Cape Peninsula
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ADOPTION OF CLOUD COMPUTING SERVICES AMONGST THE MICRO-ENTERPRISE SECTOR IN CAPE TOWN

by

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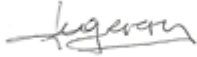

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DECLARATION

I, Albin Boris Lugerero Chiza, declare that "Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town" represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

7 November 2018

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Signed   **Date**

ABSTRACT

Micro-enterprises play a vital role towards the South Africa's economic growth by contributing towards job creation. Despite the importance of the role of micro-enterprises, micro-enterprises face several challenges such as lack of finance, lack of skilled workers and lack of technological resources. Previous studies indicate that Information Technology has a distinct role in assisting micro-enterprises overcome several challenges. It is further evidenced in the extant literature that cloud computing, provides a low cost entry for enterprises to support several facets of their business operations. In the current era cloud computing requires a constant as well as fast internet connection and the South African government has various interventions to address the infrastructure divide. However, we have a scant understanding of the adoption challenges amongst micro-enterprises to adopt cloud solutions, which to date feature more prominently amongst larger organisations.

This research investigated the factors that influence cloud computing adoption in the micro-enterprise sector in Cape Town. This is a city that promotes the contribution of micro-enterprises to their economic activity, and was such an ideal location to investigate cloud computing adoption amongst the micro-enterprise sector. This research provides a rich understanding of the factors that influence micro-enterprises in Cape Town to adopt cloud computing services and proposes guidelines to encourage micro-enterprises in Cape Town to use cloud services to improve their productivity. The researcher uses the UTAUT model as a framework and a qualitative research methodology to investigate the research question. Data for this research study was collected via face to face interviews with semi-structured questions of ten micro-enterprises and an IT expert. The findings showed that the factors influencing the adoption of cloud computing services are performance expectancy, effort expectancy, social influence, facilitating conditions, lack of training, cost efficiency and reduction of working hours.

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DEDICATION

I dedicate this thesis to my parents, brothers and sisters

Table of Contents

LIST OF FIGURES

LIST OF TABLES

APPENDICES

GLOSSARY

Acronyms	Definitions
ASGISA	Accelerated and Shared Growth Initiative of South Africa
CRM	Customer relationship management
EE	Effort Expectance
GDP	Gross Domestic Product
IaaS	Infrastructure as a service
ICT	Information and Communication Technology
IDT	Innovation Diffusion Theory
IT	Information Technology
Ne-SDI	National e-Skills Dialogue Initiative
PaaS	Platform as a service
PC	Personal Computers
PEOU	Perceived ease of use
PU	Perceived usefulness
SaaS	Software as a service
SAMAF	South Africa Micro- Finance Apex Fund
SCT	Social Cognitive Theory
SI	Social Influence
SLAs	Service Level Agreements
SLA	Sustainable Livelihood Approach
SMMEs	Small, Medium and Micro-enterprises
TAM	Technology Acceptance Model
TOE	Technology-Organisation-Environment
TPB	Theory of planned behaviour
UB	Use Behaviour
UTAUT	Unified theory of acceptance and use of technology

CHAPTER ONE

INTRODUCTION

1.1 Background to the problem

Small, medium and micro-enterprises (SMMEs) are businesses owned by one or more individuals, which can play a role in creating jobs and contributing to the economic growth in South Africa (South Africa, 2017). South African government understands the contribution of SMMEs to the economy, as SMME employers account for 14% of the total employment and contribute 42% to the gross domestic product (South Africa, 2017). The National Development Plan projected that by 2030, 90% of the jobs generated will come from SMMEs (Marrian, 2014). The government of South Africa, in creating a small business ministry to impact positively on unemployment and poverty in South Africa, has appointed a new minister of Small Business Development.

According to Wolcott, Kamal and Qureshi (2008), a micro-enterprise is a business with five or fewer employees which may be a home-based, farm-based or street front business that can function on a full or part time basis. Micro-enterprises, employing no more than five employees, contribute to economic growth by providing employment opportunities, most of which are opportunities for working closely with consumers; however, they struggle to meet consumer needs for one of several reasons: lack of knowledge, skills, planning, funds or innovation (Mariah Brown, n.d). The government understands the importance of developing the micro-enterprise sector and supporting the sector in training or mentoring because growing the micro-enterprise sector will boost a nation to defeat poverty, unemployment and inequality (Iolbusinessreport, 2014). Poor infrastructure, such as Information and Communication Technology (ICT), is a barrier to micro-enterprise growth. With better access to affordable technology, micro-enterprises will be able to fulfil their customer needs and save time while performing their tasks.

The underlying issues of the research reported on in this study concern the adoption of Information Technology in the micro-enterprise sector. Studies have shown that Information Technology (IT) can allow micro-enterprises to compete with large companies, to avoid high labour and productions costs, and to increase the quality of their products or services (Corso, Martini, Pellegrini & Palolucci, 2003; Levy, Powell & Yetton, 2001; Nguyen *et al.*, 2007; Premkumar, 2003). However, it has been established that in spite of the exponential increase in access of Information Technology (IT) to the micro-enterprise sector, the rate of IT adoption by micro-enterprises has remained quite low (Ghobakhloo, Hong, Sabouri & Zulkifli, 2012). Southern and Tilley (2000)

suggest that the rate of IT adoption by micro-enterprises is low because managers are uncertain about the opportunities that IT offers. Levy, Powell and Yetton (2001) add that Information Technology implementation in micro-enterprises regularly happens without correct planning; as a result, the percentage of successful adoptions is low. Modimogale and Kroeze (2011) point out that the lack of ICT infrastructure make the access to information difficult in South Africa. They add that it is vital, though, for micro-enterprises to use ICT within their organisation because ICT can be beneficial for micro-enterprises and fulfil their strategic, operational or marketing needs.

In this current era in which Information Technology is ubiquitous and pervasive, cloud computing has been at the forefront of ICT discourse. Kim (2009:1) defines *cloud computing* as "being able to find files, data, programs and have access to services via the internet provided by a cloud provider and paying only for cloud computing services used". Studies show that computer software can be an expensive resource for organisation. According to Abdulaziz (2012:235), companies using cloud computing, however, are not required to have software packages for every computer in the company because employees can use software from the cloud and this drives to lower software costs.

Pienaar (2012) adds that cloud computing can be beneficial to micro-enterprises with no available financial or human resources to invest in IT, in that they can now compete directly with big businesses because enterprise solutions are presently more affordable and more widely available than ever before.

Sharum *et al.* (2013) suggest that micro-enterprises have little knowledge or interest in cloud computing because they hire more generalists than specialists who can promote innovation or create competitive advantage: they do not trust security in the cloud and they do not have Internet access. According to a research study released by the World Wide Worx late in 2013, only 50% of South African SMMEs are using cloud computing services (Bizcommunity, 2014).

Goldstuck (n.d) states that the level of Internet penetration is caused by the use of cell phones and South Africa is fifth in terms of Internet users in Africa behind Nigeria, Egypt, Morocco and Kenya. Goldstuck (n.d) suggests that SMMEs and entrepreneurs should make use of the Internet by having an online presence with a website, by adopting and investing in new technology such as cloud computing. The South African government argues that improving Internet penetration and the use of Internet by citizens and businesses will result in a strengthened economy (Department of Communications, 2013). The Department of Communications (2013) of South Africa indicates that the broadband plan of South Africa in 2013 provided an outline of the government strategy to fast-track that and while the efforts were meant at improving Internet infrastructure, many areas of this infrastructure still need our attention, especially in rural areas.

According to a 2011 study in South Africa conducted by the BMI-TechKnowledge Group, fixed as well as fixed wireless broadband penetration is estimated at 2%, with results furthermore showing that 64.8% of households in the country have no access to the Internet; 16.3% of households had access to the Internet via mobiles; 8.6% from home; 4.7% from work; and 5.6% from elsewhere (Department of Communications, 2013). In the Western Cape, the provincial government is at an advanced stage of planning to deliver a provincial broadband network. Based on a study called 'Western Cape Digital Readiness Assessment 2015', Alfreds (2016) posits that 93.8% of the residents in the province have access the Internet via mobile phone, as compared to a national average of 70.8%. Moreover, 38% of Western Cape households have a computer with Asymmetric Digital Subscriber Line Internet access as compared to the national average of 22%.

Hinde and Van Belle (2012) posit that micro-enterprises are a key part of most developing economies and hence a unique sub-set of the SMME sector that need to be supported more substantively to grow the economy. In South Africa, as micro-enterprises contribute to job creation, cloud computing aid micro-enterprises in cost savings for their business operations, to compete with large companies and to contribute more to the growth of the South African economy.

1.2   Problem statement

In view of the foregoing, the research problem for the proposed research is as follows: as cloud computing adoption by micro-enterprises in South Africa remains slow, the sector has not yet been successful in realising the advantages and benefits of this technology.

1.3   Research question, sub-questions and objectives

The formulated research question is expanded into four research sub-questions, summarised in Table 1.1. The research methods and objectives of the respective research sub-questions are also provided.

Table 1.1: Research question, sub-questions and objectives

Research question	What are the factors influencing the adoption of cloud computing in the micro-enterprise sector?	
What is the state of cloud computing in South Africa?	Analysis of reports and white papers on industry	Determine the state of cloud computing in South Africa in general

What are the levels of awareness of cloud computing? **What factors promote or inhibit technology adoption in general, and specifically with regard to cloud computing?**	Interviews, and qualitative data analysis	Investigate the levels of awareness of cloud computing and identify the factors that promote or inhibit technology as well as cloud computing adoption
What recommendations can be made to improve adoption of cloud computing by micro-enterprises in Cape Town?	Interpretation of findings	To make recommendations based on the findings with regards to the improvement of cloud computing adoption rates by micro-enterprises in Cape Town

The above questions relate to the empirical investigation. In order to answer these research questions, a detailed literature review was undertaken. The specific questions and objectives of the literature review are as follows in Table 1.2:

Table 1.2: Literature review questions and objectives

Literature review questions	Objectives of review
What is cloud computing? **Why is cloud computing relevant to micro-enterprise sector?**	To understand the importance of micro-enterprises in Cape Town using cloud computing in order to keep the edge over competitors
Could technology and cloud computing adoption be implemented in the micro-enterprise sector?	To determine the concerns about technology and cloud computing adoption
What are the relevant theories, models and frameworks which are relevant to the study of cloud computing adoption? **Which of these are suitable for investigating the main research question?**	To identify various models theories that have been used to study adoption of cloud computing To derive a suitable theoretical framework for the empirical study

1.4 Research design

Creswell (2009:4-5) describes *research design* as the blueprint to conduct research, including the intersection of philosophical strategies of inquiry and specific methods.

There are two types of designs approaches: qualitative and quantitative research. The combination of both approaches is called a *mixed mode approach*.

Qualitative research

According to Remenyi, Williams, Money and Swartz (1998), *qualitative research* is a research that is not based on numbers but based on evidence, which is why statistics is not preferable for qualitative research.

Quantitative research

Creswell (2009) proposes that *quantitative research* is a means for collecting data which are numbered and converted using statistics. Considering the two approaches, the qualitative approach was selected for this study.

According to Hoepfl (1997), qualitative methods can be used in situations where variables are first identified and then tested quantitatively at a later stage. A qualitative approach in this study provides an avenue to best understand cloud computing adoption issues in the natural setting of the selected businesses and analyse rich data to understand the factors affecting the adoption of cloud computing by micro-enterprises in Cape Town, to find out the level of awareness of owners of micro-enterprises in Cape Town regarding new technology, to generate a plausible guideline as well as to make recommendations for improving the uptake of cloud computing services amongst the micro-enterprises in Cape Town.

The research was conducted as follows:

Interviews

The researcher has conducted face-to-face interviews with semi-structured questions with owners and employees of micro-enterprises as well as an IT expert. According to Creswell (2009), *interviews* include unstructured and generally open-ended questions used to elicit perspectives, views and opinions from participants. Creswell (2009) confirms that these interviews can be used for an exploratory type of study because the person conducting the research can readjust the questions as necessary. The purpose of interviews is to get an in-depth view on cloud computing adoption within the micro-enterprises in Cape Town and to determine the level of awareness and understanding of cloud computing within these Cape Town micro-enterprises. The interviews were framed using UTAUT constructs to influence the design of the questions. A total of ten micro-enterprises and one IT expert in Cape Town were interviewed. The interviews were curtailed at the point at which saturation was achieved, meaning that the ability to obtain additional information had been reached (Fusch & Ness, 2015). It was found that no new codes in the data were being

revealed after the eight interviews. Ten micro-enterprises, which employ no more than five employees in various sectors – finance, tourism, healthcare, retail, communication and transport – were purposively selected for collecting qualitative data regarding their understanding and experience of the phenomena under study. A Digital Marketing Manager in a company that operates in an IT sector was also selected based on his expertise with cloud computing. This particular company in the IT sector, with forty-five employees, makes use of cloud computing. The ten micro-enterprises in the financial, tourism, healthcare, retail, communication and transport sectors are micro-enterprises with no more than five employees but which *do not* make use of cloud computing. The reason for selecting micro-enterprises from the various sectors (financial, tourism, healthcare, retail, communication, Information technology and transport) is because a South African SMME survey conducted by World Wide Worx shows that the IT and communication sectors are sectors with high cloud computing adoption percentages, while the tourism, retail, healthcare and transport sectors are, by contrast, sectors with low cloud computing adoption percentages (McConnachie, 2012). After analyzing each micro-enterprise in each of the sectors, the outcome was the same. They were all similar in terms of facing difficulties adopting cloud computing services due to shortage of resources, shortage of IT specialists, lack of interest or a general lack of knowledge from micro-enterprise owners towards the cloud system. Therefore, there was no need to select more micro-enterprises above these ten.

Micro-enterprises, in particular enterprises employing five or fewer employees, as well as an IT expert in Cape Town, comprised the units of analysis for this study.

1.4.1   Sampling and research participants

Polit and Beck (2004:729) refer to *purposive sampling* as "a non-probability sampling" technique which decides on individuals that will participate in the research who will not only be knowledgeable but will also provide helpful information.

This study used purposive sampling to find participants for this study. Therefore, micro-enterprises in Cape Town were selected as units of analysis.

1.4.2   Data analysis

Data were sourced through interviews, documents and literature findings. After data has been consolidated, it was summarised to understandable texts. According to Miles and Huberman (1994), data analysis is associated with the following components: data reduction, data display and conclusion drawing or verification.

Data reduction

Miles and Huberman (1994) define *data reduction* as processing and converting the data that appears in written field notes or transcripts.

Data display

Miles and Huberman (1994) describe *data display* as information that has been organised and compressed and that permits conclusion and action.

Conclusion drawing and verification

Miles and Huberman (1994) posit that *conclusion drawing and verification* is a phase where the person conducting the research realises the meaning of the data obtained.

1.5   Delineation of the research

The research will focus on a sample of such micro-enterprises in Cape Town given this geographical location is in close proximity to the researcher. This may have an indication of the generalisability of the study but this is discussed further in the final chapter.

1.6   Managing research ethical issues

Research ethics can be defined as set of values that researchers should follow when interacting with research participants to ensure their behaviours are acceptable (Resnik, 2015).

Some of the common ethical issues related to research, as indicated in the Faculty of Informatics and Design ethics checklist (Cape Peninsula University of Technology, n.d), are as follows:

- participants who are not capable of giving informed consent;

- co-operation of a gatekeeper for access to research participants;

- participants involved in the research without providing any agreement;

- discussion of sensitive topics with research participants and use of invasive, intrusive, or potentially harmful procedures in the study;

- testing on sentient subjects and the use of financial inducements to garner participant cooperation; and

- involvement of materials or processes in the research damaging to the environment.

None of the above is pertinent to this study. However, the issue of informed consent of research participants is relevant to this study. The researcher obtained informed consent from each research participant for this research study (The Ohio State University, n.d). In this research study, informed consent was obtained by offering the research participant an opportunity to consider whether or not to participate in the research and minimizing the possibility of undue influence (Johns Hopkins Medicine, n.d).

1.7   Contribution of the research

Many studies related to technology adoption in SMMEs have been conducted, but fewer studies relating to cloud computing adoption in the micro-enterprise sector have been done. This research will contribute to that body of knowledge by identifying the factors that influence micro-enterprises in Cape Town when considering to adopt cloud computing. In addition, it will provide guidelines to encourage micro-enterprises in Cape Town to use cloud computing. Vendors can use the outcomes of this research to meet the high demands of micro-enterprises increase awareness of cloud computing by conducting a presentation to Cape Town micro-enterprises presenting benefits of cloud computing and explaining how to use cloud computing.

1.8   Overview of chapters

1.8.1 Chapter One: Introduction

Chapter One provides an overview of the research. It also provides details of the research problem, the research question, the research sub-questions, the research objectives, the literature review questions, the literature review objectives, the research design, research ethical issues, and the contributions of the research.

1.8.2 Chapter Two: Literature Review

Chapter Two presents a literature review of the key concepts of this research. An overview of cloud computing in South Africa and the challenges of cloud computing adoption in micro-enterprises are discussed within the chapter. The chapter also explores the various theories and technological models underpinning cloud computing adoption.

1.8.3 Chapter Three: Research Methodology and Design

Chapter Three, focusing on the research methods, sampling techniques and data collection instruments, discusses qualitative research and details why a qualitative approach was used to

obtain data to understand the factors that influence the adoption of cloud computing by micro-enterprises in Cape Town. Furthermore, it also discusses how face-to-face interviews with semi-structured questions were conducted with the use of UTAUT constructs to influence the design of the interview questions, and how the Atlas.ti software tool was used to facilitate qualitative data analysis. Lastly, the research discusses how ethical clearance was obtained to conduct this research study.

1.8.4 Chapter Four: Research Findings and Discussion

Chapter Four reports the findings based on the interview analysis concerning adoption of cloud computing by micro-enterprises in Cape Town. The findings of the results from the interviews provide responses to the research question with key constructs of the UTAUT model as framework.

1.8.5 Chapter Five: Recommendations and Conclusions

The research objective, research problem and research questions are addressed within the chapter. Then, Chapter Five provides recommendations based on the findings with regards to the improvement of cloud computing adoption rates by micro-enterprises in Cape Town. Additionally, the chapter examines the limitations of the research and the research contribution, thereby proving guidance for future research.

1.9   Conclusion

The chapter presents a background of the research study undertaken and highlights the background of the research problem, the research question, the research sub-questions as well as research objectives. The chapter discusses the delineation and contribution of the research study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a literature review of key concepts and background to this research study. Firstly, the researcher discusses the overview of the SMMEs (2.2). This is followed by an examination of the current state of SMMEs in South Africa (2.3). Following this is an analysis concerning the role of ICT in SMMEs and an overview of cloud computing globally and in South Africa (2.4 to 2.6). Finally, the researcher discusses the challenges of cloud computing adoption in micro-enterprises (2.7); Information and Communication Technologies adoption (2.8); cloud computing adoption (2.9); theories, framework and models underpinning technology adoption (2.10.); and lastly, the proposed model for the research (2.11).

2.2 Overview of the small, medium and micro-enterprises

SMMEs contribute to over 90% of African business operations and 50% of African employment as well as Gross Domestic Product (Ramukumba, 2014). In many SMMEs, either one person or a small team of employees is in charge of running the activities within the organisation, which can be a disadvantage because many activities are poorly managed, as SMMEs do not have managerial resources or functional specialists. Simultaneously, this can also be an advantage because there are few coordination issues as there is regular face-to-face interaction, engendering numerous opportunities for communication between members of the management team (Jones & Tiley, 2003:17). According to Schlenker and Crocker (2003), as 70% of SMMEs are more worried about quality of life issues than stock value, the purpose of these firms is to produce an income for their owners. Burns (2001:9) suggests that SMMEs do not have the resources to use expensive advertising and promotion campaigns in their businesses, so instead the manager puts extensive effort into developing relationships with customers, investing time rather than money. However, Schlenker and Crocker (2003) explain that often the management team does not share knowledge or experience with employees and decisions are made by the owner based on instinct instead of analysis of data collected by the business.

Schwarze (2008) states that micro-enterprises can be classified into businesses in which there is only one owner and no employees and those that employ between one and four people over and above the entrepreneur. Micro-enterprises are major contributors for employment creation,

increasing professional abilities, procuring basic resources to rural areas, or in other words, they are vital for basic household economic survival (Kamal, 2011). Kamal (2011) also reports that micro-enterprises are different from large businesses by explaining that micro-enterprises use traditional technologies such as email, web and simple accounting packages as opposed to larger firms using more complex applications such as CRM.

2.3   Small, medium and micro-enterprises in South Africa

According to the latest research conducted by the Small Enterprise Development Agency (January, 2016), there are 2 251 821 SMMEs in South Africa, 667 433 operating in the formal sector and 1 497 860 in the informal sector (South Africa, 2017). The study also adds that black owned formal SMMEs account for 34% (226 927) of the total formal SMMEs (South Africa, 2017). The framework primarily used in South Africa is the definition of the National Small Business Act 102 of 1996, which describes five categories of businesses in South Africa (Abor & Quartey, 2010).

Table 2.1: The definitions of SMMES in accordance with the National Small Business Act 102 of 1996 (Source: Abor & Quartey, 2010)

Enterprise size	Number of employees	Annual turnover (in South African rand)	Gross assets, excluding fixed property
Medium	Fewer than 100 to 200, depending on industry	Less than R4 million to R50 million, depending upon industry	Less than R2 million to R18 million, depending on industry
Small	Fewer than 50	Less than R2 million to R25 million, depending on industry	Less than R2 million to R4.5 million, depending on industry
Very Small	Fewer than 10 to 20, depending on industry	Less than R200 000 to R500 000, depending on industry	Less than R150 000 to R500 000, depending on industry
Micro	Fewer than 5	Less than R150 000	Less than R100 000

The small businesses are classified by the National Small Business Amendment Act 26 of 2003 (South Africa, 2003) as follows:

- *Survivalist enterprises:* These are enterprises where the income produced is usually less than the minimum income standard; there are no paid employees.

- *Medium enterprises:* These are enterprises employing up to a maximum of two hundred employees, with power frequently decentralised to another management layer.

- *Small enterprises:* Small enterprises are enterprises with higher number of employees (fifty) compared to very small enterprises and their management structures are more complex.

- *Micro-enterprises:* These are enterprises, often home-based businesses, with a limit of five employees including the owner, and thus are often not registered.

There are well over 800 000 SMMEs in South Africa. These SMMEs in South Africa account for 50% of the Gross Domestic Product as well as provide employment to about 60% of the labour force (Department of Trade and Industry, 2012). However, SMMEs in South Africa face numerous challenges: lack of management skills; lack of funds; limited ability to develop relationships with customers; lack of affordable technology and poor quality of products as well as services (Ntsika, 2011; Department of Trade and Industry, 2012).

Makoza and Chigona (2011) believe that micro-enterprises in South Africa constitute a high percentage of the SMME sector, stating that South Africa has a dual economy structure. Makoza and Chigona (2011) explain that the first economy is well developed and uses sophisticated technologies, while the second economy is not developed as well as mature. They further discuss that government and development agencies have, with ongoing effort, tried to bridge the two economies by offering services such as Internet access and computer support to shift micro-enterprises from the second economy into the first economy.

In South Africa, there is evidence of continued escalation of Internet users which means that there is an increase of potential Internet users who may be interested in conducting online transactions (Ndayizigamiye, 2014). Ndayizigamiye (2014) argues that the South African government has introduced an initiative to stimulate online SMME presence through a website called The Woza online, a platform that enables SMMEs to create their website using the .co.za domain. An Internet Economic Impact Study conducted by World Wide Worx for Google South Africa in 2011 revealed that the Internet economy in South Africa contributes 2% to the country's gross domestic product (GDP) (World Wide Worx, n.d). Another survey published by Statistics South Africa in 2014, the General Household Survey (GHS), showed that access to the Internet was the highest in the Western Cape (62.1%), Gauteng (59.9%), Free State (48.7%) and lowest in Limpopo (32.6%) and the Eastern Cape (37.4%) (Mybroadband, 2015). Cloud computing offers Information Technology services over the Internet but even so, the response of micro-enterprises towards the use of the new technology has been slow. Consequently, this research contributes to the knowledge of

micro-enterprise factors that should considered for stimulating growth of cloud computing by micro-enterprises in South Africa.

The government has a variety of policies, legislations, regulations and initiatives to ensure SMMEs' support (Makoza & Chigona, 2011).

Table 2.2: South Africa SMMEs promotion initiatives

(Source: Makoza & Chigona, 2011)

Initiatives	Main Focus	Objectives
Accelerated and Shared Growth for South Africa (AsgiSA)	National	Support SMME business start-ups through capital financing
Nsika Enterprise Promotion Agency	National	Support SMME businesses through non-financial services
Small Enterprise Development Agency	National	Promote and support SMMEs through training, funding and business advice
South Africa Micro- Finance Apex Fund (SAMAF)	National	Provide support for access to finance for microenterprises
Khula	National	Support SMMEs in accessing financial services
Real Enterprise Development (RED) Door Program	Provincial	Small business formation support through funding and training.

Thlabela, Roodt, Paterson and Weir-Smith (2007) aver that the Accelerated and Shared Growth Initiative of South Africa (ASGISA), introduced by the government in 2006, determined factors such as the cost of telecommunications, which are influencing South Africa's plan to achieve 6% economic growth and to eliminate unemployment and poverty in South Africa by 2014. The cost of telecommunications and the availability of ICT infrastructure will significantly improve or prevent access to ICT (Thlabela *et al.,* 2007).

In terms of increasing the percentage of ICT intake in SMMEs, SEDA is the body accountable for ICT initiatives and support programmes for SMMEs (Afolayan, 2014).

Jere, Thinyane and Terzoli (2011) posit that the Department of Communications has introduced a new ICT programme called the National e-Skills Dialogue Initiative (Ne-SDI) to address the country's ICT skills shortage and to ensure ICT applications are accessible in rural areas. The National e-Skills Dialogue Initiative (Ne-SDI) program produces workplace-ready ICT graduates emphasising the categories of e-skills such as ICT practitioner skills, ICT user skills, e-business

skills and e-literacy (Jere, Thinyane & Terzoli, 2011). The action taken by Ne-SDI to assist SMMEs in rural areas with ICT skills and an improved understanding of the value of ICT will contribute to an increase in the user percentage for advancing technologies such as cloud computing by SMMEs.

2.4   Role of Information and Communication Technology in SMMEs

The sections below discuss the categorisation and role of ICT in SMMEs before examining the role of ICT in micro-enterprises. Challenges of ICT adoption by SMMEs and by micro-enterprises will also be discussed.

Ritchie and Brindley (2005) define *ICT* as a group of digital technologies intended to collect, store, process and communicate information within an organisation.

Apulu and Latham (2009:64) report that in developed countries, ICTs have been implemented to positively impact the operational needs of SMMEs. ICTs improve the percentage level of efficiency and offer poor individuals a voice (South Africa, 2017). The number of SMMEs using ICT tools in their enterprises has increased due to the use of mobile phones and the use of technologies on mobiles phones such as WhatsApp and Facebook (South Africa, 2017).

Mostert and Ntetha (2008:23) are of the opinion that if ICTs are exploited in analysing, accessing and evaluating information, they are capable of improving business communication as there is infrastructure which allows this to occur.

2.4.1   Categorisation of ICT for SMMEs

Various business needs resulted in the categorisation of ICT use. Lucchetti and Sterlacchini (2004) classify them into the next categories: general-user, production-integration and market-oriented groups.

Micro-enterprises are currently in the general-user group where the basic ICTs such as telephone and Internet are used for administrative tasks. With the use of cloud computing services, micro-enterprises will potentially move into the production-integration and market-oriented groups where ICTs are used to produce quality goods and to market those goods to communicate with customers globally.

2.4.2   Adoption of ICTs amongst the SMMEs

ICTs are essential to the SMMEs because they bring competitiveness to the SMMEs, thereby enabling them to compete against big businesses (Alam *et al.,* 2007:125; Alberto & Fernado, 2007:352). Those SMMEs handling masses of information are probably going to use ICTs in their business operations to do less paperwork and to provide high quality services to their customers (Manueli, Latu & Koh, 2007). The benefits of ICT for SMMEs consist of making the organisation effective through better processes as well as giving organisations the skill to better manage information and save cost (Ismail, Jeffrey & Van Belle, 2011).

World Wide Worx has conducted surveys to determine uptake of ICTs by SMMEs in South Africa and undertook a survey in January 2012 which established a strong relationship between being online and being competitive, profitable and sustainable (South Africa, 2017). The results showed that 79% of SMMEs with a website reported profitability, whereas only 59% of SMMEs without a website reported the same (South Africa, 2017). Johnson, Kabanda, Adams and Davids (2008) argue that the future of SMMEs will depend on how well it can manage and use ICTs; however, despite the accruing benefits of adopting ICTs, the adoption of these technologies by SMMEs remains slow. Due to the lack of ICT infrastructure, the government has planned to develop the communications sectors by improving access to the telecommunications infrastructure in the country, especially in rural areas (Wolf, 2001). Moreover, the government is engaged to use ICT to enable rapid shared economic growth, better service delivery and completely transform society (Smith, 2016).

2.4.3   Challenges of ICT adoption by SMMEs

Kroeze and Modimogale (2011) explain that as the issues influencing the adoption of ICT are both socio-economic and technological, they argue that SMMEs face the challenge of an owner taking the majority of the decisions about the business (strategic direction) which means that the owner's limitations becomes limitations of the business. The adoption of ICT by the SMMEs is affected by the owner's ICT skills, personality and attitude towards technology (Mutula & Van Brakel, 2007). Additional barriers to ICT adoption consist of high ICT cost, shortage of finance, lack of knowledge about the benefits of using ICT and security concerns (Ismail, Jeffrey & Belle, 2011; Esselaar *et al.,* 2007).

2.4.4   Adoption of ICTs amongst the micro-enterprises

Having examined ICTs in SMMEs, in general, the two subsequent sections will focus on micro-enterprises in particular, given that as a subset of SMMEs, they have specific unique challenges.

According to Makoza and Wallace (2011), the use of ICTs in the micro-enterprise sector is restricted to non-advanced technologies such as personal computers, laptops, radios and telephones. To the contrary, the benefits of using ICTs in micro-enterprises consist of better productivity, improved access to data, smaller amount of administrative costs and high quality communications. ICTs can assist micro-enterprises in their plan to expand while also attracting customers (or more generally, stakeholders) and growing in the knowledge and skills needed to run their business operations more efficiently (Qureshi, 2005).

The section highlighted that due to lack of infrastructure and limited access to finance, micro-enterprises primarily make use of ICTs such as mobile phones to run their daily operations. Hopefully, micro-enterprises take advantage of advancing technologies on their mobiles such as WhatsApp or Facebook, as these are easily accessed cloud solutions that build brands or reach new markets.

2.4.5   Challenges of ICT adoption by micro-enterprises

Makoza and Wallace (2011) believe that the use of ICT in micro-enterprises has the following challenges: lack of ICT skills; lack of knowledge for applying ICTs to support business activities; lack of time, finance and information; and a resistance to technology which negatively impacts the confidence of micro-enterprise owners in their use of ICTs.

The lack of sufficient guidance available to micro-enterprises about the Internet 'start-up' process could also be the reason why these businesses fail to take advantage of ICT (Docherty & Simpson, 2004).

Furthermore, the lack of training on ICT is problematic for micro-enterprises as most of them are not using IT for their business activities except few businesses operating in the accounting field (Barba-Sanchez, Martinez-Ruiz & Jimenez-Zarco, 2007). Grandon and Pearson (2004) suggest that the level of education of the owner is positively correlated with the presence of a computer in the business.

Factors such as high demand from customers, pressure to stay competitive with other companies and size are all criteria that can influence a business to use ICT (Zappala & Gray, 2006:264).

The section covered challenges affecting micro-enterprises in terms of ICT adoption. A majority of micro-enterprises do not have ICT skills or knowledge to run their businesses. Consequently, ICT training courses should be introduced to micro-enterprise owners who make the business decisions, to help them in terms of increasing their productivity and reaching new customers.

2.5   Cloud computing

The previous section discussed the challenges faced by micro-enterprises in respect of ICT adoption. Cloud computing in the current era is one category of ICTs which could benefit micro-enterprises.

Murugan and Bay (2010) define *cloud computing* as an Information Technology paradigm shift in which server hardware and software are accessed over the Internet on demand. Gustafson and Orrgren (2012) explain that cloud computing derives from grid computing, a domain of connected computers. Gustafson and Orrgren (2012) further discuss that a cloud computing provider is a company that offers cloud computing services to enterprises or individuals. Many local businesses, without knowing, make use of cloud-based applications such as an online backup service where no human intervention is required (Joubert, 2012). Many people have used sophisticated cloud computing applications like Dropbox or Google Drive to store and manage documents and sensitive personal information (Adjei, 2015).

2.5.1   Types of clouds

Bowen (2011) believes that in order to provide a protected cloud computing solution, it is essential to choose the type of cloud to be used. There are various types of cloud computing models: private, public, hybrid or community (Davids & Van Belle, 2017).

2.5.1.1 Private cloud

Keung and Kwok (2012) suggest that private cloud utilises in-house Information Technology infrastructure to build a cloud environment to ensure support of the business operational needs, offering flexibility in the resource allocation and improving data security where data are stored. They add that the private cloud model is utilised by companies that need control over their data assets to have the resources available to them to maintain their own cloud infrastructure (Keung & Kwok, 2012).

2.5.1.2 Community cloud

Community clouds contain resources that are shared with others in the community (Aharony, 2015). Furthermore, community cloud refers to a collective effort where several organisations put a great deal of effort to share common cloud infrastructure as well as policies and concerns (Dillon, Wu & Chang, 2010).

2.5.1.3 Public cloud

Mohlameane and Ruxwana (2014) express that *public cloud* involves resources that are shared among individuals using the cloud over the Internet. They further state that public cloud computing services are mainly delivered to the public by cloud providers (examples include Google Apps, Amazon Web Services and Salesforce). The benefits are cost-efficiency, flexibility and easy management (Yeboah-Boateng & Essandoh, 2013).

2.5.1.4 Hybrid cloud

Hybrid cloud occurs in businesses where sensitive data are managed on a private cloud whilst general and non-critical processes are performed in a public cloud (Yeboah-Boateng & Essandoh, 2013).

Keung and Kwok (2012) state that the maturity level of Information Technology (IT) of a micro-enterprise plays a key role when choosing if a private cloud or a public cloud solution is appropriate for a micro-enterprise. They further explain that only micro-enterprises with higher levels of IT maturity can use a private cloud; a public cloud is for micro-enterprises with low IT maturity as their IT infrastructure is still developing.

2.5.2   Cloud computing delivery models

There are various cloud computing services that micro-enterprises can adopt.

Ogigau-Neamtiu (2012) suggests that cloud computing providers deliver services based around three fundamental models: infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS).

Sahandi, Alkhalil and Opara-Martins (2013) define *IaaS* as IT equipment that is managed by a cloud provider and then used by a cloud consumer in a pay-as-you go manner. They also underline that IaaS services consist of storage, where virtualised storage is offered on demand.

According to Aharony (2015), *PaaS* facilitates powerful tools for developers to generate applications without having to handle concerns about the infrastructure. Software as a Service (SaaS) uses hardware as well as software applications provided by the cloud provider and the cloud applications can be accessed from the user's web browser (Maqueira-Marín, Bruque-Cámara & Minguela-Rata, 2017). In a SaaS infrastructure, applications are made available by cloud providers for personal and business use such as MS Exchange and QuickBooks (Qureshi

& Kamal, 2011). Another example is Google Docs which eliminates the need to run the application on the user's local computer as the application can be accessed from user devices (e.g. Smartphones, tablets, laptops and desktops) that have Internet connection (Sabwa, 2013).

