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ACCEPTANCE OF ONLINE SHOPPING BY INDIVIDUALS IN SOUTH AFRICAN TOWNSHIPS

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Research report
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ABSTRACT

Internet connectivity has revolutionised the way we conduct our day-to-day activities like banking, communication, travelling arrangements and shopping. Internet has enabled the birth of many technological innovations throughout the world including online shopping. Online shopping is the process of purchasing goods and services from online stores also known as e-tailers over the internet. In developing countries like South Africa, buying and selling of commodities makes up most of the economic activities. Individuals. With the increase in internet connectivity, individuals now have an option to replace the traditional brick and mortar shopping with online shopping.

Although online technology is already in maturity phase in the developed countries, for South Africa as a developing country, it is still in its infancy. This might be attributed to factors that may include late penetration of the internet as well as logistical challenges which common in most developing countries. South Africa as a developing country needs technology to grow its economy into a developed country and online technology is one of the key technologies required to achieve this. The majority South African population comes from the townships which means that township dwellers constitute the majority of the consumers. Online shopping technology has potential to contribute towards the growth of small and medium-sized enterprises (SMEs) which is a key part of the South African economy. This demographic set up in South Africa makes it critical for business and academics to understand the acceptance of technology in South African townships, with online shopping being one of these key technologies.

The study investigated factors affecting acceptance of online shopping by individuals in South African townships using the adapted unified theory of technology acceptance theory (UTAUT). Using a hypothetical model to test various hypotheses, the study followed a positivist research paradigm. Through the theoretical lens of the adapted unified theory of acceptance and use of technology (UTAUT). A survey was used as the data collection method. The hypotheses were tested and analysed to further understand the factors affecting acceptance of online shopping by individuals in South Africa.

Findings of this study revealed that the elements of the adapted unified theory of technology acceptance theory (UTAUT) are strong in predicting acceptance of online shopping in South African townships. Elements like performance expectancy, effort expectancy, social influence as well as trust proved to be significant in predicting acceptance of online technology. This research will assist academics and practitioners to further understand the acceptance of online shopping by individuals.

Keywords: Online shopping, UTAUT, Customer satisfaction, Trust, Online vendors, Townships, m-commerce, e-tailers

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CHAPTER 1: INTRODUCTION AND BACKGROUND

This research report is about the factors affecting acceptance of online shopping by individuals in South African townships. The outline of this chapter is as follows; the first section introduces the field of study followed by a section on the background to the research problem. Section 1.3 outlines the study location followed by section 1.4 which discusses the context of the study. The problem statement is outlined in section 1.5 followed by the purpose of the study in section 1.6. Goals and objectives of the study are outlined in section 1.7 and significance of the research study is discussed in section 1.8. Section 1.9 summarizes the chapter followed by section 1.10 which gives an overall overview of the whole research.

1.1. Introduction to the field of study

Online shopping is the process of purchasing goods and services from online stores also known as e-tailers over the internet. Consumers may use the online shopping anytime of the day and from anywhere for as long there is internet connectivity. This research will study factors affecting acceptance of online shopping by individuals in South African townships. This chapter gives an introduction to the field of study of acceptance of online shopping followed by a brief discussion of the background to the research. The next section will discuss the study location and context, followed by a section on the problem statement of the research. The next section will discuss the goals and objective of the research followed by the significance of the study and finally summary of the chapter a synopsis of the next chapter

1.1.1. Benefits of online shopping

Online shopping also known as m-commerce or e-commerce has created new possibilities of doing shopping. There are many benefits of online shopping which include saving time, accessibility and comparability of global products, convenience as well as ability to shop 24 hours a day (Zhou, Dai & Zhang, 2007; Shahzad, 2015; Al-Debei, Akroush & Ashouri, 2015). With online shopping, consumers are able to browse through a catalogue for goods in another country or continent and purchase the goods in the comfort of their homes or offices.

1.1.2. Online shopping in developing countries

In developing countries like South Africa, online shopping is rapidly growing but has not reached maturity as compared to developed countries (Nietsckie, Naidoo, Mulaudzi, Dludla, Mokgabudi, Mansoor & Motshabi, 2011). The difference in maturity in different countries and regions is due to various factors affecting individual acceptance of online shopping (Shahzad, 2015). In the current era, internet has evolved into becoming a necessity technology regarding the day to day tasks of people.

The cost of internet connectivity is decreasing and easily available, thus enabling people across all economic and academic classes to use the internet (Hidayanto, Saifulhaq & Handayani, 2012). Online shopping has potential to contribute towards the growth of the economy. South Africa as a developing country has been faced with some challenge including poverty and slow economic growth. According to Farhad, Behravesh & Rasouli (2011), online shopping has potential to contribute towards economic growth. It is important to gain understanding of factors affecting online shopping in South African townships. According to Pernegger & Godehart (2007), 25% of the South African population is from the townships.

1.1.3. Internet connectivity in South Africa

In South Africa, initiatives like free Wi-Fi by city of Tshwane and Western Cape broadband offers residents free and open internet to the public (Geerdts, Gillwald, Calandro, Chair, Moyo & Rademan, 2016). Free internet accessibility may afford individuals from all economic classes to use online technologies like online shopping without incurring connectivity charges. There are also restaurants that provide patrons with free Wi-Fi and these initiatives provide free internet accessibility in South Africa enabling patrons to do their shopping while eating.

Internet penetration is increasing in South Africa and with Government initiatives, more and more people are connecting to the internet every day. Examples of common online shops in South Africa include Take-a-lot, Zando, Loot, Fashionhub including Makro and Pick n Pay which are previously brick and mortar only retailers. This study uses adapted unified theory of acceptance and use of technology (UTAUT) to understand

factors affecting acceptance of online shopping by individuals in South African townships.

1.1.4. Acceptance of technology

Technology acceptance by individuals is the decision they take regarding future use of technology (Louho, Kalliojaand & Oittinen, 2006). Success of information technology initiatives may be determined by the acceptance of the technology by potential users. Acceptance of information technology initiatives is a good predictor of the actual usage of the technology. All information technology initiatives, whether in a mandatory or optional use environment, will require user acceptance for them to become a success.

Increased coverage and affordability of internet connectivity throughout the world, complemented with high availability of affordable internet connectivity devices has enabled a worldwide increase of online information technology initiatives. Some of the online information technology includes online banking, e-filing, online communication platforms, online flight bookings as well as online shopping platforms. An understanding of acceptance of online shopping by individuals is important for both traditional brick and mortar and online vendors.

1.1.5. Projections of online shopping

According to (Nielsen's Company, 2016), online shopping sales are projected to grow more than double between 2015 and 2019 and will constitute more than 12% of global sales by 2019. Online shopping also known as m-commerce or e-commerce has which includes saving time, easy accessibility of goods and services globally as well as ability to shop 24 hours a day (Zhou *et al*, 2007; Shahzad, 2015). In developing countries like South Africa, online shopping is rapidly growing but has not reached maturity as compared to developed countries (Nietsckie et al, 2011).

According to Ashraf, Thongpapanl & Auh (2014), Internet economy contributes 5% to 9% of the total gross domestic product in developed countries and has an increase of 15% to 25% in developing countries. The difference in maturity in different countries and regions is due to various factors affecting individual acceptance of online shopping (Shahzad, 2015). The reducing costs and easy accessibility of internet connectivity is

contributing towards the upward trend of online technology like online shopping (Hidayanto et al, 2012). Technology acceptance is pivotal to the success of information technology initiatives and this research contributes towards further understanding of the acceptance of technology through the theoretical lenses of unified theory of acceptance and use of technology.

1.2. Background to the research problem

According to internet usage statistics, Africa has the largest growth of usage of 8503.1% from 2000 to 2017 (http://www.internetworldstats.com/stats.htm). This increase in usage in Africa increases opportunities for online technology like online shopping. In South Africa internet connectivity costs are decreasing and even free, with free internet initiatives like free Wi-Fi by city of Tshwane and Western Cape broadband (Geerdts et al, 2016). The reducing costs of internet connectivity in South Africa are enabling more and more people to access internet connectivity and exposing them to online services like online shopping. There is growth in sales amount of online shopping world-wide and statistics indicates that online shopping contributes significantly to the South African economy (Makhitha & Dlodlo, 2014)

Common online vendors in South Africa include Take-a-lot, Zando, Loot, Fashionhub as well as other traditionally brick and mortar only retailers like Makro and Pick n Pay. According to Shang & Wu (2017), there is an increase of online shopping globally and this upwards trend of m-commerce expands an opportunity for scholars to investigate more and contributes towards further understand of factors affecting acceptance of online shopping in developed and developing countries like South Africa.

Acceptance of information technology is one of the key predictors of future use of technology within a voluntary technology use environment which in turn may determine the success or failure of technology. The criticality and importance of acceptance of technology were mentioned in the literature by Oye, Iahad & Ab-Rahim (2012) when they stated that there is little value derivable from technology unless users accept and use it.

According to Parameswaran, Kishore & Li (2015), UTAUT as a theory, continue to be widely used as a predictor for future usage of technology initiatives. The

conceptualized framework used in the study aims to strengthen the unified theory of acceptance and use of technology as a technology acceptance theory (UTAUT) by testing the theory through the identified hypotheses. The study investigated acceptance of online shopping by individuals in South African townships within a voluntary acceptance use environment.

South Africa is a developing country and according to Kwarteng & Pilik (2016), developing countries are behind in terms of technology and internet penetration as compared to developed countries for example, USA, with the area of online shopping still in its infancy in African region. In South Africa and throughout the world, vendors are on the drive to provide convenient services to their clients through the provision of online shopping, with predictions of future growth in online sales, however, some consumers still prefer physical shopping outlets as compared to online shopping (De Swardt & Wagner, 2008). There is a need for online vendors and other stakeholders to understand factors affecting acceptance of online shopping to ensure development of online shops meeting the requirements and expectation of individual consumers.

1.3. Study location

South Africa is a country that is located in the Southern Africa region neighbouring Zimbabwe, Mozambique and Botswana. South Africa is a multi-cultural country also known as the rainbow nation due to its diversity. In South Africa, people reside in the cities, towns, villages and farms. Within the cities, there inner city dwellings which are the residential dwellings within the city which in most cases are in the form of penthouses and flats. Just outside the cities, are suburbs, which in the South African context, are characterised with sparse huge houses for the affluent families. Examples of suburbs in South Africa include Fourways, Morningside, Parktown and Saxonworld.

Moving further out of the cities, are townships, which in the South African context, are characterised with underdevelopment and overpopulation. Free houses also known as RDPs provided by the Government to low income earners constitute a substantial percentage share of houses in the townships. The houses in townships are closely located and in most cases small. In most cases South African townships are associated with low-income families and under developed infrastructure and

amenities. Some examples of townships in South Africa include Soweto, Tembisa, Tokoza, Katlehong, Mamelodi as well as Umlazi

Two major townships around Johannesburg, which are Soweto and Katlehong were used as the locations for data collection for the study. In South Africa, the majority of the urban population is from the townships and according to a keynote address by Pernegger & Godehart (2007), 73% of Johannesburg residents live in townships and informal settlements popularly known as squatter areas with 43% of Johannesburg living in Soweto alone. The significance of the population size in townships within South Africa justifies the choice of the study location of this study.

1.4. Context of the study

Based on solid, relevant theoretical underpinnings and literature, a research framework has been developed to investigate technology acceptance factors affecting acceptance of online shopping by individuals within the context of South African townships. The study was carried out within the context of a voluntary acceptance of online shopping by individuals in South African townships. There is an increase in internet connectivity and use of online technology in South Africa and other developing countries globally (http://www.internetworldstats.com/stats.htm). The upward trend of acceptance and usage of internet is constantly shifting the paradigm of how individuals do their shopping, moving from traditional shopping towards online shopping (Shang & Wu, 2017).

There are many benefits of using online shopping which includes saving time, accessibility and comparability of global products, convenience as well as the ability to shop 24 hours a day (Zhou *et al*, 2007; Shahzad, 2015). In developing countries like South Africa, online shopping is rapidly growing but has not reached maturity as compared to developed countries (Nietsckie *et al*, 2011). The difference in maturity in different countries and regions is due to various factors affecting individual acceptance of online shopping (Shahzad, 2015). In the current era, internet has evolved into becoming important to our life. The cost of internet connectivity is decreasing thus affording people across all economic and academic classes to use the internet (Hidayanto *et al*, 2012).

1.5. Problem Statement

Unified theory of acceptance and use of technology (UTAUT) is used as the theoretical lens to further understand factors affecting acceptance of online shopping by individuals in South African townships. The factors affecting acceptance of online shopping by individuals in South Africa are under-investigated and not fully understood, let alone in the context of individuals in South African townships. Kwarteng & Pilik (2016) support this, when they stated that the lack of research on online shopping together with its infancy as compared to developed countries. There are insufficient studies to understand acceptance and use of online shopping (Li & Huang, 2009). This need for more studies on acceptance of online shopping creates an opportunity for current and future research.

Although there are existing studies of acceptance of online shopping in developing countries, there is no known study focusing on acceptance of online shopping by individuals in townships. Therefore, this study contributes towards filling the research gap of acceptance of online shopping within the context of individuals in townships. According to Akroush & Al-Debei (2015), most of the existing studies of acceptance of online shopping have been conducted in developed countries and there are less studies focusing on developing countries, let alone townships.

Although townships in South Africa may refer to geographical areas where people live, these geographical demarcations have given birth to a culture known in South Africa as township culture. There is less research on the acceptance and use of e-commerce across cultures (Ashraf, et al, 2014). This study also helps to bridge the gap by giving insights of acceptance of online shopping by individuals from South African townships which are also considered township cultural hubs in South Africa.

1.6. Purpose of the study

The purpose of the study was to explore the factors affecting acceptance of online shopping by individuals in South African townships.

1.7. Goal and Objectives

The goal of this study was to develop a model for the acceptance of online shopping by individuals in South African townships using unified theory of acceptance and use

of technology (UTAUT) as a theoretical lens. The study was carried out in the context of a voluntary acceptance of online shopping by individual consumers in South African townships.

The objectives of the study were to:

- Determine the effect of perceived security on Trust of online shopping by individuals
- Determine the effect of trust on acceptance of online shopping by individuals
- Determine the effect of performance expectancy on acceptance of online shopping by individuals
- Determine the effect of effort expectancy on acceptance of online shopping by individuals
- Determine the effect of social influence on acceptance of online shopping by individuals

Research Questions

In the line with study goal and objectives, the following were the research questions
Primary research question:

- What are the factors affecting acceptance of online shopping by individuals in South African townships?

Secondary research questions

- To what extent does effort expectancy affect acceptance of online shopping by individuals in South African townships?
- To what extent does social influence affect acceptance of online shopping by individuals in South African townships?
- To what extent does performance expectancy affect acceptance of online shopping by individuals in South African townships?
- What is the effect of perceived security on trust of online shopping by individuals in South African townships?
- What is the effect of trust on acceptance of online shopping by individuals in South African townships?

In order to achieve the study objectives, the researcher used quantitative research methodology and made use of descriptive and inferential analysis to determine and establish causality to evaluate relationships between the constructs in the framework and test the hypothesis highlighted in the study. Related and relevant literature, together with past research models used to study similar and related phenomena was reviewed. The reviewed literature together with past research models formed the basis of the formulation for the research model used in this research.

Questionnaires were used to collect data completed by respondents from an identified, selected population, which are two major townships around Johannesburg. To test the research model, a real life scenario based hypothetical model was used together with a follow-up of questionnaires based on the scenario being studied. The variables used in the hypothesis were then operationalized using current and relevant literature together with the relevant research instrument developed.

There was also pre-testing and pilot testing of the research instrument to ensure face validity and content validity of the research constructs. The research instrument was distributed to a sample population of individuals from two townships around Johannesburg and the data collected was then analysed to deduce inferences around the causality of the hypothesis.

1.8. Significance of the study

From the academic perspective, the study contributes towards the testing of the adapted unified theory of acceptance and use of technology. This will contribute towards further understanding of the factors affecting acceptance of online shopping by individuals. This research extends the body of knowledge and contributes towards bridging the literature gap by showing how the adapted UTAUT may be used to explain factors affecting acceptance of online shopping by individuals. The results of the systematic literature review conducted indicated that there is a level of inadequacy as far as availability of literature within the acceptance of online shopping by individuals in townships is concerned. This study, which is based on the adapted UTAUT research framework, contributes towards bridging this academic gap.

Many consumers are still reluctant to accept online shopping due to how some online shopping technologies and platforms are implemented which are difficult to use and confuse the consumers (Lim & Ting, 2012). This study may also be used by practitioners like e-tailers (online retailers) towards understanding what consumers need in terms of online shopping technology and platforms for them to accept online shopping. Using the results of the study, online shopping practitioners may gain an understanding of factors affecting acceptance of online shopping by individuals within the context of individuals in townships.

1.9. Summary of the chapter

Chapter 1 discussed the field of study and then provided the background to the research problem, including the study location and population as well as the research problem. The chapter also discussed the research goals and objectives together with the research questions including contributions of this study. The next chapter, which is chapter 2 will discuss the literature review of related past studies within the context of acceptance of technology and unified theory of technology acceptance and use (UTAUT).

1.10. Overview of the rest of the research report

Chapter 2 of the research reviews the existing literature and discusses the theory underpinning the study of acceptance of online shopping by individuals. This chapter then gives the research model that guides the study. Chapter 3 discusses the research methodology. Chapter 4 discusses data analysis together with the research findings; Chapter 5 provides the interpretation of the research findings and Chapter 6 provides an evaluation of the research together with the conclusion.

CHAPTER 2: REVIEW OF LITERATURE AND THE THEORETICAL FRAMEWORK

2.1. Introduction

This chapter reviews the literature and discusses the theoretical framework that was used to conduct the study on acceptance of online shopping by individuals in South African townships. Discussion of online shopping together with highlights, contributions and limitations of past studies is given. The reviewed literature is from credible sources, scholarly journals and conference proceedings. Section 2.2 of the chapter defines online shopping followed by discussion of past related literature in section 2.3. Section 2.4 discusses some of the theories of technology acceptance and details of the unified theory of acceptance and use of technology (UTAUT) as well as perceived security and trust. Section 2.5 develops the research model and gives the study hypotheses.

