THE EFFECTS OF TECHNOLOGY ADOPTION ON MILLENNIAL ENTREPRENEURSHIP.

Githinji Magdaline Wangari.

082688

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Proposal contains no material previously published or written by another person except where due reference is made in the Research Proposal itself.

..... [*Name of Candidate*]
..... [*Signature*]
..... [*Date*]

This Research Proposal has been submitted for examination with my approval as the Supervisor.

Edwin A. Obunyo ..... [*Name of Supervisor*]
..... [*Signature*]
..... [*Date*]

Strathmore Institute of Mathematical Sciences
Strathmore University

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ABSTRACT.

Information Technology has made considerable inroads in organizations and enterprises. This diffusion of technology has been credited with significant cost reductions, gains in productivity, organizational effectiveness and in some cases a definite competitive advantage (Earl, 1989). This study sought to bring out the various aspects of technology adopted in an enterprise and their impact on the growth and profitability on the firm. The aspects considered were Managing accounts/bookkeeping, managing inventory, online banking, online sale of business products, The results of the study obtained that there exists a linear relationship between the adoption of technology and the returns of the company. This relationship exists positively for all variables used in this study. This finding offers a valuable insight to entrepreneurs and provides a strategic direction of adopting technology to optimize the performance of the firm.

THE EFFECTS OF TECHNOLOGY ADOPTION ON MILLENNIAL ENTREPRENEURSHIP.

CHAPTER ONE.

Background of the study.

There are many challenges to starting and operating a new business (Yallapragada & Bhuiyan, 2011) and, similar to past generations, millennials are taking on these challenges (Intuit Canada, 2013). There hasn't been a precise definition for the millennial birth years and there is a controversial discussion regarding this. According to (Nikirk, 2009), the millennial generation are currently aged between 8-27 years. (Taylor, 2012) Defines millennials as people born after 1982. In this study, the millennial generation, are those born between the years 1980 and 2000 (Lloyd et al., 2013). Many of these are entering their career exploitation while others are actively involved in career and technical education in schools and colleges.

In regards to (Venkataraman, 2000), entrepreneurship is defined as the scholarly examination of how, by whom and with what effects the opportunities to create future goods and services are discovered, evaluated and exploited. The person who carries out this activities is known as an entrepreneur.

The need, necessities and desires of man has led to the invention of technologies, which have made life simple, easy, and accessible. For examples, evolution of the compact mobile phones, World Wide Web (www), airlines etc. While advances/improvements in technology continue with rapid phase, the usage of these is far lower than expectations. (Ndubisi, 2005; Ndubisi, Gupta and Massoud, 2003)

Entrepreneurs can use technology to help navigate through these challenges. This study explores how entrepreneurs improve the performance of their small businesses. The study focuses on the Micro, Small and Medium enterprises (MSMEs). Kenya's official definition of MSMEs is used which is according to employment size, (MWANGI, 2016): Micro-enterprises – less than 10 employees; Small enterprises – 10-49 employees; Medium enterprises – 50-99 employees.

Information technology (IT), ranging from mainframe-based transaction processing systems to information systems based on local area networks, and from computer-integrated manufacturing

to communications based applications such as videoconferencing and electronic mail, has made considerable inroads into large organizations. Majority of such organizations now rely on IT for their day-to-day operations. This diffusion of technology has been credited with significant cost reductions, gains in productivity, organizational effectiveness and in some cases a definite competitive advantage (Earl, 1989). There is no reason to believe that this applies any less to small enterprises than to the large multinational. Meyer and Boone (1987) outline numerous cases where small companies have benefited through the use of external databases, office automation applications (e.g. spreadsheets), and the project management software.

The general trend away from costly mainframe computing, based on in-house programs, towards cheaper user friendly computers with standard software packages, means that sophisticated tools are becoming increasingly available to small businesses, without the need for advanced programming skills. However it is less clear to what extent these advantages are realized in practice by firms in less developed national IT environments such as Kenya, or how much such firms approach IT in order to reap the results. In this study, there is more focus on managing accounts/ bookkeeping/ managing inventory, online banking and online sales & purchases. This research hopes to bring out the factors that led to firms adopting these IT aspects and the challenges experienced.

