AN INVESTIGATION INTO E-COMMERCE ADOPTION AND DIFFUSION BARRIERS: A CASE STUDY OF SMALL AND MEDIUM ENTERPRISES (SMEs) IN BINDURA, ZIMBABWE.

Submitted by

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The undersigned certify that they have supervised, read and recommend to the Bindura University of Science Education for acceptance a research project entitled: An Investigation into E-commerce Adoption and Diffusion Barriers: A Case Study of Small and Medium Enterprises (SMEs) in Bindura, Zimbabwe submitted by Felex Tafirei in partial fulfilment of the requirements for the Masters in Business Leadership Degree Program.
DECLARATION

I, Felex Tafirei, declare this research project herein is my own work and has not been copied or lifted from any source without the acknowledgement of the source.

……………………

Signed

Date
DEDICATION

This research is dedicated to my family.
ACKNOWLEDGEMENTS

Isaac Newton, the great scientist, once said, “If I have been able to see further than others, it is because I have stood on the shoulders of giants”.

There are many giants who contributed directly and indirectly towards the successful completion of this dissertation. It is impossible to mention them all. However, I would like to express my sincere and profound gratitude to MR P. Munyedza my supervisor whose expert advice and patience was of great value. I would like also to acknowledge the BUSE Department of Economics, my fellow workmates and MBL class mates whose willingness to share ideas, formally or informally, inevitably made this project possible. I would also like to acknowledge the unquantifiable moral support from my family without which it would have been impossible to complete this project.
ABSTRACT

Research on the use of e-commerce in business indicates that, e-commerce may be the only source of sustained competitive advantage in this era of increased globalisation of the market place. However, SMEs in developing countries face significant barriers to the adoption of this technology and lag behind their larger counterparts. This research presents a theoretical model of the barriers to e-commerce adoption by SMEs in Bindura, Zimbabwe. The results of this research were based on an empirical cross section exploratory study of for profit SMEs in Bindura. Data were gathered using questionnaires and face to face interviews with the owners of the SMEs and with intermediary support organisations. The data were coded and SPSSv16 was used to generate the descriptive statistics. The key findings were that while almost all SMEs used email as a communication tool, none of them used the internet to carry out business transactions online. The main barriers to e-commerce adoption were identified as the incapability of the SME organisations to carry out networked processes due to lack of knowledge and IT personnel, high cost of computers and connectivity, unreliable and inefficient telecommunications infrastructure as well as lack of support from intermediary support organisations like ISPs, commercial banks and the government. The researcher recommends strong support from both the private sector and the government in terms of education and training build up, investment in reliable, cost effective and convenient telecommunications and internet infrastructure as well as a strong legal framework to protect on line transactions and users.
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LIST OF ABBREVIATIONS

ICTs  Information Communications Technologies
ISP   Internet Service Providers
SMEs  Small and Medium Enterprises
UNCTAD United Nations Conference on Trade and Development
UNDP  United Nations Development Program
SEDCO Small Enterprise and Development Corporation
ZISPA Zimbabwe Internet Service Providers Association
CHAPTER 1: INTRODUCTION

1.0 Introduction
The benefits of using Information Communication Technologies (ICTs) and in particular electronic commerce (e-commerce) in business are well documented (Schneider, 2002). However, research done in developed countries, though country specific and despite differences in methodologies used, have generally concluded that e-commerce adoption and use by Small and Medium Enterprises (SMEs) is significantly lower than by their larger counterparts (Lawson et al., 2003 and Mohammad and Ismail, 2009). This is despite the fact that, according to Alston (1999) e-commerce may be the only strategic weapon that SMEs can use to maintain a competitive advantage not only in their traditional domestic market but in the global market place as well.

Very little empirical research in the use of Internet Technologies by SMEs in Africa, particularly in Zimbabwe has been carried out. This research therefore is an attempt to explore and build an understanding of how the organisation’s capability and skills, perceived benefits and support from intermediary organisations affect the decision by SMEs in Bindura, Zimbabwe to adopt e-commerce as a business strategy. It is also the purpose of this research to establish a profile of the specific uses and barriers to e-commerce adoption and to suggest private initiatives and government policy interventions that could lead to more successful e-commerce applications by SMEs in Zimbabwe.

This chapter comprises the introduction and background against which this research was carried out, the general research problem, objectives of the study and research propositions. The significance of the research to various stakeholders as well as its delimitations and limitations are also laid out in this chapter.

1.1 Background to the Research
The emergence and exponential growth of ICTs and in particular Internet Technologies, has transformed many aspects of our lives but perhaps none more so than the way we will shop for goods and services in future and the way companies large and small do or should do business.
Globally, e-commerce revenue was estimated to be $680 billion in 2011 and a whopping $963 billion by 2013 while in the USA alone it was estimated to be $187 billion (WIUPS, 2012).

1.1.1 World Internet Users and Population Statistics

The world average internet penetration rate was 32.7% as at 31 December 2011. The leading region was North America with a penetration rate of 78.6% while the whole of Africa had a penetration rate of 13.5 % (ibd.).Figure 1.0 below shows the World internet penetration rates by geographic regions for 2011.

Figure 1.0 World Internet Penetration Rates

Despite the low penetration rate, the African continent realised an internet growth user rate of 2988.4 % in the last 10 years followed by the Middle East (2244.8%), Latin America and the Caribbean (1205.1%) and Asia (789.6%).

1.1.2 Africa Internet User Statistics

With the world average internet penetration rate at 32.7%, Africa remains the continent with the lowest internet penetration at 13.5% while North America, with a penetration rate of 78.6% is the highest in the world. Figure 1.1 below shows Africa’s top 10 internet countries as at March 2008.
Nigeria tops the African continent in terms of internet use while Zimbabwe ranks 10\textsuperscript{th}. Between 2000 and 2008, Somalia had the highest growth in terms of users with a rate of 48,900.0\% (from 200 to 89,000 users), followed by the Democratic Republic of Congo at 45,980.0\% (from 500 to 230,400 users). During this same period, the number of internet users in Zimbabwe grew by 2602\% from 50000 to 1351 000 users.

1.1.3 Internet and e-commerce Usage Statistics in Zimbabwe

Internet usage in Zimbabwe by both the business community and the general public has grown substantially by 165\% over the last three years. According to the ITU, there were 1,481,000 Internet users as at December 2009 representing 13.0\% of the population. During the same period, the Internet penetration (the percentage of people using the Internet) has gone up from 6.7\% to 10.9\%. Table 1 below shows internet use statistics from 2000 to 2009.
Table 1: Internet Usage and Population Growth

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Users</th>
<th>Population</th>
<th>% Pen.</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>2000</td>
<td>50,000</td>
<td>14,712,000</td>
<td>0.3%</td>
<td>ITU</td>
</tr>
<tr>
<td>2002</td>
<td>500,000</td>
<td>13,874,610</td>
<td>3.6%</td>
<td>ITU</td>
</tr>
<tr>
<td>2005</td>
<td>820,000</td>
<td>12,247,589</td>
<td>6.7%</td>
<td>ITU</td>
</tr>
<tr>
<td>2008</td>
<td>1,351,000</td>
<td>12,382,920</td>
<td>10.9%</td>
<td>ITU</td>
</tr>
<tr>
<td>2009</td>
<td>1,481,000</td>
<td>11,392,629</td>
<td>13.0%</td>
<td>ITU</td>
</tr>
</tbody>
</table>

Source: ITU Jan 2011

According to Shadrech Nkala, chairman of the Zimbabwe Internet Service Providers Association (ZISPA) the tremendous growth in internet use among the public was due to a desire by mainly the young generation to access the internet for educational and entertainment reasons.

The above statistics indicate that business traffic on the internet supported by increasing broadband will continue to grow and along the way define, inevitably, not only a new business environment, but new rules of the game on the electronic market place making e-commerce imperative for any business organisation. Across the world e-commerce has increasingly become a necessary component of business strategy and may become a strong catalyst for growth in developing countries (UNDP, 2004).

With many economies moving towards being knowledge based economies, future indications are that business will predominantly be conducted online. According to Herbst (2001) the traditional way of doing business and making payments has been surrogated by electronically networked processes and transactions. As such organisations that do not embrace the new technologies will be left behind in the technological dust as the internet business model evolves (Lawson et al., 2003). This perhaps indicates that today’s SMEs must go online or go out of business. Ironically, however, research evidence has generally shown that e-commerce adoption by SMEs is very low yet ICTs can make a significant difference to how well the SME sector fulfils its potential role in contributing to a healthy and robust economy (Kai Uwe Brock, 2000).

SMEs in Zimbabwe play a critical role in the growth and development of the national economy in terms of their contribution to employment, output as well as entrepreneurial development. Their strategic importance lies in the fact that SMEs make up more than 80% of established
business units and their activities are not only confined to agriculture but cut across industries from manufacturing to services (Dube et al., 2010).

The potential for e-commerce adoption and use by SMEs is enormous in Zimbabwe owing to the high literacy rate, rapid growth of the number of Internet Service Providers (ISPs) and users in the country as well as the increasing popularity of doing business and shopping online the world over. These developments provide SMEs with many new opportunities to expand their business operations and along the way create thousands of new jobs. Increased use of Internet technologies will provide traditional brick and mortar businesses with an effective and powerful method of improving their business processes and thereby increase their sales and growth. It is the researcher’s view that with such rapid and dynamic developments in ICTs and globalisation, the next profitable market, sale or contract for a brick and mortar business in Zimbabwe may only be but a click away.

The Internet, with its ability to transcend barriers of time, distance, size and culture gives SMEs a cheaper way of tapping into their markets (global or local) making e-commerce strategies a viable proposition for them. However, research evidence has found that e-commerce adoption and use by SMEs not only lags behind their larger counterparts (Thong, 2001 and Mohammad and Ismail, 2009) but falls below expectations (UNCTAD, 2004). Comparably the use of the Internet by SMEs in developed countries is greater than its use by similar sized firms in developing countries (Intrapairot and Srivihok, 2003).

1.2 Research Problem
SMEs in developing countries face unique and significant barriers to e-commerce adoption compared to their counterparts in the developed world. In Zimbabwe, although the digital foundations are there and internet access continues to grow significantly, albeit in leaps and bounds, e-commerce adoption and diffusion, especially by SMEs, is perhaps yet to reach measurable levels and falls far short of expectations even though it offers them a viable and practical solution for the achievement of competitive advantage. This report therefore sought to explore why brick and mortar SMEs fail to take advantage of internet technologies to transform themselves into viable and agile businesses of the future.
1.2.1 Research Questions
The Primary research question was why SMEs lag behind their larger counterparts in adopting e-commerce as a business strategy? The following were the sub-questions:

1.2.1.1 How is the decision by SMEs to adopt e-commerce as a business strategy affected by the organisation’s ICT capability and skills?
1.2.1.2 How does perceived ICT use and benefits affect the decision by SMEs to adopt e-commerce as a business strategy?
1.2.1.3 To what extent does the state of supporting telecommunications infrastructure affect the decision by SMEs to adopt e-commerce as a business strategy?
1.2.1.4 What are the other barriers that impact on the decision by SMEs to adopt e-commerce as a business strategy?
1.2.1.5 To recommend how SMEs can best adopt e-commerce as a business strategy.