2.2. Online shopping defined

Online shopping also known as e-commerce is a process of purchasing goods and services through the internet (Shahzad, 2015). According to Nielsen company report (2016), the willingness to use digital retailing options in the future is highest in the developing markets in the Asia-Pacific (60% on average), Latin America (60%) and Africa/Middle East regions (59%), and trails in Europe (45%) and North America (52%). Previous research has shown that the quest for convenience and the need to save time is one of the drivers of online shopping throughout the world (Alreck, DiBartolo, Diriker, Dover, Passyn & Settle, 2009).

The possible benefits of online shopping to individuals include convenience, low cost, ease of use, access to a variety of goods as well as time saving (Zhou *et al*, 2007; Shahzad, 2015). Online shopping is a growing sector worldwide yielding positive results with $1.25 trillion worth of e-commerce by 2013 (Mlelwa, Chachage & Zainupa, 2015).According to Mlelwa *et al*, (2015), countries like Czech Republic have nearly a quarter (24%) of their gross domestic product (GDP) being generated by e-commerce which includes online shopping. South Africa has been experiencing very low economic growth and increasing unemployment rate. A better understanding of

aspects like online shopping that have potential to contribute towards the GDP is important.

2.3. Review of the literature

There has been prior research on acceptance of online technology and in this section of the literature review, there is discussion of various theories of technology acceptance from different literatures. Each discussion focuses on main objectives and key findings of each research paper. After the discussion, summarised key factors of the reviewed literature, including theories used, variables tested as well as research limitations are presented in a table to give a high level summary of the reviewed literature. In obtaining the relevant literature for the study, the researcher used the keywords (Online shopping, UTAUT, Trust, Online vendors, Townships, m-commerce, technology acceptance) to search for past literature. The following databases which are IEEE Xplore, Emerald, JSTOR, ProQuest and ScienceDirect were used to find and select the past literature reviewed.

2.3.1. Acceptance of mobile internet

Venkatesh, Thong & Xu (2012) developed a model based on unified theory of acceptance and use of technology (UTAUT) which they named UTAUT2. This model extended the UTAUT model with additional constructs which are hedonic motivation, price value and habit to study factors affecting acceptance and use of mobile internet by individuals. The objective of the study was to use UTAUT2 to study factors affecting acceptance and use of mobile internet by individuals in a voluntary and non-organizational setting.

The results of the study by Venkatesh *et al*, (2012) showed that hedonic motivation has a more significant effect on acceptance of mobile technology than performance expectancy. Gender, Age and experience were found have a moderating effect on acceptance of mobile internet. Other constructs of UTAUT like performance expectancy, effort expectancy and social influence were found to have an effect on the acceptance of mobile internet but were found to be moderated by individual moderators like age, gender and experience. Results also showed that the construct of facilitating conditions was moderated by experience and age.

2.3.2. Acceptance of mobile banking

Martins, Oliveira, & Popovic (2014) in their study on acceptance and use of internet banking individual consumers, used unified theory of acceptance and use of technology (UTAUT) together with an additional construct of perceived risk where they unpacked perceived risk to include perceived security, trust and how these affect acceptance and use of mobile banking. The objective of their study was to extend UTAUT model with a construct of perceived risk factor in order to understand factors affecting acceptance and use of internet banking. The study was conducted within the context of individual voluntary use of mobile banking.

In their paper, Martins *et al* (2014) stated that trust and perceived security are the most critical determinants of acceptance of monetary transactions over the internet by prospective users since they have worries of security and low levels of trust will lead to lack of acceptance of the technology. The findings of the study by Martins *et al* (2014) were that performance expectancy, effort expectancy, social influence and perceived risk were the most significant determinants of acceptance of online banking by individual users. Another finding of the study was that perceived risk increases the power of UTAUT to predict acceptance of online banking.

In their paper, Zhou, Lu & Wang (2010) discussed acceptance of mobile banking by individuals using a theoretical combination of unified theory of acceptance and use of technology (UTAUT) and technology task fit (TTF). Objective of the study was to use an integrated model of TTF and UTAUT to give a more comprehensive study of acceptance and use of mobile by users.

The results of the study by Zhou *et al* (2010) indicated that task characteristics and the technology characteristics of the TTF theory are strong determinants of task technology fit which in turn affect the acceptance and use of online banking technology. For the constructs of UTAUT model, the performance expectancy, social influence and facilitating conditions were found to be strong determinants of acceptance and use of mobile banking technology. Effort expectancy was found to have a strong effect on performance expectancy.

2.3.3. Acceptance of mobile payments

The study by Khalilzadeh, Ozturk & Bilgihan (2017) discussed acceptance of technology by individuals and adapted the UTAUT model to add risk, security and trust to test factors affecting acceptance of mobile payment in the restaurant industry. The purpose of the study was to provide an integrated model for studying individual acceptance of information technology through improving the explanatory and predictive power of UTAUT model (Khalilzadeh *et al*, 2017).

In the study, Khalilzadeh *et al* (2017), contextualized risk as the exposure to risk and security as the perceived protection against exposure to risk. Results from the study by Khalilzadeh *et al* (2017), indicated that risk, security and trust are significant determinants of acceptance of mobile payments within the restaurant setting with security having a positive effect on trust.

The study by Abrahao, Moriguchi & Andrade (2016) used unified theory of acceptance and use of technology (UTAUT) to study acceptance of mobile payment services using smart phones by consumers. Purpose of the study was to identify and discuss factors affecting acceptance and use of mobile payments using smart phones within the context of consumers in a voluntary environment. Abrahao, *et al* (2016) adapted the unified theory of acceptance and use of technology (UTAUT) to add two constructs which are perceived risk and perceived cost and the results were as below:

- The constructs of UTAUT which are performance expectation, effort expectation and social influence were found to have significant effect towards acceptance of mobile payments using smart phones.
- Perceived risk was also found out to have significant effect on acceptance of mobile payments using smart phones by consumers.
- Perceived cost was found not to have any significant effect on acceptance of mobile payments using smart phones by consumers.

2.3.4. Acceptance of online shopping

Technology acceptance model known as TAM is one of the most used technology acceptance theory by researchers (Lim & Ting, 2012). It was developed by Davis (1989) based on the theory of reasoned action and has two main constructs which are

perceived usefulness and perceived ease of use (Samaradiwakara & Gunawardena, 2014).

Lim & Ting (2012), in their research paper, stated that it was a challenge within information technology management to identify significant factors affecting acceptance and use of technology by individuals. The objective of the study by Lim & Ting (2012) was to use technology acceptance model (TAM) to test and discus the factors affecting consumers' acceptance of online shopping. Lim & Ting (2012) argued that although TAM is one of the mostly used technology acceptance theory, it is imperfect as there remains a wide variation of research results in various studies focusing on different users and technology.

They argued that in the case of online shopping, a narrowed approach focussing on a study within a specific country is important due to user cultural differences thus mitigating the imperfections of TAM. Using TAM as the theoretical underpinning of the study, Lim & Ting (2012) in their findings stated that consumer attitude determines their acceptance of online shopping. Focusing on the relationship between perceived ease of use and perceived usefulness, the results of their study indicated that perceived ease of use and perceived usefulness of online shopping platforms affect the attitude of consumers towards acceptance of online shopping.

Lian & Yen (2014) integrated unified theory of acceptance and use of technology (UTAUT) and innovation resistance theory to study factors affecting acceptance of online shopping. The purpose of the study is to find out factors affecting acceptance of online shopping by older consumers (Lian & Yen, 2014). The results of the study by Lian & Yen (2014) were as below:

- Performance expectancy and social influence were found out to have a major effect on acceptance of online shopping by older adults.
- Value, risk and tradition were found to be significant barriers of acceptance of online shopping by older adults.
- Gender was found out to have non-significant moderating effects on acceptance of online shopping

- The study also found that, within the context of online shopping, younger consumers had higher drives and lower barriers towards acceptance as compared to older consumers
- Value was found to be a significant barrier of acceptance of online shopping for both older adults and young consumers while risk and tradition were found out to be significant barriers of acceptance of online shopping to older adults only.

The study by Li & Huang (2009) combines theory of perceived risk (TPR) and technology acceptance model (TAM) to discuss the relationships of the constructs of these theories and how they affect acceptance and use online shopping. Results of the study by Li & Huang (2009) indicated that there are significant relationships between the constructs of the two theories with perceived risk having a negative effect to perceived usefulness and perceived ease of use. Perceived usefulness was found to have a positive effect to perceived ease of use and both perceived usefulness and perceived ease of use were found to have a positive effect on acceptance of online shopping.

In their study of factors affecting acceptance of online shopping, McCole, Ramsey & Williams (2009) used a theoretical framework based on theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) and adapted it with additional construct of trust with perceived privacy and security concerns as moderating variable. The objective of the study by McCole *et al* (2009) is to investigate the moderating effect of privacy and security concerns on the trust towards acceptance of online shopping. The results of the study by McCole *et al* (2009) indicates that trust in a vendor, trust in the internet and trust in the third party have a positive effect on acceptance of online shopping and a perceived sense of protection by individuals has a positive effect on trust of the technology.

2.3.5. Acceptance of biometric technology

Miltgen, Popovic & Oliveira (2013), in their paper integrate technology acceptance model (TAM), diffusion of innovations (DOI), unified theory of acceptance and use of technology (UTAUT) together with an element of trust-privacy to investigate the

acceptance of biometric identification technology by individuals within the context of voluntary environment.

In their study, Miltgen *et al* (2013) found out that perceived ease of use and social influence has no significant effects on acceptance of biometric technology. Compatibility, perceived usefulness, facilitating conditions, perceived risk, trust in technology and innovativeness were found to have an effect on acceptance of biometric technology (Miltgen *et al*, 2013). According to Miltgen et al (2013), perceived risk and trust in technology has the most significant effect on acceptance of biometric technology.

2.3.6. Reviewed literature summarized

Table 2.1: Summary of theories, research methods and limitations of reviewed literature

References	Study theories	Technology	Study Methods	Constructs tested	Limitations
Journal: MIS Quarterly Topic: Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. Venkatesh *et al*, 2012	Unified theory of acceptance and use of technology (UTAUT)	Mobile internet	Venkatesh et al, (2012), tested the theoretical model using an online survey on 1512 internet consumers. The online survey was carried out in two data collection stages with a space of four months between the two stages.	Performance expectancy, Effort expectancy, Social influence, Facilitating conditions, Hedonic motivation, Price value, Habit Moderating factors: Age, Gender &Experience	There is a generalization limitation on the study as the study was conducted in a country with very high penetration rate of mobile phones. The average age of the study sample was 31 and results might not be applicable to older consumers. Model testing done to a single technology which is mobile technology.
Journal: International Journal of Information Management Topic: Understanding the Internet Banking Adoption by Portuguese Customers: a Unified Theory of Acceptance and Use of Technology and Perceived Risk Application Martins et al, (2014)	Unified theory of acceptance and use of technology (UTAUT)	Internet banking	The research model was tested using a set of hypothesis and actual acceptance and use of internet banking using online survey. Out of the total population of 726 made up of university students and former students, 249 validated results were used in the study	Performance risk, Financial risk Time risk, Psychological risk, Social risk, Privacy risk, Overall risk, Perceived risk, performance expectancy, Effort expectancy, Social influence Facilitating conditions Behavioral intention, User behavior Moderating factors: Gender & Age	The study had a sampling limitation due to the population being limited to university students and former students averaging 30 years and most of them highly educated. Due to the sampling limitation, the results might not be applicable to the general population.
Journal: Computers in Human Behavior Topic: Integrating TTF and UTAUT to explain mobile banking user adoption Zhou *et al*, (2010)	Technology task fit (TTF) Unified theory of acceptance and use of technology (UTAUT)	Mobile banking	Questionnaires were distributed to universities in China and 265 responses were received with 250 responses being verified as valid response.	Task characteristics, Technology characteristics, Task technology fit, Performance expectancy, Effort expectancy, Social influence, Facilitating conditions, User adoption	The study was limited to the theories of UTAUT and TTF only. Only cross-sectional data was collected Study was conducted within China only and study may not be generalized to other countries. Study limited to technology of mobile banking.
Journal: Computers in Human Behavior Topic: Online shopping drivers and barriers for older adults: Age and gender differences Lian & Yen, (2014)	Unified theory of acceptance and use of technology (UTAUT) Innovation resistance theory	Online shopping	Lian & Yen, (2014) distributed 1437 questionnaires 1437 to older individuals and 574 valid responses were collected. Another 308 questionnaires were distributed to university students and 246 valid responses were collected.	Constructs: Performance expectation, Effort expectation, Social influence, Facilitating conditions, Usage barrier, Value barrier, Risk barrier, Tradition barrier, Image barrier, Image barrier Online shopping intention	Study was limited to the technology of online shopping. Another limitation was of the population which was limited to students in Taiwan. Study may not be generalized to the general population including other people who are not students.

Table 2.1: Summary of theories, research methods and limitations of reviewed literature: *Continued*

References	Study theories	Technology	Study Methods	Constructs tested	Limitations
Journal: World Academy of Science, Engineering and Technology International Journal of Economics and Management Engineering Topic: Applying Theory of Perceived Risk and Technology Acceptance Model in the Online Shopping Channel Li & Huang (2009)	Theory of perceived risk (TPR) Technology acceptance model (TAM)	Online shopping	The study was done using a questionnaire survey as the instrument to test the reliability and validity of the model and research hypothesis. The quantitative analysis was based on the 637 received valid responses from the online survey done to consumers selected online.	Constructs: Perceived risk, Perceived usefulness, Perceived ease of use, Behavioral intention, Actual purchase behavior	Most of the respondents were highly educated and familiar with internet. The study has a potential culture limitation. Study was limited to the technology of online shopping.
Journal: Computers in Human Behavior Topic: Integrating TTF and UTAUT to explain mobile banking user adoption Zhou *et al*, (2010)	Technology task fit (TTF) Unified theory of acceptance and use of technology (UTAUT)	Mobile banking	Questionnaires were distributed to universities in China and 265 responses were received with 250 responses being verified as valid response.	Constructs: Task characteristics, Technology characteristics, Task technology fit, Performance expectancy, Effort expectance, Social influence, Facilitating conditions, User adoption	The study was limited to the theories of UTAUT and TTF only. Only cross-sectional data was collected. Study was conducted within China only and study may not be generalized to other countries. Study limited to technology of mobile banking.
Journal: Decision Support Systems Topic: Determinants of end-user acceptance of biometrics: Integrating the “Big 3” of technology acceptance with privacy context Miltgen *et al*, (2013)	Technology acceptance model (TAM) Diffusion of innovations (DOI) unified theory of acceptance and use of technology (UTAUT)	Biometrics technology	An online survey was used as the instrument to collect the data for the study from the population of young individuals between the age of 15 and 25. From the online survey, 326 responses were obtained.	Innovativeness, Trust in the technology, Privacy concerns, Compatibility, Perceived ease of use, Perceived usefulness, Social influence, Facilitating conditions, Perceived risks, Behavioral intention to accept technology, Behavioral intention to recommend using the technology	The study was limited to a single biometric technology which is iris scanning. Another limitation of the study was the age group which was limited to a range between 15 and 25 years. The results of the study may not be applicable to an older generation of users.
Journal: Modern Applied Science Topic: E-shopping: an Analysis of the Technology Acceptance Model Lim & Ting (2012)	Technology acceptance model (TAM)	Online shopping	A survey was administered to 350 consumers in shopping malls and hypotheses were also developed and tested.	Perceived ease of use & Perceived usefulness	The study was limited to consumers in Malaysia. The study was limited to the technology of online shopping only.

2.4. Theories of technology acceptance

Theories used to study acceptance of technology, include technology acceptance model (TAM), theory of planned behaviour (TPB) and innovation diffusion theory (IDT), task technology fit (TTF), theory of reasoned action (TRA) as well unified theory of acceptance and use of technology (UTAUT). The study investigates factors affecting acceptance of online shopping by individuals in South African townships through the theoretical lenses of the adapted UTAUT theory with the inclusion of perceived security and trust in the research model

Researchers have used various theories and frameworks to study individual acceptance of online technology. These theories and frameworks include technology acceptance model (TAM), theory of planned behaviour (TPB), diffusion of innovation (DOI), theory of reasoned action (TRA), technology task fit (TTF) as well as unified technology acceptance and use theory (UTAUT). Unified theory of acceptance and use of technology (UTAUT) is one of the most used theories on studies of acceptance of information technology by individuals (Oliveira & Martins, 2011). According to Thong, Venkatesh, Xu, Hong & Tam (2011, p.614), "UTAUT is a synthesis of about two decades of individual-level technology acceptance research".

2.4.1. Unified theory of acceptance and use of technology (UTAUT)

Unified theory of acceptance and use of technology (UTAUT) may be adapted to fit the technology being studied (Venkatesh, Davis & Davis, 2003). The study by Martins *et al,* (2014) adapted UTAUT and included variables of trust and perceived security when they studied acceptance of biometric technology. Results from previous research have indicated that UTAUT explain effectively user behavior towards acceptance of innovative technology more than any past models (Tsai, Zhu & Jang, 2013).

In their comparison of fourteen theories and frameworks of technology adoption, Samaradiwakara & Gunawardena (2014), found out that UTAUT was an improved theory that could be used to predict adoption of technology. This study adapted UTAUT to include trust and perceived security as prior studies have indicated the significance of these two constructs in acceptance of online technology.

Unified theory of acceptance and use of technology known as UTAUT was developed by Venkatesh et al (2003). The unified theory of acceptance and use of technology (UTAUT), measures acceptance of information technology through a consolidated approach using constructs from eight different theories which are theory or reason action (TRA), technology acceptance model (TAM), motivational model, theory of planned behavior (TPB), combined TPB/TAM, model of PC utilization, innovation diffusion theory as well as social cognitive theory (Venkatesh et al, 2003).