Wroe (1987) argues that small firms possess certain potential advantages in making use of the technology since they are able to complete the tradition process much faster and they possess greater flexibility to undertake any reorganization required to realize the full benefits of technology (Poutsma and Walravens, 1989). It has been argued that (Dwyer, 1990; Clark, 1987) IT promises considerable gains for small businesses, allowing them to increase their market scope and secure their business within the industry through improved communication with both large firms and other small firms. Through accurate and systematic record keeping, IT can help small businesses in areas of traditional concern: the collection of outstanding payments, stock control, increased sales and improved after-sales services. Although Lincoln and Warberg (1987) found that, in practice, small businesses failed to utilize the marketing data that they possessed, Poutsma and Walravens (1989) argue that IT can help a small business to develop its markets, increase turnover, raise profitability, and still remain a small firm able to realize the benefits of that smallness in service and flexibility.

Small businesses have particular problems in adopting and using IT. Typically, they do not have the appropriate skills available in-house and thus have to train existing staff or purchase those skills in the market place. IT is usually associated with a systematic approach to management and decision making, and its introduction requires careful planning, whereas much small business management practice is based on short term, informal, ad hoc lines (Hill et al., 1984). Although technology is much cheaper than before, it still represents a considerable investment for small businesses, which traditionally lack such funds. The introduction of IT, which may lead to dramatic changes in the business's fundamental activities, requires an awareness and basic knowledge within the management function, but many owners of small businesses appear to be too busy 'surviving' to invest time in such projects. Therefore, there is a significant risk that such efforts to introduce IT will be unsuccessful and the cost for such a failure may be fatal for the small firm lacking adequate financial and productive cushioning (Scholhammer and Kuriloff, 1979). Thus it is hardly surprising that until recently many small businesses have avoided such risks by ignoring IT. With lack of markets and local competition contributing to 32.9% and 24.9 % respectively of challenges faced by both licensed and unlicensed MSMEs (MWANGI, 2016), entrepreneurs have decided to take up on technology to improve the success of their businesses.

During the last 20 years, there has been considerable growth in the number and prosperity of small businesses throughout Western Economies, including Europe (Sengenberger, Loveman and Piore, 1991). According to a report by NASSCOM, India was ranked the 3rd largest startup ecosystem with more than 1,100 accelerators, 200 active angels, 150 VCs and over 4000 startups operating in the region. The nation is on the front of innovation, technology and entrepreneurship, and 2015 was quite the year for the Indian startup ecosystem.

With over 300 million people having access to internet, India is now the second most connected nation in the world (after China). The country spent 169 minutes per day on their smartphones in 2015. The influx of low cost smartphones and laptops, coupled with relatively low-cost mobile plans have empowered people across the country to connect especially in the rural areas. This connection has also led to efficiency of business transactions and growth leading to easier ways of running businesses as well as giving a good foundation for startups.

(Wheeler, 2006) states that drawing on interviews with micro-entrepreneurs and micro-finance practitioners in Benin, Burkina Faso, Niger, and Togo, his study explored the needs,

characteristics, motivations, and success factors for micro-entrepreneurship in the region, together with some of the impediments to the growth and success of micro-enterprise ventures. It was found that those operating micro-enterprises in the informal economy are entrepreneurs principally by necessity, and that their most basic needs tend to drive their business activities and behaviors. It was also observed that their success was constrained by a number of barriers, including poor access to capital, poor training, and general aversion to risk. As a result, the development of the micro-enterprise sector in urban French West Africa has been sub-optimal, and the authors conclude that this situation may persist unless broader economic and social barriers are addressed. Based on this most MSMEs owners have been reluctant to go into adopting technology in their businesses since they have more basic needs to attend to and the lack of training and knowledge in the technological world is one of the great barriers of adoption of technology.

Problem Statement.

Most firms are adopting technology to run their operations and abandoning the old school methods. Technology continues to trend in the way millennials are running their business operations by using computerized systems to run their sales and summaries (Taylor, 2012). Online marketing is also on the rise (Mwangi, 2016). Most businesses have online shops where one can just buy the goods they need online and they are delivered to their doorstep. Some businesses are operating only online and don't have physical locations and they are doing really well. Money transfer technologies have made shopping easier since one doesn't have to walk insecure with loads of cash when they are going shopping thanks to Mpesa, Airtel Money etc.