1.2.2 Research Objectives
The primary research objective was to establish how specific internal and or external adoption barriers affect e-commerce adoption by SMEs. The following were the sub-objectives:

1.2.2.1 To establish the relationship between the organisation’s ICT capability and skills and the decision to adopt e-commerce as a business strategy.
1.2.2.2 To establish how the decision to adopt e-commerce as a business strategy is determined by the way the owner/manager perceives the use and benefits to be derived from e-commerce.
1.2.2.3 To investigate how the decision to adopt e-commerce as a business strategy depends on the state of supporting telecommunications infrastructure.
1.2.2.4 To establish a profile of the barriers that affect e-commerce adoption and diffusion by SMEs.
1.2.2.5 To recommend the best strategies that will help SMEs successfully embrace e-commerce as a business strategy.
1.2.3 Research Propositions

Research evidence has shown that the use of internet technologies largely depends on the literacy rate and the level of staff’s ICT skills and training. Where there is lack of internal specific competencies, e-commerce adoption has been seen to be very low (Darch and Lucas, 2002). Thus the following is proposed:

1. That e-commerce adoption and use varies positively with the organisation’s ICT capability and skills.

This relationship will be stronger where the owner/manager is competent in the use of computers and where the business has dedicated ICT staff and proper internet infrastructure.

The use of any technology in business has been found to largely depend on the perceived areas of application or use of that technology (Davis, 1989). Like the demand for most commodities, the demand for technology is a derived demand, that is, it is demanded for the benefits that the owner will derive from using that technology. The following is therefore proposed:

2. That perceived use and perceived benefits have a significant effect on the adoption or non-adoption of e-commerce as a business strategy by SMEs.

This relationship will be stronger the greater the number of possible uses or areas of business application and the greater the number of tangible benefits to be derived from using e-commerce.

The adoption and use of e-commerce by SMEs requires total transformation in the SME business processes. Success in this area can only be possible if the barriers to e-commerce adoption are significantly reduced (Lawson et al., 2003). The e-commerce practices must also be such that they provide a convenient alternative to the traditional way of doing business. While the digital foundations might be there the internet platform must not be very expensive in terms of installation, connectivity and maintenance. The following is therefore proposed:

3. That there are many significant e-commerce adoption barriers faced by SMEs

E-commerce has also been found to flourish where there is a good e-commerce infrastructure: technological, legal and ethical (Ayo et al., 2008). A good e-commerce infrastructure is one which is generally attractive to both business and consumers. In this regard ISPs should
guarantee stable and efficient internet connectivity accessible in a variety of settings and places. The following is therefore proposed:

4: That e-commerce adoption depends on the state of telecommunications infrastructure.

This relationship will be stronger where there is stable and secure internet connectivity, compatibility between different ICT platforms and where the level of support from industry and government is high.

From these propositions, the research model can be presented schematically as follows:

1.2.4 The Research Model

ELECTRONIC COMMERCE ADOPTION AND DIFFUSION MODEL

Adapted from Kapurubanda et al. (2008) and Ta-Tao Chuang et al. (2007)

The model shows that the decision to adopt e-commerce and the rate at which it will diffuse is a result of the interaction and the balance of forces in the environment within which the business finds itself in. Nevertheless successful adoption and diffusion will lead to business realising some tangible benefits.
1.3 Justification of the Research
Despite the staggering importance of e-commerce and strategic considerations for its successful adoption, empirical studies in this area especially with regards to e-commerce use by the SME sector are very limited. It was expected therefore that the study would make a significant contribution to the body of literature by showing how specific factors internal and or external impact on the adoption or non-adoption of e-commerce as a business strategy by SMEs. The study was also expected to allow for a broader understanding of the generic needs of the SME sector and the challenges faced by SMEs in the adoption of ICTs and thus help stimulate initiatives and support programmes (public or private) required to overcome these obstacles and promote the use of e-commerce in business.

The researcher also hoped that the findings would provide valuable information to SME owners and managers who may want to adopt ICT related business strategies. The knowledge gained may lead to a greater number of successful e-commerce applications and its integration as a future business strategy.

1.4 Assumptions of the Study
The following assumptions about SMEs and e-commerce as a business strategy were made:

1.4.1 There is no significant difference that exists between the social, technological and economic characteristics of cities and towns in Zimbabwe.
1.4.2 SMEs want to adopt e-commerce as a business strategy.
1.4.3 There are immense benefits to be derived from the use of e-commerce and SMEs have full knowledge or are aware of the benefits derived from its use thereof.
1.4.4 There shall be full cooperation from the subjects under study and the respondents shall give accurate information about their business.

1.5 Key Definitions
E-commerce
E-commerce is the use of electronic and digital communications and digital information processing technology in business transactions to create, transform and redefine relationships for value creation between or among organisations, and between organisations and individuals (UNDP, 2004).
**Diffusion**
This is the extent to which e-commerce technology assimilates into the firm’s operation or the degree of e-commerce intensity (Migiro, 2006).

**Perceived usefulness**
Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989).

**SMEs**
An SME is an organisation employing less than 50 people (Dube et al., 2010).

### 1.6 Limitations

The research was about e-commerce adoption behaviour by SMEs in Bindura. Due to the social, technological, infrastructural or economic differences between cities and towns in Zimbabwe the generalisations of the study may only be applicable to similar sized towns.

There are also a number of decision variables that need to be examined for one to come up with a comprehensive analysis and measure of e-commerce adoption by SMEs. Nevertheless the discrete variables chosen for the study allowed for generalisations across the different types of business or industry.

The data was collected from SMEs in the service sector and because of the cross sectional nature of the data the analysis may only show correlation between variables under study and nothing more. It shall therefore be inappropriate for anyone to try to draw any causal relationship between the studied factors and the extent of e-commerce adoption. Like any other exploratory and empirical study the results should therefore be interpreted with caution.

It must be kept in mind that the ICT industry is still young and dynamic. The rapid inventions and innovations occurring in this industry almost on a daily basis may make the results of this study inapplicable in the course of time as new areas of ICT business applications are found or as the ICT sector grows and reaches maturity. The present results and conclusions may therefore need to be modified in line with developments in the ICT industry.

Given the time and scope of the study, it is not possible to look at all the decision variables that affect e-commerce adoption by SMEs. These may need further examination.
1.7 Delimitations
The research was an SME cross sectional survey carried in December 2011. The subjects of the study were drawn from a survey of for-profit SMEs in Bindura town the provincial capital for Mashonaland Central Province. Respondents were drawn from the data base provided by the Ministry of Small Enterprise Development as well as from SEDCO Bindura. Specifically the research focussed on e-commerce adoption and use by for-profit SMEs as defined in section 2.1.1 in chapter 2.

Despite the existence of a significant number of e-commerce barriers which SMEs face, this research focused on how organisational capability and skills, perceived use and benefits as well environmental variables as stated in the research questions affect e-commerce adoption. The study did not look at other Internet technologies and applications like e-mobile, e-banking, e-tailing. It also neglected, albeit without loss of significance, the kind of opportunities that are presented by broad band and mobile access to e-commerce services and focused extensively upon PC based internet access.

1.8 Research Outline
The rest of the research is organised as follows: Chapter 2 reviews the relevant literature while chapter 3 describes the methodology, research design and sampling techniques. Data gathering instruments and data analysis procedures are also explained in this chapter. Chapter 4 presents the findings of the research from respondent and research question analysis. Chapter 5 is the conclusion of the research. It gives a discussion of research propositions and conclusion of the research problem. Implications for theory and for policy are also given. The future research directions are also described in this chapter.

1.9 Chapter Summary
The potential for e-commerce adoption and use by SMEs in Zimbabwe as a business strategy is enormous but they face a number of challenges arising from their organisational set up and the environment in which they are operating. Chapter 1 gave the background to the study, the research problem as well as the research propositions. The chapter also gave the justification of the study, its limitations and delimitations. The following chapter is a critical review of the relevant literature about SMEs and e-commerce adoption.
CHAPTER 2: LITERATURE REVIEW

2.0 Introduction
In modern day economies, the use of ICTs in business has generally come to be regarded as essential in enhancing the competitiveness of the industrial economy of a country. However, the full effects of ICT use can only be realised if, and when, ICTs are widely diffused and adopted. It becomes crucial therefore to understand the determinants of ICT adoption as well as the theoretical models that have been developed to help explain ICT adoption. This chapter presents a critical review of both theoretical and empirical literature on e-commerce adoption by business.

2.1 Theoretical Literature Review
Any meaningful research is grounded in theory. Section 2.1 is a discussion about what SMEs are, the nature of e-commerce and the various e-commerce adoption and diffusion models that have been developed to explain e-commerce adoption by business enterprises.

2.1.1 The Nature of SMEs
A review of literature on development economics shows that there is no international consensus on what constitute an SME as there is considerable degree of diversity and conflict among official SME definitions between countries and national governments. In economic development policy circles, SMEs are viewed as that segment of business occupying the space between micro enterprises and large firms and this sector present opportunities and challenges that are distinctly different from those of the other two groups (Gibson and Vaart, 2008).

While SME definitions are wide and varied depending on multilateral institution or national governments in which the SME operates, SMEs are more meaningfully define by their functional and behavioural attributes than by quantifications of employees, assets and turnover (ibid.). However, Gibson still defines an SME as a formal enterprise with an annual turnover in, United States dollar terms, of between 10 and 1000 times the mean per capita gross national income at purchasing power parity of the country in which it operates. According to Gibson, definitions by turnover have multiple advantages over definitions by either employment or assets given that it is the most consistent across sectors. SMEs are also viewed as less technologically sophisticated
and slower to take advantage of available and affordable technology but more flexible and able to adapt to changes in the economic and regulatory environment.

In Zimbabwe, the Ministry of Small and Medium Enterprise Development define an SME as a registered enterprise employing between 30 and 70 people depending on the type of industry. In the European Union, businesses with fewer than 10 employees are called ‘micro’, those with fewer than 50 employees ‘small’ and those fewer than 250 employees ‘medium’. By contrast in the USA a small business has fewer than 100 and a medium sized business has fewer than 500 employees. For the purposes of this research, an SME is defined as an organisation employing less than 50 people (Dube et al., 2010).

2.1.2 The Nature of E-commerce

E-commerce has been defined in several ways depending on the context and research objectives of the author. Generally e-commerce may be defined as the process of buying, selling, transferring or exchanging products, services, and or information via computer networks, including the internet. E-commerce includes e-trading, e-messaging, electronic data interchange (EDI), e-mail, electronic catalogues, internet, intranet and extranet services. A more comprehensive definition is that e-commerce is the use of electronic communications, digital communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organisations and between organisations and individuals (UNDP, 2004). For SMEs, however, e-commerce is generally defined as the utilisation of ICT and its applications to support business activities (Poon and Swatman, 1999).

Many researchers on ICT adoption by firms do not distinguish between e-commerce and e-business choosing instead to use these synonymously (Ramsey et al., 2003). The two, however, are significantly different. E-business describes a greater degree of integration of ICTs with business processes and management practices, often conducted through the internet. E-commerce is less sophisticated than e-business (Martin and Matlay, 2001). E-business involves the use of the web to conduct business and it connects key players to critical business systems. There is also a difference between e-commerce and e-business in terms of business benefits, extent of organisational change and sophistication in that e-commerce is part of e-business.
2.1.3 E-commerce Adoption and Diffusion Models

A number of theoretical models have been developed to try to explain the determinants of ICT adoption both at the individual and firm level. The most frequently used theories are the Technology Acceptance Model (Davis, 1989), the Technology-Organisation-Environment framework (Tornatzky and Fleischer, 1990), Theory of Planned Behaviour (Ajzen, 1991), Diffusion of Innovations Theory (Rogers, 1995) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003).