UTAUT consists of four key constructs, which are performance expectancy, effort expectancy, social influence and facilitating conditions as well as four moderators, which are gender, age, experience and voluntariness of use (Venkatesh, Thong & Xu, 2016). UTAUT which was originally developed within the context of employee technology acceptance within an organization has been extended to study other contexts like consumer technology (Venkatesh *et al*, 2012). (See model in Figure 1)

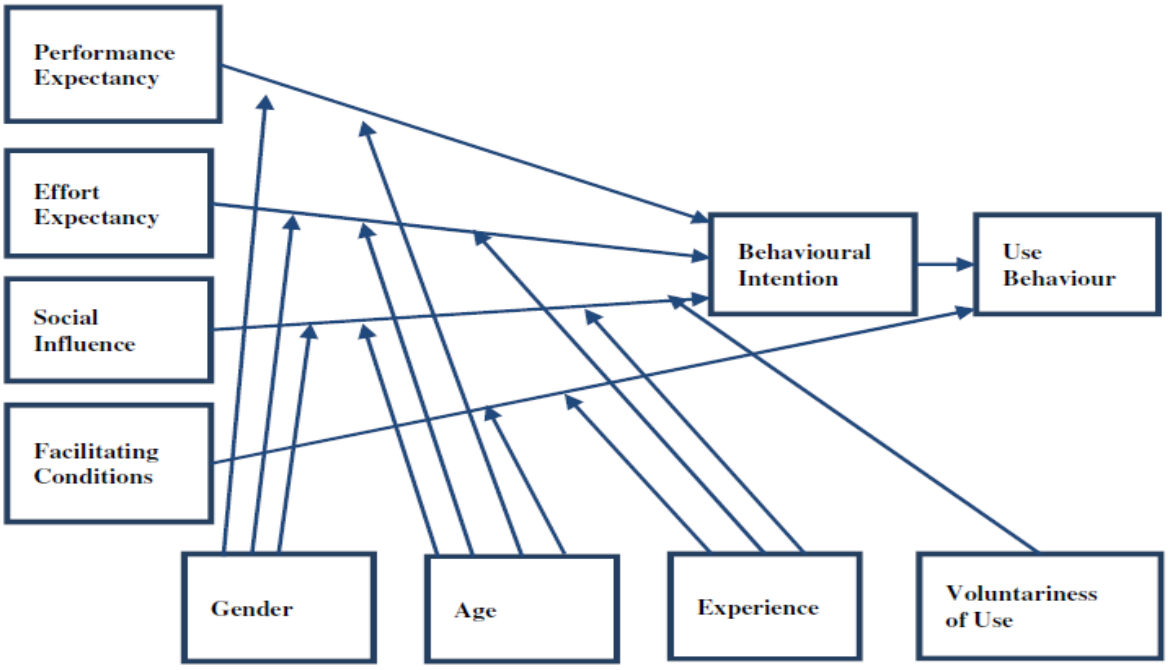


Figure 2.1: Unified theory of acceptance and use of technology (Venkatesh et al, 2003)

Figure 1 above shows the unified theory of acceptance and use of technology (UTAUT). According to Venkatesh et al (2012), performance expectancy is the level to which users expect use of technology to benefit them in performing required

activities. The performance expectancy variable is significant and strongly predicts behavioural intention in both voluntary and mandatory environments (Venkatesh et al, 2003).

The setting of the present study is within a voluntary environment. Effort expectancy is the expected level of easiness to use the technology by the users (Venkatesh et al, 2012). According to Venkatesh et al (2003), the effort expectancy variable is significant in both mandatory and voluntary settings only in the initial stage after user training or introduction to the technology while becoming non-significant over time as the user gets used to using the technology.

Social influence refers to the behaviour of an individual being influenced by how the individual thinks other people will think of them if they use the technology. It is the level to which they perceive that other important people believe that they should use the new system (Venkatesh et al, 2003). According to Venkatesh *et al* (2012), facilitating conditions refer to how users perceives the availability of necessary resources and support to use the technology and when performance expectancy and effort expectancy are available, facilitating conditions becomes non-significant in predicting acceptance of technology.

2.4.2. Perceived Security and Trust

Results from the study of existing literature of acceptance of online technology indicated that perceived risk and trust are important factors affecting acceptance of online shopping by individuals. According to Egger (2000), perceived security and trust are the key factors that affect e-commerce growth globally. Security fears by potential online shoppers' causes huge monetary losses to e-commerce retailers and lack trust is one of the main reasons why e-commerce becomes less attractive (Matbouli & Gao, 2012).

Trust is important for the success of online-shopping and it is important for online shopping platforms to clearly declare the security that they offer to customers as well as a clear contract stipulating the policies and guarantees available to customers (Barnard & Wesson, 2004). Perceived security and trust are the most critical

determinants of acceptance of monetary transactions over the internet by users (Martins et al, 2014).

2.4.3. Studies that have used UTAUT, perceived security and trust

There are existing studies on acceptance of technology that have applied the unified theory of acceptance and use of technology (UTAUT) or modified UTAUT with perceived security, risk and trust. According to Khalilzadeh *et al* (2017), various empirical studies have applied revised and adapted the UTAUT model with risk, security and trust being critical additions in m-commerce as they relate to payments and privacy According to Eid, (2011), perceived security has a significant effect on trust of online shopping.

Venkatesh *et al*, (2012) used UTAUT to study acceptance and use of mobile internet by individuals. Another study by Martins *et al*, (2014) applied adapted UTAUT with perceived risk (perceived security) and trust variables in their study on acceptance of mobile banking by individual consumers. Khalilzadeh *et al,* 2017 adapted UTAUT with risk, security and trust variables in their study on acceptance of mobile payments within the restaurant setting. Another study by Lian & Yen, (2014) used UTAUT adapted with value, risk ad tradition to study acceptance of online shopping by individuals.

2.5. Research Model

According to Venkatesh *et al*, (2012), performance expectancy, effort expectancy and social influence significantly affect behavioural intention to use technology, with facilitating conditions determining the actual use of the technology. This study focuses on testing factors affecting acceptance of online shopping not the actual use of the technology. Moderating factors like age, gender and income were not included in the proposed framework as they were proposed for future studies of acceptance of online shopping.

The research model is based on UTAUT with the addition of perceived security and trust. The complete process of online shopping is a combination of different processes which include purchasing of goods and services over the internet as well as paying for the goods and services over the internet. According to Martins et al, (2014),

consumers are always scared of losing money when they do monetary transactions over the internet. This justifies the inclusion of perceived security and trust in the research model of acceptance of online shopping by individuals in South African townships.

The research model consists of four independent constructs, which are perceived security (PS), performance expectancy (PE), effort expectancy (EE) as well as social influence (SI). Trust (T) of online shopping technology is a dependent construct of (PS). The constructs will measure acceptance of online shopping by individuals in South African townships. The other construct of UTAUT, which is facilitating conditions, was excluded, as the purpose of the study is to measure acceptance of technology and not use.

Moderating factors of UTAUT like age, gender and income were not included in the current model due to limited time and resources available to carry out the study and these moderating factors were proposed for future studies of acceptance of online shopping within or beyond the same context.

Research model

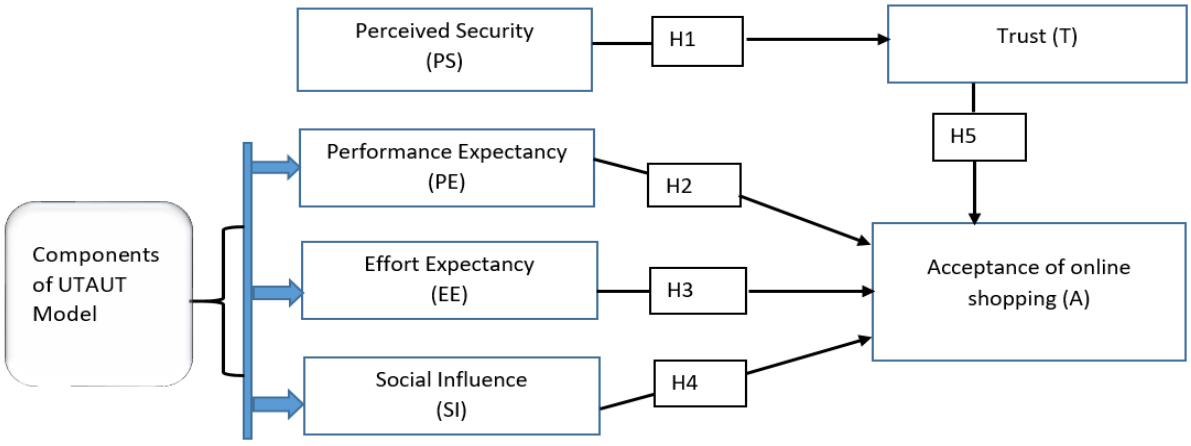


Figure 2.2: Research Model

The research model above in Figure 2 was used to measure the factors affecting acceptance of online shopping by individuals in South African townships. The research model is based on UTAUT with additional constructs of perceived security (PS) and trust (T). Trust (T) is the first dependent variable and is a dependant on perceived security (PS). The main dependent variable is acceptance of online shopping, which

is a dependent on trust (T), effort expectancy (EE), performance expectancy (PE) as well as social influence (SI). The relationship between perceived security (PS) and trust (T) will be investigated.

Table 2.2.: Summary of hypotheses

Construct	Hypothesis Number	Hypothesis Description
Perceived Security (PS)	H1	Perceived security has a positive effect on trust of online shopping technology by consumers
Performance Expectancy (PE)	H2	Perceived expectancy will have a positive effect on acceptance of online shopping by consumers
Effort Expectancy (EE)	H3	Effort expectancy has a negative effect on acceptance of online shopping by consumers
Social Influence (SI)	H4	Social influence has a positive effect on acceptance of online shopping by consumers.
Trust (T)	H5	Trust will have a positive effect on acceptance of online shopping by consumers

The summarised hypotheses measured by this research study are shown in table 3.1 above. The hypotheses are further discussed below:

H1*.The higher the perceived security of online shopping by a consumer, the higher the trust of online shopping technology by consumers.*

Perceived Security (PS) is a sense of protection against infringements of individuals' rights through theft, deletion or alteration of their information by an unauthorized party on the web (Matbouli & Gao, 2012). Perceived security has a positive effect on trust of online shopping by existing and future potential consumers. Perceived security (PS) is contextualized as the perceived sense of security or protection against cyber theft and abuse that an individual feels before, during and after use of online shopping.

According to Jarupunphol & Mitchell (2002), any perceived or reported internet security risk will negatively affect trust of online shopping thus affecting individuals' behaviour to accept e-commerce. Security is an important determinant of individual acceptance of online shopping, meaning that if consumers feel that they are secured

during online shopping, this will contribute towards acceptance of online shopping (Keisidou *et al*, 2011).

***H2**. The more consumers perceive the high performance of the online shopping technology, the more they will accept of online shopping.*

Performance Expectancy (PE) is the level at which users expect the usage of technology to benefit them in performing required activities and it is a significant predictor of technology acceptance in both voluntary and mandatory environments (Venkatesh et al, 2003).

***H3**. The lower the effort expectancy regarding use online shopping technology by individual consumers, the higher the acceptance of online shopping by individual consumers.*

Effort Expectancy (EE) depicts the level at which online users expect the technology to be easy to use (Lian & Yen, 2014). In the context of online shopping, effort expectancy is the degree to which users expect the online shopping technology to be easy to use. According to Gefen *et al*, (2003), expectancy of less effort to use technology will positively affect behavioural intention to use online shopping technology.

***H4**. The more an individual perceives that important people in their social cycles believe they should use online shopping, the more they are likely going to use it.*

Social Influence (SI) is the influence of individuals' behaviour by their anticipation of how others think of them if they use the technology (Venkatesh *et al*, 2012). In the context of online shopping it is the influence of shoppers' behaviour by their anticipation of how others deemed important people within their social cycles will think of them if they use the online shopping technology.

***H5**. The higher the trust of online shopping technology by individuals, the more they will accept it*

Trust (T), in e-commerce is a form of relationship between the online shoppers and the online vendors, which in turn have a positive effect on acceptance of online shopping technology by consumers (Ali *et al*, 2016).

2.6. Summary of the chapter

The chapter reviewed various literatures based on different concepts and theories of user acceptance of information technology within different contexts. Results from the literature review shows that there are various studies that posit unified theory of acceptance and use of technology (UTAUT) as a solid theory to study user acceptance of online shopping. Martins et al, (2014) added perceived security and trust to the unified theory of acceptance and use of technology (UTAUT) in order expand the study to other areas where UTAUT cannot explain individual decisions regarding acceptance of information technology. Adapting UTAUT with elements of risk, security and trust increase the explanatory and predictive power of the UTAUT model (Martins et al, 2014; Khalilzadeh et al, 2017).

A study on online shopping within the context of India by Malik, Kumara & Srivasta (2013) stated that perceived usefulness and ease of use have a significant effect on acceptance of online shopping while perceived financial risk negative impacts the acceptance of online shopping. According to Zainudeen, Samaajiva & Sivapragasam (2011), physical infrastructure and other support services are critical for the success of online shopping and these are in most cases unavailable and inaccessible by township population in developing countries.

Security threats have a negative effect towards acceptance of e-commerce technology through erosion of individual trust with implications like organizational or individual monetary losses, legal implications as well as reputation damage (Matbouli & Gao, 2012). The internet environment is highly uncertain and dynamic positing trust as a significant determinant of acceptance of online technology (Al-Debei *et al*, 2015). Trust is very important to online shopping as it is one of the key reasons why a lot of consumers use the internet but do not purchase online (Ha & Stoel, 2008; Ashraf *et al*, 2014).

The chapter also discussed existing studies that have used UTAUT as well as perceived security and trust to study acceptance of technology together with the research model used to study acceptance of online shopping by individuals in South African townships. Hypotheses measured in the study were also developed and

discussed with reference to existing literature. The next chapter will discuss the research methodology used to conduct this research.

Through analysis of existing literature on acceptance of online shopping, an unexplored area of extending the research with the context of township individual consumers in South Africa was identified. This study also extends the unified theory of acceptance and use of technology (UTAUT) with elements of perceived security and trust to test these two items together with other constructs of UTAUT. The study tests the adapted UTAUT model regarding factors affecting acceptance of online shopping by individuals in South African townships within a voluntary environment. The next chapter discusses the research methodology followed in carrying out the study on acceptance of online shopping by individuals in South African townships.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction

The chapter provide the research methodology followed in conducting the study. The chapter is outlined as follows; section 3.2 discusses the research paradigm followed section 3.3 which discusses the research approach. Research strategy is in section 3.4 followed by research design in section 3.5. Ethics are discussed in section 3.6.

3.2. Research paradigm

Research paradigm also known as research philosophy is defined as a process of how social phenomena may be examined to gain understanding and try explain it (Saunders *et al,* 2009). There four main research paradigms in research which are positivism, realism, interpretivism as well as pragmatism (Saunders *et al,* 2009).

According to Bhattacherjee (2012), positivist research method uses a quantitative approach through laboratory experiments and/or surveys to collect data and uses a deductive research approach which starts with the theory then use data to test the theory. This study is based on a positivist research paradigm using a quantitative approach. The study empirically tested the adapted UTAUT model through hypotheses within the context of acceptance of online shopping by individuals in South African townships. To this point the positivist research paradigm is the most appropriate, as this study is quantitative in nature and uses a survey to collect the data

3.3. Research approach

Saunders *et al* (2009), defined research approach as the approach taken by the researcher at the beginning of the research regarding theory, whether it will be explicitly stated upfront in the design of the research or not. There are two main research approaches which are quantitative and qualitative approaches (Bhattacherjee, 2012).

Quantitative approach tend to be deductive in nature and qualitative approach tend to be inductive in nature (Saunders *et al*, 2009). Goal for inductive is to develop theory and deductive approach's goal is to test theory (Bhattacherjee, 2012). Objective of this

study is to test the adapted UTAUT theory within the context of acceptance of online shopping in South African townships hence the deductive approach was taken. Deductive approach infers that the research approach for this study is quantitative.

According to Kothari (2008) quantitative research approach can be further subdivided into inferential, experimental and simulation approaches. The study used the quantitative approach through inferential analysis, which was described by Bhattacherjee (2012) as referring to statistical testing of hypotheses. Quantitative results of the data were analysed using a statistical tool to validate the relationships depicted on the research model to factors affecting acceptance of online shopping by individuals in South African townships.

3.4. Research strategy

This study followed the positivist paradigm using the quantitative research approach. To this point a survey research strategy was found to be the most appropriate. Bhattacherjee (2012), defined a survey as a method of collecting data using standardized questionnaires or interviews in a systematic way and mostly suited when individuals are the unit of analysis.

This study approach took an inferential approach which Kothari (2008), defined as a process of studying or questioning a sample population to ascertain or infer characteristics or relationships using a survey. This study was done using a self-administered survey where individuals were handed questionnaires which they completed and handed back. No other research strategy other than the survey was used in the study, meaning that a mono method was used.

The survey was a cross-sectional survey, in a non-experimental form. Cross-sectional survey is explained as a form of survey where data is collected at one point in time (Creswell, 2014). A cross-sectional was chosen over longitudinal study due to the limited time and budget available to undertake this study. Longitudinal requires data to be collected over a spread period of time which may run into years (Creswell, 2014). A cross-sectional survey uses questionnaires or structured interviews for data collection where data for dependent and independent variables is collected at the same time using the same questionnaire (Creswell, 2014). According to

Bhattacherjee, (2012) survey questionnaires possess the strength of measuring an array of unobservable variables, therefore, is an appropriate choice for studies in which the individual is the unit of analysis.

According to Bhattacherjee (2012) some of the biases of a survey include;

i. Non-response bias where there is a risk of the majority targeted respondents failing to respond,
ii. Social desirability bias, where majority of respondents may tend to avoid sharing negative opinions or personal information,
iii. Sampling bias where for an example, if the survey is being done through emails, there is a systematic exclusion of people without emails.

In a cross-sectional survey, independent and dependent variables are measured at the same time using the same instrument. This has a risk of common method bias where there might be inadequate separation of the phenomenon being investigated and the measurement artefacts (Bhattacherjee, 2012).