Despite the fact that I.T helps in improving business operations, its adoption by millennial entrepreneurs is hindered by several reasons, namely, high cost technology, lack of training, fear of unknown (Wheeler, 2006). Many studies have been carried out in regards to IT. Some of these studies focus on factors that leads to the adoption of IT, the type of advises the entrepreneurs received, the amount of staff involvement in information systems development and the type of problems they frequently encountered. However, what happens after the adoption of IT is still unexplored. Therefore, this study seeks to establish the impact of aspects of IT adoption on business performance of millennial entrepreneurs.

Research Objectives.

Main Objective: To find out how aspects of IT adoption affect business performance of millennial entrepreneurs.

Specific Objective:

1. To find out how book keeping, online banking, inventory management and online sale of business products affect profitability and growth.

Research Questions.

How does book keeping, online banking, inventory management and online sale of business products affect profitability and growth?

Justification of the Study.

The findings are dedicated to helping entrepreneurs make better investment decisions by making aware the concept of technology and entrepreneurship. This might largely contribute to the kind of decision the entrepreneur takes or foregoes and the kind of technologies they choose to invest in their enterprises. With the possible effects being on their mind, they are able to know what to expect beforehand and thus make prior plans.

CHAPTER TWO

Literature Review

Theoretical Framework

The topic of IT adoption in SMEs has broadly attracted researchers' interests. Many studies have been conducted to investigate factors affecting the decision of IT adoption. Those studies differ with regard to underlying theories and technologies under investigation. Popular theories adopted by existing research include the innovation theory (Thong, 1999), the theory of organizational demography (Chuang et al., 2007), the theory of planned behavior (TPB) (Harrison et al., 1997), the technology acceptance model (TAM) (Davis et al., 1989), and the resource-based theory (Caldeira and Ward, 2003). Information technologies examined in prior research include database management systems (Grover and Teng, 1992), business applications (Thong, 1999), e-commerce (Mirchandani and Motwani, 2001), the internet (Levy and Powell, 2003), and asynchronous transfer mode and broadband network (Yao et al., 2002; Choudrie and Dwivedi, 2006; Dwivedi and Lal, 2007).

By synthesizing prior research, Thong (1999) identified contextual elements that were related to IT adoption: Decision makers' characteristics; Technological characteristics; Organizational characteristics. He examined the impact of these factors on the likelihood of and the extent of IT adoption. Thong found that the likelihood of IT adoption was significantly associated with CEO characteristics, Information System characteristics, organizational characteristics and environmental characteristics. Also, he found that business size, employee's IS knowledge, and information intensity were associated with the extent of IT adoption.

The theory of planned behavior (TPB) and technology acceptance model (TAM) have been widely employed to examine the issue of IT adoption. Based on TPB, Harrison et al. (1997) investigated executive decision processes of IT adoption in a multiphase field study. Their findings indicate that attitude, subjective norms, and perceived control are sufficiently explaining the IT adoption decision and that the effect of those factors is moderated by firm size. Nevertheless, firm and individual executive characteristics had no bearing on the decision of IT adoption. Riemenschneider et al. (2003) argued that TPB and TAM possessed complementary advantages and disadvantage in predicting the adoption of IT. Consequently, they asserted that combining

these two theories would offer a better explanation of IT adoption. They found that the more integrated both TPB and TAM became, the better they explained the phenomenon of IT adoption.

The Upper Echelon Theory (UET) (Hambrick and Mason, 1984) suggests that organizational strategic outcomes and processes are a function of managerial characteristics of top managers. The main notion of the UET is that strategic choices are more of the outcome of behavioral factors than that of mechanic calculation for economic optimization. As a result, strategic choices generally own a great deal of behavioral components and reflect decision makers' idiosyncrasies, such as cognitive base and value preferences. The idiosyncrasies frame the decision situation that executives face and create their perceptions of the situation. The UET suggests that because cognitive base, values and perception are unobservable, measurable managerial characteristics could be adequate surrogates for and provide reasonable indicators of those latent constructs. Hambrick and Mason (1984) suggested an unexhausted list of observable managerial characteristics, including age, functional tracks, career experiences, education, socioeconomic roots, financial position and group characteristics. They proposed 21 propositions relating those characteristics to strategic choices and the performance of organizational outcomes.