The section discussed three cloud computing delivery models. Micro-enterprises can benefit from the services offered by these three models as their IT equipment and encrypted data can be stored in the cloud and managed by a cloud provider in a pay-as-you go manner at a very reasonable price. For example, Zimbra offers numerous productivity tools available in the Cloud which can cost 49 rands per month (Koeries, 2012).

2.6   Cloud computing in South Africa

Nicholas (2013) states that the BSA Global Cloud Computing Scoreboard analysis positions South Africa as 20th out of 24 with regard to the use of cloud computing, a lower ranking than its ranking of 18th the previous year. Nicholas (2013) expresses that the study also found that South Africa fails to have a high percentage of broadband penetration and still encounters ICT infrastructure challenges.

Kshetri (2010) believes that South Africa is a leader in using the cloud to support telecommuting and in South Africa; the call centre industry has been the fastest growing field for the cloud.

In 2015, World Wide Worx conducted another survey to indicate the levels of uptake of Cloud computing by SMMEs in South Africa and the results were the followings: 47% of SMMEs said that they made use of online backups; 37% utilised online accounting; 27% used an online project management service; and 25% had an online customer relationship management (CRM) solution (Goldstuck, 2015). There may be an indication of few uptakes but there is a lack of understanding among SMMEs as to what constitutes the cloud (Goldstuck, 2015). There is also a lack of understanding of the benefits of the cloud environment in the micro-enterprise sector, especially on how it may alleviate some micro-enterprise concerns regarding lack of time as well as financial resources for new technology projects (Singh, 2016).

Cohen, Mou and Trope (2014) suggest that the latest software and hardware are available to micro-enterprises via cloud computing, offering benefits such as the availability of backup systems and disaster recovery, both of which are available from the cloud service provider.

2.7   The challenges of cloud computing adoption in micro-enterprises

Abdulaziz (2012:236) argues that the use of cloud computing obliges a constant and fast Internet connection. In addition, he specifies that a large bandwidth for the connection is needed for the

download of a large document from web-based applications. Internet coverage in developing economies, though, remains a challenge due to lack of basic infrastructure such as roads, telecommunications, electricity and water (Mujinga & Chipangura, 2011). Bowen, Morara and Mureithi (2009) report that inadequate infrastructure severely delays micro-enterprise growth and Internet availability. In South Africa, there were high expectations regarding the Internet and how it would help micro-enterprises compete with larger organisations but unfortunately micro-enterprises did not materialise these opportunities due to limited knowledge of the technology being implemented and lack of understanding of some crucial aspects of the business such as human resources, marketing and finance (Daniel, 2011).

Dillon, Wu and Chang (2010) emphasise that the cost of moving data to and from the cloud and the cost of hardware as well as software are still high. They further discuss that users should reach an agreement with cloud providers on the supply of cloud computing service via Service Level Agreements (SLAs). Ramgovin, Eloff and Smith (n.d) suggest that one of the principal challenges of cloud computing is that of holding the service provider responsible for managing the application and ensuring high quality service.

Mather, Kumaraswamy and Latif (2009) identify the following barriers to cloud computing adoption by micro-enterprises: economic value, interoperability, reliability issues due to the non-availability of the cloud infrastructure, Information Technology governance and political issues due to global boundaries.

Abdollahzadehgan, Hussin, Gohary and Amini (2013) posit that the skills, time, funds and staff necessary for planning are also major issues in micro-enterprises, as micro-enterprises have fewer slack resources to absorb the shock of an unsuccessful investment in Information Systems adoption.

Point blank the main cloud computing challenge is security because firms allow a cloud provider via Service Level Agreements to manage their hardware and software applications (Carroll, Van der Merwe & Kotzé, n.d). Furthermore, firms do not want to lose their data in the cloud due to unauthorised access. Therefore the cloud provider will address those concerns by using encryption to protect the firms' data.

The adoption of cloud computing in the micro-enterprise sector remains slow due do a variety of reasons presented in this section, reasons such as constant Internet connection, large bandwidth, cost of data communication, responsibilities of cloud provider, shortage of talents, shortage of time, shortage of funds and critical security.

2.8 Benefits of ICT Information and Communication Technologies adoption for SMMEs

Qureshi and Kamal (2011) explain that micro-enterprises are generally owned by people who do not have enough resources or skills to use ICTs, so cloud computing can be beneficial to these micro-enterprises in terms of growth by making low cost Information Technology solutions available to micro-enterprises that may be adopted with little effort or skill. In this section, selected previous studies are reviewed to identify how the use of ICTs can assist micro-enterprises to envision, and attain, better economic outcomes.

Makoza and Chigona (2011) noted that the Sustainable Livelihood Approach (SLA) was used for the study regarding the impact of making use of ICTs in microenterprises. Study results indicated that the implementation of ICTs for the microenterprises was not high in terms of assets, and the ICTs were mostly applied for information gathering (Makoza & Chigona, 2011). They explained that the Sustainable Livelihoods Approach was regarded as beneficial because SLA helps understand the livelihoods of poor people. Micro-enterprises are an option for alleviating poverty.

Another study also showed that a qualitative research approach was used to examine the role of ICTs within micro-enterprises in Gauteng, South Africa (Modimogale & Kroeze, 2011).Their results demonstrated that micro-enterprises should invest in educating their staff and management about the benefits of ICT and invest in recruiting Information Technology specialists (Modimogale & Kroeze, 2011).

Finally, Gupta, Dasgupta and Gupta (2008) examined the Unified Theory of Acceptance and Use of Technology to investigate the use of ICT to improve government-to-employee interactions in a government organisation in a developing country, with results determining that performance and effort expectancy, social influence and facilitating conditions stimulate the update of ICT adoption. (Gupta, Dasgupta & Gupta, 2008).

2.9 Cloud computing adoption

Abdollahzadehgan, Hussin, Gohary and Amini (2013) state that several advantages of cloud computing can benefit SMEs in terms of remaining competitive in a fast changing business environment. Previous studies on cloud computing adoption are reviewed to identify various models and theories that have highlighted the determinants affecting the use of the cloud.

The first study reviewed was a study conducted by Tan and Lin (2012) to investigate the status of organisational implementation of cloud computing in Singapore and the determinants affecting their adoption. Applying the TOE framework during their investigation, their study findings

indicated that factors such as organisational technology-sensing capability, perceived relative advantage as well as perceived industry pressure are all associated with cloud computing adoption (Tan & Lin, 2012).

The next study reviewed was a study by Prasetya and Dachyar (2012) who investigated factors affecting cloud computing implementation in Indonesia. They applied the Technology Acceptance Model to obtain results showing that factors such as cost effectiveness, security and reliability will influence decision makers regarding the application of cloud computing (Prasetya & Dachyar, 2012).

The final study reviewed, conducted by Oliveira, Thomas and Espadanal (2014), applied a Diffusion of innovation (DOI) model to determine the factors that influence the adoption of cloud computing. Results of their study showed that relative advantage, complexity, technological readiness, top management support, as well as organisation size affect the use of cloud computing within an organisation (Oliveira, Thomas & Espadanal, 2014).

2.10 Theories, frameworks and models underpinning technology adoption

Technology adoption can help businesses and people to gain a competitive advantage in a world that is changing at a fast pace (Van Donk, 2008). Elibol (2003) as well as Dulkadir and Akkoyun (2013) note that Information Technology plays a huge contribution to the success of SMMEs in terms of saving cost in their business operations, collecting data to make decisions and providing excellent products to their customers. Straub (2009) posits that adoption theories study the choices of an individual with regard to accepting or discarding an innovation.

There are a number of technology adoption theories in the Information Systems field: the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Unified Theory of Acceptance and Use of Technology (UTAUT) and The Technology Organisation and Environment (TOE) framework. The above theories and frameworks have been selected for review in order to derive a suitable theoretical framework for this empirical study.

2.10.1 Theory of planned behaviour model

Theory of planned behaviour (TPB) (Figure 2.1), a concept proposed by Icek Ajzen (Azjen, 1991), states that human behaviour is governed by an individual's attitude as well as behavioural intention and behavioural intentions are characterised by social norms and the view of the individual on how easy the behaviour can be achieved (Martin, 2017)..

Lee, Cerreto and Leffor (2010) posit that the extent to which a person can view a precise behaviour in a positive manner (attitude), believes that important others want them to adopt a specific behaviour (subjective norm) and lastly believe that they are capable of adopting the behaviour (perceived behavioural control). These factors contribute to the intention of the individual to perform the behaviour. George (2004) suggests that intentions reveal upcoming behaviour, while actual behaviour reveals what occurred previously

The theory of planned behaviour has been applied in numerous studies. As an example, the theory of planned behaviour was used in a study by Neneh (2017) to understand employee theft intentions in small businesses. The results of the study showed three factors (attitudes towards theft, perceived behavioural control and moral norms) connected with the intentions to participate in employee theft and recommended that these be taken into consideration when recruiting employees (Neneh, 2017).
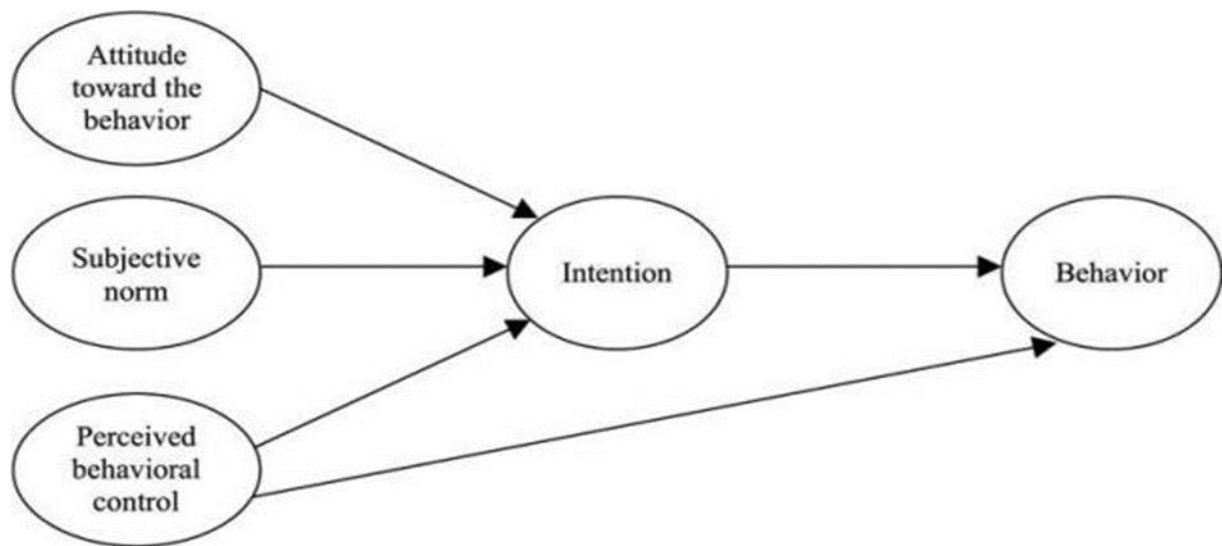
Source: From Azjen (1991)

Figure 2.1: Theory of Planned Behaviour Theory (Azjen, 1991)

2.10.1.1 Limitations of Theory of Planned Behaviour Model

There are several limitations of the Theory of Planned Behaviour Model, including the following:

- It disregards the emotion such as threats, fear and positive or negative feelings (Bergman, 2005).
- It is restricted to individual rational behaviour that does not offer a precise justification for individual behaviour related to emotion (Zhang, 2018).
- It overlooks the variances of human behaviour and the culture that can anticipate human behaviour (Zhang, 2018).

Based on the above, the theory of planned behaviour model was not found useful to understand the factors that influence micro-enterprise owners in Cape Town in adopting cloud computing as micro-enterprise owners' intentions are vitally important when making business decisions concerning which direction to take – such as with adopting cloud computing services – to drive profits in their businesses.

2.10.2 Technology, Organisation and Environment (TOE) framework

SMME competitiveness, determined by many factors, is usually considered by a firm's external, internal and entrepreneurial-related factors (Porter, 2004:126). Oliveira, Martins and De Lisboa (2011) state that the TOE framework is used to consider organisational factors that influence decisions to use technology within a firm.

The TOE framework (Figure 2.2), originally developed by Tornatzky and Fleischer (1990) and later updated by Zhu and Kraemer (2005:61-84), avers that adoption is determined by technology development (Kauffman & Walden, 2001), organisational conditions and reconfiguration (Chatterjee, Grewal, & Sambamurthy, 2002), and industry environment (Kowath & Choon, 2001).

The TOE framework offers a helpful analytical framework beneficial for examining the use of various forms of Information Technology innovation (Tiago & Martins, 2011). The TOE framework is argued to be an integrative framework that makes available a guiding theoretical basis since research in the adoption of ICT typically evaluate various technological, organisational, and environmental factors that either ease or obstruct adoption (Ramdani, Chevers & Williams, 2013).

Technology context

Technological context suggests that adoption relies on the pool of technologies inside and outside the firm as well as the perceived relative advantage (gains) of the application, compatibility (both technical and organisational), complexity (learning curve), trialability (pilot test) and observability (visibility) (Awa & Ukoha, 2012).

The cost of hardware and software, as well as the cost of ensuring compatibility within the existing ICT infrastructure, fall under the technological context (Ellis & Van Belle. 2009).

Organisational context

The *organisational context* consists of characteristics such as size, quality of human resources, and complexity of the structure of the company's management team; top management support is important to create a technology adoption culture within an organisation (Low, Chen & Wu, 2011).

Top executives can strengthen major organisational changes in several ways: 1) Communicating in a comprehensive manner verbally or in written the company's values, strategy and the role of technology in implementing this strategy; 2) emphasising both within and outside the company about the importance of the innovations; 3) establishing a team in charge of creating a vision pertinent to the innovation (Angeles, 2013).

Environment context

According to Angeles (2013), the *environmental context* refers to the stakeholders outside a company that can influence how a company can view innovation in their business operations and set up a plan to acquire the resources to pursue innovation. Angeles further explains that these stakeholders could either be in favour or not of technological innovation.

Van Belle and Akande (2014) believe that organisations should educate themselves about laws and legislation related to cloud computing to know what actions to take in instances when the cloud provider does not comply with the SLA. They further discuss that it will give them details to ensure their data privacy are protected. In cases where the data centre and the company are in other countries, companies are required to be familiar with their rights in the case of non-compliance from the cloud provider and to be informed if there is data that can be viewed or accessed by an unauthorised user (Van Belle & Akande, 2014).
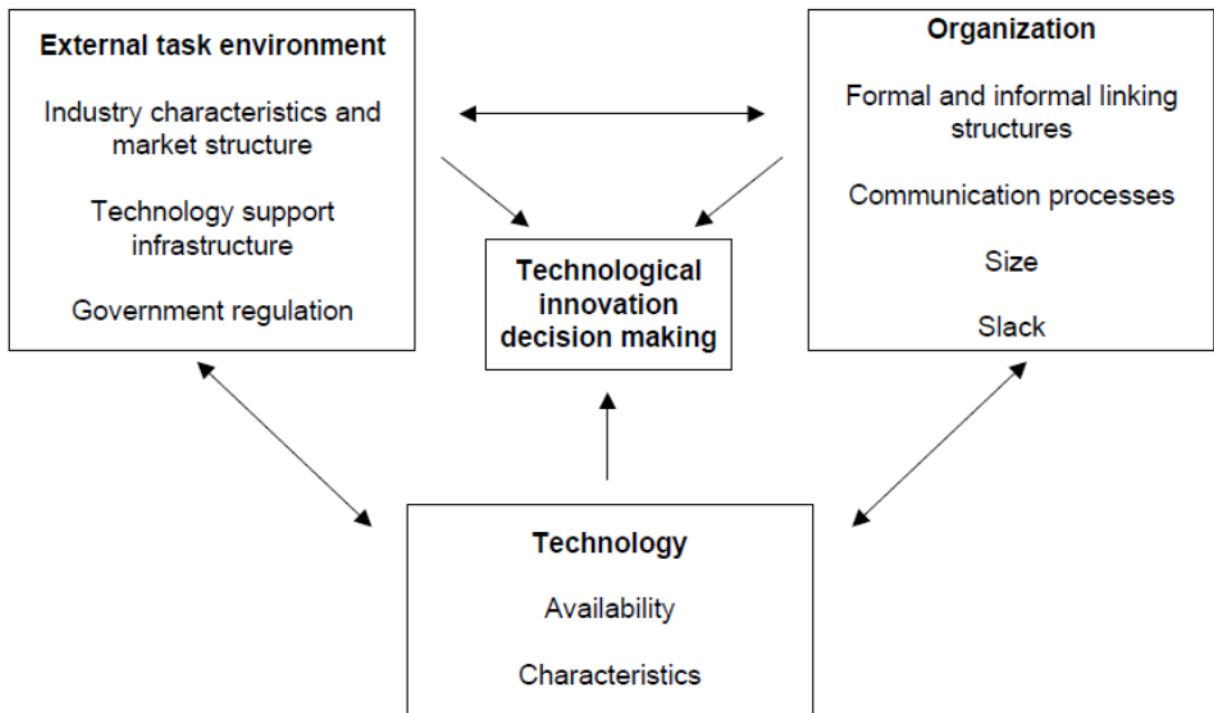
Figure 2.2: The Technology, Organisation and Environment framework (Tornatzky & Fleischer 1990)

2.10.2.1 Limitations of Technology Organisation and Environment framework

The major criticism of the Technology Organisation and Environment framework is that some of the constructs in the adoption predictors are assumed to be more applicable to large organisations where clients are certain of continuity and fewer complaints, than to SMMEs (Awa & Ukoha, 2012). Therefore, the TOE may not be a suitable lens for a study of cloud adoption amongst micro-enterprises.

2.10.3 Technology Acceptance Model

Davis (1989) proposed the Technology Acceptance Model (TAM) (Figure 2.3) to predict user's adoption of information systems. TAM suggests that a person's behavioural intention to adopt technology is influenced by two beliefs: perceived usefulness (PU) and perceived ease of use (PEOU) (Aharony, 2015). Aharony explains that PU is defined as the person's perception that adopting a technology will positively impact performance, while PEOU addresses a user's perceptions that using a particular system would be free of effort.

These two beliefs mentioned are subjective to external variables including individual differences and individual difference variables, which influence the use of any technological innovation in different categories such as information systems, production and marketing (Wang *et al.,* 2003).
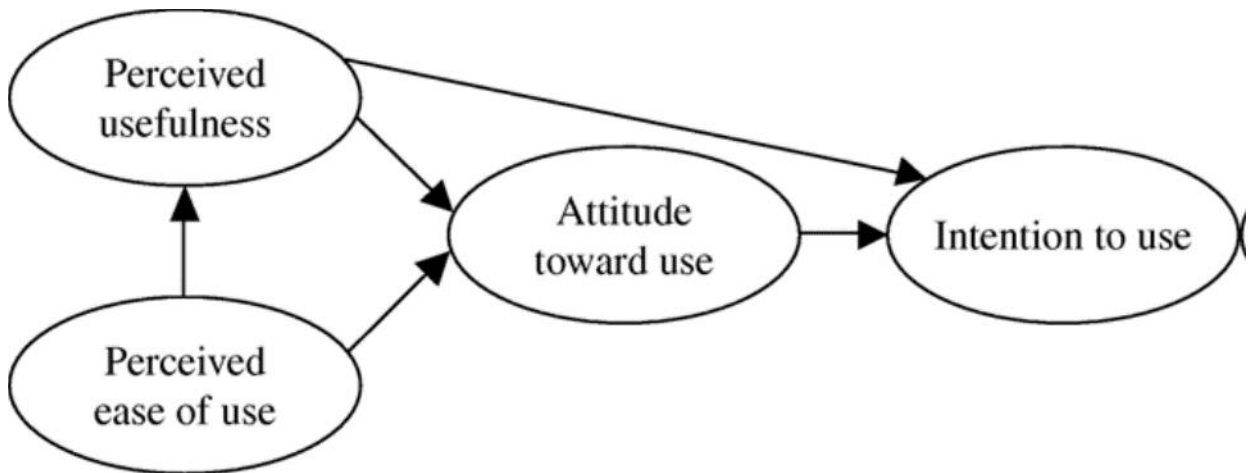
Figure 2.3: Technology Acceptance Model (Davis, 1989)

According to Ii, Nasco and Clark (2007), TAM theorised that the behavioural intentions of an individual to use technology are caused by the attitude of the individual towards the technology. The TAM model offers less relevant information on a user's opinion about implementing specific systems by narrowing its constructs to only perceived usefulness (PU) and perceived ease of use (PEOU) (Awa & Ukoha, 2012). The TAM model was later modified by Davis and Venkatesh (1996) who, removing attitude from the model, constructed the model to include external variables (external stimulus), perceived usefulness and perceived ease of use (cognitive response), behavioural intention to use (intention), and actual system use (behaviour).

2.10.3.1 Limitations of Technology Acceptance Model

Major problems of the TAM are the followings:

- The Technology Acceptance Model does not give details how the use of technology can improve using the variables, and that besides the perceived ease of use, it does not include an organisation's external factors which contribute to the approval of technology (Venkatesh *et al.,* 2003; Al-Qeisi, 2009).

- The relations among attitude and behaviour and between intention and behaviour are not strongly instructed (Juntumaa, 2011).

- Another limitation of TAM is its constraint to study one information system with a similar group of subjects on a task at a particular time, thus raising the generalisation problem of any specific study (Lee, Kozar & Larsen, 2003).

Based on the above, the Technology Acceptance Model was not selected for this study of cloud adoption amongst micro-enterprises as it does not consider external factors such as external pressure from competitors that have a major influence on micro-enterprise owners when making decisions pertaining to their business operations.

2.10.4 Unified theory of acceptance and use of technology model

The Unified Theory of Acceptance and Use of Technology Model (UTAUT), a technology acceptance model developed by Venkatesh, Morris, Davis, and Davis (2003), was developed to describe the acceptance of a technology among users (Raman *et al.,* 2014). UTAUT has four key constructs (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) that influence behavioural intention to use a technology (Venkatesh & Thong, 2012). Four constructs of the UTAUT model (Venkatesh *et al.,* 2003) are as follows:

- *Performance Expectancy:* The degree to which individuals consider that the use of the technologies will improve their performance.
- *Effort Expectancy:* The degree to which individuals believe that the use of technologies will not be difficult.
- *Social Factors:* The extent to which individuals rely on important others to influence them to use technologies.
- *Facilitating Conditions:* The extent to which the organisational and technical infrastructure needed for supporting the technologies exists.

The first through third constructs are the direct determiner for Behaviour Intention (BI) and the fourth direct determiner is Use Behaviour (UB) that measures the possibility of an individual to use the technology (Venkatesh *et al.,* 2003). Venkatesh, Morris, Davis and Davis (2003) suggest that the role of gender which has a strong and permanent basic psychology, age and experience reduce the influence of the four main constructs towards Behaviour Intention (see Figure 2.4).

The objective of UTAUT-model is to comprehend system usage (Carter et al., 2011) and to make concepts available which are not dependent on any precise theoretical perspective (Venkatesh *et al.*, 2003).
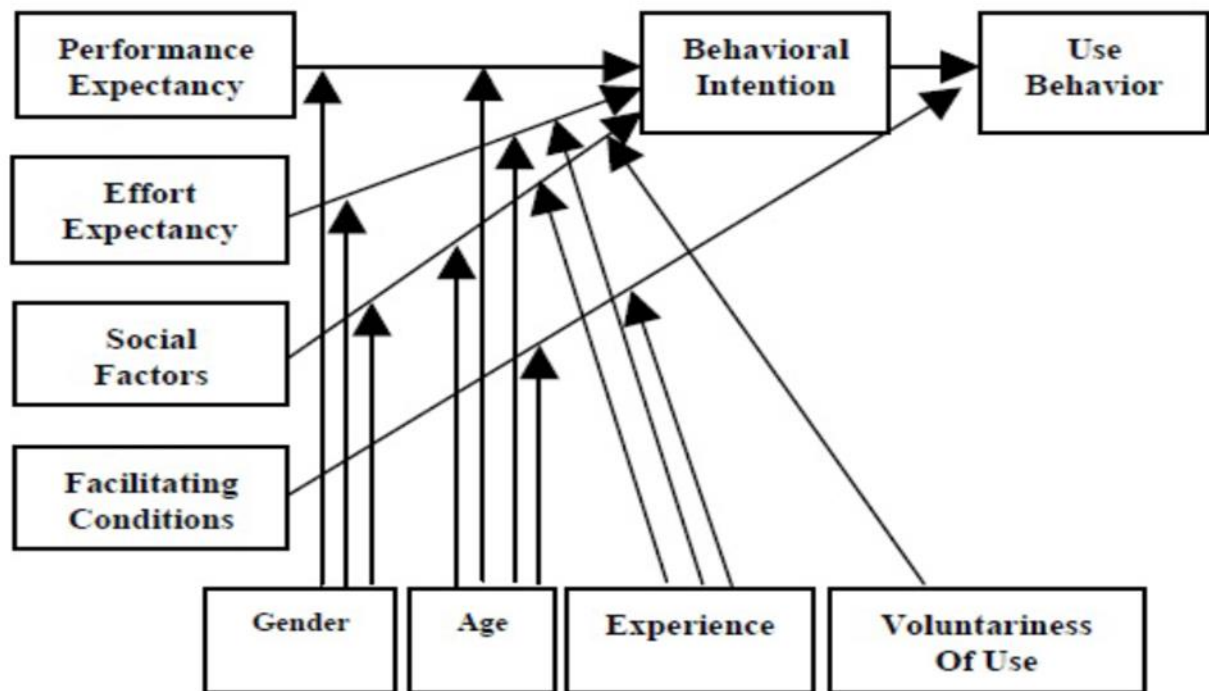
Figure 2.4: The UTAUT Model (Venkatesh, Morris, Davis & Davis, 2003)

2.11 The proposed model for this research

Hayes (2012) indicates that there are many research studies that examine information technology (IT) adoption in small firms, adding that most of the studies covering the use of Information Technology in small businesses state that an important determinant is attitude toward the technology. Qureshi and Kamal (2011) suggest that cloud computing enables micro-enterprises to reduce the challenges they face when adopting ICTs (e.g. decreases the cost of ICT infrastructure) because cloud computing applications are available over the internet and on devices such as mobiles. The use of cloud computing will depend on the characteristics and the personality of micro-business owners, especially in the case of performance expectancy since the utility of the new technology will be directly related to the owners' capability and understanding of the new technology (Mandal & McQueen, 2012).

Consequently, models which test acceptance at an individual level are also of potential value to this study. Riemenschneider, Harrison and Mykytyn (2003) argue that since the decisions in micro-

enterprises about Information technology adoption are made by owners, the TPB and TAM models may help to explain the organisation adoption question. They found that a collective model representing the constructs of both the TPB and TAM provided an appropriate fit than either model alone. Consequently, a model combining TBP and TAM will be more suitable than using either of these independently as a study framework. The Unified Theory of Acceptance and Use of Technology (UTAUT) theory was developed after evaluating eight theories and models, namely: the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behaviour (TPB), a combined TBP/TAM, the Model of PC Utilisation, Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT) (Williams, Rana & Dwivedi, 2015). Combinations of the listed models have been used as theoretical models in some circumstances while in others, these models have been stretched with additional factors (Attuquayefio & Addo, 2014). These models explain between 30-60% of users' behavioural intention to use technology, while the application of the UTAUT model explains 70% of the variation (Venkatesh *et al.,* 2003). Venkatesh *et al.* (2003) describe the UTAUT as a useful research framework to explain technology acceptance behaviour, as well as an experimental tool for managers and business owners to determine the success possibility for introducing new technology. It helps them comprehend the factors which cause technology acceptance to better plan strategic decisions such as marketing, training, selling as well targeting users who are less interested in adopting and applying new technology systems. UTAUT provides support to managers to understand the various forms of behaviour related to individuals 'acceptance of technology, thus generating an opportunity for individuals to agree to use the new technology. (Lee *et al.,* 2010).

Due to the failure of TAM to consider an organisation's external factors that influence adoption, the failure of TPB model to account for other variables that factor into behavioural intention and the constraints of the TOE framework for technological innovation, the UTAUT model will be used as a framework for this research to analyse and understand the factors that influence the micro-enterprise owners in Cape Town to choose to use cloud computing. The UTAUT model was determined to be suitable to offer insight into both the advantages and disadvantages that micro-enterprises feel cloud computing offers them and to explain their behaviour towards the usage of new technologies. The researcher substantiates this by reviewing previous studies that have demonstrated UTAUT's reliability, suitability and validity in various technological contexts: Schaupp, Carter and Hobbs (2009) used the UTAUT model to investigate the acceptance of e-Filing by the American tax payers, with results suggesting that performance expectancy and social influence predict behavioural intention; Carlson, Kacmar, Wayne and Grzywacz (2006),

conducting a study with the UTAUT model to explain acceptance of m-devices/services in Finland, found PE and EE vital in explaining m-devices/services acceptance.

The UTAUT model was also considered suitable for this study because UTAUT measures the possibility of an individual using the technology, and since micro-enterprises operate as 'individuals', this means that the decision to adopt a new technology relies on the behaviour of the micro-enterprise owners as opposed to large organisations where employee attitudes as well as perceptions are measured in terms of their objectives within the structures of accountability (Qureshi, Kamal & Good, 2008). The advantage of cloud computing is that it can be used by an individual whenever the individual needs it (Kunze *et al.,* 2008). As such, it is important for users to believe that using cloud computing will benefit in performance gains. Venkatesh, Morris, Davis and Davis (2003) add that UTAUT, in outperforming the eight individual models, is a dominating model to analyse user intention to use Information system (IS) and to determine the acceptance of new technologies. Gupta, Dasgupta and Gupta (2008) state that the UTAUT model can be applied in designing appropriate features to facilitate new technology acceptance by users and in understanding factors driving acceptance of new technology. The UTAUT model suggests a robust path towards understanding how people would prepare to engage for a new purpose or in a new way using technology (Bagui, 2013). UTAUT also presents a more comprehensive picture of technology acceptance and the use of technology as compared to other previous models (Dada 2006: 8). Furthermore, UTAUT has been repeatedly tested to explain technology adoption by many researchers since its inception in 2003 (Gupta, Dasgupta & Gupta, 2008). Cao, Bi and Wang (2013) state that the UTAUT model incorporates psychology, behavioural science, sociology, information systems and various other disciplines, rendering it the most comprehensive theory of technology acceptance thus far. They argue that in the UTAUT model, three external factors must be taken into consideration: perceived risk (referring to a user's psychological expectations which are caused by the possible negative consequences in the use of the new technology); perceived cost (referring to the expense the user perceives to pay for the use of the new technology); and personal innovativeness (referring to a user's tendency to obtain new products or services and acquire relevant knowledge. The UTAUT model focuses on individual technology behaviour and system usage in the working environment (Venkatesh *et al.*, 2003: Carter, 2000:305). In addition, the UTAUT model has been used to evaluate the adoption of cloud service storage in China (Cao, Bi & Wang, 2013). This, therefore, provides an additional reason as to why UTAUT is a useful framework to study user behaviour towards adoption of new technology, given that the objective of this study is to make recommendations for accelerating the uptake of cloud computing services amongst micro-enterprises in Cape Town.

2.12   Conclusion

This chapter covered the literature of cloud computing in general, and in particular, the use of cloud computing by micro-enterprises in Cape Town. The aim of this chapter was to review factors which affect the adoption of cloud computing by micro-enterprises in Cape Town. Several technology acceptance models were discussed in the quest to determine a suitable theoretical framework for this study. The UTAUT model was found to be the best model for this study to understand the factors that influence micro-enterprise owners in Cape Town in choosing to rely on cloud computing. The subsequent chapter describes the research design, sampling techniques and data collection instruments used to conduct the research.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1   Introduction

This chapter presents the research design process, the research philosophy, the research methods, sampling techniques, data collection instruments, steps followed in the analysis of the qualitative data and ethical considerations.

3.2   Research design process

Bhattacherjee (2012) states that *research design* is a data collecting plan in research intended to answer specific research questions or test hypotheses. Various strategies are available for research: case study, action, research, surveys, experiments, ethnographies, narrative studies as well as grounded research (Henning, 2004). Babbie and Mouton (2002:74) state that research design is the detailed master plan for conducting research.

Following from the foregoing, the aims of a research design process in this study, then, are to investigate the research problem to attain the research objective. The research problem for the proposed research is as follows: cloud computing adoption by micro-enterprises in South Africa remains slow; the sector has not experienced large successes in taking advantage of the benefits of the technology. The main objective of the research is to make recommendations to improve the uptake of cloud computing services amongst the micro-enterprises in Cape Town. This chapter also describes the steps taken to address the key question: "What are the factors which influence the adoption of cloud computing in the micro-enterprise sector?" This chapter thus provides the framework to investigate the latter question.

3.3   Research philosophy

Kroeze (2011:1) explains that the term *philosophy* is used in a wide-ranging sense to define any viewpoint, value or belief.

The philosophical level of conducting research encompasses the axiological, ontological, and epistemological assumptions:

3.3.1   Epistemology

Epistemology refers to what can be known about the reality and how it can be known (Willis, 2007).

Hallebone and Priest (2009) define *epistemology* as a set of axiomatic assumptions that express the way knowledge about a specific view of reality is to be generated, understood, represented and used.

The researcher thus adopted an appropriate epistemological stance to obtain knowledge on how micro-enterprises in Cape Town can use and maximise the benefits of cloud computing.

Figure 3.1 represents the three epistemologies that contribute to qualitative research (Myers, 1997).
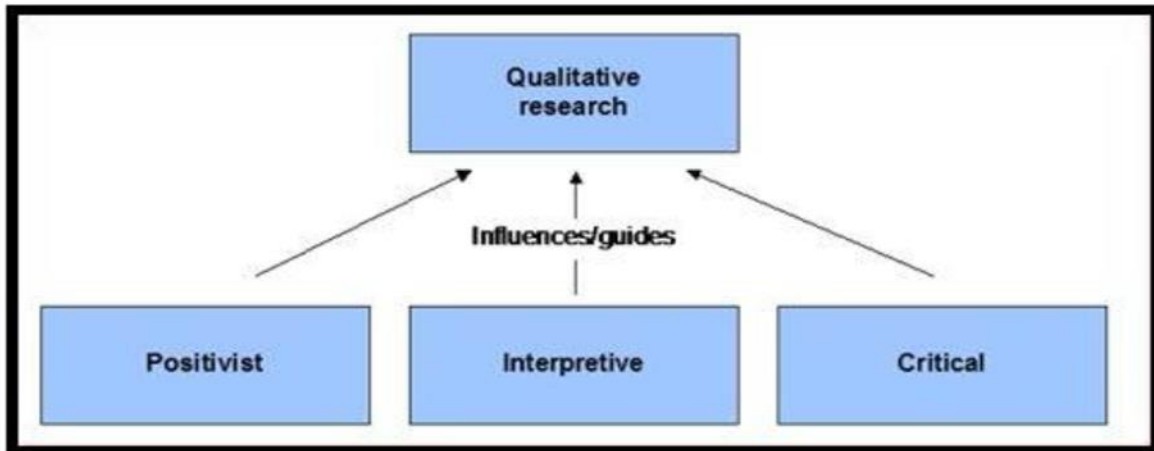
Figure 3.1: Research epistemologies in qualitative research (Myers, 1997)

3.3.1.1 Implication of the philosophy of interpretivism on this research

There are three dominant epistemological approaches used in Information Systems research: positivism, interpretivism and critical realism (Neuman, 2003; Pather & Remenyi, 2005).

