary documentation?

3. Which criteria are applied to lend money to entrepreneurs? How much capital would you require if you were to consider investing in digital technology?

4. Do you have any investors at present? How did you attract investors if you have any?

5. What are the most severe obstacles which you have encountered in recent years when you have tried to obtain funding or borrow? Are these obstacles unique to your area?

6. Which forms of support does the government offer? Have you received any financial support from the government to enable you to investing digital technology? What type of

support, if any, would you need to integrate digital technology into your business practices to the fullest extent?

7. Which cooperatives or groups operate in your area? Could you provide me with examples? Have you ever been a member of a cooperative or a group and, if so, did you find these cooperatives or groups helpful?

8. What other obstacles have you encountered in obtaining funding?

Of all of the topics which we have covered, which is the most important to you?

APPENDIX I Focus group response

Project title:

The Role of Digital Design and Technology in the Development of Entrepreneurship in Gokwe, Zimbabwe

Researcher: Patience Moyo

Faculty of Informatics and Design, Cape Peninsula University of Technology

Questions

The purpose of this research is to evaluate the role that digital design and technology play in the development of entrepreneurship in Gokwe. Data was collected from entrepreneurs from several different sectors in Gokwe, and also from urban entrepreneurs in Harare, in order to perform a comparative analysis.

Main research question: What is the role which digital design and technology play in the development of entrepreneurship in Gokwe?

1. How do your customers pay for your services or products?

The payment system that we use in our business is that when we pay eeh, we use the bank transfers; we also use Ecocash and also zip it. (Crafter 7)

Have you encountered problems in either receiving payments from customers or paying your suppliers? Could you please elaborate on those two points?

When we receive payments we do encounter problems because most of our customers they do bank transfers some of them pay by visa, most of our customers. Our banking system is not as efficient as it was before we have been experiencing cash shortages, sometimes their system is offline this affects us very bad because if a client makes a transfer the process for it to reflect is affected if the system is not working. This delays a sale and delivery as well, so you could say it slows down business. We also use Ecocash payment system it has given us our own share of problems similarly to the bank, the Ecocash system sometimes when you want to make a transaction either paying your supplier or receiving money the system is down. The challenge comes when you make the transaction and either the person you sent the money to have not received the message confirmation to show that the transaction has been done. The other problem that I had forgot to mention is that the banks have set up a system where you can link your bank account to your Ecocash account. I have had a problem transferring from my bank account into my Ecocash, the bank balance highlighted that the transaction was successful but the Ecocash account did not receive any money I had to go to Ecocash the following day because my account had been blocked you know after requesting the balance a number of times because I was panicking we are talking money here. The teller at Ecocash then checked and realized that the transaction was done but their system had not updated the transaction because it was offline again. They then updated and that is when I got the message notification, this could have been avoided if

the system was a bit efficient and that day when I had a challenge with my accounts I could not buy or pay for anything it was a huge inconvenience. (Crafter 8)

2. Which types of communication media do you use to communicate with your customers?

We communicate with our customers through phones calls and whatsapp. (Crafter 6)

How do customers obtain information concerning your products or service?

We inform the about our product through sending pictures, I have a WhatsApp number that I use to upload pictures on our status. We use posters and flyers. We make phone calls a lot of them to keep our customers updated because our business the customers want to see how the product looks like before they buy it. So we do follow up after uploading picture on WhatsApp we call clients reminding them to check WhatsApp status or to ask if they saw the new product that we have. (Crafter 1)

Please try to think back over the past year and recall whether or not you encountered any problems in communicating with your customers? If there were problems, could you possibly describe them?

We have had problems of poor network due to electricity as you know in our country, we are experiencing heavy load shedding. When there is no electricity you cannot communicate efficiently, the network signal is low to the point that making a phone could be a struggle because of poor connection. We rely on phone calls when we have blackout on ZESA sometimes when we do not have connection. Buying alternative sources of power such as solar panels and generator is expensive because if you look at it as it stands these products are on high demand and as a result they are not cheap. This affects communication with clients and you might lose business because they are some customers that require responses immediately. (Crafter 5)

2. How do you think that using technology could increase the success of your business?

On that one I can say we are trying we are not very; as you know every business you have to have one member who's fully fledged on these I.T things. Personally I can say that I am aware but they is room for improvement and if it's possible I would love to be trained so I can understand about technology in our business. (Crafter3)

What is your opinion of the potential for technology to contribute to the development of your business?