The extent of IT adoption is defined as the breadth and depth of using IT in different aspects of businesses. Businesses might use IT to support its operations or improve the decision quality. Business operations can be a single task within a functional area or a process consisting of a series of activities. The extent of IT adoption varies from one firm to another. One company might use IT (e.g. productivity suite) to improve clerical productivity in the form of office automation.

Dalrymple (2004) says that Profitability can be measured using Pre Tax Profit / Turnover, Return on Capital Employed, Return on Net Assets, Return on Total Assets, Value Added, Value Added / Net Assets, Turnover / Orders. In this research, Net assets and orders will be used

He also states that for growth measures, the following can be used Turnover, Pre Tax Profit / Turnover, return on Net Assets, Return on Capital Employed, Capital Investment / Turnover, Customer Service, People Satisfaction, Innovation, People management, Supplier Management, Financial Management. This can be measured using Short Term Assets/Current Liabilities, Short Term Debt/Long Term Debt, Pre Tax Profit / Interest, Credit Payment Days, Debtor Days, Stock

Turnover, Cash in Bank / Turnover, Turnover /Working Capital, customer orders, new products, new customers, number of suppliers, change of number of employees.

Empirical Review

Reasons for information technology adoption

For many firms, the most common reasons for IT adoption is to provide a means to enhance survival and/or growth, staying competitive and/or enhancing innovation abilities (Moyano, 2007). SMEs adopt IT for different reasons, because the functions of the firms vary in different environments (Macpherson et al., 2003) and they do not necessarily operate in the same way or have the same impact (Oakey and Cooper, 1991). Some argue that this move in response to IT is a reaction to an event (Winter, 2003) while others suggest that the change results from the pressure from customers and emphasis on improving efficiency (Ballantine et al., 1998). Another argument is that the change is in response to the pressures from internal and external environment (Morel and Ramanujam, 1999). A study by Siggle and Levinthal (2005) found firms go through changes within certain stages of their life cycle or in response to changes of their external environment. These changes are, sometimes, rationalized as innovativeness and competitiveness (Lefebvre, 1993). Andires and Debackere (2006) confirm this view by pointing out that firms seek IT adoption in response to changes, both internal and external. Internal changes include the life cycle or maturity of the firm and external changes are survival or stability in the market. As firms go through different stages in their life cycle, they adapt to situations that suit them (siggelkow and levinthal, 2005). However, there is no agreement among researchers on how many stages there are within a firm's life's cycle. Firms go through different stages and respond to changes throughout those stages. This include the need to satisfy certain requirements or to respond or adapt to a required improvement (Andries and Debackere, 2006). A study by Phelps et al. (2007) disagrees with this view and suggests that the firms go through states instead of stages in terms of growth. These states are related to managerial problems and are unpredictable. These problems include changes that are faced by firms and the absorptive capacity of the firms. It argued that the absorptive capacity play a critical role in their growth condition. This argument supports Zahra and George (2002) study that absorptive capacity generates competitive advantage of a firm.

External changes refer to causes such as technology-push and market-pull (Andries and Debackere, 2006). Here, technology-push describes an innovation that is well developed and the market, under

the pressure of this advanced technology, is required to absorb it. On the other hand, market-pull refers to a social need where IT is developed to satisfy this need. Often, the market-pull adopters are the innovators or first movers in the market (Laudon, 2007). Market pull also refers the certain standards established by the industry. In order for the firm to conform to newly established standards, it needs to implement certain features or changes in its process to accommodate such changes (Romanoet al., 2001)

In the similar context, IT adoption is also measured through competitiveness and innovativeness. Innovation usually occurs when firms are striving to move forward with growth and profitability being the inspiration. On the other hand, survival means staying competitive in the market, becoming stable or just fitting-in (Jones, 2003) echoing Jennings and Beaver (1997). Here, innovators represent alternatives between divergence (trigger by infusion of resource) and convergence (external constraints) (Druilhe and Garnsey, 2004). Khan (1989) suggests product and process innovations of firms are linked to a broadening market internationalization. For many companies, growth occurs via improvements in efficiency and effectiveness (Capello,1990). Atherton (2003) confirms this by suggesting that to invest in growth and innovation, one of the necessary resources is technology.