The study used a survey research method to collect the quantifiable data that were statistically analysed to test the derived hypotheses as per the research model. Existing literature like Venkatesh et al, (2012); Martins et al, (2014); Miltgen *et al*, (2013); Makhitha & Dlodlo, (2014), have used the survey research method for studies on acceptance of information technology including online shopping. The present study follows this trend.

3.5. Research design

The study followed the exploratory research design which is more appropriate in this instance as online shopping is still a new phenomenon in South Africa. Studies on acceptance of online shopping in South African townships are few or possibly non-existent which also justifies the stance of an exploratory study. According to Bhattacherjee, 2012, an exploratory study is in most cases carried out in new areas of inquiry.

The study used a quantitative design through a cross-sectional survey, in non-experimental form. Cross-sectional survey is explained as when collection of data is

done at one point in time (Creswell, 2014). Collected quantitative data were analysed using research analysis tools to validate the relationships depicted by the framework in determining factors affecting acceptance of online shopping by individuals in South African townships.

3.5.1. Research process followed

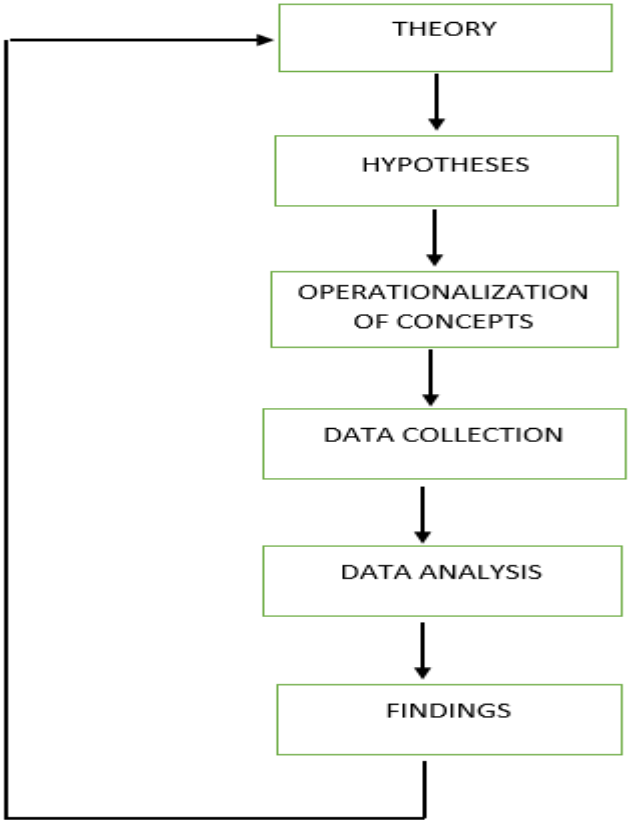


Figure 3.1: Research process (Bryman & Cramer, 2011)

The diagram above (Figure 3) gives a diagrammatic depiction of the research process followed carrying out this study. The research started with the theory and then the hypotheses to be tested were formulated followed by the operationalization of the research concept which is acceptance of online shopping by individuals in South African townships. This was followed by the data collection process and then the data analysis process using statistical package for the social science (SPSS) software, version 23 for windows.

3.5.2. Unit of analysis

According to Bhattacherjee, (2012), the unit of analysis is the person, collective or object that will be investigated. A survey is best suited for studies that have individual people as the unit of analysis. The unit of analysis for this study was individuals.

3.5.3. Population

The population for the study was all individuals in South African townships familiar to or doing online shopping. The selection criteria was that you ought to be older than 18 years of age, and residing in a townships.

3.5.4. Sampling

Different sampling approaches were combined to sample the possible set of participants of the survey. The questionnaire was self-administered in different townships around Johannesburg. Johannesburg was selected by the researcher due to proximity convenience which is a non-probability sampling. The researcher resides in Johannesburg and it provides a broad coverage of participants due to diversity and it has the status of the most populated city in South Africa.

Multi-stage sampling was used as well as cluster sampling approach in order to cluster the townships around Johannesburg into geographic areas. According to Saunders *et al* (2009), cluster sampling a non-probability sampling similar to stratified sampling in which the sampling frame is grouped into groups before sampling. Johannesburg has two municipalities which are Ekurhuleni and Johannesburg demarcated into four main zones which are East Rand, West Rand, North Rand and South Rand. All the townships around Johannesburg are within these four zones. The cluster grouping for the sampling frame was based on the four zones. Using a probability sampling approach where a dice was thrown on drawn map of the zones, South Rand and East Rand were chosen

There are several townships both formal and informal within South Rand and East Rand and further sampling was done with the objective of remaining with two townships, one for South Rand and another for East Rand. In order to achieve this, quota sampling, which is non probability sampling was used based on population density. Bhattacherjee, (2012), described quota sampling as the technique of

segmentation of the survey population into subgroups, then use non-random observations to select the population frame. In the case of the study, the grouping of the population was townships and quota used to choose the townships was the density of the population.

The researcher decided to use the most densely populated townships for zonal demarcation. Based on statistical results from Stats SA documented on the business tech website (https://businesstech.co.za/news/general/132269/these-are-the-biggest-townships-in-south-africa/) on the population of South African townships in 2016, most populated township around Johannesburg was Soweto and for East Rand, it was Katlehong. These two townships which are Soweto and Katlehong were chosen for the study on acceptance of online shopping by individuals in South African townships.

3.5.5. Research instrument

Table 3.1: Measuring items

Construct	Definition	No of items	Items	Measures	Literature
Perceived Security	A sense of protection against infringements of individuals' rights through theft, deletion or alteration of their information by unauthorized parties on the web (Matbouli & Gao, 2012).	4	PS1	Online shopping environment has security measures to protect me as an online shopper.	Eid, 2011
			PS2	Online shopping is a secure environment for me to share data	Eid, 2011
			PS3	Shopping online will not cause financial risk	Eid, 2011
			PS4	I feel secure about the electronic payment of online shopping	Khalilzadeh *et al*, 2017
Trust (T1)	A form of relationship between users and the technology providers, which in turn have a positive effect on acceptance of the technology (Ali *et al*, 2016).	4	T1	I am not afraid sharing personal information during online shopping	Al-Debei *et al,* 2015
			T2	I believe online shopping service providers are reliable.	Khalilzadeh *et al*, 2017
			T3	I believe online shopping service providers are trustworthy.	Khalilzadeh *et al*, 2017
			T4	I trust online shops will deliver on all their promises	Khalilzadeh *et al*, 2017
Performance expectancy	A level at which users expect the usage of technology to benefit them in performing required activities (Venkatesh et al, 2003).	4	PE1	Online shopping will allow me to do shopping effectively.	Venkatesh *et al*, 2003
			PE2	Online shopping will be useful for me	Venkatesh *et al*, 2003
			PE3	Using online shopping will save me money	Venkatesh *et al*, 2003
			PE4	Using online shopping will save me time	Venkatesh *et al*, 2003
Effort expectancy	A level at which online users expect the technology to be easy to use (Lian & Yen, 2014).	4	EE1	It will be easy for me to use online shopping system	Venkatesh *et al*, 2003
			EE2	Learning how to use online shopping systems will be easy.	Venkatesh *et al*, 2003

			EE3	My interaction with online shopping system will be clear and understandable.	Venkatesh *et al*, 2003
			EE4	Online shopping will not require a lot of technical effort	Venkatesh *et al*, 2003
Social influence	An influence of individuals' behaviour by their anticipation of how other think of them if they use the technology (Venkatesh *et al*, 2012)	4	SI1	People important to me think I should buy some of my goods and services using online shopping	Venkatesh *et al*, 2003
			SI2	People who influence my decisions think I should do online shopping.	Venkatesh *et al*, 2003
			SI3	People important to me are influencing me to use online shopping	Venkatesh *et al*, 2003
			SI4	Important people will support me on use of online shopping	Venkatesh *et al*, 2003
Acceptance (Online shopping)	A behavioral intention to use technology (Venkatesh *et al*, 2012)	4	A1	I can predict that I will use online shopping in the future	Venkatesh *et al*, 2003
			A2	I plan to use online shopping in the future	Venkatesh *et al*, 2003
			A3	I intent to use online shopping in the future	Venkatesh *et al*, 2003
			A4	I will use online shopping as soon as possible.	Venkatesh *et al*, 2003

Table 3.1 above highlights the research variables together with the measures per variable as well as the source of the research measures. All the research measures highlighted above were adapted from prior related research in the field of acceptance of online technology by individuals. The wording of the measurement items was modified to align with the context of study. Perceived Security (PS) was adopted from Eid, (2011) and Khalilzadeh et al, (2017), Trust (T) was adopted from A-Debei et al, (2014) and Khalilzadeh et al, (2017) while Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Acceptance (A), were adopted from Venkatesh et al (2003).

The data for the study of acceptance of online shopping by individuals in South African townships was collected using a cross-sectional standardized questionnaire based on the research hypotheses (See Appendix A). The research questionnaire was developed in English based on the literature using close-ended structured questions. There were no translated versions of the questionnaire.

Questionnaire were based on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) (See Appendix A). The questionnaire consisted of three main parts with the first part consisting of the constructs of UTAUT as well as trust and perceived security based on five-point Likert scale (5=strongly agree). There is also a question that assesses what consumers would prefer to buy online based on given six options which are clothes, services, food and groceries, electronic gadgets, others as well as all of the above.

The last section consists of demographic questions like age and gender. Content validity of the research constructs was maintained by ensuring that scale items used in prior studies within acceptance of information technology were used. Acceptance (A) of online shopping was measured by structured questions in the questionnaire asking respondents about their intentions and plans to use online shopping in the future using the five-point Likert scale.

There are other additional questions, including demographic questions, which were included in the instrument. The demographic questions included age, gender and monthly income and gender was coded using a 1 or 2 dummy variable where 1 represented women. Other additional questions used 0 or 1 dummy variables (See Appendix A).

3.5.6. Pre-testing

Pre-testing of the research instrument was done to ensure face validity of the research instrument. It was conducted through the administering of the questionnaire in a selected population of fellow students and also seeking expert comments from the university lecturers selected using convenience sampling due to their proximity. The pre-test helped to refine the research instrument through the participants pointing out ambiguous, vague and biased wording in the research questions which was rectified by the researcher before the research instrument was administered to the sample population.

3.5.7. Data collection method

Before the actual data collection process, pilot testing was conducted in order to further refine the content and the structure of the research instrument. Pilot testing

should be conducted before the questionnaire is used to collect the data in order to ensure that respondents will understand the questions and also to allow the researcher to assess the validity of the questions as well as the reliability of the responses (Sunders *et al*, 2009).

The pilot test was conducted by the researcher in one area of Katlehong Township called Tokoza where questionnaires were administered and responses were obtained from the small set of selected participants. Results from the pilot testing were thoroughly analysed by the researcher at the level of each question and results proved the face validity and content validity of the research instrument as no issues were found. The results from the pilot testing were not incorporated in the actual analysis.

After the pilot testing process, the questionnaires were administered to participants within the defined sample frame based on the multi-sampling strategy used. The questionnaires were administered through a self-administered survey. The researcher physically moved around the townships accompanied by assistants and distributed the standardized questionnaires to individuals who completed them and handed back the responses to the data collectors. The total number of 200 responses were collected over a period of 2 weeks and after quality checking of the responses, 196 were loaded into SPSS for analysis.

The target objective of the survey was to administer and collect 200 responses in these two townships within a period of 2 weeks and it was achieved. Further probability sampling was done during the collection of the data by approaching every third adult person met in the street to a maximum of 10 people per street before moving to the next street. With regards to collecting data from homes, knocking on every third house was done, limited to 10 houses per street before moving to the next street. At taxi ranks, every third adult was approached to a maximum of 20 people per tax rank before moving to the next tax rank. A maximum of four biggest tax ranks per each township were chosen and the size of the tax ranks was based on the information received from the locals.

In terms of choosing the streets to conduct the survey, every three streets were skipped, choosing the fourth street to a maximum of 4 streets per section or extension

of that township. The multi-sampling strategy was used to select the final research sample frame used to generalize individuals in South African townships.

3.5.8. Data analysis method

Descriptive and inferential data analysis was employed. All research based on quantitative measurements must have elements of accuracy and dependability also known as reliability of measurements (Cronbach, 1951). In order to test the hypotheses of factors affecting acceptance of online shopping in South African townships, quantitative data analysis was conducted using the SPSS software program.

Data that was collected was first captured in a tabular format in SPSS and subjected to correlation analysis for assessment of convergent and discriminant validity using principal components analysis. Cronbach's α was used to test the scale validity of the dependent and independent constructs to see if all alpha values of the constructs are above the expected norm of 0.7 (Javadi, Dolatabadi, Nourbakhsh, Poursaeedi & Asadollahi, 2012). Regression analysis was also done to test the relationships between independent and dependent variables.

3.6. Ethics

Ethics is a moral distinction between what is right and what is wrong and is important in research to guard against researchers unethically advancing their interests through activities that are against the norms of scientific conduct (Bhattacherjee, 2012). An ethical clearance was obtained from the University ethics committee before the commencement of the study on acceptance of online shopping by individuals in South African townships (See Appendix D)

3.6.1. Informed consent

The research sample frame of individuals in South African townships who participated in the survey each was given a set of questionnaire with an introductory participant letter as the first page and the consent letter page on the second page (See Appendix D) which they were required to sign before completing the questionnaire.

3.6.2. Right to privacy

The first page of the questionnaires administered to the sample frame was a participant letter (See Appendix C). This letter assured the participants of confidentiality and anonymity of the responses and that their responses would be used for academic research only.

3.6.3. Informed protection of harm

Participants of the survey were informed in the participant letter (See Appendix C) of the voluntariness of their participation and their right of withdrawal at any time from participating in the study. Necessary ethics approval was obtained from the university ethics committee before the survey commenced.

3.7. Summary of the chapter

The chapter discussed the research methodology used to conduct this study which included the research paradigm and the research approach. The chapter also included discussion of the research approach including discussion of measurement instrument and the sampling strategy. Data analysis, ethics, informed consent as well as the right to privacy together with informed protection of harm were also discussed in this chapter. The next chapter will discuss the data analysis as well as the findings of the study on factors affecting acceptance of online shopping by individuals in South African townships.

CHAPTER 4: DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1. Introduction

Acceptance of online shopping by consumers might seem simple and clear to understand, however there are many factors that affect acceptance of online shopping by individual consumers as revealed by the results of the literature review. The complexity of factors affecting acceptance of online shopping by individuals is also corroborated by research results of this study which showed that all the four constructs (Trust, Performance expectancy, Effort expectancy, Social influence) in the study framework which are independent constructs for the acceptance of online shopping had a significant effect on acceptance of online shopping.

The research population were adult individuals in the identified and selected South African townships. For the duration of the data collection, data collectors approached and spoke to an average of 300 adult individuals. Out of the collected 200 questionnaires, 196 (98%). Given the systematic challenges of face to face surveys where people are always sceptical to speak and answer questions from strangers, 98% useable responses is a good and acceptable response rate.

The aim of this chapter is to discuss the statistical results obtained from the quantitative study of acceptance of online shopping by individuals in South African townships. The statistical analysis of study data was done using statistical package for social sciences (SPSS) 23. The chapter presents a logical report of the results of the analysis starting with the demographic variables of the frequency distribution of the geographic sample population of individuals in South African townships. The next discussion will be the results of the validity and reliability tests on the constructs of the measures used to investigate acceptance of online shopping by individuals in South African townships.

This will be followed by discussion of the results of the factor loading measurements on the decision variables of acceptance of online shopping by individuals in South African townships to determine whether there are significant differences between the

variables used in the study. The study on acceptance of online shopping by individuals in South Africa townships was conducted using the following decision variables; perceived security (PS), trust (T), performance expectancy (PE), effort expectancy (EE), social influence (SI) and acceptance of online shopping (A).

4.2. Demographic Variables with the Frequency Distribution

Table 4.1: Demographic profile of the frequency distribution of the sample

Gender	Frequency	Percentage
Male	108	55.4
Female	87	44.6
Total	195	100.0
Age		
Less than 30	134	68.7
30-45	49	25.1
Above 45	12	6.2
Total	195	100.0
Income		
Less than R1000	33	16.9
R1001 – R5000	50	25.6
R5001 – R10000	36	18.5
Greater than R10000	76	39.0
Total	195	100.0
Shopping Online - Clothes		
No	79	40.5
Yes	116	59.5
Total	195	100.0
Shopping Online - Services		
No	119	61.0
Yes	76	39.0
Total	195	100.0
Shopping Online - Food and Groceries		
No	121	62.1
Yes	74	37.9
Total	195	100.0
Online Shopping - Electronic gadgets		
No	80	41.0
Yes	115	59.0
Total	195	100.0
Shopping Online - Others		
No	91	46.7
Yes	104	53.3
Total	195	100.0
Shopping Online – All of the above		
No	125	64.1
Yes	70	39.9
Total	195	100.0
Use of Online Shopping		
No	31	15.9
Yes	164	84.1
Total	195	100.0
Intention to use Online Shopping		
No	22	11.3
Yes	173	87.7
Total		100.0

Table 4.1 above illustrates the demographic results of the analysis. During the data collection stage, 200 completed questionnaires were collected. Out of the collected 200 questionnaires, 196 were suitable for the analysis. The demographic distribution of the study is shown in Table 4.1. The results showed that with regards to gender, 108 of the participants were male making up 55.4% the total participants and 87 were female making up 44.6% of the total participants.

Age group

The majority of the research participants fell in the age group of less than 30 years with a distribution of 134 making up 68.7% of the total participants followed by 35 – 45 years age group totalling 49 and constituting 25.1% of the total participants. The age group above 40 years was 12 accounting for 12% of the total participants.

Income

With regards to income, the majority of the participants (39.0%) fell within greater than R10000 income band followed by R1001 – R5000 income band making up 25.6% of the total participants. Those within the income group of less than R1000 are 33 accounting for 16.9% of the total participants.