Positivistic philosophy seeks to establish descriptive principles for a reality that exists independently of an observer or participant and is usually associated with quantitative methods such as experiments, surveys and statistical analysis (Hallebone & Priest, 2009; Voce, 2004).

Critical theory is a paradigm to transform society and bring about change in situations by clearing away the myths and coming out with reality (Burke, 2007).

The *interpretivist approach* is determined by observations, interviews, and analysis of existing literature to become reality (Myers, 2009) rendering it subjective and contextually based. Furthermore, the interpretive paradigm depends on qualitative data, built on the belief that a truth is based on interactions within the social context (Baumfield, Hall & Wall, 2013:16). Lawrence (2010) also argues that the use of an interpretive perspective can assist researchers to understand human thought and action in organisational context.

After considering the three approaches, the interpretivism paradigm was deemed to be in best alignment with this research for understanding the factors affecting the adoption of cloud computing by micro-enterprises in Cape Town. The interpretivism paradigm offers the opportunity for the researcher to understand research participant experiences of cloud computing, in particular how the research participants think and feel about cloud services. This was considered an important issue, given that micro-entrepreneurs could not be understood from a distance. This study, therefore, needed to engage in an in-depth manner with the research population, and this aligned well with the interpretivism paradigm.

3.4 Research methods

Research methods refer to processes which may be used to study or understand diverse thoughts and issues in the framework of a specific discipline (Creswell 2009; Saunders, Lewis & Thornhill, 2009).

Research methodology emphasises the research mechanism and the procedures to be used, while research design emphasises the outcomes being targeted. (Babbie & Mouton, 2008:75).

Williams (2007) avers that there are three types of research methodologies: qualitative, quantitative and mixed methods. The section below discusses qualitative methodologies in detail.

3.4.1 Qualitative research methodology

Denscombe (2002:148) describes the qualitative research method as an investigation where the researcher analyses words and reports detailed observations of informants and ensures to conduct the research study in an appropriate setting. Qualitative research methods allow a researcher to make changes to the data collected as the research study continues (Welman, Kruger & Mitchell, 2005:8) and to be more open to the research subject and what may be learned from it (Willis, 2007; Creswell, 2013:42-50).

The literature review conducted by the researcher revealed that certain sectors in South Africa, such as retail, tourism and transport, are left behind in terms of cloud computing adoption. The qualitative method was used in this research study to obtain data to comprehend the factors that affect adoption of cloud computing by such micro-enterprises in Cape Town and to make recommendations for escalating the uptake of cloud computing by micro-enterprises in Cape Town as micro-enterprises are undeniably important in sustaining economic growth in South Africa. Qualitative data for this research was sourced from interviewing a cloud computing expert and owners and employees of the participating micro-enterprises.

This research study examines human feelings regarding an innovation (in this case cloud computing). It is noted that the notion of human feeling and perception is an important element in researching how cloud computing could be adopted by more micro-enterprises in Cape Town. Thus, qualitative research was apt for this study given that it is an approach to research which considers the behaviour of people in situations and outlooks pertaining to the context within which they act (Kaplan & Maxwell, 2005). The second motivation for adopting a qualitative research approach is that it focuses on developing an in-depth understanding of individuals' attitudes and views (Cresswell, 2003:179). This was in keeping with the nature of the research problem domain. At the outset of the study, it was clear that the target population, micro-enterprises, are in general only accessible through one-on-one interactions. This sector is generally not organised under associations. Furthermore, there would be diverse stages of understanding of the core concepts being investigated. Thus, the research adopted a qualitative approach to facilitate a more in-depth interaction and the collection of a set of rich data through which insight into the problem would be enabled.

3.5 Sampling techniques

Sampling can be described as the process of selecting a sample of a population of interest for the purposes of making observations and analysis about that population (Bhattacherjee, 2012:67). The research population for this study is comprised of owners and employees in Cape Town micro-enterprises which employ no more than five employees, in the following sectors: communications, IT, retail, tourism, transport and healthcare. Implications of this selection are that the quantity and the exact location of all the elements of this research population are identifiable and reachable by the researcher (Neuman, 2011).

Babbie and Mouton (2003:166) state that choosing a sample in a qualitative research is made on the basis of the knowledge of the individuals being studied, the judgment of the person carrying the research study and the reason why the research study is conducted.

There are two types of sampling: 1) probability sampling, associated with quantitative methods; and 2) non-probability sampling, related to qualitative methods (Flick, 2010).

3.5.1 Non-probability sampling

Non-probability sampling can be described as the process of choosing participants from a population whereby the researcher does not know the number and location of the population elements (Babbie & Mouton, 2001). The possibility that the respondents will be involved in the sample cannot be projected with non-probability sampling (Christensen *et al.,* 2001).

The advantage of non-probability samples, however, is that they are less complicated and more economical in regard to time and financial expenses than probability samples (Welman, Kruger & Mitchell, 2005:68).

There are four types of non-probability sampling that a researcher may choose between: convenience, quota, snowball and purposive sampling (Achieng, 2013).

This research applied purposive sampling, a type of non-probability sampling, to select participants for this study. Polit and Beck (2004:729) state that *purposive sampling* is a non-probability sampling technique whereby research participants are carefully chosen based on their knowledge and expertise. For this research study, the participants were selected based on their expertise on cloud computing, their availability, the sectors in which they operate and the number of employees at their workplaces.

3.5.2 Targeted population

The targeted populations for this study are micro-enterprise owners and employees in Cape Town, in the following sectors: communications, retail, tourism, transport and healthcare. An IT expert in a company operating in an IT sector was also selected for this study. The reason for selecting micro-enterprises from the financial, tourism, healthcare, retail, communication, Information technology and transport sectors is because a South African SMME survey conducted by World Wide Worx shows that the IT and communication sectors are sectors with high cloud computing adoption percentages while the tourism, retail, healthcare and transport sectors are sectors with low cloud computing adoption percentages (McConnachie, 2012). Therefore, focusing on these sectors would provide respondents from micro-enterprises who are deemed to be low level cloud adopters.

Micro-enterprise owners and employees in the following aforementioned sectors are the unit of analysis as they will provide imperative responses for the study. The targeted micro-enterprises had to employ no more than five employees.

3.5.3 Micro-enterprises in Cape Town

Cape Town is situated in the Western Cape Province of South Africa and is the province's capital (Bickford-Smith, Van Heyningen & Worden, 1999; Hiller, 2000; Lemanski, 2004; Miraftab, 2012). It is the second most populous city after Johannesburg with a mixture of different ethnic groups (Small, 2008; Bickford-Smith, 2010; Statistics South Africa, 2011). The city, one of the most multicultural cities in the world, has a very rich history (Wilkinson, 2000; Rassool & Proselandis, 2001; Coombes, 2003; Murray, 2007; Bickford-Smith, 2010).

According to the City of Cape Town (2013), the majority of Cape Town's economic activity is driven by micro-enterprises. The Western Cape Provincial Economic Review and Outlook (WCPERO, 2007:160) posits that a micro-enterprise can be either a survivalist or a non-survivalist enterprise, in terms of the following criteria:

- *Survivalists* do not hire anyone, with examples of such entrepreneurs including hawkers, vendors and spaza shop owners.

- *Non-survivalist enterprises,* which hire no more than four regular workers, form part of the informal economy.

The government is constantly attempting to promote micro-enterprise success within the South African economy (Swanepoel, Strydom & Nieuwenhuizen, 2010; Urban & Naidoo, 2012; Okurut & Ama, 2013). Failure to create employment through micro-enterprises puts the South African economy at risk associated with an increase in crime rate, economic deterioration and poverty escalation (Adebowale, 2011).

Micro-enterprises contribute to domestic growth, job creation and general welfare which in turn promote South Africa's economic growth (National Small Business Amendment Act No. 29 of 2004 South Africa; National Budget Speech South Africa, 2011; Dietrich & Krafft, 2012; Haltiwanger, Jarmin & Miranda, 2013).

Despite the significant role played by micro-enterprises, micro-enterprises are overpowered by high failure rates and poor performance levels, partly due to insufficient funds, poor management skills and lack of access to new technology (Jocumsen, 2004; Fatoki & Garwe, 2010). Evidence in the extant literature indicates that with access to cheaper, and in some cases free cloud computing services, the adoption and utilisation of ICT is within reach of micro-enterprises. The

integration of cloud-services to support business processes will result in improved performance of micro-enterprises and will facilitate business benefits, including increased market access, amongst others.

3.6 Data collection instruments

3.6.1 Interviews

Bryman and Bell (2007:570) suggest that an *interview* can be described as a process whereby questions are designed and asked by an interviewer. In this method, the researcher must have a structure or plan of who is going to be interviewed and how the interview is going to be conducted, and must ensure that all questions are related to the study (Leedy & Ormrod, 2001). By asking appropriate questions, the researcher is able to acquire all the information desired (Patton, 2002). Interviews are a rich source of information, as not only does the researcher elicit the answers to the questions, but is also able to observe the participants and the environment during the interview sessions (Babbie, 2011). According to Patton (2002), the objective of an interview is to comprehend that which the candidate is experiencing. Rubin and Rubin (2005) add that qualitative interviews are conversations where the interviewer asks most of the questions in line with the research topic and usually elicits detailed information, understanding of experiences and a reconstruction of events.

Another way of conducting interviews is to provide the participants with questionnaires listing all the questions the interviewer wants the participant to answer (Neuman, 2011).

There are different variations of an interview, namely face-to-face interviews, group interviews, telephone interviews, and email or Internet interviews.

- *Face-to-face interviews* are conducted by an interviewer who collects data directly from an interviewee (Bolderston, 2012).

- *Group interviews* are interviews conducted all together with a group of interviewees (Patton, 2002; Bolderston, 2012).

- *Telephone interviews* are more expensive than in-person interviews as they are conducted with the use of a mobile (Szolnoki & Hoffmann, 2013).

- *Email* or *Internet interviews* are interviews conducted online with the use of emails, instant messaging or video conferencing (Bolderston, 2012).

Interviews can be categorised as either structured or semi-structured (Longfield, 2004). Qualitative researchers primarily rely on face-to-face interviewing when conducting semi-structured

interviews (Sturges & Hanrahan, 2004). Struwig and Stead (2001:98) aver that face-to-face meetings are achievable through the following formats:

Structured interview: Welman, Kruger and Mitchell (2005) note that structured interviews are series of questions obtained from a questionnaire drafted previously which is used by the interviewer to interview a respondent on a face-to-face basis whilst recording the proceedings of the conversation.

Semi-structured interview: According to Struwig and Stead (2001:98), a semi-structured interview is a mixture of structured and unstructured questions with multiple responses obtained for a set of questions, allowing for more detailed response. Questions may vary from one interview to the next (Welman, Kruger & Mitchell, 2005).

Unstructured interview: An unstructured interview is conducted through open-ended questions. It gives in depth information on the phenomenon being studied and also gives an opportunity to conduct follow up interviews with participants (Struwig & Stead, 2001:98).

The interviews for this research study were conducted on the premises of the micro-enterprises. The interviews were carried out in English and the researcher created an environment where the participants were able to express themselves comfortably as the researcher reassured the interviewees that they were allowed to ask questions if there were terms or concepts in the study they did not understand. Face-to-face interviews with semi-structured questions were conducted as this type of interview was used to obtain the interviewees' experiences on cloud computing and to clarify any questions that the interviewees may have on cloud computing. Brace (2004:25) states that face-to-face interviews encourage respondents to provide deeper responses as they have the capability of stimulating deep conversations.

The interview questions were sent to the owners and employees participating in the research by the researcher before the interviews took place. The interview schedule was designed based on UTAUT constructs (refer to section 3.6.1.1).

Planning is essential when conducting fieldwork interviews to make collected evidence relevant (Warden, 2007: 31). Henning (2004:70) divides the interview research process into three phrases:

- finding the respondent and setting up the interview based on the research design;
- conducting and recording the interview; and
- reflecting on the interview and analysing or interpreting the data.

Based on the above, the researcher contacted all participants via telephone as well as emails to determine whether they were willing to participate in the research and to establish dates for interviews (refer to Appendix K).

3.6.1.1 Design of the interview questions

The interview schedule consists of two parts. The first part includes the objective of the interview and clarification of key concepts such as description of cloud computing, benefits of cloud computing as well as examples of cloud applications. The second part of the interview schedule consists of interview questions. The sections of the interview questions included two categories: demographic data and IT infrastructure as these were questions to determine the demographic characteristics of the participants of the research study to find out if any demographic characteristics are associated with adoption attitudes, and to determine the current state of infrastructure of the research participants that may influence their attitude towards the adoption of cloud computing.

These were subsequently followed by questions structured to obtain responses according to the constructs of the UTAUT.

- *Performance expectancy:* These questions were designed to gather evidence in respect of whether cloud and non-cloud businesses expect improved performance from cloud computing.

- *Effort expectancy:* These questions were used to gather evidence which would provide an understanding of factors related to 'effort expectancy', that is, whether cloud computing will be easy to use.

- *Social influence:* These were questions to determine whether the use of computing can be influenced by important others.

- *Facilitating conditions:* These questions were drafted to establish whether organisational and technical infrastructure required for the support of cloud computing existed in the workplace of the research participants.

3.6.2   Field notes

David and Sutton (2004) state that *field notes* are a written record of researcher observations. Field notes provide researchers with the opportunity to gain a clear view of one's thoughts (Mayan, 2001:112). Dana and Yendol-Hoppey (2009:74) posit that field notes capture what is occurring without commenting on or judging a particular act where no interpretations are made. For this research study, field notes were used when the researcher was making notes during the interviews as well as when the researcher was reflecting on the interview conversations.

3.6.3   Audio recording

Data during interviews were captured by audio recording. Gillham (2005) explains that audio recording is beneficial as it give the opportunity to the researcher to record respondents' opinions.

Saunders, Lewis and Thornhill (2009) delineate further advantages of audio recording:

- allows the interviewer to concentrate on questioning and listening;

- allows questions formulated at an interview to be correctly recorded for use in later interviews where appropriate;

- allows the interviewer to re-listen to the interview;

- generates a correct and unbiased record;

- allows direct quotes to be extracted; and

- provides a permanent record for others to use.

Before recording each interview, permission was obtained from the interviewee to record the interview. After completing the interviews, the researcher listened to the tapes three to four times to ensure accuracy of the transcriptions.

3.7 Data analysis

Data analysis is defined as the process of converting raw data collected from documents, interviews and field notes into significant data (Neuman, 2011). Mapeshoane (2015) posits that business documentation and important points emanating from interviews formed field notes. This research study is qualitative; therefore, the focus will be on qualitative data analysis (Babbie, 2011).

Boeije (2010) suggests that analysis of qualitative data be described as a process of gathering data together to elaborate findings and reach conclusions.

There are numerous qualitative analysis techniques such as narrative analysis, thematic analysis, grounded theory and discourse analysis. After considering and reading intensively about these techniques, thematic analysis was selected as the most suitable technique for the researcher because the technique can be understood easily, does not consume much time and can be applied to any qualitative study.

Thematic analysis identifies patterns (themes) that are important to the topic under investigation through reading of the data, where the themes that have emerged turn into categories (Fereday & Muir-Cochrane, 2006).

In this research, as interviews were used as a data collection method, it was then necessary for the researcher to transcribe the recorded interviews (Aubel, 1984). The next step of analysis comprises the coding phase. Miles and Huberman (1994: 57) state that using codes when describing text ease the retrieving and organising of the data into categories and then themes. At the outset, there were pre-determined themes aligned to the main constructs of the UTAUT model. Thus the analysis sought to code within these themes, while simultaneously assessing what new themes may emerge. Themes capture something vital about the data related to the research question, so researcher judgment is the essential tool in determining what a theme is (Braun & Clarke, 2006: 87). The themes emerged from categories for analysis that will measure the issues being investigated (Wilkinson & Birmingham, 2003). Main categories are those aspects of the data about which the researcher would seek more information, and subcategories state what is said in the data with regard to these main categories (Schreier, 2014). Braun and Clarke (2006) suggest that thematic analysis will allow the researcher to take notes of the experience of the participants involved in the research study, which will be recorded during the interview process.

The following section elaborates on how analysis was carried out with the assistance of qualitative data analysis software.

3.7.1   Using qualitative analysis software (Atlas.ti) to conduct data analysis

Creswell (2007) suggests the use of Computer-assisted Qualitative Data Analysis (CAQDAS) software to code, annotate and compare data segments in qualitative data analysis. The qualitative aligned works of a number of other researchers such as Yin (2009) and Neuman (2003) were consulted to ensure a manageable and reliable approach was followed. CAQDAS is a tool that can be used to manage a large pool of evidence. It does not analyse data but rather facilitates the data analysis (Yin, 2009). The transcriptions were loaded onto a CAQDAS, Atlas.ti. (see Appendix E for the list of transcripts report). The software was used for the management of the text into smaller chunks (coding), and seeking evidence from the different transcripts. After reading the transcripts several times, a number of labels were assigned to relevant words or sentences; this process is called "coding" (see Appendix F for the list of the labels). The software assisted with the linking of codes to the matching quotations (see Figure 3.2 for the demonstration of the concept coding in Atlas.ti and Appendix J for the Atlas.ti report of codes linked to their quotation).
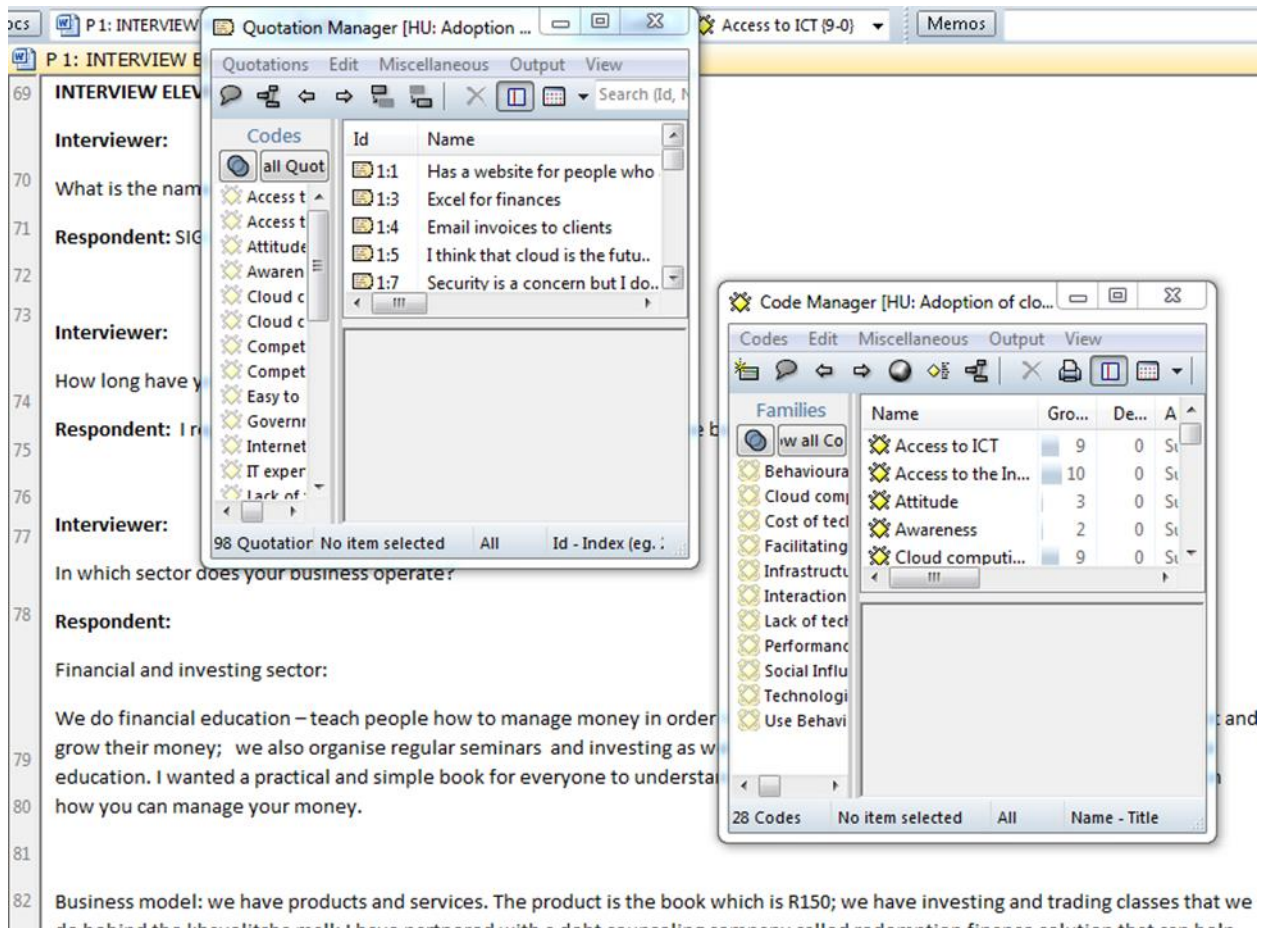
Figure 3.2: Concept coding with Atlas.ti (screenshot from Atlas.ti)

The researcher used two specific factors to decide which codes were important. The first factor was whether the interviewee has stated that specific words or sentences were important. The second factor was the repetition of specific words or sentences in several interviews. The software reveals a report detailing the relevant frequencies of each code (see Appendix I for a statistical report detailing the relevant frequencies of each code). The codes were then linked to create categories. Nine categories were created and structured as themes. Table 4.3 in Chapter 4 displays categories and emerged themes derived from the evidence.

3.8 Evaluation of qualitative research

Various strategies aligned with the qualitative research tradition were used to evaluate how the research was planned and achieved, involving confirmability, dependability and trustworthiness.

3.8.1 Confirmability

Confirmability is defined as the degree to which the outcomes of an investigation could be confirmed by other researchers (Baxter & Eyles, 1997). Confirmability is measured by the research findings in relation to the data collected (Polit & Hungler, 2006). In this study, confirmability was achieved by associating objectives with interview questions as outlined in Appendix B.

3.8.2 Dependability

According to Shenton (2004), *dependability* refers to the consistency of the research findings in the event that the study was to be replicated within a similar context. A study is regarded as *trustworthy* when the findings of the study are considered dependable (Polit & Hungler, 2006). Lincoln and Guba (1985) suggest the use of an audit trial which indicates how the research has unfolded, starting with the researcher's interest in cloud computing services to the interpretation of the evidence collected from the interviews with the research participants who did not maximise the benefits of the cloud. The demonstration below presents a physical research audit trail showing that the research study has been conducted within a clear structure.

Audit trail 1: Identification of a problem in the micro-enterprise sector

I developed interest in the micro-enterprise sector after the Government had created a small business ministry under Minister Lindiwe Zulu in a quest to combat unemployment and poverty levels. Cloud computing can deliver important benefits to micro-enterprises and boost job creations. The problem is that cloud computing adoption by micro-enterprises in South Africa remains slow so the sector is not maximising the potential benefits from the technology.

Audit trail 2: The research proposal

A research proposal was drafted after a preliminary literature review based on the above. The research proposal was submitted and considered by the CPUT Higher Degrees committee.

Audit trail 3: Finalising of the research question

The following research question: "What are the factors which influence the adoption of cloud computing in the micro-enterprise sector?" was confirmed after a vast literature review was undertaken.

Audit trail 4: Literature review

A literature review covering the use of cloud computing by micro-enterprises in Cape Town was conducted. This literature shaped the research methods used in the research.

Audit trail 5: Identification of research participants

Ten micro-enterprises were purposively selected to participate in this study. A Digital Marketing Manager in a company operating in an IT sector was also selected based on his expertise with cloud computing. The ten micro-enterprises had no more than five employees each and neglected to make use of cloud computing because of their dearth of knowledge pertaining to the cloud. The company in the IT sector, however, makes use of cloud computing.

Audit trail 6: Data gathering

Face-to-face interviews with semi-structured questions were conducted with the ten selected micro-enterprises and the IT expert. Interviews were recorded and transcribed. Transcriptions and the researcher's field notes formed the evidence.

Audit trail 7: Data analysis

The evidence was interpreted using Qualitative Atlas.ti software. The transcripts were read several times and labels were assigned to relevant words or sentences to create codes. The codes were then linked to create categories, with nine categories created and structured as themes. The results of the data analysis were used to address the main research question with key constructs of the UTAUT model as a framework in order to understand the cloud computing adoption factors that influence the micro-enterprise owners or employees.

3.8.3 Trustworthiness

Trustworthiness, concerned with the findings of the research (Collis & Hussey, 2003), is used in qualitative research in achieving the quality of the study (Polit & Beck, 2006). Trustworthiness is concerned with reliability of the informants as well as the researcher's capability to gather information and record it correctly (Brink, Van der Walt & Van Rensburg, 2009). The researcher held several brief sessions with the supervisor to improve the interpretation of the evidence. In addition, field notes were used to verify the interview transcripts.

3.9 Ethical considerations

As part of the principle of research ethics, respondents should provide consent about participating in the research (Neale, 2013). Zikmund, Babin, Carr and Griffin (2010) suggest that that a

researcher should send a written request to the research participants who were selected prior to the occurrence of the interview when investigating phenomena using a case study. When investigating people, ethical issues and concerns are bound to arise (Johanson 2002; Ezzy, 2002). Myers (2009:45) believes that *research ethics* can be seen as the use of moral values in the research process. Ethics indicate how researchers should interact with the people involved in the research process (Simons, 2009:96). According to Leedy and Ormrod (2005), harm might be caused in the following ways:

• observing the behaviour of informants without their awareness;

• Failing to keep informants' information that are meant to be confidential away from the public; and

• Not being able to respect values that are important to informants.

Several methods for dealing with these issues may be recommended (Mtongana, 2012):

• informing the interviewees that the interviews are recorded; and

• ensuring the confidentiality of the data obtained.

Permission as well as the ethical clearance to conduct this research study was obtained upon approval of the research proposal by the Faculty of Informatics and Design Research Committee at the Cape Peninsula University of Technology. The purpose of the research study was explained to all respondents. The interview schedule was used to familiarise the respondents with key concepts related to cloud computing. All respondents were informed that the information provided during the interviews would be kept secure and in complete confidence (see Appendix C for the letter sent to research participant). All the interviews were recorded and notes were generated as back up.

3.10 Chapter summary

This chapter presents different methods for collecting data for research. The qualitative research method was used in this study to obtain data to understand the factors that affect adoption of cloud computing by micro-enterprises in Cape Town and to make recommendations to improve the uptake of cloud computing by micro-enterprises in Cape Town. Interviews, field notes and audio recordings were gathered to collect data. The research utilised purposive sampling to find participants for the research study. Data analysis techniques were also discussed in this chapter.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

Chapter 4 presents the findings which emanate from the qualitative data collection process described in the previous chapter. This chapter presents the demographic information and business profile of research participants. The findings of the results from interviews analyses were used to address the main research question with key constructs of the UTAUT model as a framework to determine the cloud computing adoption factors that affect the micro-enterprise owners or employees amongst the target population of the study.

4.2 Demographic overview of respondent businesses

Demographic data was extracted from the interviews with the research participants. The demographic information can be seen in Table 4.1.

Table 4.1: Demographic information of research participants

Company	Experience (years in business)	Industry sector	Role in the company	Categorisation	Number of employees
Company 1	Six years	Communication	Operating Manager and Sales Director	Micro-enterprise	5
Company 2	Twenty-five years	Retail / IT	Technician and sales representative	Micro-enterprise	5
Company 3	Thirty-six years	Healthcare	Doctor	Micro-enterprise	1
Company 4	One year	Tourism	Administrator	Micro-enterprise	3
Company 5	Fifteen years	Transport	Branch Manager	Micro-enterprise	3
Company 6	Thirteen years	Retail	Store Manager	Micro-enterprise	3

Company 7	Six years	Retail	Administrative Director	Micro-enterprise	3
Company 8	Five years	Retail / Healthcare	Consultant	Micro-enterprise	5
Company 9	Three years	IT	Digital Marketing Manager	Small enterprise	45
Company 10	Three years	Tourism	Creative Marketing officer	Micro-enterprise	2
Company 11	One year	Financial and Investing	Founder and CEO	Micro-enterprise	3

Table 4.1 presents various demographic characteristics such as length of work experience, the sector in which the business is operating, the role of the research participants in the business, the categorisation of the business and the total number of individuals working in the business. The research participants were owners, managers and employees. Furthermore, work experience varied from one year to thirty-six years.

4.2.1 Description of research participants

This section provides a description of the operating environment of each of the companies interviewed.

Company 1: Company 1, located in Cape Town, has been operating for six years in the communication sector, in branding services in particular. Company 1 has five employees and markets other people's companies to get maximum exposure in regard to signage, promotional items and corporate ware. When companies want their ideas conceptualised and printed and promoted, they reach out to Company 1 to provide such services. Company 1 is not using cloud computing services at the moment but does make use of ICT such as computers and mobile phones.

Company 2: Company 2, located in Cape Town, has five employees which include IT technicians who provide IT service solutions. Company 2 has been operating for twenty-five years in the IT/retail sector as an IT retailer with branches in the Western Cape and in Gauteng. Examples of items that Company 2 sells are the followings: desktop PCs, laptops, printers, tablets, keyboards

and projectors. Company 2 uses computers, mobile phones, tablets and a website in their daily operations but does not make use of cloud computing services.

Company 3: Company 3, located in Cape Town, can be categorised as Family Practice Physician, General Practitioner, Health Consultant and Medical Practitioner. Company 3 works alone and is self-employed. Company 3 has been operating in the healthcare sector for thirty-six years and operates half-days on weekdays. Company 3 is not a cloud use; however Company 3 does use ICT like tablets and computers in the business operations.

Company 4: Company 4, located in Cape Town, has three employees and has been operating in the tourism sector since October 2015. Company 4 offers accommodation and can be considered as a type of small hotel. Company 4 includes free Wi-Fi connection and free private parking. Company 4 is a non-cloud user that relies on mobile phones and computers in the operations.

Company 5: Company 5, located in Cape Town, has three employees and has been operating in the transport sector since 2001. Company 5 deals with goods transported in bulk by truck, ship or aircraft. Company 5, with additional branches in Johannesburg, Lubumbashi and Kinshasa, is a non-cloud user that uses mobiles and computers as an IT system to communicate with customers and the other branches.

Company 6: Company 6, located in Cape Town, has three employees and has been in the retail field since 2003. Company 6 specialises in selling jewellery and watches. Most of the customers of Company 6 are walk-in customers. The use of computers by Company 6 is quite limited. In addition, Company 6 does not make use of cloud computing services.

Company 7: Company 7, with three staff members, has been operating in the distribution office sector since 2008. Company 7 provides consultation about safety requirements and also distributes protective equipment including protective clothing, hand protection, head protection and fire-fighting equipment. Company 7 has seen applications on Smartphones such as Dropbox but was not aware that Dropbox was a cloud application that offers a variety of features which make it easy for users to share or collaborate on documents. Company 7 does not make use of Dropbox or any other cloud computing applications for business operations but is using computers and mobile phones as a means of communicating with customers. Company 7 also has a website to market the business.

Company 8: Company 8, with five employees, has been operating in the retail health care sector for five years. Company 8 sells health foods as well as flu remedies and also provides services such as organic skin treatments and natural medicine dispensary. Company 8 does not make use

of cloud computing services but believes that cloud computing will help them track their budgets better. Company has a landline, a website and a computer to run their business.

Company 9: Company 9, which includes a Digital Marketing Manager who was selected to be interviewed based on his expertise with cloud computing, has forty-five employees and is located in Cape Town. Company 9 has been operating for three years in the IT sector, a sector with high cloud computing adoption percentage. Company 9 provides entrepreneurs and start-up businesses with easy-to-use card payment facilities. Company 9 uses ICT and cloud computing services in their daily operations such as xero cloud accounting software. Company 9 has a marketing website, a sign up website and a website portal.

Company 10: Company 10, with two employees, been operating for a year in the arts, culture and tourism sector. Company 10 cares for a collection of artistic and cultural objects, an initiative helping to curb gangsterism. Company 10 is a non-cloud user that uses Information Technology such as Google Glass and a website to market their business online.

Company 11: Company 11, with three employees, has been operating for a year in the financial and investing sector. Company 11 teaches people how to manage and invest their money in order to be financially literate. To do so, Company 11 organises seminars and offers investing and trading classes. Company 11 also helps people who are in debt and yet still have an interest in investing. Most of the customers of Company 11 reside in the township in Khayelitsha. Company 11 is a non-cloud user that has a website where they sell items to customers and also uses an Information Technology system called Quick Response code scanner to take customers to their website.

4.2.2 Summary

Table 4.2 below summarises the state of cloud computing adoption by the respondents. All respondents stated that they used some form of ICT in their company.

Table 4.2: Summary of use of IT and cloud computing services amongst respondents

Respondents	Current IT being used	Cloud computing use
Company 1	Computers and mobile phones	NONE
Company 2	Computers, mobile phones, tablets and a website	NONE

Company 3	Computers and tablets	NONE
Company 4	Computers and mobile phones	NONE
Company 5	Computers and mobile phones	NONE
Company 6	Computers, mobile phones and a website	NONE
Company 7	Computers, mobile phones and a website	NONE
Company 8	Computers, landline and a website	NONE
Company 9	Computers, mobile phones and a website	YES
Company 10	Computers, mobile phones, Google Glass and a website	NONE
Company 11	Computers, mobile phones, Quick Response code scanner and a website	NONE

4.3 Research findings

This section presents the interview analyses in response to the main research question. Interviews with owners and employees of micro-enterprises as well as an IT expert in Cape Town were conducted to understand the factors that influence the adoption of cloud computing services by micro-enterprise in Cape Town. The interviews were all conducted in the workplace of each interviewee. The constructs of the UTAUT model were used as a framework for this research in order to analyse and understand the factors that affect micro-enterprise owners or employees in Cape Town to adopt cloud computing services. The interview schedule was designed with the UTAUT concepts to structure the findings (Venkatesh & Thong, 2012). As mentioned in Chapter 3, data obtained from the interviews were used to create nine categories which were then structured as themes. Table 4.3 below illustrates this.

Table 4.3: Categories of concepts derived from the evidence

Categories	Grouped codes	Themes

		Performance Expectancy	Effort Expectancy	Social Influence	Facilitating Conditions
Infrastructure	Access to ICT; access to Internet; process invoices; maintaining financial information				X
Technological Resources	Awareness and competence; use of cloud computing; IT expert		X	X	X
Cost of Technology	Internet cost; cloud computing requirement				X
Government Initiatives	Government role		X		X
Interaction with Cloud Computing	Easy to use and to learn; training	X	X		X
Cloud Computing Trust	Lack of trust; safety; attitude; successful competitor; other company influence		X	X	X
Productivity and Time Management	Quick job performance; save time	X	X		
Market Expansion	Competitive advantage; marketing	X	X		
Behavioural Intention to Use	Reduce workflow; reduce cost; cloud computing benefits; make business more profitable	X	X		

As indicated in Figure 4.1, Atlas.ti helped identify links among the codes (see Figure 4.1). Those relationships assisted in categories identification. For example, access to the Internet is part of cloud computing requirement as users cannot maximise the benefits of cloud computing without a strong Internet connection. A presentation of all the categories and their related codes is found in Table 4.3 above.