It's quite important we are in the modern changes that are taking place any business has to go that way. I can give you an example in our line of business of crafts business located in Harare is operating their day to day deals online. They have a system where you view to product, select delivery dates and collection located online. In crafts image is

everything these websites are linked to their social media pages such as Facebook twitter and blogs. We also want something like this for our business; I think technology can also do the same for us if we fully implement it so we can be able to process payments online. **(Crafter3)**

4. What do you think is the significance of entrepreneurship in Zimbabwe?

*It's significance you can actually measure it when you look at employment opportunities for some of those who are here in the rural areas communities especially if you look at our own business were we are more into handcrafts so if you see a lot of entrepreneurship happening then you know you see that there is that direction of generally creating employment for the communities its quite important. Entrepreneurship if it is making profit it can contribute to the G.D.P of the country, to the start-ups it means a person can be self-sufficient he or she can be able to put food on the table in his or her home. It creates jobs thereby reducing poverty and crime in the country and lastly an entrepreneur you develop work ethic to be able to work hard the effort you put it determines what you get out. **(Crafter5)***

How have you contributed to the economy since you started your business?

*I can say the business has been contributing a lot by selling in the cities we are actually bringing in revenue and income to the group members. You realize that this business is a source of income to seventy percent of the members. We have created sustainable livelihoods if I can put it that way; members have seen their children to school up to university level. **(Crafter1)***

5. From your own knowledge, experience, or research, what do you think are the main respects in which technology could contribute to the development of your business?

*I think technology can develop our business in market expansion, I also think we can be able to use digital technology in our day to day running of the business from communication, selling and receiving payments because I feel we are a bit old fashioned in terms these modern technologies. I also think that they are things that we are not even aware of that other business people in our industry are using that we do not know and given the right information we can use them also. **(Crafter 7)***

*In which respects would you like technology to contribute to the development of your business? I think having a website that can process payments, check and track the product delivery of the product that is what we are aiming technology can develop our organization, were we can also communicate and also..... if our customers can track the progress of the product that they would have bought from us. Were we have links were customers can make payments online. We would want to have that facility because at the moment we do not have. And that's the position that we are at. We want to expand our market to neighboring countries. **(Crafter3)***

Of all of the points which we have covered, which are the most important to you?

I think with social media and also graphic designing because we have to do a lot of advertising you have to do a lot of designing. I think in graphic designing we be looking at a lot of product development like coming up with new product design, prototypes, new concepts and because if you look at handcrafts and Zimbabwe that we have got a lot of crafters in Zimbabwe but they have been producing the Zim type of product so we feel that there is need for graphic designers to come and do some bit of product ideas, product adaptation and so on. (Crafter5)

Sub-question 1: How can digital design and technology influence the identification of entrepreneurial opportunities and communication with potential markets?

1. How far does your market extend?

At the present moment we have got customers in at the Gokwe centre some are in Gweru and Bulawayo. In Bulawayo we take advantage of the ZITF that happens annually, we sell our crafts there and it is the major exhibitions that we look forward to because it attracts different types of people from all works of life as a result we acquire more customers and get a lot of revenue from this trade fair. The customers will come from all over the country for this trade fair it's actually a very big thing in Bulawayo. From the ZITF we have managed to get other customers that travel to Gokwe way after to buy our crafts for resale later, so they act as middlemen. I could say we have customers mostly in areas we have crafts centers such as Gokwe, Bika and Harare. (Crafter 1)

Do you have customers outside of Zimbabwe?

We are aiming to have more customers outside Zimbabwe we want to target the Asian market but at the moment we have customers outside the country for instance U.K the Netherlands and America. (Crafter 8)

Which specific markets would you like to reach?

We would want to reach the China, more European countries the Middle East and Africa because I think we have the potential and am confident in our products. Our products are unique the way we design our crafts is peculiar to Zim only I think this fact can work to our advantage and if we manage to penetrate the international market we can grow not only as a business but grow in terms of the revenue that we will receive. (Crafter1)

2. Which new entrepreneurial opportunities have you been able to identify recently?

Yah I can say when looking at handcrafts we there's quite a huge opportunity in terms of interior décor uuum. That is where we also look at roping in graphic designers to look at product concepts that will link up with this niche of interior décor. We are also looking at fashion. We are hoping to expand in these areas we have a plan to incorporate some of

the designs that we have on the crafts into interior décor. The idea is a good one and if we apply it we will have very beautiful afro centric interior designs that are Zimbabwean. (Crafter3)

What are the entrepreneurial opportunities which are available to you at present?