Goods and services that participants are comfortable buying using online shopping

In terms of what the participants would feel comfortable shopping online the highest distribution (116) participants accounting for 59.5% of the total participants are comfortable with buying clothes online with 79 participants, which is 40.5% of the total not comfortable, followed by electronic gadgets where 115 accounting for 59.0% of the total said yes to buying online and 80 accounting for 41.0% of the total no to buying online. 76 participants accounting for 39.0% are comfortable buying services online and 119 participants making up 61.0% are not comfortable buying services online.

Out of all the participants, 74 are comfortable purchasing groceries online and 121 participants are not, while 104 participants said yes to purchase other commodities online with 91 participants saying no to purchasing other commodities online. A total of 70 participants making up 39.9% of the total which also the lowest distribution with

regards to shopping online was comfortable with buying all of the above online which 125 participants accounting for 64.1% of the total participants not comfortable.

Intentional behaviour on use online shopping

The majority of the participants (164) accounting for 84.1% of the total population is not using online shopping and 31 accounting to 15.9% are using online shopping. Out of the total participants, 22 participants, making up 11.3% of the total, do not intend to use online shopping in the future. The majority (173) accounting for 87.7% of the total participants intend to use online shopping in the future

4.3. Data cleaning procedures

Before the analysis process, data were cleaned and prepared to ensure increased statistical accuracy. A total of 200 questionnaires was collected and 4 of the questionnaires were excluded from the SPSS data due incompleteness. The results of the skewness analysis indicated that the dataset was within the normal range (-2 to +2) and also it was less than the standard deviation multiplied by 3. Results of the kurtosis analysis also indicated that the dataset was within the normal range (-2 to +2) and was less than the standard deviation multiplied by 3. Outliers were resolved through finding the average values of the measures and use them in the analysis.

4.4. Validity testing

Factor analysis was used to test the construct validity of the instrument which is the relationship of measures within each construct of the research framework. Factor analysis was used to ascertain whether the individual measures contributed to the constructs they belong to as per the research questionnaire.

According to Bhattacherjee, (2012), factor analysis is the statistical technique of grouping research measures into factors based on the correlation between research measures and the constructs they belong to (Bhattacherjee, 2012). The study used exploratory factor analysis (EFA) for constructs validity analysis, which was also used by Akroush & Al-Debei, (2015) who were also researching on acceptance of online shopping by individuals.

4.4.1. The extraction and rotation method

With regards to factor analysis, measures belonging to the same construct are expected to have a factor loading of 0.60 or more (Bhattacherjee, 2012; Pallant, 2010). Before the calculation and selection of the valid measures, extraction and rotation was done. Some of the techniques used for factor extraction are principal components, principal factors, image factoring, and maximum likelihood factoring, alpha factoring, unweighted least squares as well as generalised least squares with principal components as the mostly used (Pallant, 2010; Widaman, 1993).

This study used principal component analysis for the factor extraction process. After the factors were extracted, they can then be rotated using orthogonal or oblique techniques, which are the two main rotation techniques (Bhattacherjee, 2012; Pallant, 2010; Yong & Pearce 2013). The researcher used varimax and quartimin rotation as the most appropriate methods for this study. All measures had a factor loading of 0.60 or more except PS3 for perceived security (PS) variable as well as EE1, EE2, EE3 and EE4 for effort expectancy (EE) variable. These measures with factor loadings of less than 0.60 were dropped out from further analysis.

4.4.2. Bartlett's test for sphericity and Kaiser-Meyer-Olkin (KMO)

Table 4.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.877
Bartlett's Test of Sphericity	Approx. Chi-Square	2078.859
	Df	171
	Sig.	0.000

Table 4.2 above illustrates the results of Bartlett's test for sphericity and Kaiser-Meyer-Olkin (KMO). In order to further test the factorability of the data, two statistical analysis should be done in SPSS, which are Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO), with Bartlett's test expected to be ($p<.05$) and KMO expected to be at least 0.6 ($p<=0.6$) (Pallant, 2010).

With reference to study results in Table 4.2, Bartlett's test for sphericity has a magnitude of ($p<.05$) and factor analysis is considered appropriate while KMO is 0.877 which is significantly strong for a good factor analysis. According to Pallant, (2010),

Bartlett's test of sphericity should be significant (p<.05) for factor analysis to be considered appropriate and KMO should be at least 0.6 for a good factor analysis.

4.4.3. Communalities

Table 4.3: Communalities

Question	Extraction	Question	Extraction
PS1	0,732	PE4	0,639
PS2	0,743	SI1	0,674
PS3	0,762	SI2	0,799
T1	0,479	SI3	0,758
T2	0,683	SI4	0,588
T3	0,734	A1	0,836
T4	0,637	A2	0,894
PE1	0,737	A3	0,856
PE2	0,665	A4	0,682
PE3	0,439		

Table 4.3 above shows the analysis results for the communalities of the research measures. Communalities show the degree to which a measure correlates with other measures, where measures with low communalities (less than 0.2) are eliminated from the analysis as factor analysis attempts to explain the variance through commonality of measures, with measures having values closer to 1 showing high levels communalities (Yong & Pearce, 2013).

The study has total of 24 measures (questions) and based on results in Table 4.3, most measures have an extraction ranging from 0.439 to 0.894 highlighting reasonable levels of communalities. Not all measures has results with high levels of communalities (above 0.2), leading to 5 measures being eliminated after the extraction, which are PS4, EE1, EE2, EE3 and EE4. This resulted in one factor which is effort expectancy (EE) being completely eliminated as all its measures (EE1, EE2, EE3, EE4) had results of less than 0.2 (See Table 4.3).

4.4.4. Rotated component matrix, factor loading and Scree plot

Factor extraction is an analytical way of determining the smallest number factors usable to best represent relationships of the variables (Pallant, 2010). Three methods

which are rotated factor loadings, rotated eigenvalues and scree test are used for the interpretation of factor analysis (Yong & Pearce, 2013).

Table 4.4a: Extraction method - principal component analysis rotated eigenvalues

Total Variance Explained			
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	7,348	38,675	38,675
2	2,247	11,827	50,502
3	1,641	8,639	59,141
4	1,101	5,792	64,933
5	1,000	5,259	70,193
6	0,791	4,163	74,355
7	0,702	3,695	78,050
8	0,601	3,165	81,215
9	0,542	2,851	84,067
10	0,495	2,606	86,673
11	0,432	2,274	88,948
12	0,382	2,013	90,960
13	0,353	1,859	92,819
14	0,346	1,823	94,642
15	0,287	1,509	96,151
16	0,245	1,290	97,440
17	0,205	1,079	98,520
18	0,170	0,894	99,414
19	0,111	0,586	100,000

Table 4.4a above shows the results of the principal component analysis using the rotated eigenvalues method which is another method of principal component analysis used in the study. Results above shows that out of the 25 measures of the study 4 were rejected.

Table 4.4b: Extraction method - principal component analysis

Total Variance Explained					
Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
7,348	38,675	38,675	3,096	16,294	16,294
2,247	11,827	50,502	2,808	14,780	31,074
1,641	8,639	59,141	2,633	13,859	44,933
1,101	5,792	64,933	2,432	12,800	57,733
1,000	5,259	70,193	2,367	12,459	70,193

Table 4.4b above shows the results of the principal component analysis. The “Total”, “% of Variance”, and “Cumulative %” columns are similar to those of the first two components in the “Extraction Sums of squared Loadings” and “Rotation Sums of Squared Loadings” (see Tables 4.4a and 4.4b) above. Tables 4.4b above shows the

results of the principal component analysis, which is the extraction method used in the study. Results indicate that total Variance Explained is over 70.193 % which is over 60%.

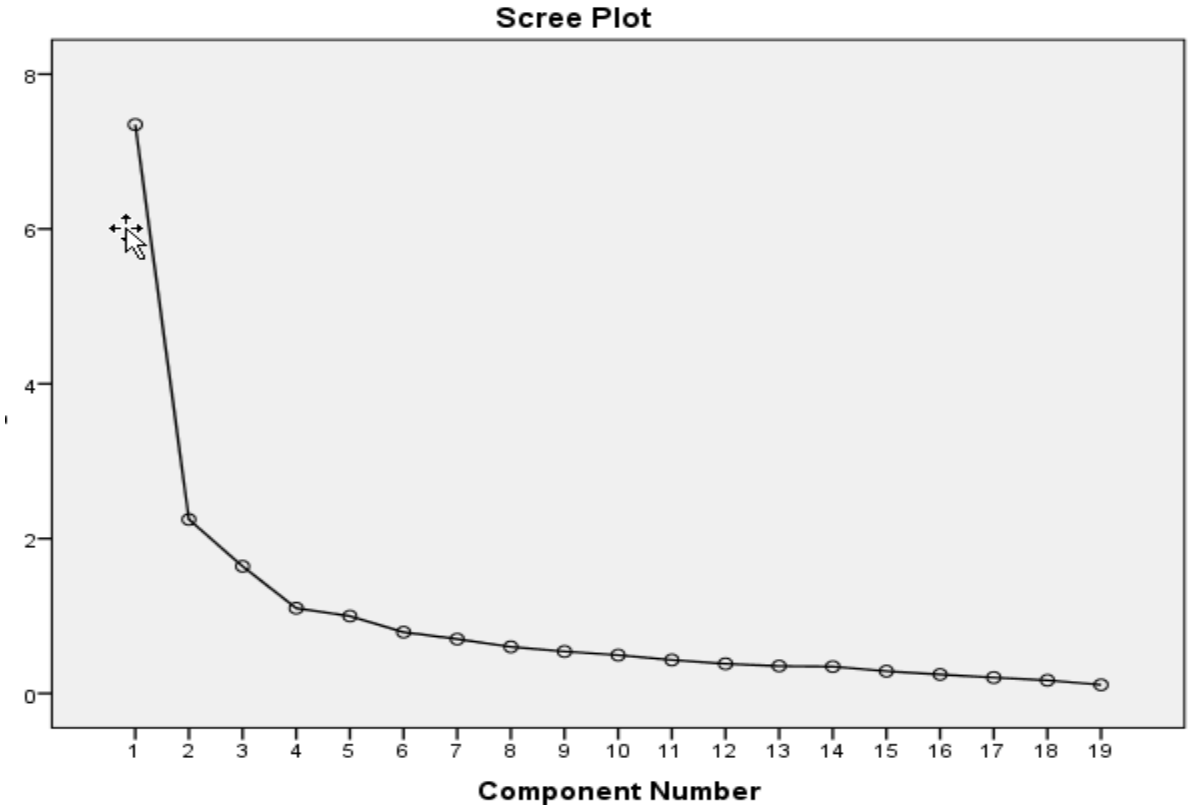


Figure 4.1: Extraction method - principal component analysis Scree Plot

Figure 4.1 above shows the results of the scree plot which is another method of principal component analysis. The scree plot above illustrates a significant decline after 6 components.

Table 4.5: Extraction method - principal component analysis rotation method-varimax with Kaiser Normalization

Rotated Component Matrix[a]						
Construct	Measures	Component				
		1	2	3	4	5
Perceived Security (PS)	PS1	0,771				
	PS2	0,760				
	PS3	0,734				
Trust (T)	T1		0,731			
	T2		0,690			
	T3		0,665			
	T4		0,628			
Performance Expectancy (PE)	PE1			0,808		
	PE2			0,862		
	PE3			0,716		
	PE4			0,779		
Social Influence (SI)	SI1					0,644
	SI2					0,799
	SI3					0,790
	SI4					0,756
Acceptance of online shopping (A)	A1				0,738	
	A2				0,702	
	A3				0,667	
	A4				0,630	
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 8 iterations.					

Table 4.5 above shows the results of the rotated component matrix. The rotated component matrix converged after 8 iterations and 5 factors were eliminated, which are PS4, EE1, EE2, EE3, EE4, are leaving a total of 19 factors as relevant (See Table 4.5). After extraction and rotation, results for the factor loadings are illustrated as in Table 4.5. The factors that emerged after the principal component analysis, which are Perceived Security (PS), Trust (T), Performance Expectancy (PE), Social Influence (SI) and Acceptance of online shopping (A), emerged automatically without being enforced in SPSS.

The measures were grouped into 6 factors which are: factor 1 = Perceived Security (PE), factor 2 = Trust (T), factor 3 = Performance Expectancy (PE), factor 4 = Effort Expectancy, factor 5 = Social Influence (SI) and factor 6 = Acceptance (Online

shopping) (A). Factor 4 which is Effort expectancy was eliminated after the extraction and rotation process as all its measures which are EE1, EE2, EE3 and EE4 had a factor loading of less than 0.5 (See Table 4.5). Another measure which was eliminated was PS4 for factor 1 (Perceived Security). According to Yong & Pearce, (2013), factor loading measures how much a variable contributes to the factor and factor loadings of less than 0.50 were eliminated (See Table 4.5).

South Africa seems to be one of the leading countries in Africa with regards to internet and technology penetration in general. Majority of South Africans in townships and suburbs own mobile phones and have access to internet and online technology. The insignificance of Effort Expectancy (EE) during this study may indicate that township people and possibly South African general are well versed with using online technologies. This means that their acceptance of online shopping will not be affected by the usability of the online shopping technology. The increased exposure to online technologies like online banking, online soccer betting and many other online technologies might have contributed to the elimination of fear regarding effort expectancy to use online shopping technology.

4.5. Reliability Test

Saunders *et al*, (2009) defined reliability, as a level of consistency with regards to findings derived from the research data collection techniques or analysis procedures. Reliability is the level of consistency and dependability for each item of a construct (Bhattacherjee, 2012). Reliability test is used to statistically ascertain the consistency of the results of a measuring instrument and although reliability of the measuring instrument contributes to the validity, in other instances, it is normal for a reliable measuring instrument not to be a valid (Kothari, 2008).

Table 4.6: Descriptive statistics and internal consistency reliabilities for the adapted UTAUT model for individual constructs of the study

Item	N	Mean	SD	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Total Cronbach Alphas
Perceived Security (PS)						0.836
PS1	195	3.05	1.215	0.686	0.785	
PS2	195	3.21	1.061	0.744	0.762	
PS3	195	3.32	1.090	0.674	0.791	
PS4	195	3.01	1.193	0.580	0.833	
Trust (T)						0.823
T2	195	3.05	0.970	0.636	0.796	
T3	195	2.88	0.990	0.724	0.708	
T4	195	3.03	0.997	0.674	0.759	
Performance Expectancy (PE)						0.757
PE1	195	3.54	0.954	0.634	0.657	
PE2	195	3.64	0.966	0.611	0.670	
PE3	195	3.49	1.105	0.458	0.763	
PE4	195	4.10	0.894	0.538	0.710	
Effort Expectancy (EE)						0.725
EE1	195	3.42	1.054	0.533	0.669	
EE2	195	3.64	0.840	0.526	0.667	
EE3	195	3.52	0.916	0.598	0.577	
Social Influence (SI)						0.842
SI1	195	3.01	1.137	0.646	0.813	
SI2	195	3.04	1.052	0.765	0.762	
SI3	195	3.14	1.134	0.707	0.785	
SI4	195	3.41	1.082	0.593	0.834	
Acceptance (Online shopping) (A)						0.931
A1	195	3.79	1.021	0.848	0.908	
A2	195	3.88	0.942	0.886	0.878	
A3	195	3.78	0.973	0.841	0.912	

Table 4.6 above shows the results internal consistency reliability tests. Cronbach analysis is one of the measures of internal consistency mostly used for testing the reliability of scales in a research (Bhattacherjee, 2012; Boudreau, Gefen & Straub, 2001; Peterson, 1994). Cronbach's alpha of at least 0.7 is commonly used by researchers to define the reliable items of a study (Lim & Ting, 2012). Based on the Cronbach's alpha results in Table 4.6, all items are above 0.7 and are reliable.

4.6. Description of the mean

Table 4.7: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Security (PS)	195	1,00	5,00	3,1915	0,97320
Trust (T)	195	1,00	5,00	2,9846	0,84700
Performance Expectancy (PE)	195	1,00	5,00	3,6923	0,74755
Effort Expectancy (EE)	195	1,00	5,00	3,4851	0,96210
Social Influence (SI)	195	1,00	5,00	3,1474	0,90730
Acceptance of online shopping (A)	195	1,00	5,00	3,8171	0,91765
Valid N (listwise)	195				

Tables 4.7 above illustrate the additional descriptive statistics, which are mean and standard deviation for each variable. The measures of the study used the 5-Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree. Results of the study indicated that performance expectancy (PE) (mean = 3,6923 rounded off to 4) and acceptance (A) (mean = 3,8171 rounded off to 4) on the 5-Likert scale = Agree, while perceived security (PS mean = 3,1915 rounded off to 3), trust (T mean = 2,9846 rounded off to 3), social influence (SI mean = 3,1474 rounded off to 3) and effort expectancy (EE* mean = 3,4851 rounded off to 3) on the 5-Likert scale = neither agree nor disagree (neutral).

Table 4.8: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PS1	195	1	5	3,05	1,215
PS2	195	1	5	3,21	1,061
PS3	195	1	5	3,32	1,090
PS4	195	1	5	3,01	1,193
T1	195	1	5	2,35	1,236
T2	195	1	5	3,05	0,970
T3	195	1	5	2,88	0,990
T4	195	1	5	3,03	0,997
PE1	195	1	5	3,54	0,954
PE2	195	1	5	3,64	0,966
PE3	195	1	5	3,49	1,105
PE4	195	1	5	4,10	0,894
EE1	195	1	5	3,42	1,054
EE2	195	1	5	3,64	0,840
EE3	195	1	5	3,52	0,916
EE4	195	1	5	3,36	1,038
SI1	195	1	5	3,01	1,137
SI2	195	1	5	3,04	1,052
SI3	195	1	5	3,14	1,134
SI4	195	1	5	3,41	1,082
A1	195	1	5	3,79	1,021
A2	195	1	5	3,88	0,942
A3	195	1	5	3,78	0,973
A4	195	1	5	3,35	1,109
Valid N (listwise)	195				

Tables 4.8 above illustrate the additional descriptive statistics, which are mean and standard deviation for each measure. The measures of the study used the 5-Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree. Measure T1 has a mean of 235 which 2 (rounded off) and on the 5-Likert scale = disagree. Research measures (PS1, PS2, PS3, PS4, T2, T3, T4, EE1*, EE4*, SI1, SI2, SI3, SI4 and A4) have individual means of 3(rounded off) each and on the 5-Likert scale = neither agree nor disagree (neutral). Measures (PE1, PE2, PE3, PE4, EE2*, EE3*, A1, A2 and A3) have individual means of 4(rounded off) each and on the 5-Likert scale = agree. Effort expectancy (EE) has been removed during factor analysis due to insignificancy.