Figure 4.1: Interlinking of codes as displayed in Atlas.ti

4.3.1 Performance expectancy

Performance expectancy can be defined as the degree to which the individuals believe that the use of the technologies will result in performance gains (Venkatesh *et al.,* 2003). Venkatesh and his colleagues explained that performance expectancy is related to the quality of outcome expectations, reduction in time needed for doing tasks and in particular, making it easier for the

user to do the job in an effective manner. They further defined performance expectancy as the perceived usefulness of a certain technology and as a result, users will fully commit to the adoption of new technology only if they identify it as 'useful'. In this study, performance expectancy was confirmed as a factor that influences micro-enterprises in the adoption of the cloud system. Micro-enterprise owners or employees who were part of this research anticipate that cloud computing will improve interaction with their customers, especially customers in different locations, because customers will be able to access cloud computing applications over the Internet on their Smartphones, computers or laptops without having to download program software. Furthermore, they expect to respond quickly to customer demands as the cloud system will allow them to work on documents simultaneously and hold meetings by video as well as with audio capabilities. Performance expectancy can be explained through several categories of data viz. competitive advantage, marketing, quick job performance and saving time.

4.3.1.1 Competitive advantage and marketing

Competitive advantage

According to the findings, micro-enterprises do consider creating a competitive advantage for their businesses to gain an edge over their competitors. The research participants acknowledged that competitive advantage was an important gain they could obtain from adopting cloud computing services.

"The business industry is moving toward the use of technology. Getting the knowledge of technology such as cloud will give me a competitive advantage with the people I am dealing with in the industry". (Company 10, 2016)

Micro-entrepreneurs suggested that cloud computing will 'up their game' to expand their client base, improve sales and even expand their businesses internationally. This finding is affirmed by Pienaar (2012) who found that cloud computing can help micro-enterprises, even those with no financial or human resources to invest in IT, to compete directly with large businesses. Micro-enterprises in this study have fewer than five employees and thus do not have an IT department. Therefore, it is difficult for them to gain competitive advantage over their competitors through innovation in technology as they do not stay abreast with technological changes.

"We don't keep up with technology magazines as technology changes every day, if we had a dedicated IT department that would be their job". (Company 1, 2016)

However, micro-enterprises can obtain competitive advantage through a strong interaction with their customers with the use of free cloud computing services.

Marketing

Marketing can be defined as the management process responsible for identifying, anticipating and satisfying customer requirements profitably (Chartered Institute of Marketing, 2015). The respondents use different marketing tools for their business operations such as website, letter, newsletter, bulk messaging and social media.

"The Internet *has made a huge difference. I can check my emails, update our website and use social media as a marketing tool". (Company 11, 2016)*

The research participants believed that the adoption of cloud computing services could improve the way they market their businesses because all of them have access to the Internet and do their marketing via the Internet. Free cloud computing services will allow them to develop their relations with both customers and suppliers because they can reach or work with their customers and suppliers anywhere in the world. Google analytics is a prime example of a free cloud computing application that research participants with no financial resources can take advantage of because it offers marketing analytics solutions.

4.3.1.2 Quick job performance and save time

Evidence showed that the interviewees felt their job performance would be quicker with the use of cloud computing because with the cloud, they could access documents and capture information anywhere at any time, simplifying their lives.

"In my role as Office Manager, I would have to go and audit – instead I could access documents where I am and check/audit. It would definitely make life easier". (Company 7, 2016)

The research participants also believed that having the ability to work from home with cloud computing will result in an increase in productivity because there will be a decrease in commuting time to and from work as well as in time spent engaged in meetings.

"This (cloud system) could help as you can access the data from home. You can even access the data from your cell phone". (Company 5, 2016)

The interviewees also stated that the use of cloud computing services would help their businesses save time because all the information will be centralised so they will only use the cloud applications that are necessary.

"Things will be quicker. Especially if there is an accounting system in the cloud, it will save time because I can login anywhere at any time and capture information". (Company 11, 2016)

Micro-entrepreneurs with limited resources or hardware investment such as the research participants can increase their productivity with the use of cloud computing services as the applications can be accessed on their mobiles, allowing them to move freely within or outside their organisations.

4.3.1.3 Summary of performance expectancy

According to the analysis, performance expectancy (PE) is based on how cloud computing helps technology users to improve their jobs. Competing globally and quick job performance were determined to be important factors for the adoption of cloud computing services by micro-enterprises. Marketing, one of the clear benefits of using cloud computing, was also found to be a vital factor in the micro-enterprise environment for boosting sales and increasing community awareness of the business. Therefore, the findings confirm that PE is an enabler of cloud computing adoption.

4.3.2 Effort expectancy

Effort Expectancy can be described as the ease of use of the technologies (Venkatesh *et al.,* 2003). Effort expectancy plays an importance role in the adoption of cloud computing because micro-enterprises should perceive the use of cloud computing as free from effort, or requiring only a relatively low-effort.

4.3.2.1 Easy to use and to learn

Evidence confirmed that micro-enterprise owners or employees are not educated well enough about cloud computing services.

"It is not difficult. It is just that people are not educated well enough about it". (Company 11, 2016)

They added that if training is provided for using the cloud and the right system is put in place by a reliable cloud provider, the adoption as well as the regular use of cloud computing services will not be difficult.

"If I get more knowledge and training on how to use the cloud, I do not think it will be difficult to use it". (Company 10, 2016)

Evidence also showed that the research participants have perceived the use of cloud computing as easy after assessing the effort involved in the process of using the cloud system such as accessing cloud applications from a Smartphone.

"Everyone has a Smartphone, it (cloud computing) would not be a difficult thing and obviously if you have the right system". (Company 7, 2016)

4.3.2.2 Summary of effort expectancy

Effort expectancy is based on how easy it is for users to use cloud computing. All the respondents relied heavily on the Internet for their business operations. Consequently, they were all in agreement that once they are introduced to cloud computing and have received the proper training, the usage of cloud computing would not be difficult and would be free of effort so long as they have a laptop, a strong and reliable Internet connection and a Smartphone.

4.3.3   Social influence

Social influence refers to the extent to which individuals believe that important others believe that they should use various technologies (Venkatesh *et al.,* 2003). Attitude and success of others have a powerful influence over the behaviour of an individual and certainly play an important part in the use of cloud computing by micro-enterprises.

4.3.3.1 Attitude

Attitudes are generally positive or negative views of a person, place, thing, or event (Bagherian *et al.,* 2009:252). An individual's attitude towards a technology has a significant influence on a decision of whether or not to adopt it (Robinson, 2009). Therefore, the attitude towards technology of a person can be the deciding factor of whether or not the new technology, in this case cloud computing, will be accepted and used. The interviewees stated that even if they do not have the same technical infrastructure of the large companies, they do not want to distance themselves from technology.

"I am not a person who will distance himself from technology". (Company 10, 2016)

One research participant stated that attending forums such as the Start-Grind forum have helped their business to be cognisant of new technology. They admitted that this was a great way of learning and sharing information for surviving in the industry in which they are competing. They believe that as a micro-enterprise, they should have a mind-set that is ready and able to adapt to changes that will grow their business.

"If you are a small business and break into the markets, you must be a disruptor, coming in with a mind-set that people started with, you can't or they will eat you up". (Company 7, 2016)

This evidence is confirmed by Martin (2005:191) who stated that in the micro-enterprise environment, owners' attitudes are shaped to dominate organisational knowledge which means that if a micro-enterprise owner does not engender a 'technology acceptance culture' within the company it will be difficult for the employees to adapt.

4.3.3.2 Successful competitors and influence of other companies

Successful companies can influence the decision of a micro-enterprise in regard to technology adoption. The research participants responded that if they could see a successful business making use of cloud computing, this could influence their decision in adopting cloud computing.

"I want to see other businesses that have used the cloud. If many businesses have used it, then I can also trust it and use it". (Company 11, 2016)

They further explained that it is important to start thinking about potential future customers because they focus on longevity and sustainability, as nobody starts a business to close it tomorrow. Therefore, when things are not working within the business and the trust of customers is not maintained, micro-enterprises should check what other people are doing to enlarge and maintain their customer base.

"IF I knew similar business using cloud it will influence me because it helps to know what the competitors are using; what is working for them and what is not working for them. If it is working for them we will follow their footsteps. If it is not working for them, we will not try it". (Company 10, 2016)

4.3.3.3 Summary of social influence

The primary findings which comprise social influence are concepts related to attitude and the influence of successful companies as well as competitors. The evidence showed that when a company could see first-hand the benefits of using cloud computing by another company, the percentage of adoption and the trust of cloud computing would increase. Furthermore, the evidence indicated that all companies operating in the micro-enterprise sector having the intention of expanding markets, the right attitude was to avoid being distant from technology and to be curious of learning new things.

4.3.4 Facilitating conditions

Facilitating conditions are defined as the perceived extent to which the organisational and technical infrastructure required for the support of the technologies exists (Venkatesh *et al.,* 2003). In the cloud computing environment, facilitating conditions include access to ICT as well as the

Internet, the technical support or source of information and the bandwidth costs. For micro-enterprises to adopt cloud computing services, certain factors such awareness, competence and trust were identified as necessary in the evidence. Another important factor identified was the role of government. Furthermore, to ensure successful implementation of cloud computing, certain requirements such as strong or fast Internet and support from cloud providers were determined to be important.

4.3.4.1 Access to Internet and ICT

Results from the interviews revealed that all research participants had access to the Internet and ICT. As having an Internet connection is necessary to use and adopt cloud computing services, all research participants therefore already have the most important technical infrastructure necessary to support cloud computing. In order for users to connect distantly to documents or applications stored in the cloud, users need access to fast Internet (Abdulaziz, 2012:236). The Internet is used by the interviewees to get in touch with their customers, to order stock, to store information, to communicate with staff in other branches, to get information from suppliers, to buy items and of course, to sell items.

"We use the Internet *mostly to communicate with our branches and staff". (Company 5, 2016)*

In addition, participants have access to ICT such as computers, mobile phones, tablets and a website to serve their customers and market their business online.

"Have a website for people who are far away and want to purchase my book". (Company 11, 2016)

The results are supported by Ismail, Jeffrey and Van Belle (2011) who suggest that the benefits of ICT for micro-enterprises include making the business faster through more effective processes, as well as giving businesses the ability to retrieve, store and process information much more efficiently in terms of cost and effort.

4.3.4.2 Process invoices and maintaining financial information

It is imperative that micro-enterprises have an efficient system for invoicing to make sure they are getting paid for the products they are selling. Micro-enterprises should also have a system to maintain their information which will help in making smart, forward-thinking business decisions. Evidence showed that the interviewees use outsourced companies to help with financial statements and must buy and rely on software packages such as Microsoft Excel for invoicing.

"We use an outsource company to help us with financial statements". (Company 10, 2016)

There is a free cloud computing application called *W*ave that micro-enterprises can use for invoices; this would be beneficial for them because the application does not require any installation or maintenance by an IT expert and can be accessed anytime.

4.3.4.3 IT expert (source of IT information)

It is vital for micro-enterprises to have an IT expert within the company who can assist employees whenever they face difficulties with using or adopting cloud computing services. Research participants were asked about the availability of an IT expert in their company. Some micro-enterprises confirmed that they have never used an IT expert because they are using the basic information that they have, teaching themselves as they go along.

"We never used an IT expert. We are just using the basic information that we have. We are self-teaching the things that we need". (Company 10, 2016)

Other micro-enterprises stated that when they have issues with their computers, they call a specialist to help them.

"I have a chap who used to work in IT Company, across the road, who has now gone into business for himself. He sees small clients like me and if I have a problem he comes to the computer". (Company 3, 2016)

Additional issues can arise when micro-enterprises do not employ IT experts because every time work needs to be done on their computers, they have to take their computers to a specialist, frequently losing two or three days of productivity. Having access to expert IT knowledge is therefore an important cloud adoption factor. Micro-enterprises that typically cannot afford to have a full-time expert may overcome this issue by using free cloud computing services that can assist them with automated backups and online software solutions, as these do not require the assistance of IT experts. Furthermore, micro-enterprise owners can get technical support from cloud providers that can offer them cloud computing services when they are needed at a less expensive rate as compared to the rate an IT expert will charge when resolving issues with IT equipment or software updates.

4.3.4.4 Internet cost

Bowen, Morara and Mureithi (2009) report that poor or inadequate infrastructure delays micro-enterprise access to the Internet but fortunately, all research participants have access to the Internet, exponentially beneficial because it is impossible to move to the cloud without the Internet.

"You can't move to the Cloud without Internet. *The more* Internet *availability, the cheaper the Internet gets". (Company 9, 2016)*

Some research participants use free Wi-Fi for their business operations. Free Wi-Fi certainly impacts the growth of their business, making a huge difference because micro-enterprises often cannot make use of paid Internet because of the lack of financial resources.

"The benefit of the free Wi-Fi has made our business grow form strength to strength, especially when we want to download videos to do presentations". (Company 10, 2016)

Internet cost is a factor that can facilitate cloud computing adoption as high cost data can be a barrier for micro-enterprises to flourish and maximise the benefits of cloud computing services. Having access to free Wi-Fi connection can definitely help micro-enterprises to more easily use cloud-computing services which require a constant Internet connection to reach new markets and improve their products or services after evaluating customer online reviews.

4.3.4.5 Lack of trust

According to Ha and Stoel (2009, 565) *trust* is the degree to which a person believes that new technology usage will be sound and dependable. For this research, trust has a definitive influence on micro-enterprises in their decision to adopt cloud computing. The main concern of the research participants was that sometimes they handle confidential information and they would like to be guaranteed by a cloud provider that the information moved to the cloud would be safe.

"For me I will say 70% I can trust the cloud .The other 30% trust I am not sure what can happen with regards to security because we deal with confidential information". (Company 10, 2016)

Cloud providers should therefore provide micro-enterprises with sufficient user-guides addressing the tactics required to maintain the safety of the business data, including data encryption, which will not put information on the cloud at greater risk than if data is stolen because nobody would have access to it on the cloud. Moreover, the quality of the services offered by cloud providers can influence micro-enterprises to overcome the issues surrounding trust and adopt cloud computing services.

4.3.4.6 Awareness and competence

Awareness can be defined as the knowledge of a specific situation and *competence* refers to the skill of being able to do something in a successful manner. The adoption of cloud computing at an early stage commences with the awareness of the technology by the owners and employees of the micro-enterprises. Lack of awareness of Information Technology options can influence any

form of innovation within a company as this is quite common in a micro-enterprise sector where employees are lacking in technology skills mainly due to low levels of education. All research participants gradually became interested in adopting cloud computing after hearing about the benefits of the cloud, admitting that due to the lack of an IT department, it was difficult for them to stay aware of new technology like cloud computing.

"We don't have IT departments. There is no department to follow up like in the big companies when you have a new system like the Cloud system". (Company 5, 2016)

In addition, competence will play an important role in the use of cloud computing because owners and employees of the micro-enterprises interviewed should have the knowledge or the skills to use a computer and access the Internet in order to make use of cloud services. Lack of awareness and low competence are factors that influence the adoption of cloud computing services. To overcome this issue, micro-enterprise owners, along with their employees, can attend a free seminar to gain knowledge and receive tailored advice from cloud experts to enhance their technological skills. Such seminars should be organised by the government and cloud providers. Cloud providers, with the help of the government, should also offer free online technical training to micro-enterprise owners and employees to increase the percentage of cloud computing adoption.

4.3.4.7 Government role

The respondents have different views on the role that the government can play in the adoption of cloud computing by micro-enterprises. Some respondents stated that the government has made a significant effort in providing funds to micro-enterprises but suggested that the government can do even more when working with micro-enterprises, such as mentoring micro-enterprises, have small offices where micro-enterprise owners or employees could go and receive training about cloud computing, put a program online or offer a TV presentation about cloud computing, and organise conferences where micro-enterprises can exchange ideas and share their experiences with cloud services.

"Government is putting a lot of time and effort into small businesses, I think they should also take a step forward with Cloud computing and introduce it to the small business". (Company 2. 2016)

They also added that there is not enough conversation between micro-enterprises and the government because they stated that since the creation of a Small Business Ministry, they have not seen or heard from the minister. Few respondents expressed that the government would only give you funds to start off your business if you are black-owned business and a local citizen.

Another respondent had a different opinion and posited that the government should work with cloud providers to strengthen them in an effort to support micro-enterprises.

"I think they (government) should approach the cloud providers to allow the cloud providers to then work with companies. So then incentivise the cloud providers to give discounts or incentives to educate companies in the region, thus allowing them to make their own decisions". (Company 9, 2016)

Therefore, to influence positively the uptake of cloud computing services in the micro-enterprise sector, the government should work closely with cloud providers to disseminate cloud computing knowledge by organising conferences or seminars and by establishing training facilities. The government should work directly with the City of Cape Town to have more free public Internet access points in Cape Town to assist in micro-enterprise efforts at competitiveness and to maximise the benefits of cloud computing services.

4.3.4.8 ICT infrastructure to support cloud computing adoption

There are some distinct aspects of the business environment that are necessary for successful use of cloud services. Respondents stated that for successful use of cloud services, it was important to have cloud providers available for support, to have training facilities, to have an efficient computer or laptop, a Smartphone, high quality and fast Internet, a sufficient amount of bandwidth and easy access to a free Wi-Fi connection.

"First of all you must have an efficient computer and fast Internet*, something to store a lot of data and I think training". (Company 4, 2016)*

Micro-enterprises using mobiles in their day-to-day operations can easily take advantage of the benefits of cloud computing services because the cloud applications can be accessed on their mobiles. Resources can be available as well from cloud providers, a definite plus for micro-enterprises, as they will not need to hire a team of IT specialists, or outsource for technical support. Having free Wi-Fi connection in an increased number of public places in Cape Town will influence the uptake of cloud computing services by micro-enterprises.

4.3.4.9 Summary of facilitating conditions

In summary, findings showed that all research participants do have access to the Internet and ICT. They relied on outsourced companies to assist with financial statements and they purchase software packages for invoicing. They were introduced to the benefits of using free cloud computing applications for invoicing which do not require any installation or maintenance and which can be accessed anytime. Some respondents stated that they do not have an IT expert and

other respondents stated that they have a specialist outside the company who assists them for any computer issues. All respondents confirmed that if they had an IT department, they will be aware of new technology such as cloud computing. Some of the micro-enterprises that participated in the research use free Wi-Fi for their business operations, which can make the adoption of cloud computing services easier. As trust has an influence on micro-enterprises in their decision to adopt cloud computing services, the best way for cloud providers to keep micro-enterprise data safe is through encryption. Moreover, the government can play an important part in the adoption process by providing enough support to micro-enterprises such as mentoring them, having offices where micro-enterprises can receive training, and through TV presentations and online programmes. The government and cloud providers can organise conferences or seminars where micro-enterprises can share their experience with cloud services and learn more about the cloud system from cloud experts.

4.3.5 Behavioural intention to use cloud computing

This section of the findings concerns 'Behavioural Intention'. *Behaviour intention* is defined as a person's perceived likelihood or "subjective probability that he or she will engage in a given behaviour" (Venkatesh & Thong, 2012). The interviewees were asked to identify the reason that would motivate them to make use of cloud computing services.

Having the ability to reduce workflow was a motivational factor that would influence micro-enterprises to use cloud computing services. With cloud computing, micro-enterprises can work from home and access documents stored in the cloud system via their mobiles anywhere at any time, a flexibility that will allow micro-enterprises to not only spend less time at the office but to provide a faster response to customer requests which could boost productivity, in particular for those who travel often but who still have to be connected to perform their duties. Working from home with the cloud will save micro-enterprises money, as they will not have to rent an office space.

Therefore, cost was also found to be a factor that would positively impact micro-enterprise owners to use cloud computing services as long as it does not compromise quality of work. In fact, with cloud computing, micro-enterprises do not need to buy or maintain software packages because software packages will be accessed from the cloud and maintained by cloud providers at lower costs. Cloud computing will mean micro-enterprises will expend less on their electricity bill because with data centres in the cloud, they will not have to maintain their servers. Furthermore, cloud back up services will help micro-enterprises reduce costs when a disaster occurs, as their encrypted data will be backed up daily.

For a successful use of cloud computing services, micro-enterprises need to join free cloud computing courses or attend conferences organised by cloud providers and the government through which they can develop their skills as well as learn from companies who had positive experiences with cloud applications; this will motivate for the use of the cloud system. Micro-enterprise owners and employees in the research study explained in the interviews that the reason why they were sceptical of cloud computing was that they had not received training on the use of such technology. For that reason, training was found to be an important motivation for micro-enterprises to adopt cloud computing services as during the training they will assess not only the ease of use of the cloud system but the value cloud computing will add to their business operations.

The research participants were happy to hear that with cloud computing, they would be able to compete with other companies, attract more customers and meet customer demands. They responded positively to the notion of having something centralised with cloud computing which could be very helpful. If, for example, an employee was off sick who had been working on a specific document, other employees would be able to continue work on that document knowing where it was stored. Cloud computing could be beneficial to micro-enterprises that would like to 'go green' by decreasing carbon production with less reliance on physical documents and hardware.

4.4   Conclusion

The research findings were in response to the below research sub-questions:

- What are the levels of awareness of cloud computing?
- What factors promote and inhibit technology adoption in general, and specifically with regard to cloud computing?

The analysis showed that the main constructs of the UTAUT model provided a clear lens to understand the adoption of cloud computing services by micro-enterprises in Cape Town. The selection of the model for the research is therefore upheld by the findings of this chapter. The chapter also analyses the data from the interviews with the ten micro-enterprises participating in the study, resulting in the following themes: Performance Expectancy, Effort Expectancy, Social Influence and Facilitating conditions.

Furthermore, this research study revealed that all research participants were interested in adopting cloud computing services after hearing and acknowledging the benefits of the cloud system. The most evident use of the cloud is storage because cloud data storage supersedes any physical data storage and saves operational storage cost. Cloud computing offers several benefits such as analytic tools, expense management, e-mail marketing, file-sharing and customer service

management. However, micro-enterprises need to determine the precise cloud tool to enhance their business processes and growth (King, 2016).

As mentioned throughout the chapter, the main constructs of the UTAUT model were used as a framework for this research: the research findings found factors motivating as well as factors deterring the adoption of cloud computing services. The interviewees claimed that the use of cloud computing services will help them perform their jobs better and that they perceive the use of cloud computing as free of effort. The interviewees all have access to the Internet, a necessary factor for the use of cloud computing services.

The percentage of cloud computing services among the micro-enterprise sector remains low because they do not, at present, have a positive attitude towards the technology; they are not aware of cloud computing services as they do not have an IT department; they do not have a fast Internet connection; they are resistant to change; and they are hesitant to move confidential information into the cloud system. However, they confirm that if they can witness another successful company make use of the cloud or receive help from the government and cloud providers in the form of training for using cloud computing services, the percentage of cloud computing adoption in the micro-enterprise sector will increase. The research study also found that the reduction of costs and working hours were factors that would motivate micro-enterprises to make use of cloud computing services. Cloud computing services offer flexible hours to micro-enterprises, largely beneficial in terms of productivity and employee motivation as they will be able to complete their work from home. Furthermore, cloud computing will help micro-enterprises reduce the cost of IT system maintenance because cloud providers will be responsible for the IT system maintenance.

CHAPTER FIVE

RECOMMENDATIONS AND CONCLUSIONS

5.1   Introduction

The objective of this study was to obtain data with the intent of understanding the factors influencing the adoption of cloud computing by micro-enterprises in Cape Town and then to make recommendations for improving the uptake of cloud computing by micro-enterprises in Cape Town.

This chapter summarises the research problem and research questions and evaluates if the latter has been addressed. Furthermore, it provides recommendations based on the findings with regards to the improvement of cloud computing adoption rates by micro-enterprises in Cape Town. It also examines the limitations of the research, evaluates the research contribution, guides future research and concludes the thesis.

5.2   Factors influencing adoption of cloud computing by micro-enterprises in Cape Town

Several factors that influenced the adoption of cloud computing by micro-enterprises in Cape Town were discovered from the interview analysis (see Chapter 4).

These factors included performance expectancy (PE) which is based on how cloud computing helps micro-enterprise owners or employees perform their jobs quicker and compete globally; effort expectancy (EE) which is based on how easy or free of effort it is for micro-enterprise owners or employees to use cloud computing; social influence (SI) which refers to the attitude and success of others who can play an important role in the use of cloud computing by micro-enterprises; and facilitating conditions (FC) which refers to the availability of organisational and technical infrastructure to support micro-enterprises on cloud computing service uptake. Other factors such as lack of training, cost efficiency and reduction of working hours were found to also play an important role in the adoption of cloud computing by micro-enterprise owners and employees. Figure 5.1 presents a graphical overview of key factor relationships between constructs of the UTAUT model.
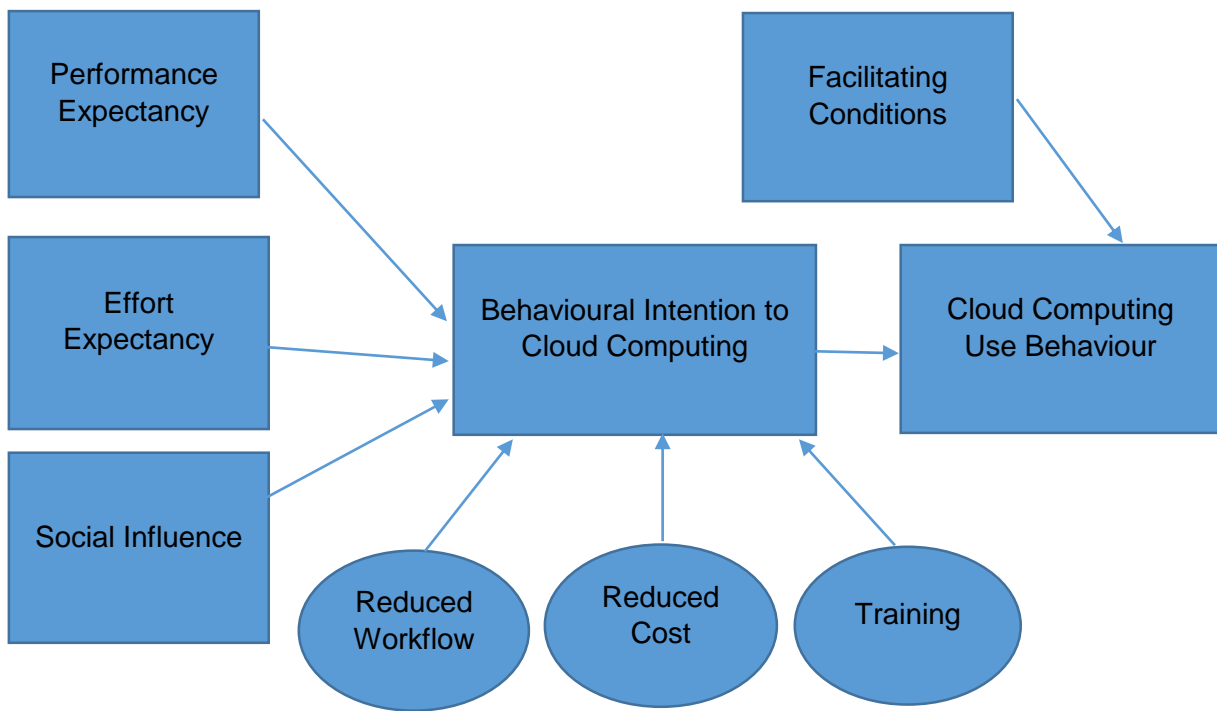
Figure 5.1: Graphical overview of the key factors adopted from the UTAUT model

While micro-enterprises contribute substantially to the South Africa economy by playing an important role in creating jobs, they must confront time and money struggles to implement technology designed to help them to operate more intelligently and efficiently. In order to extend the profitability of micro-enterprises as quickly as possible, micro-enterprise owners understood that meeting customer needs is critically important, so they will only commit to adopt cloud computing services if they perceive the technology as helpful, especially for the interaction with customers and the expansion of their businesses. Free cloud computing services will allow micro-enterprises to respond quickly to customer demands in various locations as the cloud system will not require them to spend time or money in renting office space or buying software packages because cloud applications can be accessed anywhere over the Internet on a host of devices such as tablets, PCs and mobiles. This will be a boost in productivity for the micro-enterprises explored in this study because the majority of them operate on a daily basis with one computer and a Smartphone or tablet. Furthermore, they do not have an IT department for support when technological issues arise, further increasing the hesitancy to use cloud computing; however, with proper training and the support of cloud providers, the research participants admitted that the use of cloud computing services will not be difficult.

The City of Cape Town should continue to assist micro-enterprises with free Internet, as this will encourage micro-enterprises to join free online cloud computing courses; the government should take the initiative to organise forums with cloud providers through which micro-enterprises can

learn more about the cloud, in particular keeping their data safe, as confidentiality and privacy are imperative. As micro-enterprises rely on marketing strategies to attract more customers, free cloud computing services will assist micro-enterprises to develop or market their brands and communicate with their customers via discussions to improve their services. It is important for micro-enterprise owners to develop a technology acceptance culture within their businesses to positively impact their employees and influence them into adopting new technology such as cloud computing.

5.3 Use of UTAUT model to assess adoption of cloud computing by micro-enterprise in Cape Town

The researcher applied the UTAUT model in a qualitative study for this research. Qualitative research takes into consideration the human feelings towards an innovation (Kaplan & Maxwell, 2005), in this case cloud computing, which is how cloud computing could be adopted by an increasing number of micro-enterprises in Cape Town. Face-to-face interviews with semi-structured questions were conducted with ten micro-enterprises and an IT expert in Cape Town. The interviews used UTAUT constructs to inform the design of the interview schedule. According to the literature, the UTAUT model is a useful research framework to explain technology acceptance behaviour, as well as an experimental tool for managers and business owners to determine the success possibility for introducing new technology (Venkatesh *et al.,* 2003). The findings of this study showed that the UTAUT model does provide an explanatory frame to understand the factors that influence micro-enterprise owners to adopt cloud computing.

5.4 Evaluation of response to the research sub-questions and literature review questions

This section evaluates the response to the main research question and research sub- questions. These were answered in different sections of this research study and offered an overall response to the main research question, as illustrated below in Tables 5.1 and 5.2.

Table 5.1: Response to the research sub-questions

Research Sub-Questions	Research Response to Questions
What is the state of cloud computing in South Africa?	Section 2.6 Overview of Cloud Computing in South Africa

	The state of cloud computing in South Africa has been discussed in the above section.
What are the levels of awareness of cloud computing? **What factors promote and inhibit technology adoption in general, and specifically with regard to cloud computing?**	Section 4.4.4.6 Awareness and Competence Some micro-enterprises that have participated in this research study were found to be not aware of cloud computing. Other micro-enterprises that have participated in the research were aware but did not use the free cloud computing services for their business operations. However after hearing about the benefits of the cloud, all research participants started to become interested in adopting cloud computing services and they also stated that due to the lack of an IT department, it was difficult for them to be aware of the benefits of cloud computing. Section 4.4 Research Findings Section 5.2 Factors influencing adoption of cloud computing by micro-enterprises in Cape Town The research findings discussed in chapter four as well as section 5.2 are in response to the response to the factors that promote and inhibit the cloud computing adoption.
What recommendations can be made to improve adoption of cloud computing by micro-enterprises in Cape Town?	Section 5.6 Recommendations Recommendations in the study are proposed to help improve the cloud computing adoption rates by micro-enterprises in Cape Town.

Table 5.2: Response to the literature review questions

Literature Review Questions	Response To Questions
Why is cloud computing relevant to micro-enterprise sector?	Section 2.6 Cloud Computing in South Africa Section 2.6 discussed why cloud computing is relevant to the micro-enterprise sector.
Could technology and cloud computing adoption be implemented in the micro-enterprise sector?	2.4.5 Challenges of ICT adoption by micro-enterprises 2.7 The challenges of Cloud Computing adoption in Micro-enterprises ICT and cloud computing can not only be implemented by micro-enterprises but can also help micro-enterprises reach new markets as well as customers. Challenges of ICT and cloud computing adoption by micro-enterprises were also discussed.
What are the relevant theories, models and frameworks which are relevant to the study of cloud computing adoption? **Which of these are suitable to investigate the main research question?**	2.10 Theories, frameworks and Models underpinning Technology adoption Various models theories that have been used to study technology adoption have been discussed in order to derive a suitable theoretical framework for the empirical study. 2.11 The proposed model for this research The UTAUT model was used as a framework for this research in order to analyse and understand the factors that influence the micro-enterprises in Cape Town to choose to use cloud computing.

5.5 Research contribution

The findings of this research are expected to contribute to both the available pool of knowledge and in practice. From a practice perspective, the research proposes guidelines (section 5.8) to enhance the adoption and uptake of cloud services amongst micro-enterprises. The research outcomes will guide cloud providers as to how to meet the emerging requirements of micro-enterprises and will, in the medium term, contribute to improved productivity of the micro-enterprise sector through the application of cloud services. From a knowledge contribution perspective, the research addresses a gap that was identified in respect of micro-enterprises relying on traditional technologies such as email and web and struggling to implement newer technology applications due to lack of funds, infrastructure and education, enhancing the difficulty for them to understand or maximise the benefits of technology applications. Micro-enterprises are unique businesses as compared to the broad category of SMMEs as micro-enterprises are those businesses in which there is one owner and no employees up to those employing five employees. Furthermore, micro-enterprises struggle for exposure and have difficulty attracting skilled employees and growing a customer base. The fact that they have few employees is frequently a disadvantage as compared to the larger group of SMMES when it comes to receiving funds from financial institutions. This research, therefore, contributes to our understanding of technology adoption of this specific sub-sector of SMMEs. This contribution must be noted in light of the delineation of this study that is the research population was drawn from a purposive sampling. Additional research can be conducted with SMMEs in other parts of South Africa.

5.6 Recommendations

Based on the findings that all research participants do have access to the Internet and ICT, this research study recommends that it is important for micro-enterprises to have access to ICT within their organisation to increase their productivity and extend into new markets. The micro-enterprises that have participated in this study had access to ICT but had no knowledge concerning how they could apply cloud computing services in their business activities as they do not employ IT specialists who can update them about technological changes.

Based on the findings that marketing is a key factor in the micro-enterprise environment for boosting sales and increasing their customers' database, it is recommended that micro-enterprises in Cape Town market their brands by investing their time in developing a good relationship with their current customers, potential customers and suppliers. Free cloud computing

services will allow micro-enterprises to reach customers and suppliers anywhere in the world. These applications will allow both suppliers and customers to contribute more quickly to the development of a micro-enterprise's products or services as micro-enterprises will be aware of their customers' thoughts about and needs from their businesses and can immediately disseminate the relevant information to their suppliers. Micro-enterprise owners or employees, accessing cloud computing services on their Smartphones, will be able to seize business opportunities when working outside of the workplace.

Based on the findings that quick job performance was an important factor for the adoption of cloud computing services by micro-enterprises, it is also recommended that micro-enterprises focus on improving their internal communication or collaboration among employees to increase their productivity. Cloud computing services will present employees with the opportunity to work together on documents even if they are not in the same location, which can benefit micro-enterprises in completing tasks or projects more quickly. Additionally, micro-enterprise owners will able to use cloud applications to send instant messaging to their employees when issues need to handled, resulting in time saved when responding to customer demands.

Based on the findings that cost would positively impact micro-enterprise owners to use cloud computing services, another recommendation is for micro-enterprises to be frugal while remaining profitable. With the cloud, micro-enterprises will be encouraged to 'go green' or paperless as they will be able to use their phones instead of notepads for business meetings and store documents on a cloud facility where they have constant security with data encrypted as compared to loose documents filling a filing cabinet. Cloud computing will provide micro-enterprises with IT hardware and software which will help micro-enterprises reduce cost as they are no longer required to retain an IT expert on call for technological support like installing software on computers.