The entrepreneurial opportunities that we have right now are just crafts that we sell locally. Normally these are sometimes in exhibitions such as the ZITF in Bulawayo and the Harare Agricultural Show that's where we get to make our sales as well. We specialize in crafts and these are use for decoration purposes for instance you can decorate your house using the crafts as ornaments just to mention a few. (Crafter 5)

3. Which methods do you use to market your products or services? Could you please provide me with some examples?

That is through WhatsApp status and we print hardcopies of flyers as well and distribute them. We utilize agricultural shows that are held in nearby towns whenever there is one we go and exhibit our products. We have experienced huge sales from them and more customers. We make phone calls as well I do not know if that counts as marketing but we make use of calls a lot. The problem with these exhibitions is that they do not happen frequently. (Crafter 8)

Do you encounter problems in reaching your target market?

We are aiming to reach the more international market and also Southern African region even African as a whole. The major reason I think affect our business is the way we market our business, it is a bit old, we have not been able to fully implement modern ways of marketing. It is then very difficult to reach the regional and the international market that we want to tap into. I think if we can embrace modern ways of marketing we will have less problems of communicating with our clients. At the moment we have a lot of challenges communication wise. (Crafter 1)

4. Are you aware of any essential differences between the entrepreneurial opportunities which are available to your business and those which are available to businesses in the city?

They are different because if you look at Zimbabwe and other SADC countries you find that in Zimbabwe this handcraft industry I can say it's not well developed because it has been lacking support. It's only when we got into independence that the government realized this sector is quite a lot opportunities for communities. That is when they had to come up with this kind of business. You get that in countries like Ghana, Kenya and those countries started long back their government were in full support and that industry has actually grown quite huge. Answering your question now, the opportunities are different those located in Harare have access to sell to tourist that visit the country I know they are hotels in Harare where crafts are displayed and sold. Business based in the city is close to better market. It is difficult for a person based in Gokwe to sell to a

tourist in Harare even if the tourist sees my flyer the chances of them buying are slim because I would have to travel to make the sell. So I am more at a disadvantaged compared to competitor who is twenty or thirty minutes away. For us crafters based here in Gokwe products yes they go and get sold in Harare by our representative but other members who do crafts based in the city are at a better position to sell unlike us who wait for customers to come to us that is in a case of the products that we sell locally. (Crafter3)

Do you have any information concerning the customers of your competitors?

We do try getting information about our competitors' customers. For example pricing, quality of their crafts, how different their crafts or products are, if so how we can also try and beat them to the game and improve on our clientele. (Crafter 5)

5. How would you characterise your relationship with the community? Do you participate in any cooperative activities for the benefit of the community as a whole?

Uuum we are not involved in anything that is aimed to help the community. (Crafter 8)

Does anyone have any final thoughts concerning existing entrepreneurial opportunities and expanding markets? No (Crafter 8)

Sub-question 2: To what extent do digital design and technology influence customer satisfaction?

1. Which media do you use to disseminate information?

Mostly at the present moment its printed flyers and brochure or any marketing material that we have at that given time we print on paper and also we make phone calls and utilize WhatsApp statuses. (Crafter1)

How many customers do you reach? How efficient are the methods which you use? Could you please provide some examples?

At the present moment I can't really put a number because I have not checked the number but we use WhatsApp status is very efficient. (Crafter 6)

Could you please characterise your post-purchase relationships with your customers?

When we sell our crafts we always follow up we have to make sure we keep tracks of the product when it's being delivered and we assist the customer to be updated and when they receive we also make a follow up to get their comments about the quality and the service. (Crafter5)

2. How do you obtain feedback from your customers? Which methods do they use to provide you with feedback? Which communication media do you use to communicate with your customers?

We get our feedback via phone calls and messages and sometimes if customers comes back to buy more we know that is positive feedback. (Crafter3)

3. What do you think could be done to keep your customers positively engaged?

Information, providing information because when customers buy, of course they buy the product but they also need a lot more information and the production site especially if you look at handicrafts, they buy handicrafts not only that they like the product but they also look at where is it coming from, and where it is coming from that community it's a way of supporting the communities. (Crafter 7)

4. What types of promotions do you offer in your business? For how long do you run them?

At the present moment I can say from last year we have not been doing a lot of promotions. (Crafter 8)

How do you reward the loyalty of your customers?

We do have some discounts here and there and also to make sure that we have to upgrade our quality. (Crafter 8)

5. For how many hours each day does your business operate?

We open at nine up to five. (Crafter1)

Are your customers able to make transactions with your business 24 hours a day?