To summarize, it can be said that firms seek IT enhancement for a purpose, which is to satisfy certain requirements or respond to necessary improvements, which could arise from pressures from internal and external sources (Andries and Debackere, 2006).

Factors affecting information technology adoption

As well as looking at the drivers of IT adoption, we must also analyze the IT adoption process itself, as this causes change in the organization. To define this process, it is important to identify the factors involved in IT adoption. There is a large body of literature on different perspectives on factors that affect the IT adoption process. Most of them focus on top management, employees, the external experts and IT vendors, the firm's capability to handle the new IT, the people and the culture and other firms within the network. These can be categorized into four major factors: organizational, networking, external expertise and IT itself.

Organizational

This is basically the internal environment and includes the size of the firm and its goals, the people within the firm, their behavior, culture, identity, structure and knowledge (Watson, 2002). Thus these elements have direct impact upon the nature of the firm. For instance, culture in SMEs is highly influenced by owner-manager's attitude, personality and values (Denison et al., 2004). Top management or owner-managers make all decisions (Stanworth and Gray, 1992) and these decisions are based on existing knowledge, personal judgement and communication skills (Carson and Gilmore, 2000). The employees' knowledge and involvement contribute to the rise or fall of the firm (Fenn, 2005). Within a firm, existing knowledge is absorbed, transformed and used to generate new knowledge, which, in turn, promotes innovation (Gray, 2006).

This category can further be divided into four elements: culture, top management, employees and the absorptive capacity of the firm (Bruque and Moyano, 2007; Denison et al., 2004; Gray, 2006; Igbaria et al., 1997; Premkumar, 2003)

Culture

Corporate culture exists within a firm and can be an organization's core competency (Barney, 1986). It is the way people do and share things following certain meanings, values and beliefs within a firm (Dennison et al., 2004). The type of culture does depend on how the firm was established, how it is being developed over time and environment in which it exists (Hall et al., 2001). A study by Minguzzi and Passaro (2001) suggests that culture is an internal factor, which includes the characteristics of human resources and the degree of openness to change. According to the authors, it is often assumed that SMEs are resistant to change and are usually portrayed as such. This resistance is determined by a 'homogeneity' structure and cause them to have doubts about innovation. The IT adoption process is a change within the organization that affects the culture of that organization and vice versa. If a culture is open to accept new, challenging activities and embrace learning, it will be prepared for the change, while a traditional culture that is inflexible or holds back is not likely to accept change (Hall et al., 2001)

Changing culture or shaping it is a process that requires strategic planning (Watson, 2002). Denison et al. (2004) suggest that within SMEs, especially in a family business, culture is influenced by the founders or owner-manager's values and belief system. According to Denison and Mishra (1995) there are four traits of organizational culture: involvement, consistency, adoptability and mission. It is argued that by recognizing these strengths, firms can gain

competitive advantage. Thus culture portrays the way people do things in respect to certain meanings, values and beliefs within a firm (Denison and Mishra, 1995). Firms that are open to accept new, challenging activities and embrace learning cultures (Hall et al., 2001) and recognize the strength of their culture are likely to advance innovation and gain advantage over their competitors.

Top management.