Based on the findings that reduced workflow would motivate micro-enterprises to adopt cloud computing, the researcher will also recommend micro-enterprises to work from home instead of renting a costly office space. Working with cloud computing from home, micro-enterprises will increase their daily productivity as they will not spend time commuting to and from work. They will not need to travel to the office for meetings as meetings can be conducted via videoconference call with the cloud. This flexibility will allow micro-enterprises fewer working hours while simultaneously providing a faster response to customer requests as they can be connected to their customers on their phones any time of the day.

Based on the findings that micro-enterprises do not have an IT department to make them aware of new technology like cloud computing and lack of awareness of technology options can affect any form of innovation within a business, micro-enterprise owners should develop innovative

thinking in their businesses. Micro-enterprise owners can include their employees by gathering their ideas when making decisions that will impact their businesses or customers, such as by adopting cloud computing services. This process will increase the level of ownership, acceptance and commitment among their employees because an agreement was made between all parties. Micro-enterprise owners can also offer free internship to students; students, then, will gain invaluable work experience and micro-enterprise owners will benefit from this programme because students will input other ideas on how to improve the products or services. Students can be a fresh source of information to keep up with the latest updates regarding cloud computing services.

Based on the findings that training was found to be an important motivation for micro-enterprises to adopt cloud computing services, the researcher will suggest that micro-enterprise owners or employees sign up for free online cloud computing courses to ease the use of cloud computing services. They should attend conferences as well where they can gather insight about the cloud or hear success stories from micro-enterprises that have adopted cloud computing in their daily operations. Micro-enterprises that do not make use of cloud computing services can be influenced in adopting cloud computing services after seeing successful micro-enterprises make use of cloud computing services; this will bolster their positive attitude, increase their trust in the cloud, and reverse their initial distancing from the cloud. These conferences will likely also provide them with an opportunity to network, very important for the growth of micro-enterprises as they will meet cloud computing experts as well as other micro-enterprises operating within the same industry.

Based on the findings that trust has an influence on micro-enterprises in their decision to adopt cloud computing services because one fear of micro-enterprises is that they do not want their information to be stolen when moving into the cloud, this research study recommends that micro-enterprises work closely with cloud providers in order for cloud providers to discuss with them tactics for keeping their business data safe, one method being data encryption. It is critical for micro-enterprises to obtain guarantees from cloud providers on service delivery; these are typically provided through Service Level Agreements (SLAs). According to Davids and Van Belle (2017), a micro-enterprise owner needs to consider the following components in terms of the SLA:

- service guarantee, which gives the company an indication of the measures the cloud provider will use to ensure they fulfil their obligation;
- time-period, which is the duration of the agreement;
- granularity, the outline of the computing resources on which the service agreement applies;
- exclusions, which highlight the conditions under which the service agreement measurements are not enforceable;

- credit, which refer to the rebate given to the micro-enterprise owner if the cloud provider cannot fulfil its service agreement obligation; and

- violation measurements and reports, which outline the mechanism used to measure and report any violation of the service agreement obligations, as well as who will be performing it.

Based on the findings that the government can play a role in the adoption of cloud computing by micro-enterprises, the final recommendation will be that the government should do much more to support micro-enterprises, such as mentoring micro-enterprises; offering small offices where micro-enterprise owners or employees that struggle with the use of cloud computing can receive assistance or training (for example, the footprint of Khayelitsha Bandwidth Barn can be extended more widely around Cape Town); generating online programmes or TV presentations about cloud computing; and organising conferences or seminars with cloud providers where micro-enterprises can exchange ideas and share their experiences with cloud services. Hearing about the benefits of cloud computing by those micro-enterprises making use of it, such as storing documents into one drive that can be accessed anywhere in the world or quick job performance, will motivate micro-enterprises that do not presently make use of cloud computing services to migrate to the cloud. Attending those conferences will teach micro-enterprises to use cloud computing services that are necessary to reduce their operational costs, to manage their financial information better and to recover their data quicker in situations where their devices used to access cloud applications crash or are stolen. The government should continue to provide micro-enterprises with free Wi-Fi because most micro-enterprises struggle with access to the Internet due to lack of financial resources. Free Wi-Fi helps micro-enterprises improve their marketing campaigns because customers are able to sign in to certain applications and check-in or tag the location of a micro-enterprise, extending the visibility of the business to their social media friends (Excel Capital, 2016). Therefore, with Wi-Fi, micro-enterprises will track customers visit, offer specials and compile customer data (Excel Capital, 2016). It is also important for the government to work with cloud providers and strengthen them so they can better support micro-enterprises.

5.7   Research limitations

The research study was conducted in Cape Town, South Africa, which is one of the limitations of the research study. The small sample size engaged in this study cannot allow generalisability of findings to the entire country of South Africa. Furthermore, a qualitative research methodology was used for this study and the purpose of the qualitative research is not about statistical generalisation but rather tries to understand the core concepts being investigated. Therefore, the study is not claiming it may be generalisable. More investigation with a large sample would provide greater strength of findings and would determine the findings generalisable. This study provides

the first step of insight into the factors based on qualitative data. Another limitation was that the micro-enterprise owners or employees did not allow me to sit with them for more than 30 minutes to conduct the interviews, and longer interviews may have yielded data with more depth.

5.8   Future research

This research has created a foundation for further research investigating the adoption of cloud computing in the micro-enterprise sector in South Africa. This research study focused on the factors that could potentially influence the adoption of cloud computing by micro-enterprises in Cape Town using the UTAUT model. Future research can use a bigger sample size and employ other adoption models. Future research should be conducted to determine if the factors identified in this study influence the adoption of cloud computing by companies in sectors other than financial, tourism, healthcare, retail, communication and transport. Finally, more research should be done to investigate change in owner or manager perceptions of cloud computing usage in the micro-enterprise sector as micro-enterprises are imperative to economic growth in South Africa.

5.9   Conclusion

This research study found that micro-enterprises in Cape Town were clearly not aware of the benefits of cloud computing as they did not know how they could apply cloud computing services in their business operations. The research study used qualitative research methods to obtain data to understand the factors influencing the adoption of cloud computing by micro-enterprises in Cape Town and to make recommendations to escalate the uptake of cloud computing by micro-enterprises in Cape Town. The study used the UTAUT model to analyse the factors that influence micro-enterprise owners in Cape Town to choose to adopt cloud computing in their businesses. Face-to-face interviews with semi-structured questions with owners and employees of micro-enterprises as well as with an IT expert in Cape Town were conducted. The interviews used UTAUT constructs to influence the design of the questions; the findings of the interviews were able to pin point the reasons that will motivate micro-enterprises to make use of cloud computing services.

This research study has identified the factors that influence the adoption of cloud computing services by micro-enterprises in Cape Town: lack of training; cost efficiency; and reduction of working hours. After micro-enterprise owners and employees discovered the benefits of cloud computing services during the interviews, they all expressed interested in adopting cloud computing services in their business operations. The main motivation for micro-enterprises to use cloud computing services was that they did not have to rent an office space and could work from

their home because cloud applications can be accessed from devices such as Smartphones. Micro-enterprise owners and employees participating in the research study used Smartphones as Information Technology. They considered Smartphones to be their best information and communication technology for conducting business operations. However, they did not make use of all features on their Smartphones such as free cloud computing applications that would help them to compete with larger companies and contribute more to the South African economy. Cloud applications could support micro-enterprise owners in managing their expenses, anytime and anywhere, and seize opportunities with customers in different locations through videoconference calls. Furthermore, in terms of cost savings, micro-enterprise owners would benefit from cloud computing services as they would be released from relying on IT experts for the maintenance of hardware or updates of software and would not need to buy office equipment for their employees because they would obtain software or hardware from the cloud system as well as hire employees who own Smartphones.

Findings suggested that the government could play a more substantial role in the adoption of cloud computing services by micro-enterprises such as mentoring micro-enterprises or assisting them in receiving training about cloud computing, organising conferences with cloud providers where micro-enterprises could learn about cloud computing services from experts, and strengthening cloud providers to better support micro-enterprises. Cloud providers could conduct presentations to micro-enterprises to demonstrate the benefits of cloud computing services. The government could also do more in supporting micro-enterprises with free Wi-Fi connections to help them obtain new customers and better manage their financial information to make good business decisions. It was found in this research study that the delay of cloud computing adoption within the micro-enterprise sector was dependent on the owner or manager as they were the ones who make decisions in the organisation. Therefore, it was deemed important that micro-enterprises develop innovative and technology acceptance cultures within their businesses to contribute positively to their daily operations and future investments. Micro-enterprise owners should involve their employees when making important decisions, such as the adoption of cloud computing services, as this would bolster morale, productivity and commitment among their employees as they would appreciate the fact that their ideas were taken into consideration. They, in turn, would provide excellent customer service because they would perceive themselves as 'owners'. Furthermore, micro-enterprises need a strong free Wi-Fi connection as cloud computing requires a constant Internet connection so users connect distantly and continuously to documents or applications stored in the cloud. Security was a concern for micro-enterprises as data in shared infrastructures increase the potential of unauthorised access, but this concern should be addressed with micro-enterprises by cloud providers when reviewing the tactics regarding how data should be kept safe

with encryption. Constructs of the UTAUT model such as performance expectancy, effort expectancy, social influence and facilitating conditions provided a lens to understand the factors that influenced micro-enterprises in their decision to adopt cloud computing services.

REFERENCES

Abdollahzadehgan, A., Hussin, A.R.C., Gohary, M.M. & Amini, M. 2013. The Organizational Critical Success Factors for Adopting Cloud Computing in SMEs. *Journal of Information Systems Research and Innovation*, 4(1):67-74.

Abdulaziz, A. 2012.Cloud Computing for Increased Business Value. *International Journal of Business and Social Science*, 1(3):234-239, January.

Abor, J. & Quartey, P. 2010. Issues in SME Development in Ghana and South Africa. *International Research Journal of Finance and Economics*: 218-228.

Achieng, M.S. 2013. The adoption and challenges of electronic voting technologies within the South African Context. Unpublished Masters thesis, Cape Peninsula University of Technology, Cape Town.

Adebowale, A. 2011. Micro-credit: an amelioration of poverty for small scale entrepreneurs in Nigeria. *IFE PsychologIA: An International Journal*, 19(1), 405-429.

Adjei, J.K. 2015.Explaining the role of trust in cloud computing services. *Info*, 17 (1): 54-67.

Afolayan, A. O. 2014. Adoption of new ICT innovation by SMMEs in Cape Town. Unpublished Master thesis, Cape Peninsula University of Technology, Cape Town.

Aharony, N. 2015.An exploratory study on factors affecting the adoption of cloud computing by information professionals.*The Electronic Library*, 33(2): 308 – 323.

Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2):179-211.

Alam.S., Khatibi, A., Ahmad, M. & Ishmail, H. 2007. Factors affecting E-commerce adoption in the Electronic Manufacturing Companies in Malaysia. *International Journal of Commerce and Management*, 17(12): 125-139.

Alfreds, D. 2016. Fin24. *Western Cape boasts SA's highest internet usage.*

http://www.fin24.com/Tech/News/western-cape-boasts-sas-highest-internet-usage-20160208

[21 March 2017]

Alharbi, S.T. 2014. Trust and Acceptance of Cloud Computing: A Revised UTAUT Model. Proceedings of International Conference on Computational Science and Computational Intelligence (volume 2), Las Vegas, 10-13 March 2014.

Al-Qeisi, K. 2009. „Analyzing the Use of UTAUT Model in Explaining an Online Behaviour: Internet Banking Adoption", Doctoral dissertation, Department of Marketing and Branding, Brunel University.

Amazon Web Services. 2016. *AWS Case Study: Medscheme.*

https://aws.amazon.com/solutions/case-studies/medscheme/

[6 December 2016]

Amazon Web Services. 2016. *AWS Case Study: PayGate.*

https://aws.amazon.com/solutions/case-studies/paygate/

[6 December 2016]

Amazon Web Services. 2016. *AWS Case Study: Travelstart.*

https://aws.amazon.com/solutions/case-studies/travelstart/

[6 December 2016]

Angeles, R. 2013. Using the Technology-Organization-Environment Framework and Zuboff's Concepts for Understanding Environmental Sustainability and RFID: Two Case Studies. *International Scholarly and Scientific Research & Innovation*, 7(11).

Apulu, I. & Latham, A. 2009. Information and Communication Technology Adoption: Challenges for Nigerian SMEs. *TMC Academic Journal*, 4(2):64-80.

Arroio, A. & Scerri, M. (eds). 2014. *The promise of small and medium enterprises.* 1st ed. New Delhi: Routledge.

Attuquayefio, S.N. &Addo, H. 2014.Using the UTAUT model to analyze students' ICT adoption. *International Journal of Education and Development using Information and Communication Technology*, 10(3):75-86.

Aubel, J., 1984. *Guidelines for Studies Using the Group Interview Technique*, International Labour Organization, Switzerland

Avram, M.G. 2013. Advantages and challenges of adopting cloud computing from an enterprise perspective. *Procedia Technology*, 12 (2014): 529-534.

Awa, H.O. & Ukoha, O. 2012. *Integrating TAM and TOE Frameworks and Expanding their Characteristic Constructs for E-Commerce Adoption by SMEs.*

http://proceedings.informingscience.org/InSITE2012/InSITE12p571-588Awa0144.pdf

[17 April 2015].

Babbie, E. 2007. *The practice of social research*. 11th Edition. Belmont, CA: Thomson Wadsworth.

Babbie, E. 2010. *The practice of social research*. 12th Edition. Belmont, CA: Thomson Wadsworth

Babbie, E. 2011. *The basics of social research*. 5th Edition. Belmont, CA: Wadsworth.

Babbie, E. & Mouton, J. 2001. The practice of Social Research. Cape Town: Oxford University Press South Africa.

Babbie, E. & Mouton, J. 2002. *The practice of social research*. Cape Town: Oxford University Press Southern Africa.

Babbie, E. & Mouton, J. 2003. *The practice of Social Research*. South African Edition, Oxford: University Press.

Babbie, E. & Mouton, J. 2008. *The Practice of Social Research*. Cape Town: Oxford University Press.

Bagherian, R., Bahaman, A.S., Asnarulkhadi, A.S. & Shamsuddin, A. 2009. Social Exchange Approach to People"s Participations in Watershed Management Programs in Iran. *European Journal of Scientific Research*, 34(3):428-411.

Bagozzi, R.P. 2007. The legacy of the Technology Acceptance Model and a proposal for a paradigm shift. *Journal of the Association for Information Systems*, 8(4):244-254.

Bagui, L. 2013. Public participation in government: the place of e-participation in the city of Cape Town – Western Cape. Unpublished Master thesis, Cape Peninsula University of Technology, Cape Town.

Barba-Sanchez, V., Martinez-Ruiz, M.P. &Jimenez-Zarco, A.I. 2007. , Drivers, benefits and challenges of ICT adoption by small and medium sized enterprises (SMEs): a literature review. *Problems and Perspectives in Management*, 5(1):103.

Baumfield, V., Hall, E. & Wall, K. 2013. *Action research in education*. London: Sage.

Baxter, J. & Eyles, J. 1997. Evaluating qualitative research in social geography: Establishing 'rigour' in interview analysis. *Transactions of the Institute of British Geographers*, 22(4), 505-525.

Bhattacherjee, A. 2012. *Social Science Research: principles, methods, and practices*.

http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oa_textbooks

[30 July 2015].

Bickford-Smith, V., Van Heyningen, E.& Worden, N. 1999. *Cape Town in the twentieth century: an illustrated social history*. New Africa Books.

Binns, T. & Nel, E. 2002.Tourism as a local development strategy in South Africa. *The Geographical Journal,* 168(3):235-247, September.

Bizcommunity. 2014. *Cloud adoption remains slow in spite of direct benefits.*

http://www.bizcommunity.com/Article/196/664/111597.html

[23 March 2014]

Bless, C., Higson-Smith, C. & Kagee, A. 2006*. Fundamentals of social research methods: An African perspective*. Cape Town: Juta & Company.

Boeije, H. 2010. *Analysis in qualitative research*, Sage Publications, London.

Bolderston, A. 2012. Conducting a research interview. *Journal of Medical Imaging and Radiation Sciences*, 43(1):66-76.

Bowen, J.A. 2011. Cloud Computing: Issues in Data Privacy/Security and Commercial Considerations. *Computer and Internet Lawyer*, 28(8):1-8, August.

Bowen, M., Morara, M. & Mureithi, S. 2009, Management of business challenges among small and micro enterprises in Nairobi-Kenya. *KCA Journal of Business Management*, 2(1):16-31.

Brace, I. 2004*. Questionnaire Design: How to plan, structure and write survey material for effective market research*. London: Kogan Page Limited.

Braun, V. & Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, (3): 77-101.

Bryman, A. & Bell, E. 2007. *Business Research Methods*. 2nd ed. Oxford: Oxford University Press.

Burke, M.E. 2007. *Making choices: research paradigms and information management. Practical applications of philosophy in IM research. Information Systems Institute*, Salford Business School, University of Salford, Salford, UK.

Burns, P. 2001. *Entrepreneurship and Small Business*. New York: Palgrave.

Cao, Y., Bi, X. & Wang, L. 2013. A Study on User Adoption of Cloud Storage Service in China: A Revised Unified Theory of Acceptance and Use of Technology Model. *IEEE Computer Society*, 287-293.

Cape Peninsula University of Technology .n.d. *Research Ethics Review Checklist.*

http://www.cput.ac.za/files/images_folder/research/documents/FID%20Research%20Ethics%20 Review%20Checklist.pdf

[18 June 2014].

Carlson, D. S., Kacmar, M. K., Wayne, J. H. & Grzywacz, J. G. 2006. Measuring the positive side of the work-family interface: Development and validation of a work-family enrichment scale, *Journal of Vocational Behaviour*, 68(1):131-164.

Carroll, M., Van der Merwe, A. & Kotzé, P. n.d. *Secure Cloud Computing: Benefits, Risks and Controls.*

http://researchspace.csir.co.za/dspace/bitstream/10204/5184/1/Kotze4_2011.pdf

[19 August 2014]

Carter, S. 2000. Improving the numbers and performance of women-owned businesses: some implications for training and advisory services, *Education & Training*, 42(4/5):326- 333.

Carter, L., Shaupp, L.C., Hobbs, J. & Campbell, R. 2011.The role of security and trust in the adoption of online tax filing. Transforming Government: People, *Process and Policy*, 5 (4):303-318.

Chartered Institute of Marketing. 2015. *A brief summary of marketing and how it works*.

https://www.cim.co.uk/files/7ps.pdf

[12 December 2016]

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies. *MIS Quarterly*, 26(2), 65-89.

Chong, S. 2008. Success in electronic commerce implementation: a cross-country study of small and medium sized enterprises. *Journal of Enterprise Information Management*, 21(5):468-492.

Christensen, L, Engdahl, N, Grääs C., & Haglund, L. 2001. *Market - A handbook*. Student literature. ISBN 91-44-01799-5, 2nd Ed.

City of Cape Town. 2013. City of Cape Town 2011Census suburb Khayelitsha https://www.capetown.gov.za/en/stats/2011CensusSuburbs/2011_Census_CT_Suburb_Khayelit sha_Profile.pdf

[25 November 2016].

Claessen, E. 2005. Strategic use of IC reporting in small and medium-sized IT companies: a progress report from a Nordic project. *Journal of Intellectual Capital*, 6 (4): 558-69.

Cohen, J.F., Mou, J. & Trope, J. 2014. Adoption of Cloud Computing by South African Firms: The Role of Institutional Forces, Absorptive Capacity, and Top Management. Proceedings of the Southern African Institute for Computer Scientist and Information Technologists Annual Conference 2014 on SAICSIT 2014 Empowered by Technology, New York, 29 September 2014.

Collis, J. & Hussey, R. 2009. *Business research: A practical guide for undergraduate and post graduate students*. Hampshire: Palgrave Macmillan.

Coombes, A.E. 2003. *History after apartheid: visual culture and public memory in a democratic South Africa*. Duke University Press.

Cornford, T. & Smithson, S. 2006. *Project research in information systems: a student's guide*. 2nd ed. London: Palgrave.

Corso, M., Martini, A., Pellegrini, L. & Paolucci, E. 2003. Technological and organizational tools for knowledge management: in search of configurations. *Small Business Economics*, 21 (4): 397-408.

Creswell, J.W. 2007. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. New Jersey, Merrill Prentice Hall.

Creswell, J.W. 2009. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd edition. Thousand Oaks: Sage Publication.

Creswell, J.W. 2013. *Qualitative inquiry & research design: choosing among five approaches.* 3rd ed. Thousand Oaks: Sage Publications.

Dachyar, M. & Prasetya, M.D. 2012. Cloud computing Implementation in Indonesia. *International Journal of Applied Science and Technology*, 2(3):138-142, March.

Dada, D. 2006. E-readiness for developing countries: moving the focus from the environment to the users. *Electronic Journal of Information Systems in Developing Countries*, 27(6):1-14.

Dana, N. F. and Yendol-Hoppey, D. 2009. *The reflective educator's guide to classroom research: Learning to teach and teaching to learn through practitioner inquiry*. Thousand Oaks, CA: Corwin Press.

Daniel, N. E. 2011. The effective measurement of SME E-commerce performance. Unpublished Master thesis, Cape Peninsula University of Technology, Cape Town.

David,M. & Stutton, C.D. 2004. *Social Research,* Sage Publication: Unlimited Kingdom.

Davids, F. & Van Belle, JP. 2017. Understanding the business strategy factors that drive the business impacts of cloud computing. 7th International Conference on Cloud Computing, Data Science & Engineering – Confluence, Noida, 12 – 13 Jan 2017.

Davis, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly*, 13(3): 319-340.

Davis, F. D., &Venkatesh, V. 1996. A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International Journal of Human Computer Studies*, 45: 19-45.

Denscombe, M. 2002. *The good research guide.* Burckingham: Open University Press.

Department of Communications. 2013. Electronic Communications Act. Notice 36 of 2005. *Government Notice*, 3 (37119): 1-61, December 6.

Dietrich, M. & Krafft, J. (Eds.). 2012. *Handbook on the Economics and Theory of the Firm*. Edward Elgar Publishing.

Dillon, T., Wu, C. & Chang, E. 2010. Cloud Computing: Issues and Challenges. 24th IEEE International Conference on Advanced Information Networking and Applications, Perth, WA, 20-23 April 2010.

Docherty, A. J. & Simpson, M. 2004. E-commerce Adoption Support and Advice for UK SMEs. *Journal of Small Business and Enterprise Development*, 11(3):315-328.

Dulkadir, B. & Akkoyun, B. 2013. Bilisim teknolojilerinin isletme performansi uzerine etkileri ve Gaziantep ilinde tekstil sektorunde bir arastirma. Gümüşhane Üniversitesi Sosyal Bilimler *Elektronik Dergisi*, 1(7):72-90.

Ebejer, J.-P., Fulle, S., Morris, G. M. & Finn, P. W., 2013. The emerging role of cloud computing in molecular modelling. *Journal of molecular graphics & modelling*, 44, pp.177–87. Available at: http://www.ncbi.nlm.nih.gov/pubmed/23835611 [Accessed May 17, 2016].

Elibol, H. 2003. Bilisim teknolojileri kullaniminin isletmelerin organizasyon yapilari uzerine etkileri, Kirikkale: University of Kirikkale.El-Gayar, O. F., Moran, M., & Hawkes, M. (2011).Student's acceptance of tables PCs and implications for educational instructions. *Educational Technology & Society*, 14(2), 58-70.

Ellis, J. & Van Belle, J.W.G.D. 2009. Open Source Software Adoption by South African MSEs Barriers and Enablers. In John McNeill (eds), Proceedings of the 2009 Annual Conference of the Southern African Computer Lecturer's Association, New York, 29 June-1 July 2009.

Esselaar, S., Stork, C., Ndiwalana, A. & Deen-Swarray, M. 2007.ICT usage and its impact on profitability of SMEs in 13 African countries. *Information Technologies and International Development Journal*, 4 (1), 87-100.

Excel Capital. 2016. *How Offering Free Wi-Fi Can Impact Your Business' Growth.*

https://www.excelcapmanagement.com/offering-free-wifi-can-impact-business-growth/

[15 February 2017]

Ezzy, D. 2002. *Qualitative Analysis: practice and innovation.* London: Routledge.

Fereday, J., & Muir-Cochrane, E., 2006. Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International Journal of Qualitative Methods*, 5(1) http://www.ualberta.ca/~iiqm/backissues/5_1/pdf/fereday.pdf [6 November 2015].

Flick, U. 2010. *An introduction to qualitative research.* 4th ed. London: Sage Publications.

Fusch, P. I., & Ness, L. R. (2015). Are We There Yet? Data Saturation in Qualitative Research. *The Qualitative Report*, 20(9):1408-1416. http://nsuworks.nova.edu/tqr/vol20/iss9/3

George, J.F. 2004. The theory of planned behavior and internet purchasing. *Internet Research*, 14(3): 198-212.

Ghobakhloo, M., Hong, T.S., Sabouri, M.S. &Zulkifli, N. 2012. Strategies for Successful Information Technology Adoption in Small and Medium-sized Enterprises. *Information 2012*, 3: 36-37, February.

Gillham, B. 2005. *Research interviewing: the range of techniques.* 1st ed. UK: McGraw-Hill Education.

Given, L.M. 2008. *The SAGE Encyclopedia of qualitative research methods.* SAGE Publications,Inc

Goldstuck, A. 2015. *SMEs will embrace cloud to meet tech needs.*

https://www.smesurvey.co.za/reports/SME%20Survey%202015%20summary.pdf

[17 March 2017].

Grandon, E. & Pearson, J. M. 2004. E-Commerce adoption: Perceptions of managers/owners of small and medium sized firms in Chile. *Communications of the Association for Information Systems*, 12:81-102.

Gupta, B., Dasgupta, S. & Gupta, A. 2008. Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems*, 17(2): 140-154, June.

Gustafson, B. & Orrgren, A. 2012. Cloud computing: The Adoption of Cloud Computing for Small and Medium Enterprises. Jonkoping University, Jonkoping.

Ha. S, & Stoel, L. 2009. Consumer e-shopping acceptance: Antecedents in a technology acceptance model, *Journal of Business Research*, 62(5):565–571

Hair, J., Blake, W., Babin, B. & Tatham, R. 2006. *Multivariate Data Analysis.* New Jersey: Prentice Hall.

Hallebone, E. & Priest, J. 2009. *Business and Management research: Paradigms and practices.* New York: Palgrave McMillan.

Haltiwanger, J., Jarmin, R. S. & Miranda, J. 2013. Who creates jobs? Small versus large versus young. *Review of Economics and Statistics*, 95(2), 347-361.

Hayes, T.P.J. 2012. Predicting Information Technology Adoption in small businesses: An extension of the Technology Acceptance Model. *Academy of Information and Management Sciences Journal*, 15(1): 37-46.

Henning, E. 2004. *Finding your way in qualitative research.* Pretoria: Van Schaik.

Heron, J. 1996. *Co-operative inquiry: research into the human condition.* London, Sage

Herrington, M., Kew, J. & Kew, P. 2010. *Tracking entrepreneurship in South Africa: A GEM perspective.* Cape Town.

Hiller, H. H. 2000. Mega-events, Urban Boosterism and Growth Strategies: An Analysis of the Objectives and Legitimations of the Cape Town 2004 Olympic Bid. *International Journal of Urban and Regional Research*, 24(2), 449-458.

Hinde, C. & Van Belle, J.P. 2012. Cloud Computing in South African SMMEs: Risks and Rewards for Playing at Altitude. *International Journal of Computer Science and Electrical Engineering,* 1 (1).

Iolbusinessreport. 2014. *Importance of SMMEs is big business for country.*

https://www.iol.co.za/business-report/opinion/importance-of-smmes-is-big-business-for-country-1768670

[29 December 2017].

Iolnews. 2011. *SA's best malls named.*

http://www.iol.co.za/news/south-africa/sa-s-best-malls-named-1.1189370

[10 July 2015].

Ion, P. & Andreea, Z. 2008. Use of ICT In SMEs management within the sector of services. *The Journal of the Faculty of Economics*, 4(1):481-487.

Ismail, R., Jeffrey, R. & Belle, J. 2011.Using ICT as a value adding tool in South African SMEs. *Journal of African Research in Business and Technology*, 2011, 1-12.

Jere, N.R., Thinyane, M. & Terzoli, A. 2001. *Development of an ICT road map for eservices in rural areas.*

http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6144217

[10 July 2015].

Jocumsen, G. (2004). How do small business managers make strategic marketing decisions*? A model of process.European journal of marketing*, 38(5/6), 659-674.

Johanson, G. 2002. Ethics in Research in Williamson, K. (ed.) *Research Methods For Students, Academics and Professionals*, Centre for Information Studies, Charles Sturt University, WaggaWagga, NSW. 67-84.

Johns Hopkins Medicine. n.d*. Informed Consent Guidance.*

http://www.hopkinsmedicine.org/institutional_review_board/guidelines_policies/guidelines/informed_consent_i.html

[18 June 2014].

Jones, O. & Tilley, F. 2003. *Competitive advantage in SMEs: organising for innovation and change.* Chichester: Wiley

Johnson, K. A., Kabanda, S.K., Adams, S. &Davids, E. How SMEs in Western Cape of South Africa Use ICT. Management of Engineering & Technology (PICMET) Conference, Cape Town, 27-31 July 2008.

Joubert, A. 2012. *Ten drivers of cloud computing for South African businesses.*

http://www.itweb.co.za/index.php?option=com_content&view=article&id=58388

[19 August 2014].

Juntumaa, M. 2011. Putting consumers' IT adoption in context: failed link between attitudes and behaviour. Aalto university publications series. Doctoral Dissertation 14/2011.

Kaplan, A. & Maxwell R. 2005. *The conduct of inquiry: Methodology for behavioural science.* New York: Harper & Row.

Kauffman, R., & Walden, E. (2001). Economics and electronic commerce: Survey and directions for re-search. *International Journal of Electronic Commerce*, 5(4), 5-116.

Keung, J. & Kwok, F. 2012. Cloud Deployment Model Selection Assessment for SMEs: Renting or Buying a Cloud. ACM Fifth International Conference on Utility and Cloud Computing, Chicago, 5-8 November 2012.

Kiblin, T. 2011. *How To Use Cloud Computing For Disaster Recovery.*

http://www.crn.com/blogs-op-ed/channel-voices/230700011/how-to-use-cloud-computing-for-disaster-recovery.htm

[24 May 2016]

Kim, W. 2009. Cloud Computing: Today and Tomorrow. *Journal of Object Technology*, 8(1): 1, January-February.

King, L. 2016. *How Small Businesses Can Save Money with Technology.*

http://www.huffingtonpost.com/laiza-king-/how-small-businesses-can-_6_b_10941926.html

[3 May 2017].

Klenke, K., 2008. *Qualitative Research in the Study of Leadership*, Emerald Group Publishing Limited, UK.

Klopping, I.M. & McKinney, E. 2004. Extending the Technology Acceptance Model and the Task Technology Fit Model to consumer e-ecommerce. *Information Technology, Learning, and Performance Journal*, 22(1).

Koeries, K. 2012. *Cloud Software Service Benefits for the Small Business*

https://www.rsaweb.co.za/cloud-software-service-benefits-for-the-small-business/

[17 November 2017].

Kowath, N., & Choon, T. (2001) Determinants of website development: A study of electronic commerce in Singapore. *Information & Management*, 39(3), 227-242.

Kroeze, J.H. 2011. Interpretivism in Information Systems: A Postmodern Epistemology? [Online], Sprouts: Working Papers on Information Systems, 11(171). http://sprouts.aisnet.org/11-171

[30 July 2015].

KPMG. 2014. *Transport sector is a vehicle for growth in SA's economy*.

http://www.kpmg.com/za/en/issuesandinsights/articlespublications/press-releases/pages/transport-sector-a-vehicle-for-growth.aspx

[10 July 2015].

Kshetri, N. 2010. Cloud Computing in Developing Economies. *IEEE Computer Society*, 43(10).

Kunze, M., Wang, L., Laszewski, G., Younge, A., He, X., Tao, J. & Fu, C. 2008. Cloud computing: A perspective study. *New Generation Computing*, 28: 137-146

Lawrence, J. 2010. The Factors that Influence Adoption and Usage Decision in SMEs: Evaluating Interpretive Case Study Research in Information Systems. *The Electronic Journal of Business Research Methods*, 1(8): 51-62.

Lee, J., Cerreto, F. A., & Lee, J. 2010.Theory of Planned Behavior and Teachers' Decisions Regarding Use of Educational Technology. *Educational Technology & Society*, 13 (1), 152–164.

Lee, Y., Kozar, K.A. & Larsen, K.R.T. 2003. The Technology Acceptance Model: Past, Present, and Future. *Communications of the Association for Information Systems*, 12 (50): 752-780.

Lee, Y-C., Li, M-L., Yen, T-M. & Huang, T-H. 2010. Analysis of adopting an integrated decision making trial and evaluation laboratory on a Technology Acceptance Model. *Expert Systems with Applications*, 37(2):1745-1754.

Leedy, P. & Ormrod, J. 2001.*Practical Research: Planning and design*. 7th Edition, SAGE Publication

Leedy, P.D. & Ormrod, J.E. 2005. *Practical research: planning and design*. 8th ed. Upper Saddle River, NJ: Pearson Prentice-Hall.

Lemanski, C. 2004. A new apartheid? The spatial implications of fear of crime in Cape Town, South Africa. *Environment and Urbanization*, 16(2), 101-112.

Levy, M., Powell, P. & Yetton, P. 2001. SMEs: aligning IS and the strategic context. *Journal of Information Technology*, 16(3): 133-44

Longfield, K., 2004. *In-Depth Interviews, Social Marketing Research Tool Kit. (Online)* www.aidsmark.org/.../14_Research-Toolkit-Ch6-In-Depth-Interviews

 [30 July 2015]

Low, C., Chen, Y. & Wu, M. 2011. Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems*, 111 (7): 1006-1023.

Lucchetti, R. &Sterlacchini, A. 2004.The adoption of ICT among SMEs: Evidence from an Italian survey. *Small Business Economics*, 23 (2):151-168.

Makoza, F. & Chigona, W. 2011. ICT use in South African Microenterprises: An assessment of livelihood outcomes. ITU-T Kaleidoscope Academic Conference, Cape Town, 12-14 December 2011.

Mandal, D. & McQueen, R. 2012. Extending UTAUT to explain social media adoption by microbusinesses. *International Journal of Managing Information Technology*, 4(4), November.

Manueli, K., Latu, S. &Koh, D., 2007. ICT Adoption Models. 20th Annual Conference of the National Advisory Committee on Computing Qualifications. Nelson. New Zealand.

Mapeshoane, T. 2015. The adoption of e-commerce in the Lesotho Tourism Industry. Unpublished Dissertation, Cape Peninsula University of Technology, Cape Town.

Maqueira-Marín, J. M., Bruque-Cámara, S. & Minguela-Rata, B. 2017. Environment determinants in business adoption of Cloud Computing. *Industrial Management & Data Systems*, 117(1):228-246. https://doi-org.libproxy.cput.ac.za/10.1108/IMDS-11-2015-0468

Maree, K. 2007. *First Steps in Research*. Pretoria: Van Schaik Publishers.

Mariah Brown. J. n.d. *How Important Are Small Businesses to Local Economies?*

http://smallbusiness.chron.com/important-small-businesses-local-economies-5251.html

[29 December 2017].