Selling we cannot we can only do it during working hours. (Crafter 6)

Do you have loyal customers who always buy your products or make use of your services?

Yes we do we have loyal customers that come to buy our crafts most of them they buy in bulk that is for resale purposes. (Crafter 8)

6. Do you offer transport services to your customers? If so, how do you track your delivery vehicles?

Yes we do, if we are doing here most of the time it's via post office and we deliver using our truck and when we make these deliveries we get to interact with customers we get feedback from them as well. (Crafter 3)

Sub-question 3: What are the factors which inhibit entrepreneurs in Gokwe from adopting digital design and technology to increase the success of their businesses?

1. What are the main obstacles which you need to overcome in order to ensure the success of your business? Could you please provide me with some examples?

Yah challenges that is in skills, digital skills we need to be trained and I mean extensive training for this to be successful. (Crafter1)

Are these obstacles significantly different outside of your area?

I don't think so, I think the challenges are fairly the same. (Crafter5)

2. Do you have any knowledge or experience concerning conducting business on digital platforms? Could you please give me some examples?

No not much. I have little knowledge yah. This is why we said we definitely need professionals to help in areas such as Graphic Design and Information Technology. (Crafter3)

3. In which respects can technology significantly change business practices?

Technology can bring visibility because once you get more of that digital social media you are visible, greater market expansion and more revenue. (Crafter 8)

For how long have you been an entrepreneur?

I think it's about twenty-seven year's hehehe. (Crafter 8)

Have you ever tried conducting business on digital platforms? If so, which platforms have you used?

Yes I have but it has just been uploading poster to advertising not to the point of selling something online. (Crafter 6)

Do you have a website?

No. But it is part of our business plan to have a website it will help my business to have online presence. (Crafter6)

4. In which respects would you like technology to contribute to the growth and development of your business? Could you please provide me with some examples?

I think it's more to do with product development, advertising, and marketing and before I forget payment system. I think the government have come in as well and help with cyber security policies to avoid cases of fraud. (Crafter3)

5. Which distribution and logistics channels do you use? How do you deliver your products to your customers?

We deliver by car, I have a truck that we use and it is safe to do these delivery personally or send someone a driver you can trust just to avoid unnecessary problems. (Crafter 5)

How do you keep track of deliveries?

There is no been need for follow up or anything if I can put it that way but I have been involved in the physical distribution of here I think most if not all of the time. Or the driver does the deliveries. (Crafter6)

Of all of the points which we have covered, which do you consider to be the most important?

I think introducing technology in marketing our business is very important. (Crafter5)

Have we overlooked anything?

Not that I can think of (Crafter6)

Sub-question 4: Which strategies could be formulated and implemented to promote the adoption of digital design and technology by rural entrepreneurs in Gokwe?

1. What do you know about existing legislation, regulations, and policies to encourage the development of rural entrepreneurship?

Umm those I am not very familiar with those. I do not know of any laws that are there for the enhancement of entrepreneurship in rural areas but I will ask around and research on it because I could be missing out of something that might benefit my business. (Crafter 8)

How does the government perceive technology-driven commerce?

Yah it's in full support. It's actually moving in that direction to encourage organizations to be I.T progressive. The government is encourage business to tap into the idea of taking the business digital because as you know the government also benefits if the small to medium enterprises grow, thus the growth of the S.M.E's is the growth of the revenue of the government as well. (Crafter1)

What is the government doing to encourage the growth of rural entrepreneurship?

It's in full support because right now the ministry is actually moving in to assist to get some consultancy to I.T and all other areas of digital marketing. The program has not started as yet but it is in the pipeline. We are not aware of the way they are going to go about the program but we are hoping it will include entrepreneurs in the rural areas as because we do not want to be left out. But like I said the program has not started and we wait to hear when it takes off from the ground. (Crafter 7)

2. To what extent are existing legislation, regulations, and policies implemented?

I do not know because I am not aware of any policies or laws that are there for the development of entrepreneurship. I think we need to ask around about these laws as rural entrepreneurs and like you asked how they are being implemented. (Crafter5)

How effectively are policies implemented?

Eish....I am not aware of the effectiveness of these policies. (Crafter3)

3. Would you like to make any recommendations for increasing the adoption of digital design and technology by rural entrepreneurs?