The following sections, section 2.1.4, section 2.1.5 and section 2.1.6 are a discussion of three theoretical models: the Technology Acceptance Model (TAM), the Diffusion of Innovations Theory (DOI), and The Technology-Organisation-Environment framework (TOE). These three theories not only dominate previous research studies on e-commerce adoption but are “…well-established innovation theories that are potentially able to provide explanation of the adoption issue … are highly applicable in predicting adoption behaviour of the firm in considering new technology” (Mohamad and Ismail, 2009:5).

2.1.4 Technology Acceptance Model (TAM) (Davis, 1989)

TAM is an information systems theory that models how users come to accept and use new technology. The model suggests that the decision about how and when users will use new technology is influenced by perceived usefulness and perceived ease-of-use of that technology (Davis, 1989). Figure 2.1 below shows the conceptual model.

**Figure 2.1 Diagrammatic representation of the TAM model.**

![Diagram of TAM model](source)
Perceived usefulness is the degree to which a person believes that using a particular system would enhance his or her job performance, while perceived ease-of-use is the degree to which a person believes that using a particular system would be free from effort (ibid.).

The model shows the relationships between system design features, perceived usefulness, perceived ease-of-use, attitude towards using, and actual usage behaviour. Overall, TAM provides an informative representation of the mechanisms by which design choices influence user acceptance, and should therefore be helpful in applied contexts for forecasting and evaluating user acceptance of ICT.

TAM model is one of the most influential extensions of Ajzen and Fishbein’s Theory of Reasoned Action (TRA) in the literature. TAM like TRA has strong behavioural elements, and assumes that when someone forms an intention to act, that they will be free to act without limitation. In the real world, however, there will be many constraints, such as limited ability (bounded rationality), time constraints, environmental or organisational limits, or unconscious habits which will limit the freedom to act.

Earlier research on the adoption of innovations also suggested a prominent role for perceived ease-of-use. Tornatzky and Klein (1982) analysed the relationship between the characteristics of an innovation and its adoption, finding that compatibility, relative advantage, and complexity had the most significant relationships with adoption across a broad range of innovation types.

Several researchers have replicated Davis’s original study (Davis, 1989) to provide empirical evidence on the relationships that exist between usefulness, ease-of-use and system use (Adams, Nelson and Todd, 1992; Davis et al., 1989; Hendrickson, Massey and Cronan, 1993; Segars and Grover, 1993; Subramanian, 1994; Szajna, 1994). The sum of this research has confirmed the validity of the Davis instrument, and supports its use with different populations of users and different software choices.

TAM has been widely criticised, despite its frequent use, leading the original proposers to attempt to redefine it several times. Criticisms of TAM as a theory include its questionable heuristic value, limited explanatory and predictive power, triviality, and lack of any practical value (Chuttur, 2009). Furthermore, the independent attempts by several researchers to expand TAM in order to adapt it to the constantly changing ICT environments has led to a state of
theoretical chaos and confusion (Benbasat, 2007). (In general TAM focuses on the adoption behaviour of the individual-user of a computer, that is, perceived usefulness and ignores the essential social processes of information systems development and implementation as well as the social consequences of information systems use.

Venkatesh and Davis extended the original TAM model to explain perceived usefulness and usage intentions in terms of social influence and cognitive instrumental processes. The extended model, referred to as TAM2, was tested in both voluntary and mandatory settings. The results strongly supported TAM2 (Venkatesh and Davis, 2000).

### 2.1.5 Technology-Organisation-Environment Framework (Tornatzky and Fleisher 1990)

The technology-Organisation–Environment Framework (TOE) is a theory that tries to explain the process by which a firm adopts and implements technological innovations. According to this theory, the extent to which a firm may adopt and implement technological innovation is influenced by the technological, organisational and environmental contexts (Tornatzky and Fleisher, 1990).

The technological context includes the internal and external technologies that are relevant to the firm. Technologies may include equipment, processes and practices internal to the firm. The organizational context refers to the characteristics and resources of the firm, such as the firm’s scope and size, degree of centralization and formalization, managerial structure, amount of slack resources, and linkages among employees. The environmental context is the business environment in which the firm operates and it includes the size and structure of the industry, the firm’s competitors, the macroeconomic context, and the government regulatory environment.

Figure 2.2 below is a schematic representation of the TOE framework. These three elements, that is, technology, organisation and environment, influence the way a firm sees the need for, searches for, and adopts new technology. Thus the three elements present both constraints and opportunities for technological innovation (Tornatzky and Fleisher, 1990).
The TOE framework has a wider scope and application. It has a solid theoretical basis and consistent empirical support in information system research. It is also a useful analytical framework that has been widely used to study the adoption and diffusion of different types of information communication technologies. Recent ICT adoption research studies that have used this theory include those by Seyal, Rahman, & Mohammad (2007); Al-Qirim (2007); Lee, C.P., and Shim, J.P. (2007); Zhu, K., and Kraemer, K.L (2005). However, the independent constructs included in the three contexts do vary across the different studies.

On a comparison basis the TOE framework is consistent with Rogers’ DOI theory which emphasises individual characteristics and the internal and external characteristics of the organisation as drivers of organisational innovativeness. These are identical to the technology and organisation context of TOE framework. The TOE framework, however, also includes a new and important component - environment context. As described earlier, the environment context presents both constraints and opportunities for technological innovation and the framework makes Rogers’ DOI theory better able explain intra-firm innovation and diffusion. This theory points to the fact that there are many barriers (internal or external) that affect e-commerce adoption by business, large or small.
2.1.6 Diffusion of Innovations Theory (Rogers, 1995)
Diffusion of Innovations Theory (DOI) is a multi-step flow theory that centers on how, why and at what rate new ideas and technology are spread through cultures operating at the individual and firm level. At the firm level, individual-leader characteristics, internal and external characteristics of the organisation are important antecedents to organizational innovativeness (Rogers, 1995).

According to DOI theory, people will adopt an innovation if they believe that it will, all things considered, enhance their utility. The rate of adoption of innovations is influenced by five factors: relative advantage, compatibility, trialability, observability, and complexity (Rogers, 1995). The first four factors are generally positively correlated with rate of adoption while the last factor, complexity, is generally negatively correlated with rate of adoption (Rogers, 1995). Figure 2.3 is diagram showing the conceptual model for DOI Theory.

Figure 2.3: the DOI Model

- Individual (leader) characteristics
  - Attitude towards change
- Internal characteristics of organisational structure
  - Centralisation and complexity
  - Formalisation and interconnectedness
  - Organisational slack and size
- External characteristics of the organisation
  - System openness
- Organisational innovativeness


The actual rate of adoption is governed by both the rate at which an innovation takes off and the rate of later growth. Low cost innovations may have a rapid take-off while innovations whose value increases with widespread adoption may have faster late stage growth. Innovation adoption
rates can, however, be impacted by other phenomena. For instance, the adaptation of technology to individual needs can change the nature of the innovation over time. In addition, a new innovation can impact the adoption rate of an existing innovation and path dependence may lock potentially inferior technologies in place.

The DOI theory sees individuals as possessing different degrees of willingness to adopt innovations even though the portion of the population adopting an innovation is approximately normally distributed over time. According to Rogers (1995), there are five categories of individual innovativeness (from earliest to latest adopters). The five adopter categories are: innovators (venturesome and educated), early adopters (respectable, social leaders, popular and educated), early majority (deliberate), late majority (skeptical and lower socio-economic status), and laggards (traditional and isolates). These categories follow a standard deviation-curve. Innovators adopt the innovation in the beginning (2.5%), early adopters making up for 13.5% a short time later, the early majority 34%, the late majority 34% and after some time finally the laggards make up for 16%.

Most innovations have an S-shaped rate of adoption. Figure 2.4 shows how an innovation would spread through society over various periods of time.

Figure 2.4 The Diffusion Process

Source: Rogers (1995)
For most members of a social system, the innovation decision depends heavily on the innovation-decisions of the other members of the system (the domino effect).

According to Rogers (1995) each member of the social system is assumed to face his/her own innovation decision that follows a five step process. The five steps are:

1. Knowledge – person becomes aware of an innovation and has some idea of how it functions.
2. Attitudes - person forms a positive or negative attitude toward innovations.
3. Decision- person decide to adopt the innovation or reject the innovation.
4. Implementation- person puts an innovation into use.
5. Confirmation- person evaluates the results of an innovation.

Based on these five criteria, individuals perceive an innovation as new or useful and decide to adopt it. For example, Rogers (1995) defined relative advantage as “the degree to which an innovation is perceived as better than the idea it supersedes” (Rogers 1995:15). New media such as magnetic tape displaced vinyl records while the mp4 in turn has displaced conventional media such as CDs (and tapes) because people perceive new media as advantageous. When an individual decides to adopt new media or switch old media with new media, the perceived characteristics of innovations play an important role in reducing some uncertainty about the innovations.

Diffusion research has focused on five elements: (1) the characteristics of an innovation which may influence its adoption; (2) the decision-making process that occurs when individuals consider adopting a new idea, product or practice; (3) the characteristics of individuals that make them likely to adopt an innovation; (4) the consequences for individuals and society of adopting an innovation; and (5) communication channels used in the adoption process.

Since the early applications of DOI to information system research, the theory has been applied and adapted in numerous ways. Research has, however, consistently found that technical compatibility, technical complexity, and relative advantage are important antecedents to the adoption of innovations.
Diffusion research has attempted to explain the variables that influence how and why users and audience adopt a new information medium, such as the Internet. The theory predicts that media as well as interpersonal contacts and influences provide information and influence opinion and judgment and thus play a critical role in determining the likelihood that the innovation will be adopted. In evolution media technology, critical mass becomes an important factor in adopting new media because new media are interactive tools and thus are required by many users to gain efficiency. That is, the more people use, the more people get benefits. In this sense, diffusion theory not only can apply to practical things, but also can be related to digital divide.

Diffusion of innovation theory attempts to explain how an innovation is spread and why it is adopted at both the micro and macro-social levels of analysis. This is in sharp contrast to many studies which have focused on individual decisions or adoption. DOI theory considers analysis at both the micro-individual and macro-social levels because studies of diffusion include both an innovation at the micro level, as well as its influence, such as social change, at the macro level.

The diffusion tradition has classified people, in terms of demographics, in explaining the variables that influence the adoption of an innovation. For that reason, some scholars often criticise that this theory may not provide a causal explanation of why and how people adopt certain technologies. Nevertheless, when it comes to the use and choice of old and new media, diffusion theory will be suited for explaining why some people prefer to use the old media or new media, because this theory provides some conceptual guidance for understanding the adoption of some technologies or innovations. When it comes to the future of DOI theory, it is expected that the popularity of diffusion research will increase because as in recent years, new communication technologies have increased and proliferated.

2.2 Empirical Literature Review
Various empirical studies on e-commerce adoption and diffusion have been carried out especially in developed countries. However, research done in these countries, though country specific and despite differences in methodologies used, have generally concluded that e-commerce adoption and use by SMEs is significantly lower than by their larger counterparts (Lawson et al., 2003 and Mohammad and Ismail, 2009). Section 2.2 is a critical review of the relevant empirical literature on SMEs and e-commerce adoption.
2.2.1 The Importance of SMEs

The role of SMEs in economic growth and development for both developed and developing countries has been increasingly recognised. SMEs are generally viewed as key to private sector growth. However, there is considerable disagreement within development policy circles as to why, or whether this is so (Gibson and Vaart, 2008).