Marrian, N. 2014. Business day live. *Small business minister will not start big job from scratch.*

http://www.bdlive.co.za/business/2014/06/25/small-business-minister-will-not-start-big-job-from-scratch

[26 March 2015].

MARTIN, L. 2005. Internet adoption and use in small firms: internal processes, organisational culture and the role of the owner-manager and key staff. *New Technology, Work and Employment*, 20(3): 190–204.

Martin. 2017. *Theory of planned behaviour: definition, explained, examples.*

https://www.cleverism.com/theory-of-planned-behavior/

[17 August 2018]

Mather, T., Kumaraswamy, S. & Latif, S. 2009. *Cloud security and privacy: An enterprise perspective on risks and compliance.* Sebastopol, CA: O'Reilly Media, Inc.

Mayan, M.J. 2001. An introduction to qualitative methods: a training module for students and professionals. University of Alberta: International Institute for Qualitative Methodology.

McConnachie, K. 2012. ITWeb. *The top SA cloud adopters.*

http://www.moneyweb.co.za/moneyweb-technology-news/the-top-sa-cloud-adopters

[20 October 2013].

Meyers, L., Gamst, G. & Guarino, A. 2005. *Applied Multivariate Research: Design and Interpretation.* London: Sage Publications.

Miraftab, F. 2012. Colonial present: legacies of the past in contemporary urban practices in Cape Town, South Africa. *Journal of Planning History*, 11(4), 283-307.

Miles, M. B., & Huberman, A. M. 1994. *Qualitative data analysis* (2nd ed.). London: Sage Ltd.

Miles, M. B. & Huberman, A. M. 1994. *Qualitative data analysis and expanded sourcebook.* Sage Publications: Thousand Oaks

Modimogale, L. 2009. Using ICTs to become a competitive SME in South Africa. *Knowledge Management and Innovation in Advancing Economies: Analyses & Solutions*: 504-513.

Modimogale, L. & Kroeze, J.H. 2011. Role of ICT within Small and Medium Enterprises in Gauteng. *Communications of the IBIMA.*

http://www.ibimapublishing.com/journals/CIBIMA/2011/369288/369288.pdf

[20 November 2013].

Mohlameane, M. & Ruxwana, N. 2014. The Awareness of Cloud Computing: A Case Study of South African SMEs. *International Journal of Trade, Economics and Finance*, 5(1):6-11, February.

Mostert, J. & Ntetha, M. 2008. Information and Communications Telechnologies (ICTs) in Secondary Educational Institutions in the Umhlatuze Municipality, South Africa: An Insight into their Utilisation, Impact and the Challenges Faced. *South African Journal of Libraries and Information Science*, 74 (1) 23-40.

Mtongana, B.O. 2012. Factors influencing the deployment of enterprise architecture in the provincial government of the Western Cape. Unpublished Masters thesis, Cape Peninsula University of Technology, Cape Town.

Mujinga, M. & Chipangura, B. 2011. Cloud computing concerns in developing economies. Australian Information Security Management Conference, Edith Cowan University, Perth Western, 5-7 December 2011.

Murray, M. 2007. Building the 'New South Africa': urban space, architectural design, and the disruption of historical memory. *History making and present day politics: the meaning of collective memory in South Africa, NordiskaArikainstitutet, Uppsala*.

Murugan, A. & Bay, A. 2010. Factors that determine the adoption of cloud computing: a global Perspective. *International Journal of Enterprise Information Systems*, 6(4): 55, October-December.

Mutula, S. 2004. IT Diffusion in Sub-Saharan Africa: Implications for Developing and Managing Digital Libraries. *New Library World*, 105 (7/8): 281-289.

Mybroadband. 2015. *Internet access in South Africa: best and worst provinces.*

http://mybroadband.co.za/news/telecoms/127450-internet-access-in-south-africa-best-and-worst-provinces.html

[28 August 2015].

Myers, M. D. 1997. Qualitative research in information systems: MISQ discovery. *MIS quarterly*, 21(2):241-242.

Myers, M. D. 2009. *Qualitative research in business and management*. London: Sage

Ndayizigamiye, P. 2014. The Influence of SMMEs Internal Factors on E-commerce Adoption: A South African Perspective. *Mediterranean Journal of Social Sciences*, 5(23), November

Neale, B. 2013. Adding time into the mix: stakeholder ethics in qualitative longitudinal research. *Methodological Innovations Online*, 8(2):6-20.

Neneh, B.N. 2017. Applying the theory of planned behaviour to the problem of employee theft in small businesses. *Journal of Contemporary Management*, 14 (1): 963-985.

Neuman, W.L. 2003. *Social research methods: qualitative and quantitative approaches*. Fifth edition. Boston: Allyn and Bacon.

Neuman, W.L. 2011. *Social Research Methods: Qualitative and Quantitative Approaches.* 7th Edition. Boston: Pearson.

Nguyen, T., Sherif, J. & Newby, M. 2007. Strategies for successful CRM implementation. *Information Management & Computer Security*, 15(2): 102-15.

Nicholas, C. 2013. News24. *SA falls behind on cloud computing.*
http://www.news24.com/Technology/News/SA-falls-behind-on-cloud-computing-20130307

[24 September 2013].

Nieuwenhuis, J. 2010. Qualitative research designs and data gathering techniques. In Maree, K. (ed.) *First steps in research*. Pretoria: Van Schaik: 70-98.

Ogigau-Neamtiu, F. 2012. Cloud computing security issues. *Journal of Defense Resources Management*, 3 (2):141, October.

Ohio State University. n.d.*Informed Consent in Research.*

https://ccts.osu.edu/education-and-training-programs/research-education-and-training-programs/clinical-research-coordinator-resources/informed-consent-in-research

[18 June 2014].

Okoli, C. & Schabram, K. 2010. A guide to conducting a systematic literature review of information systems research. Sprouts: *Working papers on information systems*, 10-26. http://sprouts.aisnet.org/10-26/

[30 July 2015].

Okurut, F. N. & Ama, N. O. 2013.Assessing factors that affect women and youth micro-entrepreneurs in Botswana. *International Journal of Academic Research in Economics and Management Sciences*, 2(1), 306-332.

Oliveira, T., Martins, M.F. & De Lisboa, U.N. 2011. Literature review of Information Technology Adoption Models at firm level. *The Electronic Journal Information Systems Evaluation*, 14(1):110-121.

Oliveira, T., Thomas, M. & Espadanal, M. 2014. Assessing the determinants of cloud computing adoption: An analysis of the manufacturing and services sectors. *Information & Management*, 51(5): 497-510, July.

Pather, S. & Remenyi, D. 2005. Some of the philosophical issues underpinning research in information systems - from positivism to critical realism. *South African Computer Journal,* 35:76-83.

Patton, M. 2002. *Qualitative Research and Evaluation Methods*. 3rd Edition. United States of America: Sage Publications

Pienaar, W. 2012.Bizco. *Are SMEs adopting the cloud opportunity?*

http://bizco.co.za/smes-adopting-cloud-opportunity/

[20 October 2013].

Pijpers, G. G. M., & van Montfort, K. 2006. An investigation of factors that influence senior executives to accept innovations in information technology. *International Journal of Management*, 23(1), 11-23

Plomp, T. 2010. Educational Design Research: An introduction. In T. Plomp & N. Nieveen (eds.).

An Introduction to Educational Design Research:1-126. Enschede.

Polit, D. & Beck, C. 2004. *Nursing research: Principles and methods* 7th Ed. Philadelphia: Lippincott, Williams & Wilkins.

Polit, D. F. & Hungler, B. P. 2006. *Instructor's manual for essentials of nursing research: methods, appraisal and utilization*. 3rd ed. Philadelphia: Lippincott.

Polit, D. F. & Beck, C. T. 2006. *Essentials of nursing research: methods, appraisals, and utilization*. 6th ed. Philadelphia: Lippincott Williams & Wilkins.

Porter, M.E. 2004. Building the Microeconomic Foundations of Prosperity: Findings from the Business Competitiveness Index, in Porter, M.E, Schwab, K., Sala-i-Martin, X & Lopez-Claros, A. (eds.) The Global Competitiveness Report 2004–2005, Palgrave Macmillan, World Economic Forum: New York:19-50.

Premkumar, G. 2003. A meta-analysis of research on information technology implementation in small business. *Journal of Organizational Computing and Electronic Commerce*, 13(2): 91-121.

Publications.Neuman, W.L. 2011. *Social Research Methods: Qualitative and Quantitative Approaches*. 7th Edition. Boston: Pearson.

Qureshi, S. 2005. How does information technology effect development? Integrating theory and practice into a process model, Proceedings of the 11th Americas Conference on Information Systems, Omaha, NE.

Qureshi, S., Kamal, M. & Good, T. 2008. Adoption of Information Technology by Micro-enterprises: Insights from a rural community. *Information Systems and Quantitative Analysis Faculty Proceedings & Presentations*: 38.

Qureshi, S. & Kamal, M. 2011. Role of Cloud Computing Interventions for Micro - Enterprise Growth: Implications for Global Development. Proceedings of the Fourth Annual SIG GlobDev Workshop, Shanghai, 3 December 2011.

Raman, A., Don, Y., Khalid, R. &Rizuan, M. 2014. Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model. *Asian Social Science*, 10(14).

Ramdani, B., Chevers, D. & Williams, D.A. 2013. SMEs' adoption of enterprise applications. *Journal of Small Business and Enterprise Development*, 20(4): 735-753.

Ramukumba, T. 2014. Overcoming Smes Challenges through critical success factors: A case of SMEs in the Western Cape Province, South Africa. *Economic and Business Review*, 16 (1): 19-38.

Rassool, C. & Prosalendis, S. (Eds.). 2001. *Recalling community in Cape Town: creating and curating the District Six Museum*. District Six Museum.

Remenyi, D., Williams, B., Money, A. & Swartz, E.1998. *Doing Research in Business and Management, an Introduction to process and Method*. London: Sage Productions.

Resnik, D. B. 2015. *What is Ethics in Research & Why is it Important?*

https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm

[17 July 2018].

Riemenschneider, C., Harrison, D. & Mykytyn, P. 2003. Understanding IT adoption decisions in small business: integrating current theories. *Information & Management*, 40(4): 269-285.

Ritchie, B. & Brindley, C. 2005. ICT adoption by SMEs: Implications for relationships and management. *New Technology, Work and Employment*, 20(3):205-217.

Robinson, L. 2009. *A summary of diffusion of innovation*.

http://www.enablingchange.com.au/Summary_Diffusion_Theory.pdf

[3 May 2017].

Rubin, H.J. & Rubin, I.S., 2005. *Qualitative interviewing: the art of hearing data* 2nd ed., London, UK: SAGE Publication

Sabwa, B.A. 2013. Cloud computing adoption by small and medium enterprises (SMES) in Nairobi County. Unpublished Master thesis, University of Nairobi, Nairobi.

Sahandi, R., Alkhalil, A. & Opara-Martins, J. 2013. Cloud computing from SMEs perspective: A survey – based investigation. *Journal of Information Technology Management*, 24(1):1-12.

Sanchez-Medina, A.J., Romero-Quintero, L. & Sosa-Cabrera,S. 2014. Environmental Management in Small and Medium-Sized Companies: An Analysis from the Perspective of the Theory of Planned Behavior. *PLoS ONE*, 9(2).

Saunders, M., Lewis, P., & Thornhill, A. 2009. *Research methods for business students*. Fifth edition England: Pearson Education Limited.

Schaupp, L.C., Carter, L. & Hobbs, J. 2009. E-File Adoption: A Study of U.S. Taxpayers Intentions. In proceedings of the 42nd Hawaii International Conference on System Sciences, Hawaii, 5-8 Jan. 2009.

Schlenker, L. & Crocker, N. 2003. Building an e-business scenario for small business: the IBM SME Gateway project. *Qualitative Market Research: An International Journal*, 6(1):7-17

Schreier, M. 2014. *The Sage Handbook of Qualitative Data Analysis*. London: SAGE Publications Ltd.

Schwarze, C.L. 2008. Involving the accounting profession in the development of financial management skills of microenterprise owners in South Africa. *Meditari Accounting Research*, 16 (2):139-151.

Sharma, M. & Kanekar, Amar. 2007. *Theory of Reasoned Action & Theory of Planned Behavior in Alcohol and Drug Education*

http://www.redorbit.com/news/science/920185/theory_of_reasoned_action__theory_of_planned_behavior_in/

[14 November 2017].

Sharum, B.J., Hollis, M.S., Alred, J.C. & EdD, S.T. 2013. Evaluating the acceptance of cloud based productivity computer solutions in small and medium enterprises. A dissertation presented in partial fulfillment of the requirements for the degree Doctor of Philosophy, Capella University, Minnesota.

Shenton, A. A. K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for information.* 22 (2): 63-75.

Simons, H. 2009. *Case Study Research in Practice*. Thousand Oaks, CA: Sage Publications.

South Africa. 2003. National Small Business Amendment Act. Notice 26 of 2003. *Government Gazette,* 461 (25763):1-10, November 26.

South Africa. 2003. National Small Business Amendment Act No. 26 of 2003. Pretoria: Government Printer.

Staples, n.d. *Top 10 Cloud Computing Questions & Answers*

http://www.staples.com/sbd/cre/tech-services/explore-tips-and-advice/tech-articles/embrace-the-cloud-or-get-out-of-the-way.html

[24 May 2016].

South Africa. 2017. Draft Information and Communication Technology Small, Medium and Micro-enterprise Support Strategy "Unlocking the potential of ICT SMMEs ". Notice 307 of 2017. *Government Gazette*, 621 (40756): 1-52, March 31.

Simons, H. 2009. *Case Study Research in Practice*. Thousand Oaks, CA: Sage Publications.

Singh, M. 2016. The Adoption of Cloud Computing by Indian SMEs – an Exploratory Study. *International Journal of Scientific Development and Research*, 8(1), August.

Smith, C. 2016. *Department puts ICT White Paper in context*

https://www.fin24.com/Tech/News/department-puts-ict-white-paper-in-context-20161002

[10 November 2017].

Straub, E.T., 2009. Understanding Technology Adoption: Theory and Future Directions for Informal Learning. *Review of Educational Research*, 79(2):625–649.

http://rer.sagepub.com/cgi/doi/10.3102/0034654308325896

[17 July 2015].

Struwig, F. W. & Stead, G. B. 2001. *Planning, designing and reporting research*, Johannesburg: Pearson Education.

Sturges, J.E. & Hanrahan, K. J. 2004. *Comparing telephone and face-to-face qualitative interviewing: a research note*. Sage Publications: Thousand Oaks

Swanepoel, E., Strydom, J. W. & Nieuwenhuizen, C. (2010).An empirical analysis of a private company's corporate social investment in SMME development in South Africa. *Southern African Business Review*, 14 (1), 58-78.

Szolnoki, G. & Hoffmann, D. 2013. Online, face-to-face and telephone surveys. *Proceedings.* The 7th International Conference of the Academy of Wine Business Research, St. Catharines.

Tan, T.C.H. 2010. A perception-based model for technological innovation in small and medium enterprises. Proceedings. 18th European Conference on Information Systems, Pretoria. Paper 33.

Tan, M. & Lin, T.T.C. 2012.Econstor. *Exploring Organizational Adoption of Cloud Computing in Singapore.*

http://www.econstor.eu/bitstream/10419/72509/1/742584003.pdf

[9 February 2015].

Thlabela, K., Roodt, J., Paterson, A. & Weir-Smith, G. 2007. *Mapping ICT Access in South Africa*. Cape Town: HSRC Press.

Thomas, T.D., Singh, L. &Gaffar, K. 2013.The utility of the UTAUT model in explaining mobile learning adoption in higher education in Guyana. *International Journal of Education and Development using Information and Communication Technology*, 9(3):71-85.

Tiago, O. & Martins, M, F. 2011. Literature Review of Information Technology Adoption Models at Firm Level. *Electronic Journal of Information Systems Evaluation*, 14(1):110-121.

Tornatsky, L. G. & Fleischer, M. 1990. *The processes of Technological Innovation*. Lexington, MA: Lexington Books.

Urban, B. & Naidoo, R. 2012. Business sustainability: empirical evidence on operational skills in SMEs in South Africa. *Journal of Small Business and Enterprise Development*, 19(1), 146-163.

Van Belle, J.P. & Akande, A.O. 2014. A Proposed Framework to Assess and Increase the Cloud Computing Readiness of Financial Institutions in South Africa. 5th International Conference on the Next Generation Information Technology Summit, Noida, 25-26 September 2014.

Van der Walt, C. & Van der Rensburg, G. 2006. *Fundamentals of research methodology for health care professionals*. 2nd ed. Cape Town: Juta.

Van Donk, D. P. 2008. Opportunities and realities of supply chain integration: the case of food manufacturers, British Food Journal, 110(2):218-235.

Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D. 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3):425-478.

Venkatesh, V. & Thong, J.Y.L. 2012.Consumer acceptance and use of Information Technology extending the Unified Theory of Acceptance and Use of Technology. *MIS Quartely*, 36(1):157-178, March.

Venkatesh, V. & Zhang, X. 2010. Unified Theory of Acceptance and Use of Technology: U.S. Vs. China. *Journal of Global Information Technology Management*, 13(1):5-27.

Voce, A. 2004. *Qualitative Research Module. Introduction to research paradigms [Online].* http://www.docstoc.com/docs/18652270/What-is-a-research-paradigm

[30 July 2015].

Wang, Y-S., Wang, Y-M., Lin, H-H., & Tang, T. I. 2003. Determinants of user acceptance of Internet banking: an empirical study. *International Journal of Service Industry Management*, 14(5): 501-519.

Weiner, S.A. 2013. *Overview: The role of information policy in resolving global challenges. Global Policy Research Institute (GPRI) Policy Briefs, 1(1), Article 6.*

http://docs.lib.purdue.edu/gpripb/vol1/iss1/6.

[22 October 2015].

Welman, C., Kruger, S. & Mitchell, B. 2005. *Research Methodology*. 3rd ed. Cape Town. Oxford University Press.

Welman,C., Kruger, F., & Mitchell, B. 2007. *Research Methodology*. Oxford University Press: South Africa

Western Cape Provincial Economic Review and Outlook. 2007. Small, medium and micro enterprise and the informal sector.

http://www.westerncape.gov.za/sites/www.westerncape.gov.za/files/documents/2007/8/chapter_6_smme_%2526_informal_sector_masterfile.pdf

[25 November 2016].

Wilkinson, P. 2000. City profile: Cape Town. Cities, 17(3), 195-205.

Wilkinson, D. & Birmingham, P., 2003. *Using Research Instruments: A Guide for Researchers*, Routledge, London and New York.

Willis, J.W. 2007. *Foundations of qualitative research: Interpretive and critical approaches*. California: Sage Publications.

Wolcott, P., Kamal, M. & Qureshi, S. 2008. Meeting the challenges of ICT adoption by microenterprises. *Journal of Enterprise Information Management*, 21(6):616-632.

Wolf, S. 2001. *Determinants and Impact of ICT use for African SMEs: Implications for Rural South Africa.*

http://www.tips.org.za/files/Determinants_and_Impact_of_ICT_use_for_African_SMEs_Implications_for_Rural_South_Africa.pdf

[19 August 2014].

World Wide Worx. 2017. *SA Internet penetration to reach 40% in 2017*.

http://www.worldwideworx.com/internet2017/

[29 December 2017].

World Wide Worx.n.d. *Internet 2% of SA economy*.

http://www.worldwideworx.com/internet-2-of-sa-economy.

[10 July 2015].

Yeboah-Boateng, E. O. & Essandoh, K. A. 2013. Cloud Computing: The Level of Awareness amongst Small & Medium-sized Enterprises (SMEs) in Developing Economies. *Journal of Emerging Trends in Computing and Information Sciences.*

http://www.cisjournal.org/journalofcomputing/archive/vol4no11/vol4no11_2.pdf

[9 February 2015]

Yin, R.K. 2003. *Case study research: Design and Methods*. Thousand Oaks: Sage.

Yin, R. K. 2009. *Case Study Research: Design and Methods*. 4th ed. Thousand Oakes, CA: Sage.

Zappala, S. & Gray, C.W.J. 2006. *Impact of e-commerce on consumers and small forms*. London. Ashgate.

Zhang, K. 2018. Theory of Planned Behavior: Origins, Development and Future Direction. *International Journal of Humanities and Social Science Invention*, 5 (7): 76-83.

Zhu, K. & Kreamer, L. 2005. Post-Adoption variations in usage and value of e- business by organizations:cross-country evidence from retail industry. *Information Systems Research*, 16(1):61-84.

Zikmund, W.G., Babin, B., Carr, J.C. & Griffin, M. 2010. *Business research methods*. 8th ed. South-Western: Cengage.

APPENDICES

Interview Schedule

Title of study: Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town

Interviewer details: Name, contact number

Interview objective

The objective of the interview is to obtain insight into cloud computing adoption amongst micro-enterprises in Cape Town and to determine the factors that influence the adoption of cloud computing by micro-enterprises in Cape Town.

Key concepts

Description of cloud computing:

Cloud computing can be described as storing and accessing data and programs over the internet instead of your computer's hard drive.

Benefits of cloud computing:

- The user does not have to have a high powered computer to run cloud computing web-based applications as these applications run in the cloud (cloud is a figure of speech for the internet), not in on a local desktop computer.

- Organisations using cloud computing do not need to buy separate software packages for every single computer in the organisation because software can be accessed from the cloud by the business employees and this drives to lower software costs.

- It provides offsite management of data and the ability for backups in any location.

- Different users are able to work on a document at same time from anywhere.

- Cloud computing can be used simply whenever one needs it.

Examples of cloud applications:

- **Travelstart is one of Africa's largest travel booking websites** (headquarter in Cape Town) that offers an array of online travel services, including flight bookings, hotel reservations, and car rental, as well as entire vacation packages. **Travelstart is using Amazon Simple Storage Service (Amazon S3)** which is easy to use object storage, with a simple web service interface to store and retrieve any amount of data from anywhere on the web. With Amazon S3, you pay only for the storage you actually use. **Amazon Web Services (AWS) is a cloud vendor that provides Amazon S3 to Travelstart and with AWS, Travelstart has seized opportunities in emerging markets** (has launched businesses in Kenya, Namibia, Egypt, Qatar etc.). **Travelstart has also cut operational costs** by forty three percent and downtime by twenty five percent.

- ***Other types of commonly used cloud services used to support business operations:***
    - ➢ **Dropbox** is a sophisticated cloud-based storage application to store and manage documents and personal sensitive information.
    - ➢ **Google Docs** is a free web-based application in which documents as spreadsheets can be created, edited or stored online. You can share information with everyone who has the right link or choose to only show it to specific people, either on a read-only basis or giving individuals the right to edit your documents.
    - ➢ **Microsoft Office Live** is a discontinued web-based service providing document sharing and website creation tools for consumers and small businesses.
    - ➢ **One drive** is a file hosting service that allows users to store, synchronize files and late access them from a web browser or mobile device.
    - ➢ **Gmail** is a commonly used email application by both businesses and individuals.

Interview questions

The interview questions below will form the basis for the session:

1.   What is the name of the company?

2.   How long has the company been operating?

3.   In which sector your business is operating? (Information Technology, Communication, Retail, Transport, Healthcare or Tourism)

4.   What is your current role in the company?

5.   How many employees do you have?

6.   Do you use ICTs in your company? E.g. PCs, mobile phone

7.   Do you use the internet for business operations? If yes please elaborate (Marketing, website, research, communication with customers etc)

8.   Do you have IT experts or specialists in the company?

9.   Cloud business: What cloud   technology / services are used currently?

10.1.   Non cloud business: Will cloud computing make this business more successful? Explain

10.2.   Cloud business: Please describe the   benefits of using cloud computing to this business.

11.1.   In respect of your own job: How would you expect cloud computing to help you in your own job? (non cloud computing user)

11.2.   In respect of your own job: Since you have started using cloud computing services – how has this helped you in your job any? (cloud computing user)?

12.1.   Cloud business: There are varying views as to how difficult it is to use cloud services in a business such as this. What is your view? (cloud computing user)

12.2.   Non-Cloud business: If you had to use cloud computing in the future in your business, how easy do you think it will be? (non cloud computing user)

13.1.   Is it easy to learn the skills to use cloud computing? (cloud computing user)

13.2.   Do you expect that it will be easy to learn the skills required to use cloud services? (non cloud computing user)

14.1.   Describe the support provided by the company to use cloud computing? (cloud computing user)

14.2.   Do you think that support will be offered by the company? What support do you think is needed? Do you want someone or a group of person to be available in case you need assistance for system difficulties? (non cloud computing user)

15.   Non cloud business: Do you know others businesses that are using cloud services? Does this have any influence on your own decision to adopt similar services?

16.   Cloud user: When you adopted cloud services, did you first consider its use by other businesses? Explain.

17.   Where / or whom are sources of information for you about IT in general? To what extent do you rely on others when you want to make decisions about IT? Who are they? Why are they important?

18.1.   Cloud business: Did you need to acquire a lot more IT infrastructure to adopt cloud computing? Did you spend more for the internet connection, internet bandwidth and data storage? Did your cloud provider go over the tactics needed to keep the data of the business safe including encryption, identify management and physical security?

Cloud business: In addition to the latter – are there any other aspects of the business environment that are necessary for successful use of cloud services?

18.2.   Non cloud business: If you were to adopt cloud computing – what do you think are the necessary aspects of your business environments to ensure successful implementation and use? (e.g. IT infrastructure etc)

19.   Does your company support training for employees when there is an upgrade on the system / technology?

20.   Does your company pay attention to bring in new technology/innovation?

21.   What role, if any, should Government play in supporting small businesses such as yours? Is there some role Government can play to assist a business such as yours to adopt and use technology more effectively?

APPENDIX B: INTERVIEW DESIGN

Interview Design

Interview questions	Objectives
Introduction – clarification of key concepts. Quick overview of common cloud computing services used by small businesses.	Ensure interviewee understands the purpose of the interview. Familiarise the interviewee with key concepts related to cloud computing.
Section A: Demographic Data • What is the name of the company? • How long has the company been operating? • In which sector your business is operating? (Information Technology, Communication, Retail, Transport, Healthcare or Tourism) • What is your current role in the company? • How many employees do you have?	To determine the demographic characteristics of the participants of the research study. Through analysis it will be determined if any of the demographic characteristics are associated with adoption attitudes.
Section B: IT Infrastructure • Do you use ICTs in your company? E.g. PCs, mobile phone • Do you use the internet for business operations? If yes please elaborate (Marketing, website, research, communication with customers etc) • Do you have IT experts or specialists in the company? If not – do you have access to any IT experts? Cloud business: What cloud technology / services are used currently?	To determine the current state of infrastructure that may influence the attitude towards the adoption of cloud computing i.e from a UTAUT context – the 'facilitating conditions'. It is noted that IT infrastructure is not the only facilitating condition.
Section C: Performance Expectancy • Non cloud business: Will cloud computing make this business more successful? Explain • Cloud business: Please describe the benefits of using cloud computing to this business. • In respect of your own job: How would you expect cloud computing to help you in your own job? (non cloud computing user) • In respect of your own job: Since you have started using cloud computing services – how has this helped you in your job any? (cloud computing user)?	Performance Expectancy is defined as the degree to which the individuals believe that the use of the technologies will result in performance gains. Objective: To gather evidence in respect of whether businesses expect improved performance from cloud computing.
Section D: Effort Expectancy • Cloud business: There are varying views as to how difficult it is to use cloud services in a business such as this. What is your view?(cloud computing user)	Effort Expectancy is defined as the ease of use of the technologies. Objective: To gather evidence which would provide an understanding of factors related to

• Non-Cloud business: If you had to use cloud computing in the future in your business, how easy do you think it will be? (non cloud computing user) • Cloud business: Is it easy to learn the skills to use cloud computing? (cloud computing user) • Non-Cloud business: Do you expect that it will be easy to learn the skills required to use cloud services? (non cloud computing user) • Cloud business: Describe the support provided by the company to use cloud computing? (cloud computing user) • Do you think that support will be offered by the company? What support do you think is needed? Do you want someone or a group of person to be available in case you need assistance for system difficulties? (non cloud computing user)	"effort expectancy" i.e. whether cloud computing is perceived as difficult to use.
Section E: Social Influence • Non cloud business: Do you know others businesses that are using cloud services? Does this have any influence on your own decision to adopt similar services? • Cloud user: When you adopted cloud services, did you first consider its use by other businesses? Explain. • Where / or whom are sources of information for you about IT in general? To what extent do you rely on others when you want to make decisions about IT? Who are they? Why are they important?	Social influence is defined as the extent to which the individuals believe that important others believe that they should use the technologies. Objective:To determine whether the use of computing can be influenced by important others.
Section F: Facilitating conditions • Cloud business: Did you need to acquire a lot more IT infrastructure to adopt cloud computing? Did you spend more for the internet connection, internet bandwidth and data storage? Did your cloud provider go over the tactics needed to keep the data of the business safe including encryption, identify management and physical security? Cloud business: In addition to the latter – are there any other aspects of the business environment that are necessary for successful use of cloud services? • Non cloud business: If you were to adopt cloud computing – what do you think are the necessary aspects of your business environments to ensure successful implementation and use? (e.g. IT infrastructure etc)	Facilitating Conditions can be defined as the perceived extent to which the organisational and technical infrastructure required for the support of the technologies exist. Objective: To establish whether organisational and technical infrastructure required for the support of cloud computing exist.

• Does your company support training for employees when there is an upgrade on the system / technology? • Does your company pay attention to bring in new technology/innovation? • What role, if any, should Government play in supporting small businesses such as yours? Is there some role Government can play to assist a business such as yours to adopt and use technology more effectively?	

APPENDIX C: LETTER TO RESEARCH PARTICIPANTS

Faculty Informatics & Design
Research Unit
P.O. Box 652
Cape Town, 8000

Tel + 27 21 469 1000
Fax + 27 21 469 1002

Cape Peninsula
University of Technology

12 August 2016

Dear Sir / Madam

RESEARCH STUDY: ADOPTION OF CLOUD COMPUTING SERVICES AMONGST THE MICRO-ENTERPRISES SECTOR IN CAPE TOWN

Thank you in participating in this research study. This research study is being conducted towards a Master's Degree in Business Information Systems at the Cape Peninsula University of Technology (CPUT).

This letter also serves to confirm that the researcher, Mr Albin Boris Lugerero Chiza, is currently a registered Maters student under my supervision. I understand that you have limited time, and therefore would like to express my sincere appreciation of your willingness to share your expertise and contribute to the advancement of research and knowledge creation.

The research concerns **the adoption of cloud computing services amongst the micro-enterprises sector in Cape Town**. The attached interview questions seek to obtain insight into cloud computing adoption amongst micro-enterprises in Cape Town and to determine the factors that influence the adoption of cloud computing by micro-enterprises in Cape Town. This study aims to contribute to both knowledge and practice by proposing guidelines to enhance the adoption and uptake of cloud services amongst micro-enterprises. It is anticipated that the research outcomes will guide cloud providers as to how to meet the emerging requirements of micro-enterprises. In turn this research will, in the medium term, contribute to improved productivity of the micro enterprise sector through the application of cloud services.

In respect of the data which is being compiled, kindly note that in keeping with the ethical requirements of the study:
- All responses and information which you provide to the researcher will be kept secure and in complete confidence.
- The data collected will be analysed and summarized, and will not be attributed to you personally nor your business.
- Thirdly, a summary of the findings will be made available to all participants. In addition the findings may be published academically (i.e. in research journals), should they merit the attention of researchers and others who work to improve the technology status of micro-enterprises, especially in Cape Town.

We thank you for your time. If you have any queries or concerns regarding this study please do not hesitate to make contact with me, using the contact details below.

Regards,

Professor Shaun Pather
Email: spather@uwc.ac.za / shaun.pather@gmail.com
Tel. 021 959 32 48 (o) 084 66 55 55 6 (m)

APPENDIX D: INTERVIEW TRANSCRIPT

INTERVIEW SEVEN – ████████ (39 MIN)

Interviewer:

What is the name of your company?

Respondent:

Uhambo Procurement and Distribution

Interviewer:

How long have you been operating?

Respondent:

We registered in 2008 and we have been operating for the past six years.

Interviewer:

In which sector does your business operate?

Respondent:

We would be categorised as a distribution office.

Interviewer:

What are your current roles in the company?

Respondent:

Resp 1: I am the Administrative Director and one of the members of the CC and one of the roles is to oversee the administrative processes.

Interviewer:

How many employees do you currently have?

Respondent:

We currently have three (3) on the executive team and three (3) staff members.

Interviewer:

Do you use Information Technology in your company (eg) computers, mobile phone etc?

Respondent:

Yes, we do use all of the above.

Interviewer:

Do you use the internet while for your operations / marketing or communication with customers?

Respondent:

We use the internet a lot for because we procure and we distribute, so we have to buy and sell. When trying to get information from our current suppliers for example when doing a tender, we would use the internet or directly via email. We obviously do our marketing via the internet but on a day-to-day basis, we all use the internet. We look for tenders, IFQ's etc.

Interviewer:

As mentioned before, a lot of small companies they struggle to have access to the internet and have a fast internet connection as well. It's a good thing you are making use of it.

Do you have any IT expert or IT team that keep your company up to date or take up problems that you might have?

Respondent:

Well, we do have a guy who does things for us, however, it is not his full time job – he works for another company. We are getting to a point where we will need to have someone doing these things for us, especially this year we have had quite a few issues related to this and telling us how we need to have someone. Then it is time out when we have to take this PC, go out to this guy who will look at it tonight - so it's two or three days that we lose. We have had these issues now and discovered that we need (this service)

Interviewer:

You will need this (expertise) when you are doing a video-conferencing call and have someone to operate the equipment.

Respondent:

Agreed, even in terms of new technology, we are not thinking along those lines, not that it important but there are so many things to focus on. We need someone to be aware when we are not. We do not have the time or information required for that. So it is important to have someone on the team to keep up up-to-date. For example, we have just finished our website after a year, it was a nightmare. But we had this website provided by SEDA because we applied for funding but somehow the vetting for vendors is not very good on SEDA's side because the vendor wanted to do the bare minimum to get paid. It could not provide us with what is was we needed and it was a whole back-and-forth for over a year. That has been a very big frustration for us. So the little knowledge that I had about websites and the internet, I applied into this situation to say but this is by far not one should be if you are a professional. Based on that we could say no or we need to relook this properly. A lot of small businesses are going to SEDA for website funding. In terms of that, government needs to have providers who are vetted well otherwise the service is redundant, because it is being directed at the small business who doesn't have the time or the knowledge for this type of thing and we trusting if we are going for funding from SEDA that you would have people who know. As a small business, you have this feeling that you must just take what you get. It should be beneficial to others. We were still in the position to evaluate the service provider's work but others may not have that knowledge and what did they do where their livelihood is dependent on the website.

Interviewer:

What do you think would be the reason that would motivate you to adopt the Cloud. You told me about your computer crashing but would there be other reasons?

Respondent:

First of all, storage space. We have hard copy and everyone is moving away from paper. In terms of where we are at the moment we started with three (employees) and as you add more people, you have to add more computers and everything to your system. And then you have to load this or that because we are all not working on an intranet – we don't have that as yet. And that can be a frustration – so to have something centralised could be very useful for a company like ours because you don't have to keep redoing a lot of things. You could just find things as it would be there – all centralised. Anything could happen, someone's off sick and then stuff stands still because you cannot access information and not knowing where it is stored. The benefit would be that we had this situation where the PC crashed and all the information was lost – so the benefit would be in terms of that and another benefit would be that we could all work off one system and access information stored there. If the building burns down, we will still have the back-up.