In SMEs, management makes all decisions from daily operations to future investment (Bruque and Moyano, 2007; Stanworth and Gray, 1992), so their decisions directly affect the IT adoption process. A major part of the literature focuses on top management or owner-managers' characteristics and behavior or social trait (Smith, 2007). Top management's social trait refers to their behaviors and frames of reference. Studies have shown that in SMEs, the role of the top management or the owner-manager is crucial to the firm as their directions affect all activities of the firm, both current and future (Fuller-Love, 2006). This also applies to the decision to adopt IT from planning to implementing and afterwards, maintaining and upgrading the system. This is to make sure that it meets the requirement of current IT and satisfies the organizational goals such as to maximizing productivity and maintaining the quality of its products and services (Bruque and Moyano, 2007). A number of studies found out that the greater the understanding the management has of IT, the more likely they will adopt IT and the more successful the adoption. (Bassellier et al., 2003). Management innovation is no less important as it represents creativity and motivation to growth (Jones et al., 2007). The study by Thong and Yap (1995) suggests that managers who are highly innovative and have a positive attitude toward IT together with a competent IT background are more likely to be successful in adopting new IT.

On the other hand, Keh et al., (2002), argue that managers identify opportunities through knowledge and experience acquired (through a social relationship network) not by individual psychological traits. A study by Harrison et al., (1997) of 162 small businesses from different industries used the theory of planned behavior (TPB) to explain and predict the decisions to adopt IT in small businesses. The TPB was used as a background theory to test and predict these decisions based on three variables of top management: attitude, subjective norms and perceived control. Their findings also confirmed that executives decide to adopt IT for competitive purposes. From a similar perspective, Jones et al., (2007) refer to owner-manager's sense-making and

discursive resources as human capital, which plays a key role in SMEs knowledge environment and is part of cognitive social capital. Together with the factors of absorptive and social capital, human capital is the foundation of growth, profit and survival.

Employees

It is clear that in most firms, management or the owner- manager are not the only people who contribute to the success of the business. Employees also make a contribution and they have a major impact on the rise or fall of the business (Fenn, 2005). From this point of view, employees are assets, as a firm's success depends on them. They are a resource that needs to be developed (Darby and Zucker, 2001).

Premkumar and Roberts (1999) suggest that keeping employees informed or aware of the new IT allows them to maximize the resources that can help be more productive. Other studies have shown that having employees as part of the project or involving them has several advantages (Anderson and Huang, 2006). Igbaria et al., (1997) provided evidence that employees' involvement in new projects or changes of practices produces higher success rate. To employees, on a personal level, it makes them feel that they are part of the team, the family or the company itself and that they are important and responsible for the success of the project. This echoes Preeces (1995) vies that employee knowledge is the firm's "human capital" and employees' involvement in the adoption process yield higher success rates. Clear communication to employees of the firm's current situation as well as their status in the firm before, during and after the implementation of change is also necessary (Turban et al., 2005). Management should make sure that employees are fully aware and understand the impact of changes. If a company starts to change to a new computer system, employees may have doubts over job security (Bull, 2003)

Some employees may not believe that the new system will change or improve the way the business functions (Anderson and Huang, 2006). Because of the negative aspect of attitude, (Bruque and Moyano, 2007) suggest that it could be more effective to hire new staff rather than train existing staff. On the other hand, the cost of hiring new staff is sometimes higher than providing training to the current ones. Training must be provided to existing employees if there is a substantial change in the IT.

Based on the above analysis, it can be inferred that involving employees in any changes makes such success more likely. When employees are part of the process, they can provide input for activities that they are dealing with every day and in which managers are not involved (Anderson

and Huang, 2006). Although in small firms, employees do not have the same perspective toward the businesses as owner-managers (Petts er al., 1998) their knowledge still is the company's capital. They contribute to a firm's absorptive capacity through which firms can advance and adapt to changes.

Absorptive capacity of the firm

Absorptive capacity refers to the capability that a firm can advance and adapt to change through the circle of absorbing knowledge, transforming knowledge and generating competitive advantage (Zahra and George, 2002). The construction of this capability includes the daily routines and processes that a firm uses to obtain, absorb, process and utilize its knowledge. It is suggested that there are two elements, potential and realized, within absorptive capacity. Potential capacity refers to the capacity to acquire knowledge and the ability to assimilate this knowledge. On the other hand, realized capacity concentrates on the transformation and exploitation of knowledge.