SMEs usually represent the largest proportion of established business in most countries (Hall, 2002). In the EU, SMEs comprise approximately 99% of all firms and employ between them about 65 million people. In India the micro and small enterprises account for about 39% of the manufacturing output and around 33% of the total exports of the country. They employ an estimated 31 million persons spread over 12.8 million enterprises (http://msme.gov.in/msme-aboutus.htm). In Indonesia, SMEs, significantly contribute to national development and as a sector they provide and create jobs as well as facilitate the elimination of poverty (Depkop, 2005). In Zimbabwe SMEs equally play a critical role in the development and growth of the country as they are responsible for the livelihoods of 80% of the population and contribute more than 50% of gross national output (Dube et al., 2010). There are also claims, even though questionable, that small firms are not only the back bone of the economy but are also more innovative and grow faster than larger firms.

2.2.2 The Benefits of e-commerce to SMEs

The strategic use of e-commerce in business is now widely recognised as bringing benefits and vast opportunities to firms whether large or small (Schneider, 2002). Businesses are motivated by a variety of complex and interrelated factors in their decision to adopt e-commerce. The most cited reasons for e-commerce adoption tend to be those based upon the company’s size and the perceived importance of e-commerce to the business. Martin and Matlay (2001) argue that e-commerce readiness and adoption are likely to vary by industry sector. For example, SMEs that focus on service provision are more likely to adopt e-commerce than similar sized manufacturing firms. Other researchers, however, found out that e-commerce adoption is more of an external pressure brought about by a new type of customer or competition (Kalakota and Robinson, 2001).
Integrating e-commerce as a business strategy enables firms to quickly respond to environmental pressure, to fulfil customer’s demand and to embrace globalisation (Bernadas and Verville, 2005). Using Michael Porter’s five forces model, Timmers (1999) concludes that e-commerce creates almost perfect competition as barriers to entry are reduced, transaction costs lowered and inventory holdings reduced. E-commerce thus enables cost leadership strategies to be employed and enables business process reengineering (Chwelo et al., 2001).

E-commerce is also regarded as having benefits to both the business and the customer. For example, e-commerce allows businesses to trade and receive payments on line 24/7/365 leaving the customer delighted. E-commerce also lowers running costs of the business and allows market expansion and saves time for the customer. Thus e-commerce enhances customer relationships either through improving customer services, developing the brand, seeking out new customers or allow for discourse with customers (Daniel and Meyers, 2002).

E-commerce allows the firm access to global markets giving businesses even those in rural areas a unique opportunity to expand from the traditional and local to the global market (Schneider, 2002). Besides the business can use ICTs for automation of existing processes or simply to increase flexibility of the firm and gain competitive advantage. A firm may also be able to increase productivity and provide value added services through increased computerization and digitalisation (Tetteh and Burn, 2001). Whether the firm trades online with customers or not, however the internet can give firms the advantage of increased profile (Galloway, 2007).

### 2.2.3 E-commerce Diffusion and Adoption Barriers

E-commerce adoption may be measured by the company’s application of electronic banking, electronic loan, electronic retailing, etc (Ta Tao Chuang et al., 2007) while the diffusion effect can be seen as the extent of e-commerce technologies that the firm adopts, for example, e-mail, intranet, EDI and the web (Al-Qirim, 2007). E-commerce adoption can also be measured by the business function that e-commerce supports, for example, communication, interaction and transaction.

Research findings on e-commerce diffusion and adoption by SMEs have found that it has fallen below expectations (UNCTAD, 2004). The reluctance by SMEs to adopt e-commerce or the seemingly low diffusion and adoption of e-commerce is attributed to many obstacles to its
adoption (Lawson et al., 2003). These obstacles have conveniently been divided into four categories: managerial characteristics of the manager or owner (gender, management support and ICT knowledge); organisational related factors (cost, size, industry sector and firm’s e-readiness); technological related factors (security, relative advantage, compatibility and perceived usefulness), environmental factors (vendors support, government role and trading partners) (Mohamad and Ismail, 2009). Other researchers have divided them into internal (individual and organisational characteristics) and external factors (political, social and cultural) (Kapurubandara and Lawson, 2008).

E-commerce adoption is also largely dependent on the availability of telecommunications infrastructure, government intervention and other environmental factors. According to Scupola (2003) a favourable government policy towards the use of electronic means of doing business will therefore enhance the use and adoption of such means.

Managerial or owner attributes are also critical on the firm’s decision to adopt or not to adopt e-commerce as a business strategy. Scupola (2003) found employee knowledge to be significant while Seyal and Rahman (2003) found management support and attitude as critical factors determining e-commerce adoption by SMEs. Sexton et al., (2002) on the other hand concluded that demographic factors like age, gender and experience were important determinants while Jean et al., (2006) found the CEO’s information technology knowledge and attitudes were important when it comes to e-business adoption.

Other researchers like Thong (2001) argue that SMEs have limited resources and technological capabilities to effectively use e-commerce while researchers like Raven, Hunag and Kim (2007) and Ramayan, Yan and Sulaiman (2005) content that SMEs may not adopt e-commerce simply because they are not e-ready.

There is no doubt therefore that SMES even though they may want to adopt e-commerce, face significant barriers that may prevent them from doing so. However, the slow diffusion and adoption of e-commerce by SMEs may be rapidly changing albeit for the better. Findings have shown that with improved technological development and provision of basic infrastructure there will be improved e-commerce (Ayo et al., 2008).
2.2.4 E-commerce Adoption in Developed Countries

According to UK online (2002) two-thirds (2/3) of business are trading online and further growth is forecast. However, Haig (2002) found out that it is the larger companies who are the most active with almost twice as many e-commerce activities as SMEs. The reasons for the slow uptake of e-commerce by SMEs is largely attributable to the ignorance about e-commerce benefits and a shortage of the appropriate skills (DTI, 2002a) even though the main reason for e-commerce adoption among SMEs is to increase sales (Actinic, 2002). In a paper investigating the reasons why SMEs in the United Kingdom move from traditional commerce to e-commerce, Simpson and Docherty (2004) found out that cost was not a significant barrier to e-commerce adoption while Van Beven and Thomson (2002) concluded that for the UK, e-commerce adoption was based upon company size and perceived importance of e-commerce to business application. Simpson and Docherty’s findings are collaborated by Dongen et al., (2002) who found out that internet adoption does not require high investment costs or an advanced pre-existing telecommunications infrastructure.

There are several perceived barriers to the adoption of e-commerce by SMEs in Australia. These include costs, lack of awareness of what e-commerce is, lack of e-commerce skills and knowledge among others (Darch and Lucas, 2002). The authors also found other secondary issues like inadequate telecommunications infrastructure, lack of trust and the relevance of e-commerce to their particular industry sector.

In Finland, a highly technologically advanced country, e-commerce adoption within SMEs was found to be affected by perceived relative advantage, perceived compatibility, CEO’s innovativeness, information intensity, support from technology vendors, competition and buyer/supplier pressure.

In New Zealand, the uptake of e-commerce in the insurance sector was found to be relatively slow (Jing Tao Yao, 2004). The insurance industry was also found to employ the internet for information distribution with very few companies offering the capability of online transactions.
2.2.5 E-commerce in Developing Countries

According to the former United Nations secretary general, Kofi Annan, ICTs, and in particular e-commerce, can significantly contribute to economic growth in developing countries and countries that fail to embrace ICTs run the risk of being left behind in socio-economic development (UNCTAD, 2004). This view was also shared by Avgerou (2002) who reported that policy makers at all levels seem to agree that e-commerce is an essential ingredient for socio-economic advancement in developing countries. What is surprising, however, is that little is known about the conditions and contingencies surrounding e-commerce adoption in these countries (Straub et al., 1997).

Governments in developing countries have made commendable efforts and various initiatives to promote the use of ICTs. However, despite these commendable efforts, the digital divide is still as wide as ever with billions of potential users reportedly still unconnected (UNCTAD, 2004). A lot still needs to be done in these countries to ensure that the benefits of ICTs are available to all. Despite such opportunities, e-commerce adoption has been, at the best, sporadic in the developing world. In 2002, while developed countries contributed towards 95% of e-commerce, Africa and Latin America accounted for less than even 1% (UNCTAD, 2002 and the World Bank, 2003). This begs the question: what are the conditions and contingencies that explain e-commerce adoption in developing countries?

Reviews of ICT literature for developing countries points to the existence of multiple and largely exogenous factors that dominate the landscape and influence ICT adoption behaviour. These factors are beyond the individual perceptions and traits of potential would-be adopters of e-commerce. For example, performance expectancy and social influence have been found to directly influence e-commerce adoption and diffusion in these countries. Thus in developing countries, the use of ICTs relies heavily on the overall socio-economic environment. If macroeconomic conditions are less favourable, individual propensity to capitalize on emerging technologies will fail to, independently, stimulate actual adoption.

The adoption and diffusion of e-commerce in developing countries is largely affected by lack of purchasing power, established credit services, and lack of a critical mass of online sellers and
shippers. This has led to e-commerce being skewed towards information rather than product consumption. The poor communication infrastructure that characterises most developing countries together with landline constraints and high prices of computers, has led to internet and information consumers in developing countries to resort to cyber cafes and cell-phones for e-commerce. Consequently, e-commerce practices in developing countries are largely information consumption and content provision with online purchases a very rare occurrence and perhaps a distant reality. Cellular service providers, for example, Econet’s Ecocash in Zimbabwe practice e-commerce using WAP-enabled cell phones to remit money in the absence of established clearing houses.

According to Belkhamza and Wafa (2009) perceive risk and ease of use are important determinants of e-commerce adoption behaviour in Algeria. They thus concluded that e-commerce applications should be enhanced by reducing the level of perceived risk. The same conclusions were also reached by Safeena, Abdulla and Hema (2010) on their study on the acceptance of internet banking and by Poon (2008), Pikkarainea et al., (2004) who found out that there is a positive relationship between perceived ease of use, perceived usefulness and e-banking.

Information-centric e-commerce however has gained some unlikely adopters in developing countries. In Zimbabwe, the state media, in particular the Herald, a leading newspaper has an online version and so do the other private media like The Standard and The Daily News. Thousands of digital consumers are reported to be visiting websites of these papers on a daily basis. In North Korea is Kwangmyong, a government-controlled intranet used to broadcast propaganda real time. In Vietnam, the Communist Party’s official Nhan Dan newspaper was the very first paper to go online. China’s People’s Daily Web edition today provides a snazzy bilingual (Chinese and English) news site. These developments among others are proof that e-commerce can and has radically transformed the economic landscape, offering unprecedented opportunities for economic growth and development from Bangalore to Dakar (Kofi Annan cf. UNCTAD, 2002).
Across the developing world, some countries have managed to harness ICTs giving them a competitive advantage in today’s knowledge based information economy. Other countries on the other hand, have lagged behind as producers of low-value labour and products for wealthier nations. This points to the fact that user behaviour related to ICT adoption and diffusion differs markedly from one developing country to another and ICT convergence in this region seem far from being realised. For example, in a study by the Center for International Development at Harvard University, Kirkman et al., (2002) found that countries such as Estonia and Israel have ICT acceptance and use rates at par with wealthier nations such as Italy, Japan and France, while a country like India, with the number of sophisticated ICT users more than the total population of Iceland, has much less overall technology acceptance, ranking about 53 places behind Iceland. In India, much like other developing countries, ICT acceptance and use are confined to regional pockets such as Bangalore, while much of the country remains information starved. Likewise, Beijing is the hub of ICT development in China while the vast region of rural China resembles a technological desert.