Interviewer:

And you can expand – say someone from Johannesburg can still communicate with you

Respondent:

It is definitely on the cards for us as we want to have an office /agent in Johannesburg, Durban. It would save us as we would not have to set the whole thing up again.

Other people have travelled overseas to do EXPOs and would be able to access documents anywhere in the world.

Interviewer:

Obviously it would be beneficial to your company.

Respondent:

Yes, I can see that it would.

Interviewer:

In respect of your own job, would Cloud computing benefit you in particular?

Respondent:

Yes, it would as while I am busy with something, someone would come and ask if I had this document. If they could access this directly, it would save me time (to do my job) and meet deadlines.

Also in my role as Office Manager, I would have to go and audit – instead I could access documents where I am and check / audit. It would definitely make life easier, not necessarily healthier because you don't walk around as much.

Interviewer:

My next question was, if you were to adopt Cloud Computing in your business, how easy would it to implement? Do you think it would be easy to use the Cloud services?

Respondent:

In our context, everyone has a smartphone, it would not be a difficult thing and obviously if you have the right system. For example, with big documents, if I cannot send it via email, I would send it via dropbox. We have worked around situations. It is not a professional dropbox and it is getting to the point where we would have to get a professional dropbox.

Dropbox is good but it is not great. Some of the things which need to be done, would be with people outside the company. Sometimes I would drive but it was wasting time. Obviously having a Cloud system which incorporates all our clients and users for certain applications, would be beneficial for the business.

Interviewer:

So acquiring the skill would not be difficult to learn as it was not many competencies but one system. In a case where you have to learn many competencies, it might be a challenge to learn all of them.

Interviewer:

Do you think that if support is added to your company and decide that this was the way to go – to use the dropbox for all our documents. Do you think the company would provide that support? You would need a person to guide you.

Respondent:

In terms of small business that would be the way to go. This product we are busy with – it would change the game for us. In terms of costs, we would need to outsource this. We would need an external person to manage it for us – like a webmaster or someone.

Interviewer:

In other ways, it is better to have someone on the inside?

Respondent:

I think that size matters, it makes sense that the bigger you are to have someone on the inside as you would have more issues. It makes sense to have someone externally unless, it becomes a major part of your business.

Interviewer:

If there is any new technology, you are positive that you would get that support from you company?

Respondent:

Yes, technology is changing and growing so rapidly. There could be a lot of products which could improve our systems, we don't know about it because we are not focussed on it. We hear about it. Companies use but we don't know about it. We are in the digital age – it makes sense to have someone on your staff with that skill set because it can only be beneficial to your company, in where you are placed and how you do business globally. Obviously, it would be beneficial to have someone like that on your team.

I have registered a new business which I am starting with my daughter – Fashion Design and was sitting with people doing the logo and copy and they were young. They were saying that they have this app and that app. I thought I knew something but I obviously don't. I realised that I needed to speak to someone.

Interviewer:

Do you know of any business using the Cloud and does it have any influence on your decision to adopt similar services?

Respondent:

Locally, I feel that we are really behind, especially small business in the industrial manufacturing sector, when it comes to IT. So obviously we are not going to be influenced locally. What I find and why we also consider this new product, is because something is not being done in a certain sector doesn't mean it cannot be done. The sector we are in, is very averse to change. We have done this for 50 years and why would we change this. So the frustration we have now is – how do we bridge this gap? One of the reasons I would consider this and why I am thinking along these lines is because the advert from Telkom: the *future customer*. If anything, that advert would influence – they started thinking about future customers. Nobody starts a business to close it tomorrow – you look at longevity and sustainability. If you think about the future, is this going to work in five years' time and we have to stay ahead or we will lag behind. To me and what people are doing in e-commerce, even though it has no bearing on our business, I feel that we can learn from that because they are looking at things very differently. If you are a small business and break into the markets, you must be a disruptor, coming in with a mind-set that people started with, you can't or they will eat you up. You have to think differently.

Look at the companies like **Take-a-lot.com**, I wonder why are they thinking differently and how can be benefit from it. The digital age is here and it's here to stay and it is growing.

Interviewer:

It is a good thing because people only look within their sector.

Where do you receive your sources of information, you do research or are there people you rely on?

Respondent:

In our company, we seek out information. Other people are happy to wait for others to inform them about something that can be beneficial to your business. If you are someone who considers all the options, you will go with that option.

Someone is doing something in their business and you hear about it. I attend a Start-Grind forum once every few months and you get to hear about new things. That is a clever way of communicating new ideas. That is one way of learning, sharing. This type of organisation is good for sharing this type of information.

You need to listen to what is happening in the world out there. I listen to Tech Talk all the time because people who do Tech Talk are always on the cutting edge of whatever it is they are doing. When it is something in education, you could think what this has got to do with what we are doing but you could learn from it.

Listening to economic reviews etc., because every new innovation would be shared.

Interviewer:

You can rely on these forums – everyone comes to share their ideas or you can get some tips for your own business.

So if you were to adopt Cloud Computing what would you think the necessary aspects of your business environment to ensure successful implementation? What do you think will be needed? I know the internet will be needed in order for successful Cloud implementation, training – someone knowledgeable that can help you if you have any difficulty in implementing the system. Are there other aspects that can be needed for successful implementation of Cloud Computing.

Respondent:

I think with Cloud Computing, they have it in application which will be able to be used in all platforms, whether it is your smart phone, computer or iPad.. How it is packaged is important, will make it usable for all platforms. I have to have a computer. So you want to have it packaged in order for it to work on all packages.

Interviewer:

We spoke about the government. How do you think the government can play a role in supporting small business, such as yours, in using this type of technology, as Cloud Computing. Do they have to organise a forum where all the businesses come together and speak about their businesses or what they need, form a committee where you exchange on a regular basis or …

Respondent:

I feel that the government will say things like we need small business to grow the economy as the economy is dependent on small business entrepreneurs. But they have things in place to support but the things in place do not really support. So there is a misunderstanding or miscommunication in the one who's the user and the one who is providing. So there is not enough conversation between small business and government because for example we have been around since 2008 and we know that there is a Small Business Ministry but we have not seen or heard from her. There is one government institution that we have been dealing with and that is PetroSA for the past year. In our opinion, the enterprise development programme is the best we've seen, the best in application even though at the moment they are struggling with finances, the value they have brought to us, wasn't just about money. We got some money from them but the overall empowerment. They really get empowerment. It was not about them, it was about us. They developed a programme for us – there were about 15 companies and they developed a programme to suit our needs and areas of growth. So in terms of this, government can develop forums of communication and listening to us; and to create funding which speaks to the needs of small business. Not we give this – but what is needed to develop the company. So for me, funding will be very important to get all of this set up – that is important to any company. All the things

government does not provide for are the things which companies need. Support cannot only be financial but also someone who has the expertise to ensure that growth takes place.

Interviewer:

Thank you very much for your time. Your information was very valuable.

APPENDIX E: TRANSCRIPTS LOADED ON THE CAQDAS REPORT

PD-Filter: All

_____

HU: Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town

File: [H:\Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town.hpr7]

Edited by: Super

Date/Time: 2016-12-06 13:26:38

_____

P 1: INTERVIEW ELEVEN {14} [Managed in My Library -> H:\INTERVIEW ELEVEN.docx] text/rtf

P 2: INTERVIEW TEN {20} [Managed in My Library -> H:\INTERVIEW TEN.docx] text/rtf

P 4: INTERVIEW EIGHT {7} [Managed in My Library -> H:\INTERVIEW EIGHT.docx] text/rtf

P 5: INTERVIEW SEVEN {13} [Managed in My Library -> H:\INTERVIEW SEVEN.docx] text/rtf

P 6: INTERVIEW SIX {6} [Managed in My Library -> H:\INTERVIEW SIX.docx] text/rtf

P 7: INTERVIEW FIVE {7} [Managed in My Library -> H:\INTERVIEW FIVE.docx] text/rtf

P 8: INTERVIEW FOUR {5} [Managed in My Library -> H:\INTERVIEW FOUR.docx] text/rtf

P 9: INTERVIEW TWO {6} [Managed in My Library -> H:\INTERVIEW TWO.docx] text/rtf

P10: INTERVIEW ONE {9} [Managed in My Library -> H:\INTERVIEW ONE.docx] text/rtf

P11: INTERVIEW NINE {13} [Managed in My Library -> H:\INTERVIEW NINE.docx] text/rtf

APPENDIX F: CONCEPTS LABELS USED TO CODE THE DATA (REPORT FROM ATLAS.TI)

Concepts labels used to code the data (Report from Atlas.ti)

Code-Filter: All

_____

HU: Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town

File: [H:\Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town.hpr7]

Edited by: Super

Date/Time: 2017-10-27 13:22:59

_____

Access to ICT

Access to the Internet

Attitude

Awareness

Cloud computing benefits

Cloud computing requirement

Competence

Competitive advantage

Easy to use and learn

Government role

Internet cost

IT expert

Lack of trust

Maintaining financial information

Make business more profitable

Marketing

Other company influence

Process invoices

Quick job performance

Reduce cost

Reduce workflow

Safety

Save time

Successful competitor

Training

Use of cloud computing

APPENDIX F1: SCREENSHOT OF THE INITIAL LIST OF CONCEPTS BEFORE CATEGORISATION

Screenshot of the initial list of concepts before categorisation

Name	Gro...	De...	Author	Created	Modified	Families
Attitude	3	0	Super	11/30/20...	12/12/20...	Social Influence
Awareness	2	0	Super	12/01/20...	12/01/20...	Lack of technology
Cloud computi...	9	0	Super	11/30/20...	12/13/20...	Behavioural Intention to use
Cloud computi...	3	0	Super	11/30/20...	12/13/20...	Facilitating conditions
Competence	3	0	Super	11/30/20...	12/01/20...	Technological Resources
Competitive ad...	1	0	Super	11/30/20...	12/12/20...	Performance Expectancy
Easy to use and ...	6	0	Super	11/30/20...	12/12/20...	Interaction with cloud computing
Government role	8	0	Super	11/30/20...	12/13/20...	Facilitating conditions
Internet cost	2	0	Super	11/30/20...	12/13/20...	Cost of technology
IT expert	10	0	Super	11/30/20...	12/13/20...	Technological Resources
Lack of trust	1	0	Super	11/30/20...	12/13/20...	Cloud computing trust
Maintaining fin...	2	0	Super	11/30/20...	12/13/20...	Infrastructure
Make business ...	2	0	Super	11/30/20...	12/13/20...	Behavioural Intention to use
Marketing	1	0	Super	11/30/20...	12/12/20...	Behavioural Intention to use, Use ...
Other company...	8	0	Super	11/30/20...	12/12/20...	Social Influence
Process invoices	2	0	Super	11/30/20...	12/13/20...	Infrastructure
Quick job perfo...	2	0	Super	11/30/20...	12/12/20...	Performance Expectancy
Reduce cost	2	0	Super	11/30/20...	12/13/20...	Behavioural Intention to use
Reduce workflow	1	0	Super	12/01/20...	12/13/20...	Behavioural Intention to use
Safety	2	0	Super	11/30/20...	12/01/20...	Cloud computing trust
Save time	1	0	Super	11/30/20...	12/13/20...	Performance Expectancy
Successful com...	2	0	Super	11/30/20...	12/12/20...	Social Influence
Training	2	0	Super	11/30/20...	12/01/20...	Behavioural Intention to use
Use of cloud co...	4	0	Super	12/01/20...	12/01/20...	Technological Resources

APPENDIX G: CODES QUOTATIONS LIST

Code-Filter: All

_____

HU: Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town

File: [H:\Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town.hpr7]

Edited by: Super

Date/Time: 2017-10-27 12:18:39

_____

Code: Access to ICT {9-0}

P 1: INTERVIEW ELEVEN - 1:1 [Has a website for people who a..] (28:28)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Has a website for people who are far away and want to purchase my book; People can also subscribe to my newsletter when I want to distribute campaign to clients; I also used bulk mailing to send messages to people; I used a lot of apps e.g. QR scanner; QR codes takes a person straight to my website

P 2: INTERVIEW TEN - 2:43 [The technology that we are usi..] (24:24)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

The technology that we are using…we are moving to the VR system – like Google glasses

P 4: INTERVIEW EIGHT - 4:1 [Yes, we do use a PC, landline] (37:37)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, we do use a PC, landline

P 6: INTERVIEW SIX - 6:1 [Yes, we use a mobile phone and..] (36:36)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, we use a mobile phone and a PC (very limited)

P 7: INTERVIEW FIVE - 7:1 [Yes, we do have an IT system] (38:38)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, we do have an IT system

P 8: INTERVIEW FOUR - 8:1 [Yes we do] (39:39)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes we do

P 9: INTERVIEW TWO - 9:1 [Yes, every day we use PC's, mo..] (38:38)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, every day we use PC's, mobile phones and Tablets

P10: INTERVIEW ONE - 10:1 [Yes] (34:34)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes

P11: INTERVIEW NINE - 11:3 [Yes, we have a marketing websi..] (49:49)   (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, we have a marketing website, a sign up website and a website portal

_____

Code: Access to the Internet {10-0}

P 1: INTERVIEW ELEVEN - 1:16 [The internet has made a huge d..] (78:78)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

The internet has made a huge difference. I can check my emails, update our website

P 2: INTERVIEW TEN - 2:31 [The benefit of the free Wi-Fi ..] (85:85)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

The benefit of the free Wi-Fi at the Barn has made our business grow form strength to strength, especially when we want to download videos to do presentations

P 4: INTERVIEW EIGHT - 4:15 [Yes, we do have a website (onl..] (43:43)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

Yes, we do have a website (online store) and then we use the internet the programmes to check products in stock and in which stores

P 5: INTERVIEW SEVEN - 5:2 [We use the internet a lot for ..] (44:44)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

We use the internet a lot for because we procure and we distribute, so we have to buy and sell. When trying to get information from our current suppliers for example when doing a tender, we would use the internet or directly via email

P 6: INTERVIEW SIX - 6:2 [We do have a website (very lim..] (42:42)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

We do have a website (very limited) as most of our clients are walk-in clients. We don't do so much through the website

P 7: INTERVIEW FIVE - 7:2 [We use the internet mostly to ..] (43:43)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

We use the internet mostly to communicate with our branches and staff

P 8: INTERVIEW FOUR - 8:2 [we use the internet for market..] (47:47)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

 we use the internet for marketing

P 9: INTERVIEW TWO - 9:2 [Yes, to get in touch with cust..] (44:44)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

Yes, to get in touch with customers, ordering stock and store information

P10: INTERVIEW ONE - 10:2 [Yes, that is our bread and but..] (40:40)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

Yes, that is our bread and butter

P11: INTERVIEW NINE - 11:25 [Yes, all the time, except for ..] (43:43)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

Yes, all the time, except for events when we send letters and when following up with customers, we use the telephone

_____

Code: Attitude {3-0}

P 2: INTERVIEW TEN - 2:41 [I am not a person who will dis..] (64:64)   (Super)

Codes:[Attitude - Family: Social Influence]

No memos

I am not a person who will distance himself from technology

P 5: INTERVIEW SEVEN - 5:23 [. If you are a small business ..] (123:123)   (Super)

Codes:[Attitude - Family: Social Influence]

No memos

. If you are a small business and break into the markets, you must be a disruptor, coming in with a mind-set that people started with, you can't or they will eat you up. You have to think differently.

P 5: INTERVIEW SEVEN - 5:39 [I attend a Start-Grind forum o..] (134:138)   (Super)

Codes:[Attitude - Family: Social Influence]

No memos

I attend a Start-Grind forum once every few months and you get to hear about new things. That is a clever way of communicating new ideas. That is one way of learning, sharing. This type of organisation is good for sharing this type of information.

You need to listen to what is happening in the world out there. I listen to Tech Talk all the time because people who do Tech Talk are always on the cutting edge of whatever it is they are doing. When it is something in education, you could think what this has got to do with what we are doing but you could learn from it.

Listening to economic reviews etc., because every new innovation would be shared

_____

Code: Awareness {2-0}

P 7: INTERVIEW FIVE - 7:11 [I think the problem with most ..] (69:69)   (Super)

Codes: [Awareness - Family: Lack of technology]

No memos

I think the problem with most small businesses, is that we don't have IT departments. We try to manage with someone coming in to show you how to use the system. There is no department to follow up like in the big companies when you have a new system like the Cloud system, it would be helpful for someone to show you

P10: INTERVIEW ONE - 10:9 [We don't keep up with technolo..] (113:113)   (Super)

Codes: [Awareness - Family: Lack of technology]

No memos

We don't keep up with technology magazines as technology changes every day. If we had a dedicated IT department, that would be their job

_____

Code: Cloud computing benefits {9-0}

P 1: INTERVIEW ELEVEN - 1:5 [I think that cloud is the futu..] (53:53)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

I think that cloud is the future because if you install anything on your PC and if gets stolen or crashes. All the information on your pc will be gone. So cloud service will be one drive to store documents so that if I am in kwazulu natal for example, I can login to a computer and access all the information I need

P 2: INTERVIEW TEN - 2:20 [In terms of keeping a profile ..] (52:52)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

In terms of keeping a profile and personal documents, cloud services can help. It will also help me keeping the database of clients and getting more sales

P 2: INTERVIEW TEN - 2:35 [Another advantage is that ever..] (40:40)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Another advantage is that everything will be in one place "one stop", you will not have to use different applications

P 4: INTERVIEW EIGHT - 4:7 [Yes, we have to do a lot of pa..] (61:61)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Yes, we have to do a lot of paperwork on line, then it gets printed and sent with a driver where we can do it on a Cloud where the person can actually use it without all the printing. That will be good

P 4: INTERVIEW EIGHT - 4:17 [It could help me in the sense ..] (67:67)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

It could help me in the sense that if the whole company could help themselves and everyone did research for interesting articles – that kind of thing. If you had a folder for interesting product knowledge. I work part-time so I miss emails and training – having the folder would be helpful

P 5: INTERVIEW SEVEN - 5:37 [to have something centralised ..] (65:65)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

to have something centralised could be very useful for a company like ours because you don't have to keep redoing a lot of things. You could just find things as it would be there – all centralised. Anything could happen, someone's off sick and then stuff stands still because you cannot access information and not knowing where it is stored

P 7: INTERVIEW FIVE - 7:4 [With the Cloud it is very impo..] (57:57)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

With the Cloud it is very important, always put our staff on the computer. If there is a virus, then we have to start all over again. With the Cloud this won't happen. With the present system, we can only use it at the office. When you are out of the office, you can't use it. That is why the Cloud system would be more helpful

P10: INTERVIEW ONE - 10:10 [Well the obvious thing is the ..] (65:65)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Well the obvious thing is the storage of data and that is what cloud is all about and if it means that we don't have to have all the hardware and cloud could provide us with the data and we can have all our Thin Clients available to us, we can get all the information from the cloud

P11: INTERVIEW NINE - 11:26 [We've got about four thousand ..] (61:61)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

We've got about four thousand (4000) customers transacting on a daily basis. Our system has to automatically put all that in our accounting. You could not do that manually. I can't show you that on the screen but we are looking at about R50 million a month. We stored all of our stuff in the Cloud. We built a model to speak directly to Zero, so that everything was done on the Cloud, so no manual input. But that meant that our customers using the point of sales thing, they just use the add-on. This super powerful thing of the Cloud

_____

Code: Cloud computing requirement {3-0}

P 1: INTERVIEW ELEVEN - 1:15 [As long as you have a laptop, ..] (78:78)   (Super)

Codes:[Cloud computing requirement - Family: Facilitating conditions]

No memos

As long as you have a laptop, a good internet connection and a smart phone, it will be easy

P 2: INTERVIEW TEN - 2:33 [I will hire someone who specia..] (84:84)   (Super)

Codes:[Cloud computing requirement - Family: Facilitating conditions]

No memos

I will hire someone who specializes in this type of technology or outsource a company that focus on cloud services

P11: INTERVIEW NINE - 11:15 [back-ups internet is a must, a..] (91:91)   (Super)

Codes:[Cloud computing requirement - Family: Facilitating conditions]

No memos

back-ups internet is a must, a really good Wi-Fi is necessary, limiting bandwidths, predicting where there would be bottle-necks

_____

Code: Competence {3-0}

P 1: INTERVIEW ELEVEN - 1:10 [50%] (70:70)   (Super)

Codes:[Competence - Family: Technological Resources]

No memos

50%

P 2: INTERVIEW TEN - 2:21 [60%] (56:56) (Super)

Codes:[Competence - Family: Technological Resources]

No memos

60%

P 5: INTERVIEW SEVEN - 5:33 [we had this website provided b..] (59:59) (Super)

Codes:[Competence - Family: Technological Resources]

No memos

we had this website provided by SEDA because we applied for funding but somehow the vetting for vendors is not very good on SEDA's side because the vendor wanted to do the bare minimum to get paid. It could not provide us with what is was we needed and it was a whole back-and-forth for over a year. That has been a very big frustration for us. So the little knowledge that I had about websites and the internet, I applied into this situation to say but this is by far not one should be if you are a professional

_____

Code: Competitive advantage {1-0}

P 2: INTERVIEW TEN - 2:37 [cloud computing will up our ga..] (44:44) (Super)

Codes:[Competitive advantage - Family: Performance Expectancy]

No memos

 cloud computing will up our game to get our clients to come to our museum. We do talk about different issues but cloud computing will help us to absorb more sales and market our museum internationally

_____

Code: Easy to use and learn {6-0}

P 1: INTERVIEW ELEVEN - 1:22 [It is not difficult. It is jus..] (74:74) (Super)

Codes:[Easy to use and learn - Family: Interaction with cloud computing]

No memos

It is not difficult. It is just that people are not educated well enough about it

P 2: INTERVIEW TEN - 2:40 [If I get more knowledge and tr..] (64:64)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

If I get more knowledge and training on how to use the cloud, I do not think it will be difficult to use it

P 4: INTERVIEW EIGHT - 4:16 [I think it would be quite easy..] (73:73)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

I think it would be quite easy to use. We now have an IT helpdesk. We did not have one before. For any kind of issue, we have to log a call. It is an external service provider. I don't think it would be too complex

P 5: INTERVIEW SEVEN - 5:15 [it would not be a difficult th..] (92:92)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

it would not be a difficult thing and obviously if you have the right system

P 8: INTERVIEW FOUR - 8:6 [So far it's not] (73:73)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

So far it's not

P 9: INTERVIEW TWO - 9:13 [I think it is very easy to use..] (68:68)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

I think it is very easy to use, I think it is very straightforward. It is as simple as going into the website and accessing basic information

_____

Code: Government role {8-0}

P 5: INTERVIEW SEVEN - 5:7 [A lot of small businesses are ..] (59:59)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

A lot of small businesses are going to SEDA for website funding. In terms of that, government needs to have providers who are vetted well otherwise the service is redundant, because it is being directed at the small business who doesn't have the time or the knowledge for this type of thing and we trusting if we are going for funding from SEDA that you would have people who know.

P 5: INTERVIEW SEVEN - 5:36 [So there is not enough convers..] (153:153)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

So there is not enough conversation between small business and government because for example we have been around since 2008 and we know that there is a Small Business Ministry but we have not seen or heard from her. There is one government institution that we have been dealing with and that is PetroSA for the past year. In our opinion, the enterprise development programme is the best we've seen, the best in application even though at the moment they are struggling with finances, the value they have brought to us, wasn't just about money. We got some money from them but the overall empowerment. They really get empowerment. It was not about them, it was about us. They developed a programme for us – there were about 15 companies and they developed a programme to suit our needs and areas of growth. So in terms of this, government can develop forums of communication and listening to us; and to create funding which speaks to the needs of small business. Not we give this – but what is needed to develop the company. So for me, funding will be very important to get all of this set up – that is important to any company. All the things government does not provide for are the things which companies need. Support cannot only be financial but also someone who has the expertise to ensure that growth takes place

P 6: INTERVIEW SIX - 6:7 [I believe that government can ..] (81:81)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

I believe that government can play a role. There is a privilege and there is also a citizen issue because the government gives their local /citizens first priority. Non-citizens' priority are limited. It is up to us to make things work. We don't rely too much on information and or funds that government provides. We also rely on our suppliers – at the end of the day (we concentrate) how to get a good and trustworthy suppliers and maintain good relationships with your suppliers

P 7: INTERVIEW FIVE - 7:9 [Government has a huge role to ..] (100:100)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

Government has a huge role to play with small businesses because small business contribute to the economy. Small businesses also employ people and an advantage to the economy. The Government should encourage and fund small business. Funds could be expertise in that area, a conference to explain, training programme, communicate with small business and encourage small business

P 9: INTERVIEW TWO - 9:11 [Government is putting a lot of..] (91:91)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

Government is putting a lot of time and effort into small businesses, I think they should also take a step forward with Cloud computing and introduce it to the small business and play a part in it. At the end of the day it benefits everybody if these businesses adopt this method

P10: INTERVIEW ONE - 10:7 [That is quite touchy subject, ..] (126:126)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

That is quite touchy subject, Government will only play a role if you are a black-owned business and that's the honest truth. They actually give you money to start off the business if you have ideas or concepts and monitor it over a period of time and they will throw money at it, but that is only for black businesses

P10: INTERVIEW ONE - 10:8 [There is actually one called N..] (132:134)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

There is actually one called National Chamber (of Commerce) around SA. They try and mentor you and try and get you on to the platform. It's always good to get someone to help and give advice. That is where we were four years ago. We're past that stage now.

I don't know of any government forums that informs people about technology and how technology can help your business. This National Chamber of Commerce gives you a mentorship and advice on small start-ups. But I don't know of any one for technology

P11: INTERVIEW NINE - 11:29 [I think they should approach t..] (111:111)   (Super)

Codes: [Government role - Family: Facilitating conditions]

No memos

I think they should approach the Cloud companies to allow the Cloud companies to then work with business. So then incentivise the Cloud companies to give discounts or incentives to educate businesses in the region, thus allowing them to make their own decisions. Business should be making money and if a business sees value in the Cloud, then they should buy it. I don't think that government should intervene and give discounts and incentives for people to use the Cloud just for the sake of using the Cloud. So I feel that government should work with Cloud companies and make them stronger and those Cloud businesses could support the businesses themselves

_____

Code: Internet cost {2-0}

P 2: INTERVIEW TEN - 2:32 [The free Wi-Fi I has been a ga..] (85:85)   (Super)

Codes: [Internet cost - Family: Cost of technology]

No memos

The free Wi-Fi I has been a game changer

P11: INTERVIEW NINE - 11:28 [The City of Cape Town has done..] (111:111)   (Super)

Codes: [Internet cost - Family: Cost of technology]

No memos

The City of Cape Town has done a great job of providing free internet. So that's the first step. You can't move to the Cloud without internet. The more internet availability, the cheaper the internet gets

_____

Code: IT expert {10-0}

P 1: INTERVIEW ELEVEN - 1:20 [No] (36:36)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

No

P 2: INTERVIEW TEN - 2:10 [We never used an IT expert. We..] (32:32)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

We never used an IT expert. We are just using the basic information that we have. We are self-teaching the things that we need

P 4: INTERVIEW EIGHT - 4:12 [we now have internal IT. They ..] (86:86)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

we now have internal IT. They are now the source of IT information in general

P 5: INTERVIEW SEVEN - 5:4 [Well, we do have a guy who doe..] (53:53)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

Well, we do have a guy who does things for us, however, it is not his full time job – he works for another company. We are getting to a point where we will need to have someone doing these things for us, especially this year we have had quite a few issues related to this and telling us

how we need to have someone. Then it is time out when we have to take this PC, go out to this guy who will look at it tonight - so it's two or three days that we lose

P 6: INTERVIEW SIX - 6:3 [No, we don't] (49:49)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

No, we don't

P 7: INTERVIEW FIVE - 7:3 [Yes we do have a provider, an ..] (49:49)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

Yes we do have a provider, an IT company which helps with IT

P 8: INTERVIEW FOUR - 8:8 [We have an accountant whose hu..] (91:91)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

We have an accountant whose husband is in IT

P 9: INTERVIEW TWO - 9:3 [Yes, basically all of us fall ..] (50:50)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

Yes, basically all of us fall into this category as IT specialists when it comes to software and hardware, we are able to do that

P10: INTERVIEW ONE - 10:3 [Yes, he (Donovan) is an IT exp..] (46:46)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

Yes, he (Donovan) is an IT expert. We do have people on call if needs be but otherwise Donovan gets his hands dirty

P11: INTERVIEW NINE - 11:5 [everyone here is an IT special..] (55:55)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

everyone here is an IT specialist

_____

Code: Lack of trust {1-0}

P 2: INTERVIEW TEN - 2:38 [There are a lot of scepticisms..] (48:48)   (Super)

Codes:[Lack of trust - Family: Cloud computing trust]

No memos

There are a lot of scepticisms because there are a lot of scams happening around. For me I will say 70% I can trust the cloud .The other 30% trust I am not sure what can happen with regards to security because we deal with confidential information. We are working with correctional services and certain information cannot be shared with the public

_____

Code: Maintaining financial information {2-0}

P 1: INTERVIEW ELEVEN - 1:3 [Excel for finances] (40:40)   (Super)

Codes:[Maintaining financial information - Family: Infrastructure]

No memos

 Excel for finances

P 2: INTERVIEW TEN - 2:9 [We use an outsource company to..] (32:32)   (Super)

Codes:[Maintaining financial information - Family: Infrastructure]

No memos

We use an outsource company to help us with financial statements

_____

Code: Make business more profitable {2-0}

P 1: INTERVIEW ELEVEN - 1:9 [As a CEO, the benefits I will ..] (66:66)   (Super)

Codes: [Make business more profitable - Family: Behavioural Intention to use]

No memos

As a CEO, the benefits I will get is that I will get more customers because the cloud will be accessed by a lot of people

P 6: INTERVIEW SIX - 6:4 [When it comes to marketing – w..] (61:61)   (Super)

Codes: [Make business more profitable - Family: Behavioural Intention to use]

No memos

When it comes to marketing – we have to generate income from that

_____

Code: Marketing {1-0}

P 1: INTERVIEW ELEVEN - 1:17 [use social media as a marketin..] (78:78)   (Super)

Codes: [Marketing - Families (2): Behavioural Intention to use, Use Behaviour]

No memos

 use social media as a marketing tool

_____

Code: Other company influence {8-0}

P 1: INTERVIEW ELEVEN - 1:24 [I want to see other businesses..] (62:62)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

I want to see other businesses that have used the cloud. If many businesses have used it, then I can also trust it and use it

P 2: INTERVIEW TEN - 2:29 [I ask fellow entrepreneurs whe..] (73:73)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

 I ask fellow entrepreneurs when I want to make decisions about IT

P 2: INTERVIEW TEN - 2:42 [IF I knew similar business usi..] (69:69)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

IF I knew similar business using cloud it will influence me because it helps to know what the competitors are using; what is working for them and what is not working for them. If it is working for them we will follow their footsteps. If it is not working for them, we will not try it

P 5: INTERVIEW SEVEN - 5:22 [One of the reasons I would con..] (123:123)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

One of the reasons I would consider this and why I am thinking along these lines is because the advert from Telkom: the future customer. If anything, that advert would influence – they started thinking about future customers. Nobody starts a business to close it tomorrow – you look at longevity and sustainability. If you think about the future, is this going to work in five years' time and we have to stay ahead or we will lag behind.

P 6: INTERVIEW SIX - 6:6 [Yes, we all learn from each ot..] (73:73)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

Yes, we all learn from each other. If other businesses are successful, why not copy some of the stuff from them. Of course yes

P 8: INTERVIEW FOUR - 8:7 [We do because sometimes the bu..] (85:85)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

We do because sometimes the business is slow and you have to check what other people are doing to get customers

P 9: INTERVIEW TWO - 9:10 [Yes, because we also deal with..] (80:80)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

Yes, because we also deal with other companies that will supply us with all our brands like Logitek. If we have to adopt Cloud computing or start using it more and more, it will be good for us if the other companies start doing it as well

P11: INTERVIEW NINE - 11:14 [when we decided to integrate w..] (85:85)   (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

when we decided to integrate with Tablet pos – a lot of our merchants use Tablet pos. We don't specifically care what other people are doing, but if we are building on top of another Cloud system and we need a lot of people to use the system to make it worth our while

_____

Code: Process invoices {2-0}

P 1: INTERVIEW ELEVEN - 1:4 [Email invoices to clients] (44:44)   (Super)

Codes: [Process invoices - Family: Infrastructure]

No memos

Email invoices to clients

P 2: INTERVIEW TEN - 2:4 [At his current state we are us..] (28:28)   (Super)

Codes:[Process invoices - Family: Infrastructure]

No memos

At his current state we are using the wave application. Software used for invoicing

_____

Code: Quick job performance {2-0}

P 1: INTERVIEW ELEVEN - 1:23 [Things will be more quicker. E..] (57:57)   (Super)

Codes:[Quick job performance - Family: Performance Expectancy]

No memos

Things will be more quicker. Especially if there is an accounting system in the cloud, it will save time because I can login anywhere at any time and capture information

P 5: INTERVIEW SEVEN - 5:14 [Yes, it would as while I am bu..] (85:86)   (Super)

Codes:[Quick job performance - Family: Performance Expectancy]

No memos

Yes, it would as while I am busy with something, someone would come and ask if I had this document. If they could access this directly, it would save me time (to do my job) and meet deadlines.

Also in my role as Office Manager, I would have to go and audit – instead I could access documents where I am and check / audit. It would definitely make life easie

_____

Code: Reduce cost {2-0}

P 2: INTERVIEW TEN - 2:36 [Yes it will make things easier..] (40:40)   (Super)

Codes:[Reduce cost - Family: Behavioural Intention to use]

No memos

Yes it will make things easier because It is cost effective

P10: INTERVIEW ONE - 10:6 [It all comes down to cost as l..] (59:59)   (Super)

Codes: [Reduce cost - Family: Behavioural Intention to use]

No memos

It all comes down to cost as long as it does not compromise any of your quality of work

_____

Code: Reduce workflow {1-0}

P10: INTERVIEW ONE - 10:11 [I will tell you what, if I hav..] (52:52)   (Super)

Codes: [Reduce workflow - Family: Behavioural Intention to use]

No memos

I will tell you what, if I have a company and cloud … can offer a solution that takes my workflow from being a ten hour a day workflow to a three hour workflow. It comes down to efficiency. If its going mean my workflow becomes more efficient, then I would go for a cloud solution and its cost effective. I have to pay my staff for a ten hour day x amount of money and a cloud solution offers me a three hour day then it is something we will look at

_____

Code: Safety {2-0}

P 1: INTERVIEW ELEVEN - 1:7 [Security is a concern but I do..] (61:61)   (Super)

Codes: [Safety - Family: Cloud computing trust]

No memos

Security is a concern but I do not want to put my business info in something that is here today and then gone tomorrow; this is the reason we have been skeptical in moving into the cloud

P11: INTERVIEW NINE - 11:20 [Information not on the Cloud w..] (105:105) (Super)

Codes: [Safety - Family: Cloud computing trust]

No memos

Information not on the Cloud was at greater risk – even if the data was stolen, they would not be able to access it on the Cloud. Would rather have my data encrypted sitting on a Cloud facility where they have 24 hr security than in a Dr's room locked in a filing cabinet

_____

Code: Save time {1-0}

P11: INTERVIEW NINE - 11:19 [To centralise, we would save a..] (99:99) (Super)

Codes: [Save time - Family: Performance Expectancy]

No memos

To centralise, we would save a lot of time and only using the platforms that are necessary

_____

Code: Successful competitor {2-0}

P 2: INTERVIEW TEN - 2:27 [Yes – Silulo Ulutho Technology..] (68:68) (Super)

Codes: [Successful competitor - Family: Social Influence]

No memos

Yes – Silulo Ulutho Technology and YOTO technologies are companies that make use of cloud services and have an influence on me. They have an influence on me because those businesses are on the side of IT. They specialize in IT and we are trying to align with them

P 7: INTERVIEW FIVE - 7:7 [We have one transport company ..] (81:81) (Super)

Codes: [Successful competitor - Family: Social Influence]

No memos

We have one transport company called FASTWAY who have a system where you can follow your stuff on the internet. Those are people we look for – they have a better way.