4.7. Correlations

Table 4.9: Correlations

Constructs		PS	T	PE	SI	A
PS	Pearson's Correlation (r)	1	0.546**	0.355**	0.186**	0.413**
	Sig. (2-tailed)(p)		0.000	0.000	0.000	0.000
	N	195	195	195	195	195
T	Pearson's Correlation (r)	0.546**	1	0.444**	0.358**	0.424**
	Sig. (2-tailed) (p)	0.000		0.000	0.000	0.000
	N	195	195	195	195	195
PE	Pearson's Correlation (r)	0.355**	0.444**	1	0.430**	.627**
	Sig. (2-tailed) (p)	0.000	0.000		0.000	0.000
	N	195	195	195	195	195
SI	Pearson's Correlation (r)	0.186**	0.358**	0.430**	1	0.463**
	Sig. (2-tailed) (p)	0.000	0.000	0.000		0.000
	N	195	195	195	195	195
A	Pearson's Correlation (r)	0.413**	0.424**	0.627**	0.463**	1
	Sig. (2-tailed) (p)	0.000	0.000	0.000	0.000	
	N	195	195	195	195	195
** Correlation is significant at the 0.01 level (2-tailed)						

Note:
N denotes the number of responses (see Table 4.9)

Table 4.9 above shows the results of the correlation statistical analysis. Correlation which is measured using correlation coefficient is a form of descriptive statistics that is used to summarize relationships of two variables (Heiman, 2005). Correlation indicates the strength and direction, which might be positive or negative, of the relationship between two variables (Bryman & Cramer, 2012).

A regression analysis must be done to assess the type of relationship between the variables as well as to determine the significance of the correlation (Pallant, 2010). According to Pallant, (2010), the calculated correlations may not be used to infer a causal relationship between the variables due to the conventional dictum that states that correlation does not imply causation. Results from a correlational study may highlight a relationship between two variables but there is no explanation for the cause of the relationship (Gravetter & Wallnau, 2013).

4.7.1. Assumptions of correlations

• Distributions of all the variables with regards to relations through the coefficient of correlation should be normal.
• Scatter-plots should be linear and homoscedastic (a sequence of random variables is homoscedastic if all random variables in the sequence have the same finite variance).
An assumption of the correlation analysis of the variables was suitable to infer a causal relationship between the variables (see Table 4.9).

4.7.2. Correlation results from statistical package for the social sciences (SPSS)

According to Bryman & Cramer (2005), other measures for coefficient exist but the most common measure is the Pearson's product movement correlation coefficient which is also known as Pearson's r. This study considered the Pearson's product moment correlation of continuous variables. The coefficient r value can range from -1 to 1 with positive sign indicating a positive direction and negative sign indicating a negative direction (Muijs, 2004).

Results in Table 4.9 above shows that the r-value ranges from .186 to .627 which exhibits a reasonable relationship between the decision variables. The correlation coefficients for all the variables are shown in Table 5.10 above and all have reasonably significant positive relationships. The only variable not forming part of the results is effort expectancy (EE). The results of the coefficient correlation enabled the carrying out of regression analysis in the next section

- There is a significant correlation (association) between perceived security (PS) and trust (T) of online shopping technology by consumers.
- There is a significant correlation (association) between performance expectancy (PE) and acceptance (A) of online shopping technology by consumers.
- There is a significant correlation (association) between social influence (SI) and acceptance (A) of online shopping technology by consumers.
- There is a significant correlation (association) between social influence (T) and acceptance (A) of online shopping technology by consumers.

*Effort expectancy (EE) has been removed during factor analysis due to insignificancy and does not form part of Table 4.9.

4.8. Multiple regression

Multiple regression was used to test the predictive weighting of a set of independent variables (predictors) on a continuous dependent measure (Pallant, 2010). It is used to estimate the relationship between the dependent variables and independent variables also known as predictors (Bhattacherjee, 2012). Each variable in a research model contributes towards the predictability of the research model and multiple regression is used to measure the level of contribution for each variable. In this study the multiple regression was applied to two sets of predictors and dependent measures which are acceptance of online shopping (A) and trust (T).

4.8.1. Multiple regression analysis to determine acceptance of online shopping

The results of the multiple regression analysis to determine acceptance of online are shown in Tables 4.10 to 4.12. According to Bhattacherjee, (2012), all normal distributions follow the 68-95-99 percent rule. The R-square value is 0.445, indicating 44.5% of the variation with regards to social influence (SI), trust (T) and performance expectancy (PE) towards acceptance of online shopping (A). Effort expectancy (EE) was excluded from the analysis due to insignificancy having a factor loading of less than 0.6 although it was found to be reliable.

Table 4.10: Model Summary[b] (Acceptance – Online shopping)

Model Summary[b] (Acceptance – Online shopping)										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.674[a]	0.454	0.445	0.68344	0.454	52.917	3	191	0.000	1.684
a. Predictors: (Constant), Social Influence (SI), Trust (T), Performance Expectancy (PE)										
b. Dependent Variable: Acceptance of online shopping (A)										

Table 4.10 above shows that the Sig. F change value is 0.000 which is less than 0.05 indicating a statistically significant contribution. Results for Durbin Watson score was 1.684 and was rounded off to 2.000 which indicates no autocorrelation in the research sample or a high level of isolation among the independent variables of the model.

Table 4.11: **One-way ANOVA[a]** (Acceptance – Online shopping)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.151	3	24.717	52.917	.000[b]
	Residual	89.214	191	0.467		
	Total	163.365	194			
a. Dependent Variable: Acceptance of online shopping (A)						
b. Predictors: (Constant), Social Influence (SI), Trust (T), Performance Expectancy (PE)						

According to analysis of variance (ANOVA) results in Table 4.11 above, the research model with all the variables excluding effort expectancy (EE) is significant (F (3; 191) = 52.917; P<0.05). Trust (T), performance expectancy (PE) and social influence (SI) make a statistically significant contribution (p<0.05) with effort expectancy (EE) excluded as it has a p < 0.05. Multiple regression results on Table 4.11 shows that the overall multiple regression model is significant with a 95% confidence interval and a p-value less than 0.05.

Table 4.12: **Coefficients[a]** (Acceptance – Online shopping)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.548	0.265		2.071	0.040	0.026	1.070		
	T	0.150	0.066	0.139	2.272	0.024	0.020	0.280	0.769	1.301
	PE	0.584	0.077	0.476	7.541	0.000	0.431	0.737	0.719	1.391
	SI	0.212	0.061	0.209	3.454	0.001	0.091	0.332	0.780	1.282
a. Dependent Variable: Acceptance of online shopping (A)										

Table 4.12 above shows the coefficients of acceptance of online shopping indicating the level of significance of the effects towards acceptance of online shopping in South African townships. In the order of significance, performance expectancy (PE) is the most significant (beta = 0.467), followed by social influence (SI) (beta = 0.209) and then trust (T) (beta = 0.139). Results of table 4.12 also indicates that the sample has a low level of multicollinearity with VIF scores ranging from 1.282 to 1.391.

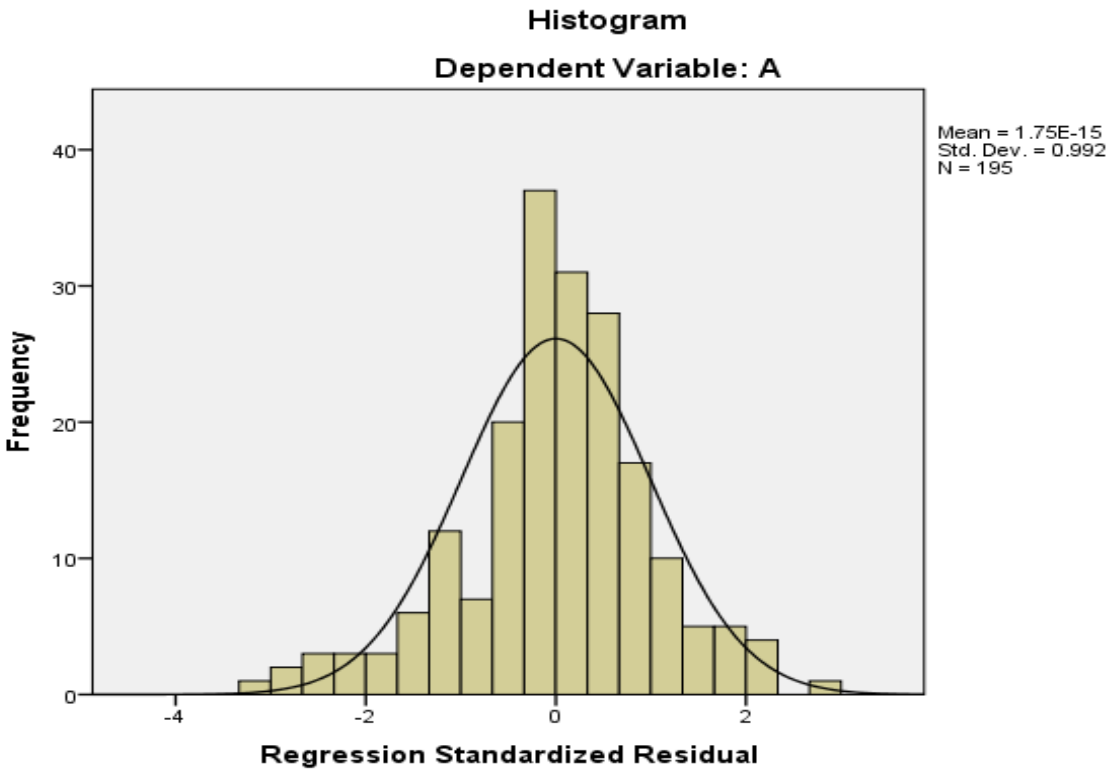


Figure 4.2: Scree Plot

Figure 4.2 above of the scree plot indicates a normal distribution as the confidence is 95% (also See Fig 4.2). This means that non-parametric are not relevant in this current study.

4.8.2. Multiple regression analysis to determine Trust

Table 4.13: Model Summary[b] (Trust)

Model Summary[b] (Trust)										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.546[a]	0.298	0.294	0.71169	0.298	81.782	1	193	0.000	2.017
a. Predictors: (Constant), Perceived Security (PS)										
b. Dependent Variable: Trust (T)										

According to Table 4.13 above, the R-square value is 0.294, indicating 29.4% of the variation in perceived security (PS) and trust (T). The Sig. F change value is 0.000 which is less than 0.05 indicating a statistically significant contribution. Table 4.13 above also shows that the results of Durbin Watson score is 2.017 and was rounded

off to 2.000 which indicates no autocorrelation in the research sample or a high level of isolation among the independent variables of the model.

Table 4.14: One-way ANOVA[a] (Trust)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.422	1	41.422	81.782	.000b
	Residual	97.754	193	0.506		
	Total	139.176	194			
a. Dependent Variable: Trust (T)						
b. Predictors: (Constant), Perceived Security (PS)						

According to analysis of variance (ANOVA) results in Table 4.14 above, the research model is significant (F (1; 193) = 81.782; P<0.05). The variable perceived security (PS) make a statistically significant contribution (p<0.05)

Table 4.15: Coefficients[a] (Trust)

Coefficients[a] (Trust)										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	1.469	0.175		8.389	0.000	1.124	1.815		
	PS	0.475	0.053	0.546	9.043	0.000	0.371	0.578	1.000	1.000
a. Dependent Variable: Trust (T)										

Multiple regression results in Table 4.15 above shows that the overall multiple regression model is significant with a 95% confidence interval and a p-value less than 0.05. Results indicated that the sample has a low level of multicollinearity with VIF scores was 1.000. According to Bhattacherjee, 2012), all normal distributions follow the 68-95-99 percent rule results above supports that as results shows 95% confidence interval for B. Perceived security is significant (beta = 0.546).

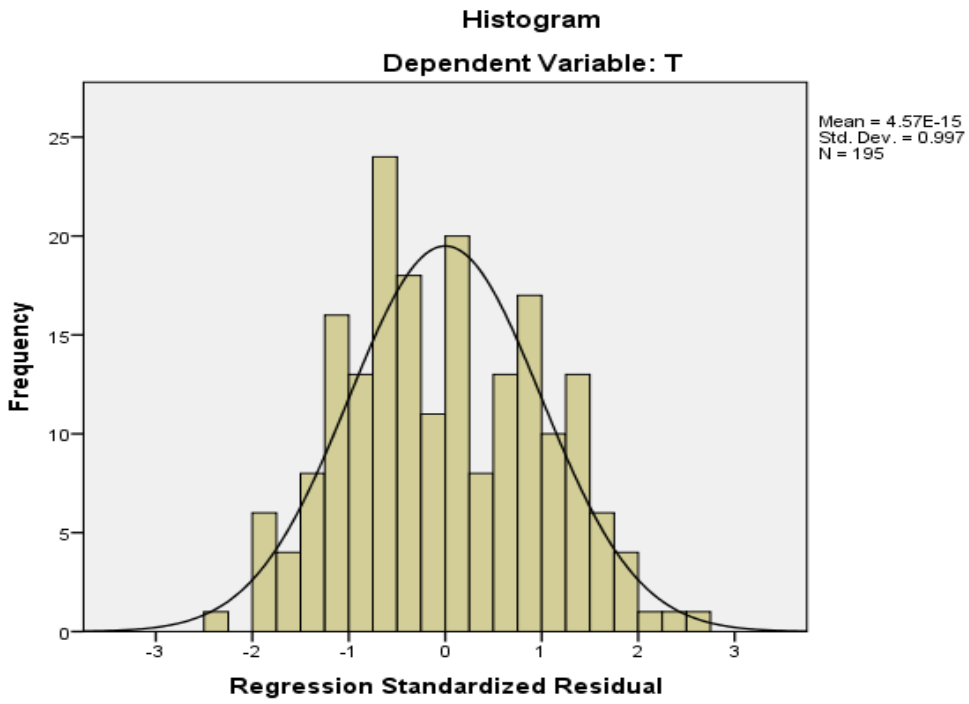


Figure 4.3: Scree Plot

Figure 5.3 above indicates the scree plot and results reflects a normal distribution as the confidence is 95%. A normal distribution means that non parametric study is not relevant in this study.

4.9. Hypotheses results

Table 4.16: Summary of hypothesis results

Path	Hypothesis Number	Hypothesis Description	Path Coefficient	Comments
PS → T	H1	Perceived security has a significant positive effect on trust of online shopping technology by consumers	0.546	Supported
PE → A	H2	Performance expectancy has a significant positive effect on acceptance of online shopping by consumers	0.476	Supported
EE → A	H3	Effort expectancy has a non-significant effect on acceptance of online shopping by consumers	_	Not supported
SI → A	H4	Social influence has a significant positive effect on acceptance of online shopping by consumers.	0.209	Supported
T → A	H5	Trust has a significant positive effect on acceptance of online shopping by consumers	0.139	Supported

Empirical testing of the research model was done and results in table 4.16 above highlights the weighted contribution of the variables. Results supported that perceived security (PS) has a significant effect on trust (T). Performance expectancy (PE), social influence (SI) and trust (T) have a significant effect on acceptance of online shopping

(A). Effort expectancy (EE) was not supported because it was eliminated from further analysis after the factor analysis as its factor loading results were less than 0.6.

4.10. Summary of the chapter

Descriptive analysis was carried out to measure the demographic distribution of the survey respondents for the study of acceptance of online shopping in South African townships. There was a near equal distribution of gender with males constituting 55.4% and females 44.6% of the total survey respondents. Majority of the respondents were under the age of 30 constituting 68,7% and the least were above the age the of 45 making up 12% of the respondents with remaining 25.1% being between 30 and 45 years.

Factor analysis was also done to determine the reliability of the research variables and all variables (performance expectancy (PE), perceived security (PS), effort expectancy (EE), social influence (SI), trust (T) and acceptance of online shopping (A) were reliable. Validity analysis was also carried out and variables (PS, PE, SI, T and A) are reliable. Effort expectancy (EE) was not reliable and was excluded from any further analysis.

Correlation analysis was carried out for variables (PS, PE, SI, T and A) and EE did not form part of the analysis as it was excluded during the reliability testing. Results of regression analysis on the variables in the research of acceptance of online shopping by individuals in South African townships indicated that perceived security (PS) has a significant effect on trust (T).

Performance expectancy (PE), social influence (SI) and trust (T) were also found to have a significant effect on acceptance of online shopping by individuals in South African townships (A). Effort expectancy (EE) was not tested as it was excluded from further analysis because it had a factor loading of less than 0.6, the minimum value for a reliable variable in this study. The next chapter focuses on the interpretation of the findings of the study of acceptance of online shopping by South African individuals.

CHAPTER 5: INTERPRETATION OF FINDINGS AND THE MODEL

5.1. Introduction

According to Akroush & Al-Debei, (2015), most of the existing studies of acceptance of online shopping have been conducted in developed countries and there are less studies focusing on developing countries, let alone townships. Although townships in South Africa may refer to geographical areas where people live, these geographical demarcations have given birth to a culture known in South Africa as township culture. There is thus a need to examine the factors affecting acceptance of online shopping across different countries and cultures.

This study aimed to answer the primary question which was; “What are the factors affecting acceptance of online shopping by individuals in South African townships?” The goal of the study was to model the factors affecting acceptance of online shopping by individuals in South African townships. Lack of studies of acceptance of online shopping within the context of developing countries, let alone townships, justified the relevance and essentiality of conducting this study.

The research model based on the unified theory of acceptance and use of technology (UTAUT) was used to empirically evaluate significant factors affecting acceptance of online shopping by individuals. A positivist research paradigm was used and quantitative data were collected from individual adults residing in South African townships, using a self-administered questionnaire. The data were then captured and analysed using SPSS v23 software. Factor analysis was done to determine factors which significantly affect acceptance of online shopping. Cronbach’s alpha was used for reliability testing of the measures.