SMEs in developing countries face challenges different from those in developing. Research literature suggests that in most developing countries, e-commerce adoption has been hindered by the quality, availability and cost of access to necessary infrastructure, as well as inability of these organisations to comprehend these technologies (Sutanonpai Boon and Pearson, 2006). In order for SMEs in developing countries to adopt e-commerce appropriately, firms need to be internally and externally e-ready (Tan et al., 2007). This finding is consistent with Molla and Licker (2005) who found out that internal organisational readiness is significantly influential in initial e-commerce adoption in developing countries.

2.3 Chapter Summary
Chapter 2 gave the theoretical literature review in which three models, TAM, DOI and TOE were discussed. Empirical literature review was also considered for both developed and developing countries. The next chapter, chapter 3 discusses the methodology.
CHAPTER 3: METHODOLOGY

3.0 Introduction
The previous chapter looked at both theoretical and empirical literature review. This chapter looks at research methodology. A cross-sectional exploratory approach using mixed methods was used to measure SMEs’ responses regarding adoption and use of e-commerce.

3.1 Taxonomy of Research
There exist a number of different research methodologies or strategies which though discussed separately below, are not mutually exclusive (Saunders et al., 2005).

3.1.1 Exploratory Research
Research study can be classified according to its purpose. Exploratory studies seek to diagnose a situation, screen alternatives and discover new ideas and assess new phenomena in a new light (Zikmund, 2003). Researchers use this approach when not enough is known about the concept or problem and want to get a greater understanding of phenomena. An exploratory study may help the researcher to decide whether it is worth researching the issue or not (Saunders et al., 2005).

Exploratory studies can be conducted through extensive literature search or by talking to experts in the field and conducting focus group interviews. An exploratory research does not lead to conclusive results for its objective is the development of hypotheses rather than their testing and its results are largely qualitative (Shajahan, 2005). In other words, it helps design a follow-up conclusive or descriptive study. “One of the reasons for conducting an exploratory study is that we do not know enough to even formulate a “Descriptive study” (Shajahan, 2005:27).

An advantage of an exploratory research is that it is flexible and adaptable to change as new data appears and new insights occur. According to Saunders et al., (2005:115) “…the flexibility inherent in exploratory research does not mean absence of direction to the enquiry. What it does mean is that the focus is initially broad and becomes progressively narrower as the research progresses”.

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3.1.2 Descriptive Research
The main aim of descriptive research is to describe, accurately, the characteristics of a population or phenomenon as it naturally occurs (Hedrick et al., 1993, Zikmund, 2003). Descriptive or conclusive research as it is sometimes called, aims to make conclusions about the effects that certain variables may have on other variables. Unlike exploratory research, it is likely to employ a proper and rigorously designed research methodology (Shajahan, 2005). Descriptive research often follows exploratory research in cases where the area of investigation is new. Thus, unlike exploratory research, descriptive surveys are based on some previous understanding of the nature of the research problem. It is likely to involve larger sample sizes, and to use quantitative rather than qualitative techniques.

3.1.3 Experimental or Causal Research
This is a research methodology conducted to identify cause-and-effect relationships among variables when the research problem has already been narrowly defined (Zikmund, 2003:56). This research is conducted in a controlled environment, and analysed using statistical methods and may involve testing the significance of a variable. Experimental research makes use of hypotheses which the experiment seeks either to support or refute. It is thus deductive in nature and uses highly structured methods. It puts emphasis on accurate quantitative measurement of outcomes and generalisations from samples to similar populations (Gray, 2004). A causal relationship is said to exist when there is concomitant variation, that is, the occurrence of two phenomena that vary together (Zikmund, 2003). However, concomitant variation by itself is not sufficient evidence of causality for there might be multi-collinearity between the variables.

3.2 Research Method
The study was primarily an empirical investigation of e-commerce adoption behaviour of SMEs located in Bindura urban. Since no other research has investigated e-commerce adoption barriers in this town, the research is conceived primarily exploratory. Given the little empirical knowledge on e-commerce practices in small business in Zimbabwe, especially in Bindura town, and the exploratory nature of this research, a qualitative approach was considered appropriate.
According to Zikmund (2003:175) a survey is “a research technique in which information is gathered from a sample of people by use of a questionnaire or interview; a method of data collection based on communication with a representative sample of individuals.” The type of information gathered in surveys varies considerably, depending on a survey’s objectives. For example a survey may seek to identify characteristics of a particular group, to measure attitudes, and to describe behaviour patterns (ibid.). Typically, survey investigations attempt to describe what is happening or to learn the reasons for a particular business activity.

This research is a cross sectional. This is because the data were collected at a single point in time. In this research various segments of SMEs were sampled from a cross section of the services sector.

The researcher found it very cheap to carry out the research and was able to cover many SMEs within a very short space of time. This concurs with Zikmund (2003) who states that surveys provide quick, inexpensive, efficient and accurate means of assessing information about the population and when properly conducted are extremely valuable to business managers.

### 3.3 Justification of Paradigm

“Phenomenology holds that any attempt to understand social reality has to be grounded in people’s experiences of that social reality” (Gray, 2004:21). A phenomenological paradigm was used as the researcher sought to explore e-commerce adoption behaviour of SMEs with the aim of finding new meaning to the phenomena. It is the belief of this researcher that the behaviour of SMEs towards e-commerce adoption is socially constructed and subjective and is driven by human interest. As the researcher tries to understand what is happening and construct a model for e-commerce adoption, the approach taken is deductive. The researcher used multiple methods to establish different views of phenomena. The use of a multi method approach enhances the validity of the research (Taylor et al., 2006). The researcher therefore argues that the problem in this study is socially constructed and subjective and thus readily lends itself to qualitative analysis.
3.4 Justification of Research Methodology

An exploratory investigative approach was deemed appropriate as the researcher sought to understand the phenomena in a new light. Very little empirical research has been done on e-commerce practices in Zimbabwe and so very little is known about e-commerce adoption behaviour among SME organisations.

A cross sectional research is the study of particular phenomena at a particular time. This was chosen because of the time constraint inherent in academic studies. This method allowed the researcher to collect a large amount of data from the SMEs in a highly economical way. The use of questionnaires allowed the collection of standardized data making it easy for the researcher to compile frequencies and make comparisons. It also gave the researcher more control over the research process.

3.5 Population of the Study

Brick and mortar SMEs located in Bindura urban and registered with the Ministry of Medium and Small Enterprise Development and with the local SEDCO office as at July 31, 2011 comprised the population sampling frame. In total there are 235 registered SMEs. These were chosen because not only did they have a permanent physical address but were also trading formally in line with the standing municipal and government laws.

3.6 Study Sample

Sixty (60) SMEs were chosen to make up the sample. Judgemental sampling was used to pick participants for the study. The selection criteria specifically were that the SME had to have 50 or less employees, a computer, a fixed line and a modem or an internet compatible mobile phone strictly for business use. The sample was chosen from a mix of service sector industries and each unit chosen had to fit the aforementioned criteria.

Participating SME organisations were contacted in advance of the study to determine eligibility, verify address and identify a contact person. Not all businesses met the target population definition. In total 72 SMEs were identified as meeting the aforementioned criteria giving an eligibility rate of 31%. From the group only 60 SMEs were selected on a proportional basis from the following arbitrary groupings: insurance & microfinance, health
& medical, education & tourism, transport & logistics, professional & management and retail & wholesale.

3.6.1 Choice of Respondents
The respondents were recommended by the participating SME organisations. The SMEs were asked to nominate a contact person to assist the researcher during the administration of the questionnaire. As it turned out the owner/managers of the SMEs nominated themselves as both the contact person and respondent. This is no surprise since there is no separation of ownership between the business and the owner. This came as an advantage because as owner/manager, they perhaps always had the chance to deal with information technology in their work position. Moreover, owners/managers are the decision makers and have greater influence on the decision to adopt new technology (Bunker and MacGregor, 2000).

3.7 Data Collection Procedures
Empirical research in this area being limited, an exploratory investigation utilising qualitative evidence was considered most suitable. The study was conducted in three distinct stages:

1. First was a questionnaire with SME organisations. Sixty (60) questionnaires were distributed. The questionnaire consisted of 5 parts: organisational capability of using the internet, uses of the internet, perceived benefits from using the internet, barriers of doing business on the internet and intermediary support organisations.
2. Second were twelve (12) face to face interviews with SME organisations.
3. Third were three (3) interviews with intermediary support organisations.

These stages were necessary for they allowed validation of information given by both parties and thus the researcher was able to pick any inconsistencies in the data given. This concurs with Mingers (2001), who argue that the use of such multiple methods is widely accepted and provides increased richness and validity to research results.

3.7.1 Pilot Test
In preparing the questionnaire, two expert researchers were contacted to review the items in the questionnaire. These were selected based on their experience and knowledge of e-commerce adoption in SMEs having published several papers on e-commerce adoption
between them. A pilot test was done to validate the questionnaire. The questionnaires were administered to 5 randomly selected SMEs that fitted the criteria as set by the researcher. The comments from the two experts and the responses from the 5 pilot tested questionnaires allowed the researcher to review and edit the items so that they capture the essence of the concepts ensuring both construct and content validity. To avoid bias, the 5 pilot tested respondents were not included in the group of SMEs that finally participated in the study.

3.7.2 Questionnaires

The questionnaire consisted of 5 parts: organisational capability of using the internet, uses of the internet, perceived benefits from using the internet, barriers of doing business on the internet and adequacy of support from intermediary support organisations. The questionnaire consisted of questions related to possible factors affecting adoption of e-commerce as identified in the literature. The questionnaire was a hybrid, that is, asked both structured and unstructured questions.

Questionnaires were used as they allowed the researcher to capture the wider and varying views of participants with regards to e-commerce adoption. This resulted in the researcher having a general picture of the factors affecting the adoption of e-commerce. Sixty (60) questionnaires were administered to SME organisations.

Demographic data (age, gender position, status in SME organisation and educational qualifications) were collected from the respondents. A 5-point Likert scale was used for most questions ranging from very important to definitely not important, or strongly agrees to strongly disagree. This scale has been used in previous e-commerce adoption research (Molla and Licker, 2005). Space was provided for additional comments.

Questionnaires were administered to owners/managers of participating SMEs. They were given a week within which to complete them. The owner/manager of the organisation was targeted because as mentioned earlier, he/she is the key decision maker and most likely person to have had experience working with the internet. Despite having contacted the respondents in advance on the day of collection, some were still not available to allow the researcher to collect the questionnaire making it necessary to call back to reduce non-
response error. That made it expensive than interviewing the person first time around. However, a total of 48 questionnaires were collected yielding a response rate of 80%.

Leaving the questionnaires with the respondents to complete at their own convenient time allowed them more time to think about the responses and also allowed for anonymity. However, the researcher was unable to clarify questions and instructions on the questionnaire (if respondents had any). This perhaps explains the three questionnaires which the researcher discarded because they had many items not responded to.