I think in the urban areas people are a bit aware but when looking in our field of business handcrafts when you move into the rural areas there's quite a lot that can be done. I think you have to rob in the stake holders there like the councils, the rural councils to also help in creating awareness to those entrepreneurs who are doing businesses to move towards using technology. I also think that educational awareness about digital technology and conducting business online is of paramount significance to rural entrepreneurs. (Crafter 8)

Which interventions could be implemented by the government to increase the use of technology-driven commerce?

I think it has to come up with a program and it has to be through a combination of all the ministries that deal with the rural communities and also in the urban areas. Educating the rural entrepreneur about technology driven commerce, access to cheaper and affordable electronic gadgets will help. (Crafter1)

4. To what extent is e-commerce used in your area? Is it used significantly more or less than in other areas?

In fact on that one we need to improve especially in the rural area because our business is based there. We would want help in terms of digital technology that is I.T and hardware and software. At the moment e-commerce is non-existent in our business of handcrafts and it is a different case for craftsmen based in Harare. (Crafter6)

5. What type of training have you received in digital marketing? If you have received training, could you please describe the form which it took?

Not much but I am willing to attend training if its provided to me because I know this will change the way I do my business in a positive manner. I can get more markets and this means more business for me. (Crafter3)

6. What is the present state of digital infrastructure in your area? Are the buildings suitable for installing information technology business systems or digital equipment which provides access to the internet?

Like here it is here in Gokwe, in Binga at the centre had been recently renovated, I think here and Binga. The one in Matebeleland it needs to be I.T friendly. But there is always room for improvement if the government approaches us and say they want to help improve we will gladly agree because improvement is better. (Crafter 8)

7. Who is responsible for the creation of content for your marketing and advertising material?

At the present moment I am I do all the content creation even if am not an expert. (Crafter1)

Sub-question 5: How do digital design and technology influence the opportunities for funding for rural entrepreneurs in Gokwe?

1. Are there any opportunities for obtaining funding for digital technology for entrepreneurial purposes in your area?

That area we are facing quite a big challenge because there is no funding so in fact we have been as it is now this business was supported by the Ministry of Rockmans Affairs Committee and of recent we have actually we have been moved again back into that ministry so that it can be able to access some of the funds that will also help into addressing that. (Crafter6)

Do you know of any organizations which provide funding to entrepreneurs?

Yah in fact this is why the government has decided to sort of move this business and other similar businesses back into the ministry as a department so that it can be able to access some funds to do some development work in the rural areas. As it is now the government has managed to resuscitate Binga craft centre which is a community craft centre in Binga. It also went through a very bad patch. So they came in there to assist them to resuscitate the whole thing and now it's back on track and we have also done Masvingo next to Great Zimbabwe there. There is a crafts centre there so it has also been upgraded. Here in Gokwe we have managed to upgrade the crafts centre also through the assistance of the Ministry of Women Affairs and Community Development. (Crafter1)

2. What are the requirements of financial institutions for extending loans to entrepreneurs?

They always ask for collateral hehehe, they always want collateral. (Crafter3)

Do you or other entrepreneurs whom you know meet all of the requirements?

At the present moment no we do not have all the requirements. (Crafter 6)

To what extent are entrepreneurs refused loans because they lack the necessary documentation?

Uuum from what I know we entrepreneurs have not been getting funding except from N.G.O's like it's called what, there is another N.G.O which used to do a bit of funding to entrepreneurs and of course ministry of S.M.E's they also have been coming very handy towards to assist and recently I think these entrepreneurs will be getting assistance because the government is actually formed this women's bank have you heard about it. Its Zimbabwe Women's Bank something like that. (Crafter5)

3. Which criteria are applied to lend money to entrepreneurs?

They look at the business proposal that you would have submitted yah and how feasible it is and how looking at the opportunities of success and the like. (Crafter1)

How much capital would you require if you were to consider investing in digital technology?

Now to come up with a figure because of the changes that has been happening here in terms of money am not sure but last time we did try to do that but that was when we were still using the U.S. Dollar, I think it came to something like, it was nearly four thousand or so. (Crafter 8)

4. Do you have any investors at present?

We have the government as our investor. (Crafter3)

How did you attract investors if you have any?

At the present moment we do not have that, we do not have any investors except for the government. (Crafter6)

5. What are the most severe obstacles which you have encountered in recent years when you have tried to obtain funding or borrow?

Collateral is our biggest challenge. (Crafter 6)

Are these obstacles unique to your area?