The rest of chapter 5 is organised as follows: Section 5.2 provides main findings of the study, followed by section 5.3 which test the hypotheses. Section 5.4 highlights the research model for acceptance of online shopping by individuals in South African townships followed by section 5.5 which discusses the contribution of the study.

Section 5.6 discusses the limitations of the study followed by section 5.6 which summarizes the chapter.

5.2. Main findings of the study

Adapted unified theory of acceptance and use of technology (UTAUT) model was used to as the theoretical lens for the study. UTAUT which was originally developed within the context of employee technology acceptance within an organization has been extended to study other contexts like consumer technology (Venkatesh *et al*, 2012). It was developed as a synthesis of prior technology acceptance and use models and was first introduced by Venkatesh *et al*, (2003). The context of this study is acceptance of online shopping by individuals in South African townships using adapted unified theory of acceptance and use of technology (UTAUT) model. This section will discuss and interpret the findings.

The hypotheses below were found to be a strong predictor of acceptance of online shopping by individuals.

H2*. The more consumers perceive the high performance of the online shopping technology, the more they accept of online shopping technology.*

H4*. The more an individual perceives that important people in their social cycles believe they should use online shopping, the more they are likely going to use it.*

H5*. The higher the trust of online shopping by individuals, the more they will accept online shopping technology*

The hypothesis below was found to be a strong predictor of trust of online shopping by individuals

H1*.The higher the perceived security of online shopping by individual consumers, the higher the trust of online shopping technology by consumers.*

Based on the results of the analysis, this study concludes that constructs above of unified theory of technology acceptance and use of technology (UTAUT) model which are performance expectancy (PE) and social influence (SI) are strong predictors of acceptance of online shopping by individuals. Results also indicated that trust (T) was also a predictor of online shopping by individuals. Perceived security (PS) was security

was also found to be a strong predictor for trust (T). Another construct of UTAUT which was included in the study model which is effort expectancy (EE) was not supported as it was excluded from further analysis after it failed to meet the minimum reliability test.

The results of this study highlights increased acceptance of online technology in people's daily lives regardless of their economic class, with effort expectancy not having any significant effect on acceptance of online shopping by individuals. This means that people who participated in the survey were not concerned about the complexity of the technology in making a decision on acceptance of online shopping. The highest predictor of acceptance online shopping by individuals was performance expectancy highlighting the need by individuals for value adding technology.

The results from this study seem to indicate the increased awareness of online shopping in the South African townships. The results of the study may suggest that the acceptance and use of online technology including online shopping is increasing in South African townships. The results may suggest that individual consumers are familiar with online technology to a point that they do not think that online shopping technology has any complexities which may deter them from accepting and using it. This trend might be attributed to increased internet connectivity in the South African townships.

Results from the study by Khalilzadeh et al, (2017) supported the results of this study as they also found out that security and trust had significant effects on the acceptance of another online technology in the form of mobile payment in the restaurant industry. In their study on acceptance of online shopping by consumers, Akroush & Al-Debei (2015) also found that trust (T) had significant positive effect on acceptance of online shopping. Some of the results of the study by Gefen *et al*, (2003) of acceptance of online shopping using the technology acceptance model (TAM) were consistent with the results of this study where it was found out that trust, perceived usefulness (performance expectancy) had a positive and significant effect on acceptance of online shopping.

However this study found out that effort expectancy did not have any significant effect on acceptance of online while Gefen *et al*, (2003) results found out the perceived ease

of use (effort expectancy) had significant effects of acceptance of online shopping. The insignificance of effort expectancy towards acceptance of online shopping might be attributed to the majority age group of the participants which was under 30 years. According to Chiemeke & Evwiekpaefe, (2011), old users are likely to be affected by ease of use (effort expectancy) towards acceptance of information technology than younger users.

The results of this study were also supported by results by Lian & Yen, (2014) on their research on acceptance of online shopping. They found out that social influence (SI) and performance expectancy (PE) had a positive significant effect on acceptance of online shopping by individuals and that effort expectancy did not have any significant effect on acceptance on acceptance of online shopping by adult individuals.

In their study on acceptance of mobile banking, Zhou *et al*, (2010), found results that were consistent with the results of this study that effort expectancy did not have a significant effect on acceptance of mobile banking, while performance expectancy and social influence had significant effects on acceptance of mobile banking. These results are very interesting as this might mean that people have adapted to technology to being part of their life and their decision to adopt technology is not affected by the complexity of the technology as compared to 2003 when Venkatesh *et al*, (2003) had their study when technology was still emerging.

Perceived usefulness and perceived ease of use in TAM are similar to performance expectancy and effort expectancy in UTAUT respectively (Venkatesh et al, 2003). This difference might be attributed to maturity of information technology over time, comparing 2003 when Gefen *et al*, (2003) study was conducted and 2017 when data for this study was collected.

The majority of the participants of the study were male and they fell within the age band of 18 to 30 years, which makes sense as the younger adults tend to accept and adopt technology more than the older adults. This also seems consistent with the results of the study which indicates that effort expectancy has no significant effects on acceptance of online shopping by individuals in South African townships.

Table 5.1: Summary of hypotheses results

Hypothesis Number	Hypothesis Description	Results
H1	Perceived security has a significant effects on trust of online shopping technology by consumers	Supported
H2	Performance expectancy has significant effects on acceptance of online shopping by consumers	Supported
H3	Effort expectancy does not have significant effects on acceptance of online shopping by consumers	Not supported
H4	Social influence has significant effects acceptance of online shopping by consumers.	Supported
H5	Trust has significant effects on acceptance of online shopping by consumers	Supported

Table 5.1 above summarizes the results of the study with regards to whether the study hypotheses are supported or not supported based on the outcome of the study. Most of the hypotheses (H1, H2, H4, and H5) were supported by the results of the study. The only hypothesis that was not supported was H3.

5.3. Hypotheses testing resulting model

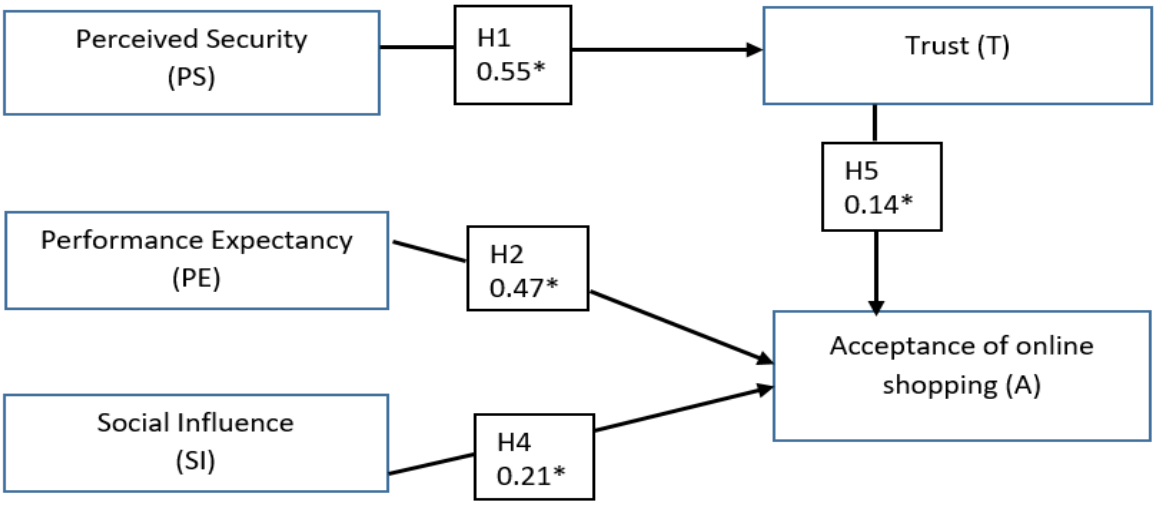


Figure 5.1: Hypotheses testing resulting model

Note: *Significant at *p≤0.05*

Figure 5.1 above shows the diagrammatic illustration of the levels of significance of the variables in the research model with regards to effects on acceptance of online shopping in South African townships. The Beta values indicate the level of significance, with significance at *p≤0.05.*

Table 5.2: Summary of structural path model results

Hypothesis Number	Hypothesis Description	Beta
H1	Perceived security →Trust	0.55
H2	Performance expectancy → Acceptance of online shopping	0.47
H4	Social influence → Acceptance of online shopping	0.21
H5	Trust → Acceptance of online shopping	0.14

Table 5.2 above shows the findings of the study indicating that all research hypotheses are supported with the exception of H3 which was not supported. Perceived security has a positive and significant effect on trust (β = 0.55). Performance expectancy (β =

0.47), social influence (β = 0.21) and trust (β = 0.14) have a positive and significant effect on acceptance of online shopping by individual consumers in South African townships.

This study was confirmatory as it confirmed the relevance of the adapted unified theory of acceptance and use of technology (UTAUT) as a theoretical lens to study the acceptance of online shopping. This study also confirmed that performance expectancy (PE), social influence (SI) and trust (T) have significant effect on acceptance of online shopping by individuals.

5.4. Model for acceptance of online shopping

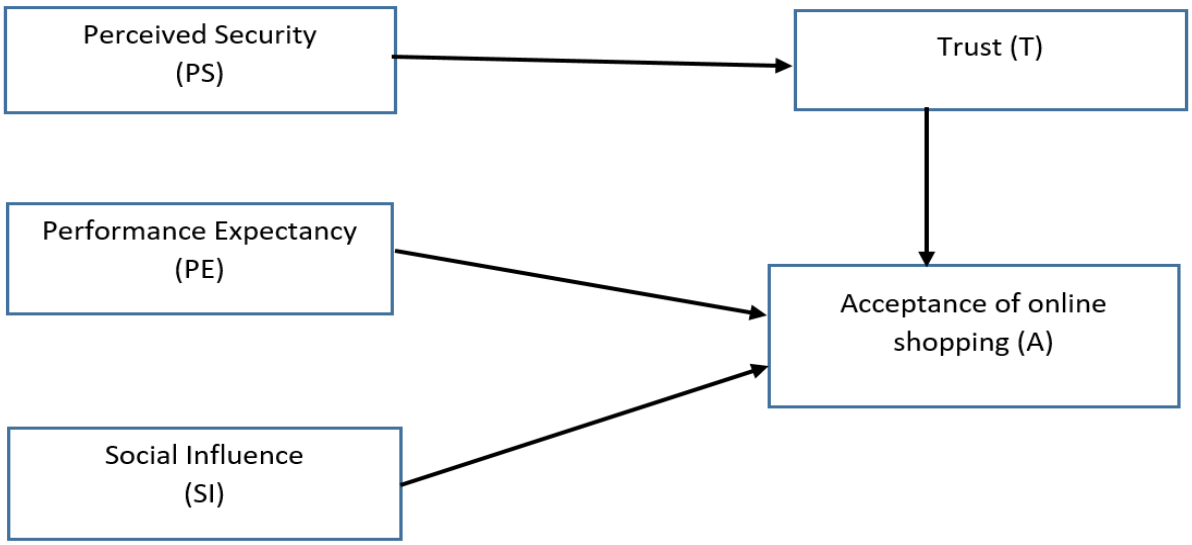


Figure 5.2: Model for acceptance of online shopping by individuals in South African townships

After the analysis of the data collected on acceptance of online shopping by individuals in South African townships and based on the results of the analysis, a model for acceptance of online shopping in South African townships was formulated. Figure 5.2 above shows the research model for acceptance of online shopping by individuals in South African townships.

5.5. Contribution of the study

Results of the study highlight the relevance and the contribution of this study of acceptance of acceptance of online shopping by individuals in South African townships. This study contributed to practice, theory as well as methodology.

5.5.1. Contribution of the study to theory

One of the identified research problem was the lack of research studies on acceptance of online shopping in developing countries and more so in townships. This research study contributed towards plugging this gap of lack of research studies. The study contributed to theory by supporting the relevance of unified theory of acceptance and use of technology (UTAUT) to study of acceptance of online shopping with specificity to online shopping.

The model of acceptance of online shopping by individuals in South African townships shows that individuals in townships accept online shopping if they perceive online shopping platforms to be secure and they trust these platforms. Individual consumers in South African townships indicated that they accept online shopping if they perceive that it will give them more value than going to a traditional brick and mortar shop. This benefits may include saving time and convenience.

Given the close proximity of township houses and the close social interrelationships of people in townships, social influence is one of the key factors towards acceptance of online shopping in South African townships. This means that a word of mouth or seeing a friend, relative or neighbour shopping online will affect an individuals' decision towards acceptance of online shopping. Results from some existing literature (Lim & Ting, 2012; Hung, Wang & Chou, 2007) indicated that effort expectancy had significant effect on acceptance of online shopping, however that was different with individual consumers in South African townships.

Individual consumers in South African townships do not see technological complexity of online shopping as an important affecting them with regards to accepting online shopping. Factors affecting acceptance of online shopping may be differ with different geographic locations like suburbs, rural areas or farms. This may be attributed to difference in social dynamics or internet penetration and accessibility levels.

The study also contributed towards the testing of the unified theory of acceptance and use of technology (UTAUT) on acceptance of online shopping. Many researchers have adapted the unified theory of acceptance and use of technology (UTAUT) with different variables, this study contributed towards the adaptation of UTAUT by adding variables of perceived security and trust. The study also contributed by testing the variables of perceived security and trust on acceptance of online shopping.

5.5.2. Contribution of the study to practice

The results of the study indicate that performance expectancy has the most significant effect on acceptance of online shopping by individual consumers in South African townships. This highlights the need for online vendors to ensure that their services and technology of online shopping provides maximum possible value for money to online consumers to ensure acceptance of the technology. Consumers should be offered value that should make it easy for them to choose online shopping over going to a brick and mortar shop for shopping.

Social influence was also found to have a significant positive effect on acceptance of online shopping by individual consumers in South African townships. These results suggest the need for extensive publicity and advertising of online shopping to individual consumers in South African townships to ensure more and more people start using the technology, thus enabling more users to influence more people within their circles towards acceptance of online shopping. As more individual consumers start using online shopping, they may then influence others to accept the technology and eventually start using online shopping.

Trust was found to have a significant positive effect on acceptance of online shopping by individual consumers in South African townships. This supports the need for online vendors to ensure that they provide online shopping services with high levels of security to ensure that consumers trust their services. If more consumers have trust in online shopping, more individual consumers will accept online shopping.

5.6. Limitations of the study

The study had some limitations, including sampling limitations. Most of the respondents were young adults under the age of 30 years who might behave differently to individuals in different age groups when it comes to the acceptance of technology. The study was also limited to quantitative study and the results might miss key qualitative results which may be obtained through the use of qualitative studies.

The study was a cross-sectional and according to Al-Debei *et al*, (2015), cross-sectional studies do not show changes of attitudes of research participants over time. The study was also limited to individuals in South African townships around Johannesburg and the response and behaviour of the individuals in these townships might be different to response and behaviour of individuals not around Johannesburg or worse outside South Africa. The response and behaviour of individuals in South African townships with regards to acceptance of online shopping might also differ to those from individuals from rural areas and suburbs. This means that this study might not be used to generalize behaviour of all South African individuals or individuals from developing country with regards to acceptance of online shopping.

The researcher adapted the unified theory of acceptance and use of technology (UTAUT) to include perceived security (PS) and trust (T). The moderating factors of UTAUT which are gender, age, experience and voluntariness of user were also not included in the adapted UTAUT model which was tested by the study. The researcher has explicitly suggested inclusion of these moderating factors in future studies of acceptance of online shopping in South African townships. However the exclusion of the UTAUT moderating factors means that the current study does not test how these moderating factors affect the adapted UTAUT factors that are being measured in the study.

5.7. Summary of chapter

Chapter 6 discussed the interpretations of the findings of the study on acceptance of online shopping by individuals in South African townships. This included discussion of the main findings as well as the hypotheses of the study. Research model was also illustrated together with a discussion of the contribution of the study to theory and

practice as well as the limitations of the study. Chapter 6 focuses on the evaluation of the research study as well as the overall conclusion. Section 6.2 will recap the overview of the research and Section 6.3 will revisit the research questions. Relevance of the research methodology will be discussed in section 6.4 and recommendations for further studies will be in section 6.5. Section 6.6 will reflect on the research study and summary of the chapter will be on section 6.7 while the overall summary of the research will be on section 6.8

CHAPTER 6: EVALUATION AND CONCLUSION OF THE RESEARCH

6.1. Introduction

This chapter gives the evaluation as well as the conclusion of the research on acceptance of online shopping by individuals in South African townships. The second section recaps the overview of the research followed by a revisit to the research questions. The next section discusses the relevance of the research methodology to the study of acceptance of online shopping by individuals in South African townships. Section 6.5 discusses the recommendations for further studies followed by the next section discussing reflection on the research study. The final chapter will conclude the research on acceptance of online shopping by individuals in South African townships.

6.2. Overview of the research

The outlay of this study has been over seven chapters with the first chapter focusing on the introduction and background of the study of acceptance of online shopping by individuals in South African townships through the theoretical lenses of the adapted unified theory of acceptance and use of technology. This included the problem statement, research goals as well as the significance of the study. Chapter 2 of the study discussed the literature review of acceptance of information technology based on different theories and also highlighted limitations and findings of previous studies. The chapter also discussed in detail the unified theory of acceptance and use of technology (UTAUT) as well as the research framework, including the hypotheses which will be tested by the research.

Chapter 3 discussed the research methodology and design, including the unit of analysis, sampling, research instrument and data collection method as well as data analysis strategy and the ethics section. Chapter 4 discussed the study findings from the quantitative analysis of the data as well as test of the research model. Chapter 5 discussed the interpretation of the research findings, including the implications of the findings on the practitioners and the research limitations. The last chapter, which is chapter 6 summarises the whole research process, including relevance of the research methodology as well as possible future studies of the similar research phenomena.