3.7.3 Face to face Interviews

Twelve (12) key informant interviews were conducted with SME owners and three (3) with intermediary support organisations. These lasted for about 45 minutes each. The interviews were semi-structured to gather qualitative empirical data and provide flexibility. The use of the interviews gave the researcher an opportunity to probe for more detail and in the process obtain unstructured information that otherwise would not have gotten through the questionnaire. Before visiting the SME organisations and support organisations, each of the respondents was contacted in advance and received a list of guided interview questions.

The SME interviewees were asked about the firm’s e-commerce operations, that is, the organisation’s capability to use information technology, the uses and possible benefits of using the internet and barriers they faced as they try to use the internet to do their business.

Personal interviews, being a two way conversation between an interviewer and a respondent were versatile and flexible. The in-depth interviews gave opportunity for feedback and allowed the researcher to obtain complete and precise information although at the risk of influencing responses by attitudes and the structure of questions. This problem, however, was overcome by the use of control questions and reassuring the respondents that the research was for academic purposes only and that their answers were strictly confidential. This helped the respondents to open up to the researcher.

The researcher also used multiple sources of information. Apart from conducting interviews, the researcher was invited to go through the internet browsing history of some companies and to see the internet hardware and software that was in place in some companies. This multiple research approach is cited as one method of ensuring reliability and validity of qualitative
research as mentioned earlier. Because of lack of anonymity some respondents were, however, reluctant to provide confidential information and the researcher had to spend considerable time and effort rephrasing the questions.

3.8 Data Analysis and Presentation
Data gathered through questionnaires and interviews was collated and analysed using SPSSv16. The descriptive statistics generated were presented in the form of pie charts and graphs.

3.9 Limitations
Bindura town is a small town and therefore the findings may only apply to Bindura and similar sized towns like Kadoma and Chegutu.

Furthermore this is a qualitative study and further quantitative research is required to gain a better understanding of the key issues that affect e-commerce adoption. Like any another exploratory and empirical study the results should be interpreted with caution. Given enough time and financial resources a longitudinal study covering the rest of the country could be more useful and a comprehensive survey instrument may need to be developed to test relationships.

3.10 Ethical Considerations
The participating SMEs were selected on the basis of their size and their location among other criteria as determined by the researcher. Before visiting the organisations, each of the interviewee was preliminarily contacted and received a list of guideline questions. All the participants were contacted and asked for their willingness to participate in the study and they were not financially induced. A consent form was drawn up and each participant was asked to sign and keep a copy. Thus all participants to this research participated on a voluntary non-binding and non-obligatory basis. Throughout the research, emphasis was on confidentiality of data collected, and on keeping information about participants strictly private. As such data collected shall be for no other use other than that for which it was collected, that is, for academic purposes only. The researcher also conducted himself in the most possible ethical manner and the report was compiled in such a way that no harm (non-malfeasance) shall come to bear on participants. Therefore any express or implied
resemblance to any organisation or owner or manager of a business in Bindura urban or loss of business directly or indirectly or however caused arising from this research, its use or otherwise even though advised is purely coincidental and thus disclaimed.

3.11 Chapter Summary
The chapter looked at research methodology and research strategies. It also looked at data collection instruments and how these were developed, tested and applied. The next chapter, chapter 4 looks at data analysis.
CHAPTER 4: FINDINGS AND DATA ANALYSIS

4.0 Introduction
Chapter 4 presents an analysis of the findings from the respondents. Data was collected in line with the methodology discussed in Chapter 3 and SPSSv16 was used to generate the descriptive statistics.

4.1 Data Collection and Analysis Procedure
Research instruments assessing the behaviour of SMEs towards e-commerce adoption were formulated and used to obtain feedback from the participating SMEs. The instruments consisted of a questionnaire with the SME organisation, face to face interviews with the owner/manager of the organisation as well as with the intermediary support organisations.

From the responses to the survey, the researcher hoped to establish the SME organizations’ capability of using the internet as well as to draw up a profile of specific uses of the internet. The interviews were used to examine experiences of the individual organisation as they used the internet and the barriers of doing business over the internet. Interviews with intermediary support organisations were meant to examine their preparedness in facilitating the use of e-commerce by business and the general public.

Data collected was coded and SPSSv16 was used to generate the descriptive statistics, that is, frequencies, pie charts and graphs. The defining variables were also ranked according to their importance as shown in the pie charts and bar graphs.

4.2 Respondent Analysis
A total of sixty (60) questionnaires were administered and 51 of these were returned giving a response rate of 85%. Three questionnaires had many questions not responded to making them invalid and unusable. This gave an effective response rate of 80%. The nine (9) questionnaires not returned represented the owners of the businesses who the researcher could not find because of their busy schedule. The managers and junior workers in all these cases reported that the owner had either gone to buy additional stock or attend to some social function like funerals and weddings.
Of the 48 respondents 66.7% were owners, 20.8% were CEOs (and not owners) while only 12.5% were managers. Figure 4.1 below shows the status of the respondents who participated in the research.

![Figure 4.1 Respondent’s Status in the Business](image)

Source: Primary Data

The high participation rate of the owners (66.7%) showed a keen interest by the owners to participate in the survey. Moreover, the ownership structure of most SMEs is such that there is no separation between the owner and the business and as owners they are also the key decision makers and thus wanted to involve themselves in anything that involved their business. This result, however, was in sharp contrast to Karagozoglu and Lindell (2004) who found that generally low response rates by top managers in small business was the common thing for they were always pressed for time in their day to day management of their companies.

Twelve interviews with the SME organisations and three with the support organisations were successfully carried out as planned. This gives a 100% response rate from the interviews.

### 4.3 Research Questions Analysis

Section 4.3 is an analysis of responses as obtained through the questionnaire. The major variables discussed are the organisation’s IT capability and skills, major uses of the internet and its benefits to the SMEs as well as other barriers to e-commerce adoption.
4.3.1 Organisation’s IT Capability and Skills

From e-commerce literature, the adoption of networked processes by SMEs largely depends on whether the firm has the capacity or the necessary organisational competence among other factors. Respondents were asked to indicate, on a 5 point Likert scale, whether they strongly agreed, agreed, neither agreed or disagreed, disagreed or strongly disagreed that they had the capacity to carry out business transactions over the internet. Their responses were captured and ranked as shown in figure 4.2 below.

**Figure 4.2 SME Organisation’s IT Capability and Skill**

![Graph showing SME Organisation’s IT Capability and Skill](image)

Source: Primary Data

An analysis of the responses revealed that while 97.9% at least agreed that they were connected to the internet, only 14.6% agreed that their organisation was well computerized, 10.4% indicated that they had the necessary staff while 12.5% and 8.3% agreed that the owner was competent in using the internet and that their organization had well established internet infrastructure respectively. This result was consistent with IT literature where it has generally been found that despite lacking the necessary IT staff or technical expertise, SME owners or management also lack such skills (Bunker and MacGregor, 2000) and that SMEs are reluctant to spend on technology as it has no short term gains and therefore have limited use of the technology (Dennis, 2000).

Two factors, however, warrant further examination here, and these are the existence of IT staff and the owner/manager’s competence in using the internet. Figure 4.3 below shows the organisation’s responses with regards to the existence of IT staff.
Figure 4.3: Organisation’s IT Staff

Source: Primary Data.

Figure 4.3 shows that 61% of the respondent disagree that they had the necessary IT staff while 27% strongly disagreed. Only 10% or 5 cases out of 48 indicated that they had IT staff with the necessary skills. The small structure of these firms and the expensive nature of these specialist staff make it almost impossible to attract and retain such staff.

Figure 4.4 is an analysis of the owner or manager’s competency in using internet technology.

Figure 4.4: Owner/manager’s Competency in Using the Internet

Source: Primary Data

The response analysis gave a surprise high disagree response of 65% that the owner/manager was competent in using the internet. Only 6 cases (12%) out of the 48 indicated that as
owners/managers they were competent in using the internet. It is important to note here that of
the 48 respondents, 32 of them were owners of the business and were honest enough to indicate
that they didn’t have much in terms of computer and internet skills. This is a surprising result
given that they also indicated in figure 4.2 that their businesses were connected to the internet.
Obviously this has an impact on the decision by the SME to adopt or not to adopt e-commerce
since the owner is the key decision maker.

4.3.2 Uses of the Internet
Respondents who were connected to the internet were asked to indicate the main uses of the
internet in their business. The items to measure the uses were drawn from literature. Five point
Likert scales were used and SPSS used to rank the various components. These are captured in
figure 4.5 below.

**Figure 4.5: Main Uses of the Internet.**

The internet and its related technologies can be put to various uses in business. 97.9% indicated
that they were connected to the internet with 92% utilising it for email communications followed
by the search for general information (83%) and for advertising and marketing (10.4%). None of
the respondents, however, indicated that they used the internet for electronic banking or for
online transactions. In a research by Rosen (2000) it was found out that more sophisticated
internet applications like e-commerce and e-business may only be affordable to large businesses with a greater proportion of SMES using e-commerce as a mechanism for marketing activities rather than providing online purchasing.

These two (e-banking and online transactions) warrant further examination. Asked about the use of the internet for e-banking and for online transactions, 52% of the respondents strongly disagreed while 48% disagreed that they were using this technology. Like with e-banking 100% disagreed that they at one time had carried out online transactions. These findings, however, are consistent with literature in IT use. Fillis et. al (2003) and Korper and Ellis (2001) also found that SMEs largely use the internet for email and rarely for online transactions.

Figure 4.6 below captures the respondent’s views on the uses of the internet for electronic banking and for online transactions.

**Figure 4.6: Uses of the Internet**

![Chart showing uses of the internet for e-banking and online transactions](chart.png)

Source: Primary Data

**4.3.3 Perceived Benefits of Using the Internet**

A review of IT literature indicates that the propensity to use the internet and its related technologies also depends on the perceived benefits derived from the use of such technologies. In this survey respondents were asked to indicate whether they strongly agreed, agreed, neither agreed or disagreed, disagreed or strongly disagreed that the use of the internet will bring them certain benefits. These responses are shown in figure 4.7A.
Figure 4.7A Perceived Benefits of Using the Internet

![Bar chart showing perceived benefits of using the internet.](chart.png)

Source: primary data

Figure 4.7A shows very low indications for the benefits derived from the use of the internet. 39.6% of the respondents indicated that using the internet reduced operational costs while the same percentage of respondents said the benefits were not clear and tangible. 35% cited possible increases in revenue and sales while 31.2% for saw a possible increase in market share and reach. These responses are quite disheartening given that the benefits from using the internet are well proven and documented. The very low response on the internet improving the company profile and image is not surprising given that none of the respondents had a website let alone a domain of their own. These findings are also in line with the findings in OECD countries where lack of awareness and uncertainty about the benefits of e-commerce were cited as significant barriers to e-commerce adoption (OECD, 1998).

A further examination on the internet improving the company profile and image as well as the intangibility of the benefits yielded interesting results. Figure 4.7B below shows this result.
The results as shown in figure 4.8B show that there were some SME operators who strongly disagreed that the use of the internet improves company profile or increase market share and reach. This finding is inconsistent with Galloway (2007) who stated that the use of e-commerce increases the company profile, transcends barriers of time and distance and thus bring huge benefits to the SME. A very low percentage of the respondents agreed that company profile and image as well is market share and reach are improved through the use of the internet. However, a combined 64.4% at least disagreed with the statement that the benefits of e-commerce were not clear.