Not really the biggest challenge we have is that the economy is not doing very well. It hasn't been doing well for a very long time. As a result, getting funding either you are in the city of or located in the rural area is very difficult. The reason is that the money is not available to be allocated to help entrepreneurs. They are other bigger priorities such as putting food on the table and surviving the economic conditions and that is what the government is concerned with as we speak. (Crafter 7)

6. Which forms of support does the government offer?

At the present moment they offer facilities in terms of advertising the crafts business internationally in embassies and they also when it comes to exhibitions, they also support the business. Yah it is mainly advertising Zimbabwe crafts in various embassies. (Crafter1)

Have you received any financial support from the government to enable you to investing digital technology?

No. (Crafter3)

What type of support, if any, would you need to integrate digital technology into your business practices to the fullest extent?

I think that the equipment yah and also consultancy. We computers, laptops and other electronic gadgets that is modern. If the government can get us those at affordable prices so that everyone can buy we would really appreciate that. We need to be educated about doing business on the digital platform, how it works and how to do it because we might take that for granted but without proper training we will not be able to run the business using modern technologies. (Crafter 7)

7. Which cooperatives or groups operate in your area? Could you provide me with examples? Have you ever been a member of a cooperative or a group and, if so, did you find these cooperatives or groups helpful?

We got I think about four, we have got another one we are working with here in Gokwe Chimanimani, there's another one I think I mentioned in Masvingo and there's also Binga craft centre. And we also have assorted groups in Binga and Matebeland South. Those are the cooperatives I know and they are very helpful because you are always up to date on the news in the crafts industry. (Crafter5)

8. What other obstacles have you encountered in obtaining funding?

Sometime back we used to get some funding from N.G.O's like Unifem when it comes to community development programs they would chip in and also UNICEF. I cannot think of any other challenge in regards to funding except for collateral. (Crafter6)

*Of all of the topics which we have covered, which is the most important to you?
Funding (Crafter6)*

APPENDIX J: Ethical clearance certificate



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Office of the Research Ethics Committee	Faculty of Informatics and Design
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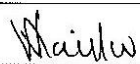
25 October 2018

The Faculty Research Ethics Committee hereby grants ethics clearance to Ms Patience Moyo, student number 216175844, for research activities related to the MTech in Graphic Design at the Faculty of Informatics and Design.

Title of thesis:	The role of digital design and technology in the development of entrepreneurship in Gokwe, Zimbabwe
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Comments:

Research activities are restricted to those detailed in the research proposal. Formal consent from the participants to conduct this research will need to be obtained before proceeding.

 Signed: Faculty Research Ethics Committee	25/10/18 Date
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APPENDIX K: Consent form granting permission to collect data in Gokwe



195 Gokwe Rural District Council
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jameson01@gmail.com

Att: Dr Robertson Tengeh
Date: 16 November 2018
Cape Peninsula University of Technology

I Mr Mlanga Jameson in my capacity as councilor of Gokwe Rural District Council of Zimbabwe give consent in principle to allow Patience Moyo 216175844 a student at the Cape Peninsula University of Technology, to collect data in my area as part of her M Tech degree in Graphic Design with the following research title " The role of digital design and technology in the development of entrepreneurship in Gokwe Zimbabwe" The student has explained to me the nature of her research and the nature of the data to be collected.

This consent in no way commits any individual staff member to participate in the research, and it is expected that the student will get explicit consent from any participants. I reserve the right to withdraw this permission at some future time.

In addition, the company's name may or may not be used as indicated below. (Tick as appropriate.)

	Thesis	Conference paper	Journal article	Research poster
Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>


Mlanga Jameson

Name

16 November 2018
Date

APPENDIX L: Editorial letter

The Editor Editorial Services

(043) 726-4829

gailfrank@nahoonreef.co.za



11 - 11 - 2020

TO WHOM IT MAY CONCERN

This is to certify that the thesis titled "THE ROLE OF DIGITAL DESIGN AND TECHNOLOGY IN THE DEVELOPMENT OF ENTREPRENEURSHIP IN GOKWE, ZIMBABWE" by Patience Zenzile Moyo has been edited by David Masters.

As English is not the first language of the candidate, a great deal of rephrasing has been required in order to give the writing the precision and the formal tone which should characterise an academic document. Although I have not contributed to the content of the text, the changes which have been made have been made at my discretion. Consequently, any discussions concerning the suitability of any of the phrasing should be referred to me and not to the candidate.

Should anyone wish to discuss or clarify any points of grammar, I may be contacted by e-mail at gailfrank@nahoonreef.co.za and my telephone number at home is (043) 726 4829

Yours sincerely,

David Masters