6.3. Research questions revisited

The purpose of this study was to develop a research framework for testing hypotheses of acceptance of online shopping by individuals in South African townships using unified theory of acceptance and use of technology (UTAUT). A questionnaire was formulated based on the research questions. The questionnaire was administered to the sample frame through a self-administered survey where individual consumers were approached in public places like tax ranks and streets and asked to complete a prepared standardized questionnaire. The collected data was then statistically analysed to obtain the research findings which were used to answer the research questions. Below is a brief discussion of each research question.

Research question 1: *What are the factors affecting acceptance of online shopping by individuals in South African townships?*

This question was to identify the factors or variables affecting acceptance of online shopping by individual consumers within the context of South African individual consumers using the adapted unified theory of acceptance and use of technology. This question did predict the acceptance of online shopping, as some of the variables of the research model which are performance expectancy, social influence and trust were found to have significant effects on acceptance of online shopping by individual consumers. This main question also included perceived security which was found to have a significant effect on trust, thus having an indirect effect on acceptance of online shopping by individual consumers.

Research question 2: *To what extent does effort expectancy affect acceptance of online shopping by individuals in South African townships?*

This research question did not have any significant effect on acceptance of online shopping by individual consumers in South African townships. This research question did not predict acceptance of online shopping by individual consumers. This means that individuals did not feel that technical, functional or navigational complexity of online shopping did not have any effect on their decision towards acceptance of online shopping.

Research question 3: *To what extent does social influence affect acceptance of online shopping by individuals in South African townships?*

The research question above did predict acceptance of online shopping by individual consumers directly. The results of this measure highlighted how people are influenced by other people in their social circles towards acceptance of online shopping.

Research question 4: *To what extent does performance expectancy affect acceptance of online shopping by individuals in South African townships?*

This research question did predict acceptance of online shopping by individual consumers directly. This means that individual consumers are willing to accept online shopping technology if it adds value to their day to day lives. Online shopping needs to give them a value or benefit that is more valuable than the alternative which brick and mortar traditional shopping mall or grocery shop around the corner.

Research question 5: *What is the effect of perceived security on trust of online shopping by individuals in South African townships?*

The above research question did predict acceptance of online shopping indirectly. Perceived security was found to have a positive significant effect on trust of online shopping. Trust was found to have a significant direct effect on acceptance of online shopping by individuals. This means that if individual consumers had a perceived sense of security with shopping online, this would increase their trust of online shopping which in turn will have a positive effect on acceptance of online shopping.

Research question 6: *What is the effect of trust on acceptance of online shopping by individuals in South African townships?*

This research question did predict acceptance of online shopping directly. This means that the more individuals' trust online shopping, the more they are likely to accept it. Online fraud is rife in South Africa and the rest of the world and most consumers are aware of the risk of transacting online.

6.4. Relevance of the research methodology

The research used an inferential analysis approach based on the positivist research paradigm using a quantitative analysis method. According to Bhattacherjee, (2012), inferential analysis an approach of using statistics to test the research hypotheses. The research design of this study was guided by hypotheses drawn from prior studies which were measured using a designed research instrument (see Appendix A). The

study used adapted unified theory of acceptance and use of technology (UTAUT) to frame the hypothesis model which was measured using a survey which is a similar approach used by Lim & Ting (2012) and Lian & Yen, (2014).

Data collected from the survey was taken through the inferential analysis process in order to answer the research questions similar to approach used by Venkatesh *et al*, 2012. This study provides empirical validation on the effects of online shopping by individual consumers and based on assessment of research methodologies of prior studies within similar context, the research methodology applied to this study was deemed to be relevant and applicable to the current study.

6.5. Recommendations for future studies

The study was a cross-sectional study and according to Al-Debei *et al* (2015), cross-sectional studies do not show changes of attitudes of research participants over time. Longitudinal studies on acceptance of online shopping by individuals in South African townships could be done in the future. This study focussed on individuals in South African townships and could be extended to other environments like universities or rural areas.

Moderating factors of the UTAUT model which are gender, age, experience and voluntariness of use were excluded in the adapted UTAUT model which was tested in this study. The researcher recommends that future study that include these moderating factors could be carried out. This study will contribute towards understanding the effect of these moderating factors on acceptance of online shopping by individuals in South African townships.

Further studies could also be conducted using qualitative study to gain more insight on the qualitative dynamics of acceptance of online shopping by individuals in South African townships. Only perceived security and trust were added to the UTAUT model and further research may extend the UTAUT model with other variables like cultural factors in order to expand the understanding of acceptance of online shopping by individuals.

6.6. Reflection on the research study

When Venkatesh *et al*, (2003) first used unified theory of acceptance and use of technology to test acceptance and use of technology, they found out that performance expectancy, effort expectancy and social influence had significant direct effects on acceptance of technology by individuals. Results of this study together with the results of prior studies by Lim & Ting (2012) and Lian & Yen, (2014) within similar context, found out that only performance expectancy and social influence as constructs of UTAUT had a significant effect on acceptance of online technology including online shopping. Effort expectancy was found not to have any significant effects on acceptance of online technology including online shopping which also contrasted with similar studies conducted by Gefen *et al*, (2003), which found out that effort expectancy had a significant effect on acceptance of online shopping.

Khalilzadeh et al, (2017) in their study on acceptance of mobile payment found out that security and trust had a significant effect on acceptance of mobile payment. This results are consistent with the results of this study as well as results from a prior study by Akroush & Al-Debei (2015) which also found out that trust had a direct significant effect on acceptance of online shopping by individual consumers.

Results on the study by Martins *et al,* (2014) stated that trust and perceived security are the most critical determinants of acceptance of monetary transactions over the internet by prospective users since high worries of security and low levels of trust will lead to lack of acceptance of the technology.

6.7. Summary of the chapter

Chapter 6 discussed the evaluation of the research together with the overall conclusion of the research. Research questions were revisited and relevance of the research methodology was discussed. Recommendations for further studies were discussed and a reflection on the research on acceptance of online shopping by individuals in South African townships was done. The last section below gives the conclusion of the research on acceptance of online shopping by individuals in South African townships

6.8. Conclusion of the study

The results of the study on acceptance of online shopping by individuals in South African townships revealed the criticality of security and trust on acceptance of online shopping by individual consumers. The effect of perceived security on trust was confirmed by the study to be significant, with trust also been found to have a significant effect on acceptance of online shopping. An interesting finding was that of effort expectancy which was found not to have a significant effect on acceptance of online shopping, which might be attributed to a holistic maturity of online technology.

Although the findings on effort expectancy were different findings by Venkatesh *et al*, (2003), the study further posited unified theory of acceptance and use of technology (UTAUT) as relevant to be used as the theoretical lens to study acceptance of information technology by individuals. Results of performance expectancy and social influence were consistent with results of Venkatesh *et al*, (2003), which found out that these variables had a significant effect towards acceptance of information technology.

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APPENDIX A – RESEARCH INSTRUMENT

Acceptance of Online Shopping by Individuals

Section 1. Perceived Security
To what extent do you agree with the following Security statements regarding Trust of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
PS1	Online shopping environment has security measures to protect me as an online shopper.	1	2	3	4	5
PS2	Online shopping is a secure environment for me to share data	1	2	3	4	5
PS3	Shopping online will not cause financial risk	1	2	3	4	5
PS4	I feel secure about the electronic payment of online shopping	1	2	3	4	5

Section 2. Trust
To what extent do you agree with the following Trust statements regarding acceptance of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
T1	I am not afraid sharing personal information during online shopping	1	2	3	4	5
T2	I believe online shopping service providers are reliable.	1	2	3	4	5
T3	I believe online shopping service providers are trustworthy.	1	2	3	4	5
T4	I trust online shops will deliver on all their promises	1	2	3	4	5

Section 3. Performance Expectancy
To what extent do you agree with the following performance expectancy statements regarding acceptance of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
PE1	Online shopping will allow me to do shopping effectively.	1	2	3	4	5
PE2	Online shopping will be useful for me	1	2	3	4	5
PE3	Using online shopping will save me money	1	2	3	4	5
PE4	Using online shopping will save me time	1	2	3	4	5

Section 4. Effort Expectancy
To what extent do you agree with the following Effort Expectancy statements regarding acceptance of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
EE1	It will be easy for me to use online shopping system	1	2	3	4	5
EE2	Learning how to use online shopping systems will be easy.	1	2	3	4	5
EE3	My interaction with online shopping system will be clear and understandable.	1	2	3	4	5
EE4	Online shopping will not require a lot of technical effort	1	2	3	4	5

Section 5. Social Influence
To what extent do you agree with the following Social Influence statements regarding acceptance of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
SI1	People important to me think I should buy some of my goods and services using online shopping	1	2	3	4	5
SI2	People who influence my decisions think I should do online shopping.	1	2	3	4	5
SI3	People important to me are influencing me to use online shopping	1	2	3	4	5
SI4	Important people will support me on use of online shopping	1	2	3	4	5

Section 6. Acceptance (Online Shopping)
To what extent do you agree with the following statements regarding acceptance of online shopping? – *Single response per line*

		Strongly Disagree	Disagree	Neither Agree nor disagree	Agree	Strongly Agree
A1	I can predict that I will use online shopping in the future	1	2	3	4	5
A2	I plan to use online shopping in the future	1	2	3	4	5
A3	I intent to use online shopping in the future	1	2	3	4	5
A4	I will use online shopping as soon as possible.	1	2	3	4	5

What would you be comfortable with shopping online?

- ☐ Clothes
- ☐ Services
- ☐ Food and Groceries
- ☐ Electronic gadgets
- ☐ Others
- ☐ All of the above

I use online shopping

- ☐ NO
- ☐ YES

I intent to use online shopping in the future

- ☐ NO
- ☐ YES

Demographic Questions

Age _____

Gender

- ☐ FEMALE
- ☐ MALE

Monthly Income:

☐ < R1000
☐ R1001 – R5000
☐ R5001 – R10 000
☐ > R10 000
☐ Prefer not to say

Thank you for taking time to complete this survey. Your response together with responses from other participants will help us better understand the factors affecting acceptance of online shopping by individuals.

APPENDIX B – PARTICIPATION LETTER

Participation Letter (SPL)

Date: 04 October 2017

Good Day

My name is Shorai Dzimati and I am a Masters student in the Information Systems Division at the University of the Witwatersrand, Johannesburg. I am conducting research on the factors affecting acceptance of online shopping by individuals in South African townships. Online shopping also known as e-commerce is a form of shopping where the customer conducts all the shopping activities from production selection up to payment on the internet. After the online shopping, the online shop will then deliver the bought goods or services to the customer.

As an adult and shopper, you are invited to take part in this survey. The purpose of this survey is to find out the extent to which acceptance factors contribute to the take-up of online shopping.

Your response is important and there are no right or wrong answers. This survey is both confidential and anonymous. Anonymity and confidentiality are guaranteed by not needing to enter your name, Identification Number, Phone Number, or any details that may be used to identify you on the questionnaire. Your participation is completely voluntary and involves no risk, penalty, or loss of benefits whether or not you participate. You may withdraw from the survey at any stage.

The first part of the survey captures some demographic data. Please tick whichever boxes are applicable. The second part of the survey comprises 25 statements. Please indicate the extent to which you agree with each statement by ticking the appropriate box. The entire survey should take between 10 to 15 minutes to complete.

Thank you for considering participating. Should you have any questions, or should you wish to obtain a copy of the results of the survey, please contact me at 1437167@students.wits.ac.za or 084 371 1111. My supervisor's name and email are: Prof Ray Kekwaletswe Ray.Kekwaletswe@wits.ac.za.

(Researcher's Signature)

_____

Kind regards

Shorai Dzimati
Masters Student: Division of Information Systems
School of Economic and Business Sciences
University of the Witwatersrand, Johannesburg

APPENDIX C – CONSENT LETTER

Title of research project: Acceptance of Online shopping in South African townships

Name/s of principal researcher/s: Shorai Dzimati.
Department/research group address: Information Systems.
Telephone: 084 371 1111.
Email: 1437167@students.wits.ac.za

Nature of the research:
A quantitative research that will make use of data analysis of participant responses to determine significance of factors affecting acceptance of online shopping by individuals in South African townships

Participant's involvement:
To provide responses to the questionnaire administered.

What's involved?
Risks: None
Benefits: Gaining an understanding of the acceptance of online shopping by individuals through assessing their responses on the factors affecting acceptance

I acknowledge the following:

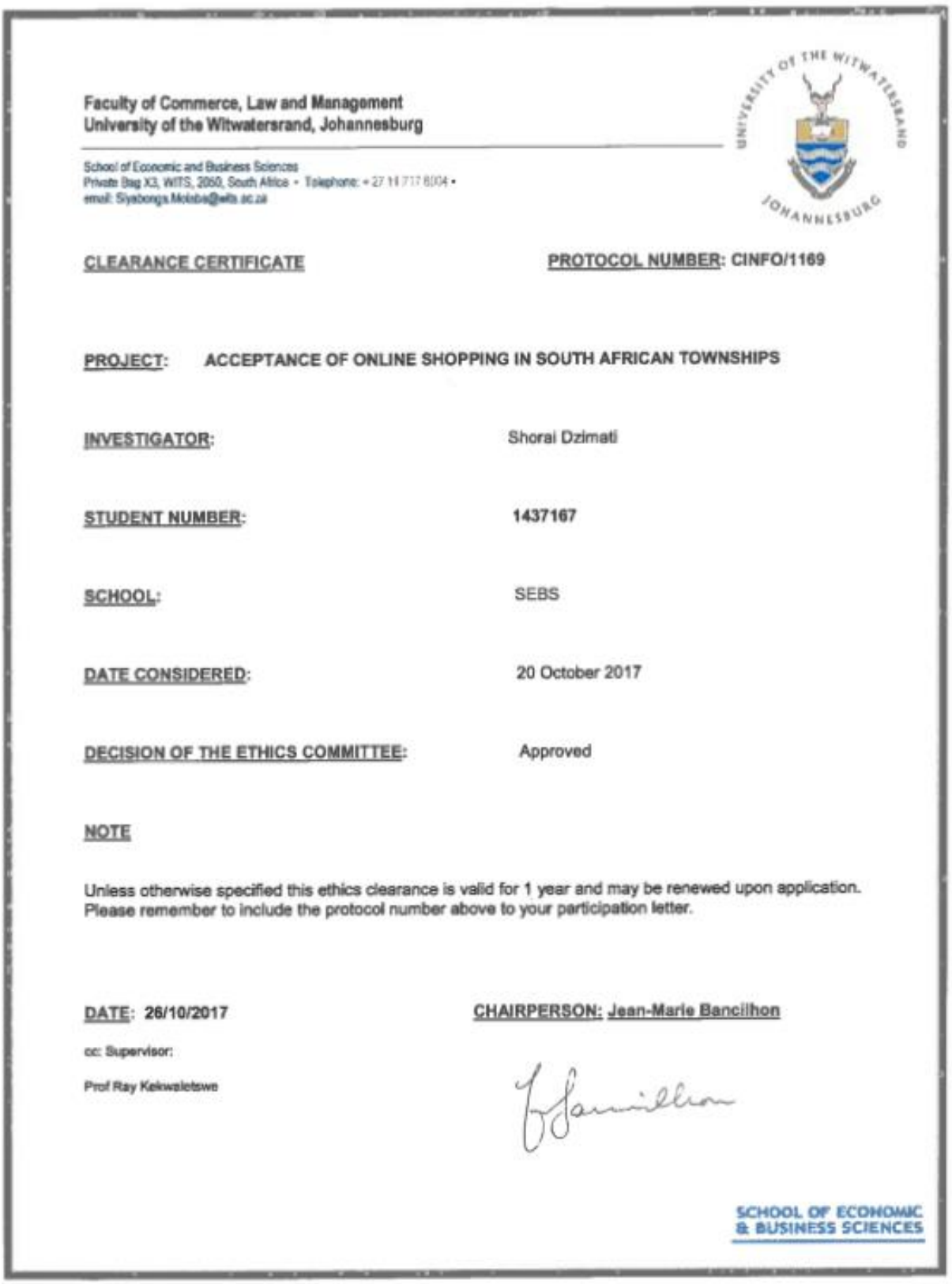
- I agree to participate in this research project.
- I have read this consent form and the information it contains and had the opportunity to ask questions about them.
- I agree to my responses being used for education and research on condition that my privacy is respected, subject to the following:
  - I understand that my personal details will not / may be included in the research / will be used in aggregate form only, so that I will not be personally identifiable (delete as applicable.)
  - I understand that I am under no obligation to take part in this project.
  - I understand I have the right to withdraw from this project at any stage.

Signature of Participant: _____

Signature of person who sought consent: _____
Name of person who sought consent: Shorai Dzimati

Date:_____

APPENDIX D – CLEARANCE CERTIFICATE



Faculty of Commerce, Law and Management
University of the Witwatersrand, Johannesburg

School of Economic and Business Sciences
Private Bag X3, WITS, 2050, South Africa • Telephone: + 27 11 717 8004 •
email: Siyabonga.Mokoba@wits.ac.za

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

CLEARANCE CERTIFICATE **PROTOCOL NUMBER: CINFO/1169**

PROJECT: **ACCEPTANCE OF ONLINE SHOPPING IN SOUTH AFRICAN TOWNSHIPS**

INVESTIGATOR: Shorai Dzimati

STUDENT NUMBER: **1437167**

SCHOOL: SEBS

DATE CONSIDERED: 20 October 2017

DECISION OF THE ETHICS COMMITTEE: Approved

NOTE

Unless otherwise specified this ethics clearance is valid for 1 year and may be renewed upon application.
Please remember to include the protocol number above to your participation letter.

DATE: **26/10/2017** **CHAIRPERSON:** Jean-Marie Bancilhon

cc: Supervisor:

Prof Ray Kekwaletswe

SCHOOL OF ECONOMIC & BUSINESS SCIENCES

APPENDIX E – TURNITIN RESULTS SUMMARY

1558925:Final_Research_Shorai_Dzimati_2017.docx

ORIGINALITY REPORT

9%	9%	4%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.cswe.org Internet Source	1%
2	run.unl.pt Internet Source	1%
3	espace.curtin.edu.au Internet Source	1%
4	Interactive Technology and Smart Education, Volume 12, Issue 3 (2015) Publication	<1%
5	www.specialer.sam.au.dk Internet Source	<1%