4.3.4 Barriers of Doing Business over the Internet

The researcher also used the questionnaire to draw up a profile of specific barriers that limit the ability of SMEs to carry out business transactions online. Figure 4.9 shows the ranked profile as given by the 48 respondents.
The barriers of doing business online warrant a detailed analysis.

**Cost of Computers**

97.9% of the respondents cited the high cost of computers as an important barrier to e-commerce adoption. This result is consistent with ZISPA’s comment that internet penetration in Zimbabwe, while on an expansion path, was being hampered by the high cost of computers. This finding is consistent with Odedra-Straub (2003) who argues that while the cost of computers has fallen in the last decade and continues to fall, they remain beyond the reach of an average individual and SME user because of the low income per capita in developing countries. For example, respondents cited costs of computers, costs of setting up internet structure and of keeping connected as significant factors. In Zimbabwe a basic desktop or laptop averages US$500 and the software and other computer accessories are equally expensive.
**Cost of Internet Infrastructure**

All the 48 respondents cited cost of setting the internet infrastructure as a significant barrier to e-commerce adoption. In OECD countries set up costs were also found to be a significant barrier (OECD, 1998). This finding, however, is in sharp contrast to Simpson and Docherty (2004) who found out that in the UK cost was not a significant factor. This was also collaborated by Dongen et al. (2002) who found out that internet adoption does not require high investment costs or an advanced pre-existing telecommunications infrastructure. Seventy-nine percent of the respondent cited the cost of connectivity a very significant barrier to e-commerce use in their business.

**Lack of IT Specialists**

87.5% of the respondents cited lack of IT specialists as a major barrier to e-commerce adoption. Some of the owners argued the size of their business did not warrant them hiring an IT specialist while others said it was expensive to hire such personnel. Nevertheless this finding was in line with Odedra-Straub (2003) and Bunker and MacGregor (2000) who found that one of the characteristics of SMEs was that they lacked technical knowledge and specialist staff and they also did not provide any information communications technology training to their employees.

**Internet Security**

31.2% of the respondents also cited the lack of security over the internet as an important barrier. From the interviews respondents raised security concerns with payments over the internet preferring instead the use of cash than making electronic payments. This result was in line with Patton and Josang, (2004) and OECD (1988) whose research found out that security risks were important when it came to the use of the internet.

**Perceived benefits**

Literature review has shown that involvement in e-commerce is also driven by the perceived benefits derived from using such technology. Findings from this research were that 27.1% of the respondents were not involved in e-commerce because they were just not aware of any benefits to be derived from using e-commerce. In section 4.3 respondents also indicated that e-commerce benefits were not tangible. This finding was consistent with a research by
Suitability of E-commerce to Doing Business
Of the 48 respondents, 83.4% cited that e-commerce was not suited to their way of doing business. The majority preferred instead face to face transactions and were comfortable with their traditional way of doing business. Greater value was placed in maintaining old existing personal relationship arguing it helped them keep customers where as electronic payments would make transactions too impersonal. This result was supported by Hofstede (1980) who explored the importance of collectivism and by Bunker and MacGregor (2000) who argued that such behaviour was in line with small business’s product oriented nature. While the cultural dimension may obviously have an effect on the propensity of the organization to adopt networked processes, recent developments have shown that virtually anything can be transacted over the internet.

4.3.5 Intermediary Support Organisations
The use of e-commerce in business also depends on intermediary support organisations as well as existence of technology vendors. Respondents were asked to indicate their satisfaction with regards to the adequacy of e-commerce support from intermediary support organisations. The items to assess adequacy of support were drawn from literature. Figure 4.9 shows respondents’ ranking of the support they expected to receive from intermediary organisations.

Figure 4.9: Support from Intermediary Organisations
All 48 respondents (100%) at least disagreed that the telecommunications infrastructure was reliable and efficient. This result was in line with Kapurubandara and Lawson (2008)’s findings that lack of telecommunications infrastructure, poor internet connectivity and lack of telephone lines significantly affect internet penetration in developing countries.

Asked whether the telecommunications infrastructure of commercial banks and financial institutions was capable of supporting e-commerce transactions, 78.3% disagreed that it was adequate. 77% of the respondents also disagreed that there was adequate support from ISPs. This finding was in line with Kapurubandara and Lawson (2008) findings that in China limited availability of banking services inhibited e-commerce adoption.

37.5% of the respondents disagreed that the legal environment was conducive to conducting business on the internet and 62.5 % could neither agree nor disagree with the statement. 37.5% disagreed that the government was doing enough and was committed to the promotion of e-commerce while 47% agreed that the government was committed to the promotion of e-commerce. These findings were consistent with a study that was carried out in Egypt where it was found out that telecommunications infrastructure, financial infrastructure and the legal system played a pivotal role in deterring e-commerce diffusion (El-Nawawy and Ismail, 1999).

The position of the respondents can be understood in the light of the fact that Bindura town still did not have a high-bandwidth telecommunications infrastructure with many businesses and the main telephone exchange still on the analogue and those connected on the net using the slow, inefficient and expensive dial up connection. This finding was consistent with NTIA (1999) who found out that there is better technological support in well built up cities and towns than in semi rural towns like Bindura.

4.3.6 E-commerce Support from Commercial Banks

Asked about the ICT products or services that they get from commercial banks, the pie chart below captures the respondents’ responses.
65% of the respondents indicated that they could make deposits or withdrawals through the ATM while 18% said they were able to make domestic cash transfers as opposed to 3% who were able to make international transfers. 7% of the respondents indicated that banks offered them the facility to make bill payments while the same percentage said their banks were sending them electronic statements.

These results do indicate that commercial banks have a wide range of ICT related products that SMEs can use to enhance their businesses. The same results, however, reveal that SMEs do not use some of these services maybe because they are not aware of their existence or perhaps they are not suitable for their business.

4.4. Interview with SMEs
Results from the interview were consistent with the results obtained through the questionnaire. 100% of those interviewed said they used the internet mainly for email communicating with their family and friends and rarely for business purposes. From the questionnaires, 97.9% were connected to the internet but from the interviews results show that even though the SMEs were capable of carrying out business transactions over the internet, they feared for security of their transactions especially non payment by the other party. 50% of those interviewed however expressed ignorance on the use of the internet to carry out business transactions.
The main challenge that SMEs face with regards to the use of the internet was the cost of connectivity and machinery required (68%), and lack of the necessary knowledge (40%). Others expressed the view that while commercial banks were supporting them, the government did not seem to support them in anyway arguing that government should subsidise the cost of connection especially for those that want to use the internet for business purpose.

### 4.5 Interview with Intermediary Support Organisations

Commercial banks expressed the view that the state of the telecommunications infrastructure was a cause of concern. They cited issues with regards to band width leading to slow connectivity and frequent cut offs in terms of communication. Most of the time due to the poor infrastructure the banks were offline greatly inconveniencing their clients. The bank managers interviewed concurred that they had tailor made ICT products meant to help the business sector. Outside the ordinary banking services they cited that they had facilities to allow SMEs to make domestic and international payments, electronic invoicing, e-banking and other various products too many to mention. However, they did express disappointment by the slow uptake of some of these products by the business community.

Commenting on the legal framework that exists to protect electronic transactions, the managers noted that there was no law yet in Zimbabwe passed to protect electronic transactions. This was worsened by the fact that electronic transactions were still required to be supported by paper documents for them to stand as evidence of contract or transaction. They also raised concern over security issues as there was no legal instrument to support parties in the transactions.

### 4.6 Summary of Key Findings

The key findings were that while SMEs were connected to the internet, they were severely limited in their attempt to use e-commerce by the lack of necessary internet infrastructure and IT personnel as well as managerial incompetence in the use of internet related technologies. Results also indicated that connectivity was no guarantee that the SMEs would use the technology intensively given the fact that most of them used the internet for email purposes and absolutely none for e-banking or online transactions.
Some respondents professed ignorance as to the existence of benefits derived from e-commerce while others argued the benefits were insignificant and not tangible. An inspection of the frequencies on barriers to entry showed that the full range of the scale was utilized by the respondents making each barrier profiled significant. The barriers were found to be consisted with barriers found in other developing countries. The respondents generally were dissatisfied with the level of support given by the telecommunications companies, commercial banks, ISPs and the government.

4.7 Unplanned Findings
The gender distribution of the respondents was 39 male (81.2%) and 9 female (18.8). of the respondents who indicated that they used the internet to search for general information non were female and non indicated they had any plans of moving to e-commerce in the next 5 years.

4.8 Chapter Summary
The descriptive statistics have shown that while SMEs were connected to the internet, they were severely limited in their attempt to use e-commerce by the lack of necessary internet infrastructure and IT personnel as well as managerial incompetence in the use of internet related technologies. Results also indicated that connectivity was no guarantee that the SMEs would use the technology intensively given the fact that most of them used the internet for email purposes and absolutely none for e-banking or online transactions. The next chapter is a summary of the findings, conclusions and recommendations.
CHAPTER 5: CONCLUSIONS AND IMPLICATIONS

5.0 Introduction
Chapter 5 is a discussion of the results from the descriptive statistics given in chapter 4. The results are discussed based on the objectives given in chapter 1 and the theoretical model given in chapter 2. The conclusion to the research problem is also given and the implications for theory, policy and practice are also discussed. At the end of the chapter are implications for further research.

5.1 Summary of Key Findings and Conclusions

5.1.1 Organisation’s IT Capability
The results from chapter 4 showed that the SMEs were connected to the internet but lacked the necessary internet infrastructure as well as specialist staff to manage or operate the e-commerce system. Moreover the organizations were not well computerized to allow them to undertake networked processes. The researcher therefore concludes that e-commerce adoption and diffusion positively depends on the organisation’s capability to carry out these transactions.

5.1.2 Management and IT personnel
The owners and managers were found to lack the necessary knowledge about the technology and its various uses. The SMEs also did not have the necessary IT personnel in place as these were expensive to hire or the organisations were just too small to warrant the employment of such personnel. Obviously this has an impact on the decision by the SME to adopt or not to adopt e-commerce since the owner is the key decision maker. Therefore the researcher concludes that the lack of organisational capability and skills negatively affects e-commerce adoption and diffusion.

5.1.3 Uses of the internet
The results from the survey indicated that even though there are several possible applications for the internet in business, SMEs largely use it for email and for nothing else. The researcher therefore concludes that lack of knowledge and awareness of the use of that technology negatively impacts on e-commerce adoption and diffusion.
5.1.4 Perceived Benefits of Using the Internet
A review of IT literature indicates that the propensity to use the internet and its related technologies also depends on the perceived benefits derived from the use of such technologies. The key findings here were that respondents were generally not aware of the benefits and regarded them as bringing no tangible benefit to the business. The researcher therefore concludes that the use and diffusion of e-commerce increases with the perceived benefits from using such technology.

5.1.5 Barriers of Doing Business over the Internet
An examination of the responses with regards to barriers to doing business online showed that all the respondents responded to every statement in the question regarding the barriers, that is, every barrier had at least one instance of each rating from the 5 point Likert scale. This shows that each one of the barriers cited was at least an important factor when it comes to the decision to adopt or not to adopt e-commerce as a business strategy. The researcher therefore concludes there are significant barriers that impact on the adoption and diffusion of e-commerce.