_____

Code: Training {2-0}

P 2: INTERVIEW TEN - 2:5 [One of the challenges we have ..] (28:28)   (Super)

Codes: [Training - Family: Behavioural Intention to use]

No memos

One of the challenges we have is that we are a bit sceptical in terms of using the cloud technology because we do not have the full information on how to use it

P 2: INTERVIEW TEN - 2:19 [the 30% can be reduced if I re..] (48:48)   (Super)

Codes: [Training - Family: Behavioural Intention to use]

No memos

the 30% can be reduced if I receive the knowledge to know how to use the tools

_____

Code: Use of cloud computing {4-0}

P 4: INTERVIEW EIGHT - 4:5 [we use the dropbox – only used..] (55:55)   (Super)

Codes: [Use of cloud computing - Family: Technological Resources]

No memos

we use the dropbox – only used to track budgets and between the stores to see where you are in the ranking

P 5: INTERVIEW SEVEN - 5:38 [For example, with big document..] (92:92)   (Super)

Codes: [Use of cloud computing - Family: Technological Resources]

No memos

For example, with big documents, if I cannot send it via email, I would send it via dropbox

P11: INTERVIEW NINE - 11:18 [Google Docs, Google Sheets] (93:93)   (Super)

Codes:[Use of cloud computing - Family: Technological Resources]

No memos

Google Docs, Google Sheets

P11: INTERVIEW NINE - 11:30 [, Zero is an accounting platfo..] (61:61)   (Super)

Codes:[Use of cloud computing - Family: Technological Resources]

No memos

, Zero is an accounting platform and YOCO can create a module which makes our life easier to give to people to make their lives earlier is the true power of the Cloud. Adding functionality without having to get the main company to build it for you. We use the standard systems of Google Drive and drop box and drop box paper as well

Interview questions	Objectives
Introduction – clarification of key concepts. Quick overview of common cloud computing services used by small businesses.	Ensure interviewee understands the purpose of the interview. Familiarise the interviewee with key concepts related to cloud computing.
Section A: Demographic Data • What is the name of the company? • How long has the company been operating? For 3rd year – only operating for this year • In which sector your business is operating? (Information Technology, Communication, Retail, Transport, Healthcare or Tourism) IN the arts and culture and tourism …Give a 2nd chance to ex prisoners – to showcase their designs to pubic and local tourists • What is your current role in the company? Creative officer- marketing • How many employees do you have? 2 employees	To determine the demographic characteristics of the participants of the research study. Through analysis it will be determined if any of the demographic characteristics are associated with adoption attitudes.
Section B: IT Infrastructure • Do you use ICTs in your company? E.g. PCs, mobile phone Moving to visual R system – like google glasses- got it form Austria. Using web to market the business Using social media • Do you use the internet for business operations? If yes please elaborate (Marketing, website, research, communication with customers etc) Using Wave Ebb – not cloud – software using for invoicing; Haven't used anything from cloud at this stage are a bit scpetical in terms of using the cloud technology. Do not have full information / understanding of cloud. • Do you have IT experts or specialists in the company? If not – do you have access to any IT experts? Never used an IT expert – self taught on what they need Outsourcing financial statements compilation at this point in time. Cloud business: What cloud technology / services are used currently?	To determine the current state of infrastructure that may influence the attitude towards the adoption of cloud computing i.e from a UTAUT context – the 'facilitating conditions'. It is noted that IT infrastructure is not the only facilitating condition.
Section C: Performance Expectancy • Non cloud business: Will cloud computing make this business more successful? Explain	Performance Expectancy is defined as the degree to which the individuals believe that the use of the technologies will result in performance gains.

Yes it will make things easier - e.g. cost-effective i.e. reduce costs; have a one stop to do business apps. • Cloud business: Please describe the benefits of using cloud computing to this business. • In respect of your own job: How would you expect cloud computing to help you in your own job? (non cloud computing user) His personal role in the company can be improved by keeping a database of clients; getting more sales. Knowledge lack is restrictive. • In respect of your own job: Since you have started using cloud computing services – how has this helped you in your job any? (cloud computing user)? ***Prompt questions*** • Do you think cloud computing will give you competitive advantage over others? Please in one sentence elaborate on this. They are dealing with other museums …; it will up their game to get their clients to come to their museum – thus more sales; be more marketable; • Do you believe your data and vital information will be secured in such technology if adopted? There is some scepticism – and knows of a lot of scams…. 70% trust.. the other 30% trust can change…. Confidential stuff – working with correctional services; the 30% can change – to get knowledge of the tools;	Objective: To gather evidence in respect of whether businesses expect improved performance from cloud computing.
Section D: Effort Expectancy • Cloud business: There are varying views as to how difficult it is to use cloud services in a business such as this. What is your view?(cloud computing user) • Non-Cloud business: If you had to use cloud computing in the future in your business, how easy do you think it will be? (non cloud computing user) The business industry is moving toward use of technology; Wil give him competitive advantage; IN terms of dealing with an international market; Will help to make global partnerships ; Re difficulty to use- do not think it is difficult – just need the training; is not distancing from technology	Effort Expectancy is defined as the ease of use of the technologies. Objective: To gather evidence which would provide an understanding of factors related to "effort expectancy" i.e. whether cloud computing is perceived as difficult to use.

• Cloud business: Is it easy to learn the skills to use cloud computing? (cloud computing user) • Non-Cloud business: Do you expect that it will be easy to learn the skills required to use cloud services? (non cloud computing user) • Cloud business: Describe the support provided by the company to use cloud computing? (cloud computing user) • Do you think that support will be offered by the company? What support do you think is needed? Do you want someone or a group of person to be available in case you need assistance for system difficulties? (non cloud computing user)	
Section E: Social Influence • Non cloud business: Do you know others businesses that are using cloud services? Does this have any influence on your own decision to adopt similar services? IT does have an influence – but both those business are on the side of IT – it's their business; so it is more their type of business; IF he knew of other similar business using cloud it will influence him - because it helps to know what the competitors are using ; what lessons from them; then try to do it better; if it did work for them they will follow. • Cloud user: When you adopted cloud services, did you first consider its use by other businesses? Explain. • Where / or whom are sources of information for you about IT in general? To what extent do you rely on others when you want to make decisions about IT? Who are they? Why are they important?	Social influence is defined as the extent to which the individuals believe that important others believe that they should use the technologies. Objective:To determine whether the use of computing can be influenced by important others.
Section F: Facilitating conditions • Cloud business: Did you need to acquire a lot more IT infrastructure to adopt cloud computing? Did you spend more for the internet connection, internet bandwidth and data storage? Did your cloud provider go over the tactics needed to keep the data of the business safe including encryption, identify management and physical security? Cloud business: In addition to the latter – are there any other aspects of the business environment that are necessary for successful use of cloud services? • Non cloud business: If you were to adopt cloud computing – what do you think are	Facilitating Conditions can be defined as the perceived extent to which the organisational and technical infrastructure required for the support of the technologies exist. Objective: To establish whether organisational and technical infrastructure required for the support of cloud computing exist.

the necessary aspects of your business environments to ensure successful implementation and use? (e.g. IT infrastructure etc) free wif-fi which can help their business grow form strength to strength –…. Can be a game changer; they used to have laptops but no internet – and were not able to do any of these things; • Does your company support training for employees when there is an upgrade on the system / technology? • Does your company pay attention to bring in new technology/innovation? • What role, if any, should Government play in supporting small businesses such as yours? Is there some role Government can play to assist a business such as yours to adopt and use technology more effectively?	

CODES-PRIMARY-DOCUMENTS-TABLE										
Report created by Super - 10/27/2017 12:46:35										
HU: [H:\Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town.hpr7]										
Code-Filter: All [26]										
PD-Filter: All [10]										
Quotation-Filter: All [98]										
	P1: INTERVIEW ONE	P 2: INTERVIEW TWO	P 3: INTERVIEW FOUR	P4: INTERVIEW FIVE	P 5: INTERVIEW SIX	P 6: INTERVIEW SEVEN	P 7: INTERVIEW EIGHT	P8: INTERVIEW NINE	P 9: INTERVIEW TEN	P 10: INTERVIEW ELEVEN	Totals:
Access to ICT	1	1	1	1	1	0	1	1	1	1	9
Access to the Internet	1	1	1	1	1	1	1	1	1	1	10
Attitude	0	0	0	0	0	2	0	0	1	0	3
Awareness	1	0	0	1	0	0	0	0	0	0	2
Cloud computing benefits	1	0	0	1	0	1	2	1	2	1	9
Cloud computing requirement	0	0	0	0	0	0	0	1	1	1	3
Competence	0	0	0	0	0	1	0	0	1	1	3
Competitive advantage	0	0	0	0	0	0	0	0	1	0	1
Easy to use and learn	0	1	1	0	0	1	1	0	1	1	6
Government role	2	1	0	1	1	2	0	1	0	0	8
Internet cost	0	0	0	0	0	0	0	1	1	0	2
IT expert	1	1	1	1	1	1	1	1	1	1	10
Lack of trust	0	0	0	0	0	0	0	0	1	0	1
Maintaining financial information	0	0	0	0	0	0	0	0	1	1	2
Make business more profitable	0	0	0	0	1	0	0	0	0	1	2
Marketing	0	0	0	0	0	0	0	0	0	1	1
Other company influence	0	1	1	0	1	1	0	1	2	1	8
Process invoices	0	0	0	0	0	0	0	0	1	1	2
Quick job performance	0	0	0	0	0	1	0	0	0	1	2
Reduce cost	1	0	0	0	0	0	0	0	1	0	2
Reduce workflow	1	0	0	0	0	0	0	0	0	0	1
Safety	0	0	0	0	0	0	0	1	0	1	2
Save time	0	0	0	0	0	0	0	1	0	0	1
Successful competitor	0	0	0	1	0	0	0	0	1	0	2
Training	0	0	0	0	0	0	0	0	2	0	2
Use of cloud computing	0	0	0	0	0	1	1	2	0	0	4
TOTALS:	9	6	5	7	6	12	7	12	20	14	98

APPENDIX J: QUOTATION AS THEY LINK TO CODES

All current quotations (98). Quotation-Filter: All

HU: Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town

File: [H:\Adoption of cloud computing services amongst the micro-enterprise sector in Cape Town.hpr7]

Edited by: Super

Date/Time: 2017-10-27 13:30:09

1:1 [Has a website for people who a..] (28:28)   (Super)

Codes:[Access to ICT - Family: Infrastructure]

No memos

Has a website for people who are far away and want to purchase my book; People can also subscribe to my newsletter when I want to distribute campaign to clients; I also used bulk mailing to send messages to people; I used a lot of apps e.g. QR scanner; QR codes takes a person straight to my website

1:3 [Excel for finances] (40:40)   (Super)

Codes:[Maintaining financial information - Family: Infrastructure]

No memos

 Excel for finances

1:4 [Email invoices to clients] (44:44)   (Super)

Codes:[Process invoices - Family: Infrastructure]

No memos

Email invoices to clients

1:5 [I think that cloud is the futu..] (53:53)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

I think that cloud is the future because if you install anything on your PC and if gets stolen or crashes. All the information on your pc will be gone. So cloud service will be one drive to store documents so that if I am in kwazulu natal for example, I can login to a computer and access all the information I need

1:7 [Security is a concern but I do..] (61:61)   (Super)

Codes: [Safety - Family: Cloud computing trust]

No memos

Security is a concern but I do not want to put my business info in something that is here today and then gone tomorrow; this is the reason we have been skeptical in moving into the cloud

1:9 [As a CEO, the benefits I will ..] (66:66)   (Super)

Codes: [Make business more profitable - Family: Behavioural Intention to use]

No memos

As a CEO, the benefits I will get is that I will get more customers because the cloud will be accessed by a lot of people

1:10 [50%] (70:70)   (Super)

Codes: [Competence - Family: Technological Resources]

No memos

50%

1:15 [As long as you have a laptop, ..] (78:78)   (Super)

Codes: [Cloud computing requirement - Family: Facilitating conditions]

No memos

As long as you have a laptop, a good internet connection and a smart phone, it will be easy

1:16 [The internet has made a huge d..] (78:78)   (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

The internet has made a huge difference. I can check my emails, update our website

1:17 [use social media as a marketin..] (78:78)   (Super)

Codes: [Marketing - Families (2): Behavioural Intention to use, Use Behaviour]

No memos

 use social media as a marketing tool

1:20 [No] (36:36)   (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

No

1:22 [It is not difficult. It is jus..] (74:74)   (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

It is not difficult. It is just that people are not educated well enough about it

1:23 [Things will be more quicker. E..] (57:57)   (Super)

Codes:[Quick job performance - Family: Performance Expectancy]

No memos

Things will be more quicker. Especially if there is an accounting system in the cloud, it will save time because I can login anywhere at any time and capture information

1:24 [I want to see other businesses..] (62:62)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

I want to see other businesses that have used the cloud. If many businesses have used it, then I can also trust it and use it

2:4 [At his current state we are us..] (28:28)   (Super)

Codes:[Process invoices - Family: Infrastructure]

No memos

At his current state we are using the wave application. Software used for invoicing

2:5 [One of the challenges we have ..] (28:28)   (Super)

Codes:[Training - Family: Behavioural Intention to use]

No memos

One of the challenges we have is that we are a bit sceptical in terms of using the cloud technology because we do not have the full information on how to use it

2:9 [We use an outsource company to..] (32:32)   (Super)

Codes:[Maintaining financial information - Family: Infrastructure]

No memos

We use an outsource company to help us with financial statements

2:10 [We never used an IT expert. We..] (32:32)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

 We never used an IT expert. We are just using the basic information that we have. We are self-teaching the things that we need

2:19 [the 30% can be reduced if I re..] (48:48)   (Super)

Codes:[Training - Family: Behavioural Intention to use]

No memos

the 30% can be reduced if I receive the knowledge to know how to use the tools

2:20 [In terms of keeping a profile ..] (52:52)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

In terms of keeping a profile and personal documents, cloud services can help. It will also help me keeping the database of clients and getting more sales

2:21 [60%] (56:56)   (Super)

Codes:[Competence - Family: Technological Resources]

No memos

60%

2:27 [Yes – Silulo Ulutho Technology..] (68:68)   (Super)

Codes:[Successful competitor - Family: Social Influence]

No memos

Yes – Silulo Ulutho Technology and YOTO technologies are companies that make use of cloud services and have an influence on me. They have an influence on me because those businesses are on the side of IT. They specialize in IT and we are trying to align with them

2:29 [I ask fellow entrepreneurs whe..] (73:73)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

 I ask fellow entrepreneurs when I want to make decisions about IT

2:31 [The benefit of the free Wi-Fi ..] (85:85)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

The benefit of the free Wi-Fi at the Barn has made our business grow form strength to strength, especially when we want to download videos to do presentations

2:32 [The free Wi-Fi I has been a ga..] (85:85)   (Super)

Codes:[Internet cost - Family: Cost of technology]

No memos

The free Wi-Fi I has been a game changer

2:33 [I will hire someone who specia..] (84:84)   (Super)

Codes:[Cloud computing requirement - Family: Facilitating conditions]

No memos

I will hire someone who specializes in this type of technology or outsource a company that focus on cloud services

2:35 [Another advantage is that ever..] (40:40)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Another advantage is that everything will be in one place "one stop", you will not have to use different applications

2:36 [Yes it will make things easier..] (40:40)   (Super)

Codes:[Reduce cost - Family: Behavioural Intention to use]

No memos

Yes it will make things easier because It is cost effective

2:37 [cloud computing will up our ga..] (44:44)   (Super)

Codes:[Competitive advantage - Family: Performance Expectancy]

No memos

 cloud computing will up our game to get our clients to come to our museum. We do talk about different issues but cloud computing will help us to absorb more sales and market our museum internationally

2:38 [There are a lot of scepticisms..] (48:48)   (Super)

Codes:[Lack of trust - Family: Cloud computing trust]

No memos

There are a lot of scepticisms because there are a lot of scams happening around. For me I will say 70% I can trust the cloud .The other 30% trust I am not sure what can happen with regards to security because we deal with confidential information. We are working with correctional services and certain information cannot be shared with the public

2:40 [If I get more knowledge and tr..] (64:64)   (Super)

Codes:[Easy to use and learn - Family: Interaction with cloud computing]

No memos

If I get more knowledge and training on how to use the cloud, I do not think it will be difficult to use it

2:41 [I am not a person who will dis..] (64:64)   (Super)

Codes:[Attitude - Family: Social Influence]

No memos

I am not a person who will distance himself from technology

2:42 [IF I knew similar business usi..] (69:69)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

IF I knew similar business using cloud it will influence me because it helps to know what the competitors are using; what is working for them and what is not working for them. If it is working for them we will follow their footsteps. If it is not working for them, we will not try it

2:43 [The technology that we are usi..] (24:24)   (Super)

Codes:[Access to ICT - Family: Infrastructure]

149

No memos

The technology that we are using…we are moving to the VR system – like Google glasses

4:1 [Yes, we do use a PC, landline] (37:37)   (Super)

Codes:[Access to ICT - Family: Infrastructure]

No memos

Yes, we do use a PC, landline

4:5 [we use the dropbox – only used..] (55:55)   (Super)

Codes:[Use of cloud computing - Family: Technological Resources]

No memos

we use the dropbox – only used to track budgets and between the stores to see where you are in the ranking

4:7 [Yes, we have to do a lot of pa..] (61:61)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Yes, we have to do a lot of paperwork on line, then it gets printed and sent with a driver where we can do it on a Cloud where the person can actually use it without all the printing. That will be good

4:12 [we now have internal IT. They ..] (86:86)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

we now have internal IT. They are now the source of IT information in general

4:15 [Yes, we do have a website (onl..] (43:43)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

Yes, we do have a website (online store) and then we use the internet the programmes to check products in stock and in which stores

4:16 [I think it would be quite easy..] (73:73)   (Super)

Codes:[Easy to use and learn - Family: Interaction with cloud computing]

No memos

I think it would be quite easy to use. We now have an IT helpdesk. We did not have one before. For any kind of issue, we have to log a call. It is an external service provider. I don't think it would be too complex

4:17 [It could help me in the sense ..] (67:67)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

It could help me in the sense that if the whole company could help themselves and everyone did research for interesting articles – that kind of thing. If you had a folder for interesting product knowledge. I work part-time so I miss emails and training – having the folder would be helpful

5:2 [We use the internet a lot for ..] (44:44)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

We use the internet a lot for because we procure and we distribute, so we have to buy and sell. When trying to get information from our current suppliers for example when doing a tender, we would use the internet or directly via email

5:4 [Well, we do have a guy who doe..] (53:53)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

Well, we do have a guy who does things for us, however, it is not his full time job – he works for another company. We are getting to a point where we will need to have someone doing these things for us, especially this year we have had quite a few issues related to this and telling us how we need to have

someone. Then it is time out when we have to take this PC, go out to this guy who will look at it tonight - so it's two or three days that we lose

5:7 [A lot of small businesses are ..] (59:59)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

 A lot of small businesses are going to SEDA for website funding. In terms of that, government needs to have providers who are vetted well otherwise the service is redundant, because it is being directed at the small business who doesn't have the time or the knowledge for this type of thing and we trusting if we are going for funding from SEDA that you would have people who know.

5:14 [Yes, it would as while I am bu..] (85:86)   (Super)

Codes:[Quick job performance - Family: Performance Expectancy]

No memos

Yes, it would as while I am busy with something, someone would come and ask if I had this document. If they could access this directly, it would save me time (to do my job) and meet deadlines.

Also in my role as Office Manager, I would have to go and audit – instead I could access documents where I am and check / audit. It would definitely make life easie

5:15 [it would not be a difficult th..] (92:92)   (Super)

Codes:[Easy to use and learn - Family: Interaction with cloud computing]

No memos

it would not be a difficult thing and obviously if you have the right system

5:22 [One of the reasons I would con..] (123:123)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

One of the reasons I would consider this and why I am thinking along these lines is because the advert from Telkom: the future customer. If anything, that advert would influence – they started thinking about future customers. Nobody starts a business to close it tomorrow – you look at longevity and sustainability. If you think about the future, is this going to work in five years' time and we have to stay ahead or we will lag behind.

5:23 [. If you are a small business ..] (123:123)   (Super)

Codes:[Attitude - Family: Social Influence]

No memos

. If you are a small business and break into the markets, you must be a disruptor, coming in with a mind-set that people started with, you can't or they will eat you up. You have to think differently.

5:33 [we had this website provided b..] (59:59)   (Super)

Codes:[Competence - Family: Technological Resources]

No memos

we had this website provided by SEDA because we applied for funding but somehow the vetting for vendors is not very good on SEDA's side because the vendor wanted to do the bare minimum to get paid. It could not provide us with what is was we needed and it was a whole back-and-forth for over a year. That has been a very big frustration for us. So the little knowledge that I had about websites and the internet, I applied into this situation to say but this is by far not one should be if you are a professional

5:36 [So there is not enough convers..] (153:153)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

So there is not enough conversation between small business and government because for example we have been around since 2008 and we know that there is a Small Business Ministry but we have not seen or heard from her. There is one government institution that we have been dealing with and that is PetroSA for the past year. In our opinion, the enterprise development programme is the best we've seen, the best in application even though at the moment they are struggling with finances, the value they have brought to us, wasn't just about money. We got some money from them but the overall empowerment. They really get empowerment. It was not about them, it was about us. They developed a programme for us – there were about 15 companies and they developed a programme to suit our needs and areas of growth. So in terms of this, government can develop forums of communication and listening to us; and to create funding which speaks to the needs of small business. Not we give this – but what is needed to develop the company. So for me, funding will be very important to get all of this set up – that is important to any company. All the things government does not provide for are the things which companies need. Support cannot only be financial but also someone who has the expertise to ensure that growth takes place

5:37 [to have something centralised ..] (65:65)   (Super)

Codes: [Cloud computing benefits - Family: Behavioural Intention to use]

No memos

to have something centralised could be very useful for a company like ours because you don't have to keep redoing a lot of things. You could just find things as it would be there – all centralised. Anything could happen, someone's off sick and then stuff stands still because you cannot access information and not knowing where it is stored

5:38 [For example, with big document..] (92:92) (Super)

Codes: [Use of cloud computing - Family: Technological Resources]

No memos

For example, with big documents, if I cannot send it via email, I would send it via dropbox

5:39 [I attend a Start-Grind forum o..] (134:138) (Super)

Codes: [Attitude - Family: Social Influence]

No memos

I attend a Start-Grind forum once every few months and you get to hear about new things. That is a clever way of communicating new ideas. That is one way of learning, sharing. This type of organisation is good for sharing this type of information.

You need to listen to what is happening in the world out there. I listen to Tech Talk all the time because people who do Tech Talk are always on the cutting edge of whatever it is they are doing. When it is something in education, you could think what this has got to do with what we are doing but you could learn from it.

Listening to economic reviews etc., because every new innovation would be shared

6:1 [Yes, we use a mobile phone and..] (36:36) (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, we use a mobile phone and a PC (very limited)

6:2 [We do have a website (very lim..] (42:42) (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

We do have a website (very limited) as most of our clients are walk-in clients. We don't do so much through the website

6:3 [No, we don't] (49:49) (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

No, we don't

6:4 [When it comes to marketing – w..] (61:61) (Super)

Codes: [Make business more profitable - Family: Behavioural Intention to use]

No memos

When it comes to marketing – we have to generate income from that

6:6 [Yes, we all learn from each ot..] (73:73)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

Yes, we all learn from each other. If other businesses are successful, why not copy some of the stuff from them. Of course yes

6:7 [I believe that government can ..] (81:81)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

I believe that government can play a role. There is a privilege and there is also a citizen issue because the government gives their local /citizens first priority. Non-citizens' priority are limited. It is up to us to make things work. We don't rely too much on information and or funds that government provides. We also rely on our suppliers – at the end of the day (we concentrate) how to get a good and trustworthy suppliers and maintain good relationships with your suppliers

7:1 [Yes, we do have an IT system] (38:38)   (Super)

Codes:[Access to ICT - Family: Infrastructure]

No memos

Yes, we do have an IT system

7:2 [We use the internet mostly to ..] (43:43)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

We use the internet mostly to communicate with our branches and staff

7:3 [Yes we do have a provider, an ..] (49:49)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

Yes we do have a provider, an IT company which helps with IT

7:4 [With the Cloud it is very impo..] (57:57)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

With the Cloud it is very important, always put our staff on the computer. If there is a virus, then we have to start all over again. With the Cloud this won't happen. With the present system, we can only use it at the office. When you are out of the office, you can't use it. That is why the Cloud system would be more helpful

7:7 [We have one transport company ..] (81:81)   (Super)

Codes:[Successful competitor - Family: Social Influence]

No memos

We have one transport company called FASTWAY who have a system where you can follow your stuff on the internet. Those are people we look for – they have a better way.

7:9 [Government has a huge role to ..] (100:100) (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

Government has a huge role to play with small businesses because small business contribute to the economy. Small businesses also employ people and an advantage to the economy. The Government should encourage and fund small business. Funds could be expertise in that area, a conference to explain, training programme, communicate with small business and encourage small business

7:11 [I think the problem with most ..] (69:69) (Super)

Codes:[Awareness - Family: Lack of technology]

No memos

I think the problem with most small businesses, is that we don't have IT departments. We try to manage with someone coming in to show you how to use the system. There is no department to follow up like in the big companies when you have a new system like the Cloud system, it would be helpful for someone to show you

8:1 [Yes we do] (39:39) (Super)

Codes:[Access to ICT - Family: Infrastructure]

No memos

Yes we do

8:2 [we use the internet for market..] (47:47) (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

 we use the internet for marketing

8:6 [So far it's not] (73:73) (Super)

Codes:[Easy to use and learn - Family: Interaction with cloud computing]

No memos

So far it's not

8:7 [We do because sometimes the bu..] (85:85) (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

We do because sometimes the business is slow and you have to check what other people are doing to get customers

8:8 [We have an accountant whose hu..] (91:91) (Super)

155

Codes: [IT expert - Family: Technological Resources]

No memos

We have an accountant whose husband is in IT

9:1 [Yes, every day we use PC's, mo..] (38:38) (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes, every day we use PC's, mobile phones and Tablets

9:2 [Yes, to get in touch with cust..] (44:44) (Super)

Codes: [Access to the Internet - Family: Infrastructure]

No memos

Yes, to get in touch with customers, ordering stock and store information

9:3 [Yes, basically all of us fall ..] (50:50) (Super)

Codes: [IT expert - Family: Technological Resources]

No memos

Yes, basically all of us fall into this category as IT specialists when it comes to software and hardware, we are able to do that

9:10 [Yes, because we also deal with..] (80:80) (Super)

Codes: [Other company influence - Family: Social Influence]

No memos

Yes, because we also deal with other companies that will supply us with all our brands like Logitek. If we have to adopt Cloud computing or start using it more and more, it will be good for us if the other companies start doing it as well

9:11 [Government is putting a lot of..] (91:91) (Super)

Codes: [Government role - Family: Facilitating conditions]

No memos

Government is putting a lot of time and effort into small businesses, I think they should also take a step forward with Cloud computing and introduce it to the small business and play a part in it. At the end of the day it benefits everybody if these businesses adopt this method

9:13 [I think it is very easy to use..] (68:68) (Super)

Codes: [Easy to use and learn - Family: Interaction with cloud computing]

No memos

I think it is very easy to use, I think it is very straightforward. It is as simple as going into the website and accessing basic information

10:1 [Yes] (34:34) (Super)

Codes: [Access to ICT - Family: Infrastructure]

No memos

Yes

10:2 [Yes, that is our bread and but..] (40:40)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

Yes, that is our bread and butter

10:3 [Yes, he (Donovan) is an IT exp..] (46:46)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

Yes, he (Donovan) is an IT expert. We do have people on call if needs be but otherwise Donovan gets his hands dirty

10:6 [It all comes down to cost as l..] (59:59)   (Super)

Codes:[Reduce cost - Family: Behavioural Intention to use]

No memos

It all comes down to cost as long as it does not compromise any of your quality of work

10:7 [That is quite touchy subject, ..] (126:126)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

That is quite touchy subject, Government will only play a role if you are a black-owned business and that's the honest truth. They actually give you money to start off the business if you have ideas or concepts and monitor it over a period of time and they will throw money at it, but that is only for black businesses

10:8 [There is actually one called N..] (132:134)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

There is actually one called National Chamber (of Commerce) around SA. They try and mentor you and try and get you on to the platform. It's always good to get someone to help and give advice. That is where we were four years ago. We're past that stage now.

I don't know of any government forums that informs people about technology and how technology can help your business. This National Chamber of Commerce gives you a mentorship and advice on small start-ups. But I don't know of any one for technology

10:9 [We don't keep up with technolo..] (113:113)   (Super)

Codes:[Awareness - Family: Lack of technology]

No memos

We don't keep up with technology magazines as technology changes every day. If we had a dedicated IT department, that would be their job

10:10 [Well the obvious thing is the ..] (65:65)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

Well the obvious thing is the storage of data and that is what cloud is all about and if it means that we don't have to have all the hardware and cloud could provide us with the data and we can have all our Thin Clients available to us, we can get all the information from the cloud

10:11 [I will tell you what, if I hav..] (52:52)   (Super)

Codes:[Reduce workflow - Family: Behavioural Intention to use]

No memos

I will tell you what, if I have a company and cloud … can offer a solution that takes my workflow from being a ten hour a day workflow to a three hour workflow. It comes down to efficiency. If its going mean my workflow becomes more efficient, then I would go for a cloud solution and its cost effective. I have to pay my staff for a ten hour day x amount of money and a cloud solution offers me a three hour day then it is something we will look at

11:3 [Yes, we have a marketing websi..] (49:49)   (Super)

Codes:[Access to ICT - Family: Infrastructure]

No memos

Yes, we have a marketing website, a sign up website and a website portal

11:5 [everyone here is an IT special..] (55:55)   (Super)

Codes:[IT expert - Family: Technological Resources]

No memos

everyone here is an IT specialist

11:14 [when we decided to integrate w..] (85:85)   (Super)

Codes:[Other company influence - Family: Social Influence]

No memos

when we decided to integrate with Tablet pos – a lot of our merchants use Tablet pos. We don't specifically care what other people are doing, but if we are building on top of another Cloud system and we need a lot of people to use the system to make it worth our while

11:15 [back-ups internet is a must, a..] (91:91)   (Super)

Codes:[Cloud computing requirement - Family: Facilitating conditions]

No memos

back-ups internet is a must, a really good Wi-Fi is necessary, limiting bandwidths, predicting where there would be bottle-necks

11:18 [Google Docs, Google Sheets] (93:93)   (Super)

Codes:[Use of cloud computing - Family: Technological Resources]

No memos

Google Docs, Google Sheets

11:19 [To centralise, we would save a..] (99:99)   (Super)

Codes:[Save time - Family: Performance Expectancy]

No memos

To centralise, we would save a lot of time and only using the platforms that are necessary

11:20 [Information not on the Cloud w..] (105:105)   (Super)

Codes:[Safety - Family: Cloud computing trust]

No memos

Information not on the Cloud was at greater risk – even if the data was stolen, they would not be able to access it on the Cloud. Would rather have my data encrypted sitting on a Cloud facility where they have 24 hr security than in a Dr's room locked in a filing cabinet

11:25 [Yes, all the time, except for ..] (43:43)   (Super)

Codes:[Access to the Internet - Family: Infrastructure]

No memos

Yes, all the time, except for events when we send letters and when following up with customers, we use the telephone

11:26 [We've got about four thousand ..] (61:61)   (Super)

Codes:[Cloud computing benefits - Family: Behavioural Intention to use]

No memos

We've got about four thousand (4000) customers transacting on a daily basis. Our system has to automatically put all that in our accounting. You could not do that manually. I can't show you that on the screen but we are looking at about R50 million a month. We stored all of our stuff in the Cloud. We built a model to speak directly to Zero, so that everything was done on the Cloud, so no manual input. But that meant that our customers using the point of sales thing, they just use the add-on. This super powerful thing of the Cloud

11:28 [The City of Cape Town has done..] (111:111)   (Super)

Codes:[Internet cost - Family: Cost of technology]

No memos

The City of Cape Town has done a great job of providing free internet. So that's the first step. You can't move to the Cloud without internet. The more internet availability, the cheaper the internet gets

11:29 [I think they should approach t..] (111:111)   (Super)

Codes:[Government role - Family: Facilitating conditions]

No memos

I think they should approach the Cloud companies to allow the Cloud companies to then work with business. So then incentivise the Cloud companies to give discounts or incentives to educate businesses in the region, thus allowing them to make their own decisions. Business

should be making money and if a business sees value in the Cloud, then they should buy it. I don't think that government should intervene and give discounts and incentives for people to use the Cloud just for the sake of using the Cloud. So I feel that government should work with Cloud companies and make them stronger and those Cloud businesses could support the businesses themselves

11:30 [, Zero is an accounting platfo..] (61:61)   (Super)

Codes: [Use of cloud computing - Family: Technological Resources]

No memos

, Zero is an accounting platform and YOCO can create a module which makes our life easier to give to people to make their lives earlier is the true power of the Cloud. Adding functionality without having to get the main company to build it for you. We use the standard systems of Google Drive and drop box and drop box paper as well

APPENDIX K: EMAIL SENT TO MICRO-ENTERPRISE OWNER REQUESTING PARTICIPATION IN THE RESEARCH

On Mon, Sep 12, 2016 at 1:38 PM, boris < ~~████████~~ > wrote:

Dear ~~██████~~,

I hope that you are well and had a wonderful weekend. I know that it has been a long time we spoke but I hope that everything is goind well on your side. I am still busy completing my master degree in Business Information Systems at Cape Peninsula University of Technology . Please allow me to remind you about the topic of my thesis and give you a brief explanation of my research study. The topic of my thesis is the following" Adoption of cloud computing services amongst micro-enterprises in Cape Town" and my supervisor is Professor Pather. The goal of my research study is to determine the factors that influence micro-enterprises to adopt a new technology, in this case "cloud computing". Cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive. Micro-enterprises can benefit a lot from cloud computing in terms of IT cost savings.

Based on some academic articles, I was able to determine that that there are sectors where the adoption of cloud computing by micro-enterprises is high and there are sectors where the adoption of cloud computing by micro-enterprises is low. I am currently looking for micro-enterprises to conduct interviews with and therefore I would like to thank you once again for participating in my research study. I am willing to sit down with you to explain my research study in details and cover the interview questions attached with you when you will be available. Please also find attached a letter written by my supervisor that gives you a brief description of my research study.

I am looking forward to hear from you in order to schedule a date as well as a time when I can conduct an interview with you. Please do not hesitate to let me know if you have any questions.

Kind regards,

Boris Lugerero

Hi Boris

Thanks very much for your request,
I'm very concern and I will do my best to collaborate with you.
However Iwill let you know when we can meet as right now we are very bus
at work .I will do my best to make it as soon as possible.

Regards

~~████████~~