5.1.6 Intermediary Support Organisations
The respondents expressed dissatisfaction with the level of support they were getting from telecommunications companies, commercial banks and the government itself. The telecommunications infrastructure was viewed as inefficient and unreliable. Commercial banks were viewed as not capable of supporting the e-commerce transactions while government was accused of not addressing security and legal issues involved with electronic transactions. The researcher therefore concludes that a reliable, efficient and well developed telecommunications infrastructure supported by a conducive legal environment positively affects e-commerce adoption and diffusion.

5.2 Conclusions on Research Problem
SMEs face both significant internal and external barriers to doing business over the internet. E-commerce flourishes where the organisation’s internal competencies are high. It also flourishes where the new technology acts as a convenient way of doing business by bringing real benefits in terms of value and time. High costs of technology and
connectivity also negatively affects e-commerce adoption and diffusion. E-commerce adoption is also influenced by the poor telecommunications infrastructure. These barriers can be significantly reduced if both the private sector and government sector take a conceited effort to provide support to SMEs in terms of education and training in ICTs, reliable and efficient telecommunications infrastructure as well as a legal framework to support the use of e-commerce by business.

5.3 Implications for Theory
SMEs in developing countries face significant and unique challenges different from their larger counterparts. Any in-depth analysis of the behaviour of SMEs therefore requires one to understand first the macroeconomic as well as the microeconomic environment in which the SME is operating. Research on SMEs and e-commerce has generally focused on the adoption process as a whole while others have focused on the decision to adopt e-commerce. However, it may be necessary to refocus research and analyse the relation between e-commerce and specific variables. Research results heavily depend on the methodology used, that is, whether quantitative or qualitative. It is important therefore that researchers adopt appropriate methodologies of analysis.

5.4 Implications for Policy and Practice
5.4.1 The research results have shown that both management and the workers lack the knowledge and skills of using internet related technologies. This barrier can be overcome by giving support to the SMEs in terms of education and skills training. IT skills training workshops for SMEs must be carried out. This support will ensure that SMEs understand the role e-commerce can play in enhancing their business and perhaps eventually integrate it as a business strategy. Where SMEs have a serious lack of internal competences the organisations must outsource these resources especially with regards to e-commerce management. Support for SMEs in this regard is very crucial because technical skills heavily influence the degree of e-commerce adoption and diffusion.

5.4.2 Digital consumers the world over have always had security concerns with payments over the internet. This calls for a legal framework to protect and authenticate transactions carried over the internet. The government is responsible for laying down the framework
of laws, regulations, policies and incentive programmes to promote internet usage and e-commerce activities. This legal framework in Zimbabwe is currently non available. Government must show its commitment to the promotion of e-commerce by putting in place such a framework and must take the lead by embarking on e-government.

5.4.3 The benefits of using e-commerce are well proven but SMEs believe they are not tangible and e-commerce is not even suited to their way of business. This calls for an appropriate awareness campaign. SMEs must be made to realize the changing and dynamic nature of not only consumer tastes but of the ways of doing business. The global trend now is in electronic means of doing business rather than the brick and mortar way. This kind of support seems very minimal and thus both the private sector and the government must embark on such awareness building programs.

5.4.4 The external barriers like unreliability of the telecommunications infrastructure, the relative high cost of internet facilities, inadequate infrastructure in the banking and financial sector require infrastructural support. The government must ensure that there is stable telecommunications infrastructure by addressing broad band and bandwidth issues. The private sector, especially commercial banks, financial institutions and ISPs should understand the generic needs of SMES and provide products and services that are appropriate and affordable. This is quite critical since e-commerce can only flourish where there is a good infrastructure: technological, legal and ethical.

5.5 Implications for Further Research
Future studies can focus on how specific variables like gender and age affect the use of technology by small business. With recent developments in the ICT sector and the proliferation of ICT related products on the market future researches can also look at the diffusion of mobile commerce. Longitudinal studies can also be carried. Focus can also be on specific industries or in different provinces as well as country wide.
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The world Internet Usage and Population Statistics (2012)


Appendix 1: Consent Form

You are invited to participate in a study being conducted by Tafirei Felex in partial fulfilment of the requirements of his Masters in Business leadership (MBL) Degree with Bindura University of Science Education.

The study seeks to investigate the factors that affect a business’s decision to adopt or not to adopt the internet or electronic commerce in its day to day business transactions. You were selected as a possible participant in this study because you operate a business in Bindura.

If you decide to participate, I will leave you a questionnaire to complete in your own time for my collection at a convenient time you will be through. Follow up interviews may be held after this questionnaire and your consent is also sought in this regard.

Any information that is obtained in connection with this study and any that can be identified with you or inferred thereof will remain confidential and will be disclosed only with your permission or as required by law. If you give me this permission, by signing this document, I guarantee you no disclosure of personal and business sensitive or trade secret information. Otherwise the information shall be used for the purpose for which it has been gathered i.e., academic purposes only.

Your decision to participate or not to participate will not in any way prejudice your current or your future relations with me or Bindura University of science Education. Should you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty. The Faculty of Commerce at Bindura University of Science Education has reviewed and approved this research.

If you have any questions during or after this research has been done please feel free to ask me using the following contact details: Bindura University of Science Education, phone 0772 757 491 or email ftafireyi@buse.ac.zw or tafireiflx@gmail.com.

You will be given a copy of this consent form to keep.

Date ____________________________ signature ____________________________

Relationship to subject:

(self(owner), CEO, manager, other employee)

Signature of researcher ____________________________
Appendix 2: Questionnaire

Ecommerce adoption and usage by SMEs

A: Demographic information

1. What is your status in the SME business? Please tick (√) the appropriate box.
   Owner [ ]  CEO/Executive Director [ ]  Manager [ ]  other [ ]
   (if not owner)

2. What is your gender? Please tick (√) the appropriate box.
   Male [ ]  Female [ ]

3. What is your age in years? Please (√) tick the appropriate age range box.
   Below 20 [ ]  between 21 and 30 [ ]  between 31 and 40 [ ]  above 41 [ ]

B: Information communications capability

This question relates to the capability of your organisation to use the internet. Below is a list of statements indicating the extent to which your organisation is capable. Based on your opinion, please rate each statement on a scale of 1 to 5 to indicate how capable your business is.

1=strongly agree
2=agree
3=neither agree or disagree
4=disagree
5=strongly disagree
C: **Uses of the internet**

This question relates to the uses of the internet in your organisation. Below is a list of statements indicating the uses of the internet in your business. Based on your opinion, please rate each statement on a scale of 1 to 5 to indicate the uses of the internet in your organisation.

1=strongly agree  
2=agree  
3=neither agree or disagree  
4=disagree  
5=strongly disagree

<table>
<thead>
<tr>
<th>Uses of the internet</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>1 We use the internet mainly for email</td>
<td></td>
</tr>
<tr>
<td>2 We use internet to search for general information</td>
<td></td>
</tr>
<tr>
<td>3 We use internet to search for competitor information</td>
<td></td>
</tr>
<tr>
<td>4 We use internet to search for cheaper supplies</td>
<td></td>
</tr>
</tbody>
</table>
We use internet for advertising and marketing

We use internet to communicate with business partners

We use internet for electronic banking

We use the internet for online transactions

D: **Perceived benefits of using the internet**

This question relates to the perceived benefits that your organisation derives from using the internet. Below is a list of statements indicating the extent to which your organisation is benefiting from the use of the internet. Based on your opinion, please rate each statement on a scale of 1 to 5 to indicate how your business is benefiting from the internet.

1=strongly agree
2=agree
3=neither agree or disagree
4=disagree
5=strongly disagree

<table>
<thead>
<tr>
<th>Perceived benefits of using the internet</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>1 Reduced operational costs</td>
<td></td>
</tr>
<tr>
<td>2 Increased sales and total revenue</td>
<td></td>
</tr>
<tr>
<td>3 Improved company profile and image</td>
<td></td>
</tr>
<tr>
<td>4 Increased market share and reach</td>
<td></td>
</tr>
<tr>
<td>5 Benefits not clear and tangible</td>
<td></td>
</tr>
</tbody>
</table>

E: **Barriers of doing business on the internet.**

This question relates to the reasons why your organisation is not using the internet to conduct business. Below is a list of statements indicating the possible reasons. Based on your opinion, please rate each statement on a scale of 1 to 5 to indicate how important it was to your decision not to use the internet to conduct business.
1 = the reason was very important
2 = the reason was unimportant
3 = the reason was neither unimportant or important
4 = the reason was important
5 = the reason was very important

<table>
<thead>
<tr>
<th>Reason for not using the internet to conduct business</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5</td>
</tr>
<tr>
<td>1  Cost of computers is very high</td>
<td></td>
</tr>
<tr>
<td>2  Cost of infrastructure to set up internet is high</td>
<td></td>
</tr>
<tr>
<td>3  Cost of Maintaining connectivity is high</td>
<td></td>
</tr>
<tr>
<td>4  Organisation does not have knowledge of computer use</td>
<td></td>
</tr>
<tr>
<td>5  Lack of IT specialists in the business</td>
<td></td>
</tr>
<tr>
<td>6  Internet is not secure</td>
<td></td>
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<tr>
<td>7  Not aware of benefits of internet/ecommerce</td>
<td></td>
</tr>
<tr>
<td>8  Ecommerce not suited to our way of doing business</td>
<td></td>
</tr>
</tbody>
</table>

F: Intermediary supporting organisations
This question relates to the nature and state of infrastructure your organisation expects from supporting industries. Below is a list of statements indicating the adequacy of support from such organisations. Based on your opinion, please rate each statement on a scale of 1 to 5 to indicate how adequate the support is.
1 = strongly agree
2 = agree
3 = neither agree or disagree
4 = disagree
5 = strongly disagree
<table>
<thead>
<tr>
<th>Adequacy of support from Supporting industries</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>1 The telecommunications infrastructure is reliable and efficient</td>
<td></td>
</tr>
<tr>
<td>2 The telecommunications infrastructure of commercial banks and financial institutions is capable of supporting e-commerce transactions</td>
<td></td>
</tr>
<tr>
<td>3 There is adequate support from internet service providers (ISPs)</td>
<td></td>
</tr>
<tr>
<td>4 The legal environment is conducive to conduct business on the internet</td>
<td></td>
</tr>
<tr>
<td>5 The government has a strong commitment to promote e-commerce</td>
<td></td>
</tr>
</tbody>
</table>

G. what are the main challenges that your organisation faces when trying to use the internet?

……………………………………………………………………………………………………………………………………
……………………………………………………………………………………………………………………………………
……………………………………………………………………………………………………………………………………

H. what ICT products/services do you get from commercial banks?

……………………………………………………………………………………………………………………………………
……………………………………………………………………………………………………………………………………
……………………………………………………………………………………………………………………………………
Appendix 3: Interview Guide - SMES

1. What are the main uses of the internet in your organisation?
2. How capable is your organisation in carrying out transactions over the internet?
3. What are the challenges you face as you try to use the internet for business?
4. What support are you getting from commercial banks and the government in terms of ICTs?
Appendix 4: Interview Guide- Intermediary Organisations

1. What is your opinion about the telecommunications infrastructure in Zimbabwe?
2. What ICT support services do you give to SMEs?
3. Comment on the legal framework that supports electronic transactions.