The study by Liao et al., (2003) suggests that there is a relationship between absorptive capacity and organizational responsiveness in terms of growth in SMEs. The directly related factors are acquisition of external knowledge, and the transforming and disseminating of internal knowledge. These relationships were moderated by environmental dynamism and the strategic orientation of SMEs. Some have suggested that absorptive capacity is part of the supply chain management (SCM) where knowledge and resources are being shared and exchanged between firms, their suppliers and their customers (Meeus et al., 2001). Gray (2006) suggests that supportive capacity in SMEs is a precondition to the successful adoption of innovation and growth. In his study of more than 1500 SME owners across the UK between2003 and 2004, he looked for relationships of absorptive capacity in education levels and a firm's experience that link to innovation and performance of the firm. The findings suggest that the higher the levels of education as well as staff development and propensity to innovate, the stronger the growth and orientation of the firms. However, there was not enough data to suggest that the firm's experience links to their innovation and performance

Networking.

Networking in SMEs exists through many interaction between firms, business partners, vendors, suppliers and customers. These networks can be personal-networks or business networks and are

not restricted by organizational boundaries (Taylor and Pandza, 2003). Through this network, firms can exchange, collaborate and share knowledge, information and communication. Due to the nature of SMEs, which generally lack IT resources and skills, firms can benefit from a network relationship when it comes to IT adoption. Fletcher (2002) suggests that networking can provide potential resources for many small business firm. With their personal network lies the source of knowledge where, owner-managers strengthen their businesses by having access to scarce resources such as skills, information and knowledge (Macpherson et al., 2003)

External experts/professional consultant.

One of the more important aspects of the IT adoption process is the assistance of external experts, consultants or IT vendors. Their professional skills are needed because as indicated by different studies, their lack of IT expertise in most SMEs (Thong et al., 1996). Finding the appropriate expertise to assist with IT adoption is even harder for many SMEs as not all consultants or software vendors are appropriate for a firm's IT adoption.

Experience and recommendation.

Some experts, both software vendors and IT consultants, argue that, by working with other firms within the same market they have acquired the knowledge from these firms and would be able to give effective advice about certain IT applications (Kole,1983). One component in the recursive learning model by (Fuller, 1996) pointed out the importance of external advice and resources. It suggests that IT/IS vendors and consultants, whose role is to shape their services to support business development, are the bridges that connect the business users and the suppliers while supporting the learning process of the business. Turban et al. 2005 suggest that most consulting firms have vast knowledge acquired and absorbed from assisting their clients. As such, they can offer their service or knowledge to firms that seek their help. For many firms, seeking external expertise is a solution to the problem of adopting IT (Izushi, 2005). A study by Soh et al., (1992) of 96 firms in Singapore adopting IT used case studies to compare two groups of small businesses that were using IT specialists or consultants and those who were not. The study suggested that those who received external assistance completed their projects on time and within budget as opposed to those who did not. A later study by Thong et al (1996) of small businesses, also in Singapore, found that external IT expertise plays an important role in the IT implementation process. The result showed that, in small businesses, support from top management, even though

it is essential, is not as important as effective external support from IT consultants. Given the lack of expertise in a small business environment, the provision of high quality external expertise should be considered in the planning process for IT adopting. In another study, Rothwell (1991) argues that firms benefit having no in-house experts. The reason is that it gives the firms the flexibilities to utilize external consultants.

Not all firms are successful using external expertise or consultants (Shin, 2006), nor is every software package suitable for a firm. It is suggested that one cannot assume that IT is practical for every firm because the functions within a firm vary one from another (Macpherson et al., 2003). In addition, there is a great difference between sales representatives and technical support even in the same IT Company (Bull, 2003). For these reasons, before deciding upon any software package, firms should make a judgement to the best of their knowledge. They should consider learning from the earlier adopters. This is because if IT is well defined and developed, the followers will take less risk in terms of technology stability (Laudon, 2007). Swift (2001) suggests the following: a firm should not take a vendor's claim at face value, never assume a vendor reference is valid, always talk with the reference's IS staff, never take IS claims at face value, always talk to the users of the system, always talk without the vendor present.

Due to the nature of SMEs, which generally lack IT expertise and skills, firms should seek professional consultants when it comes to IT adoption (Fuller, 1996). Quality advice from professional consultants or IT vendors is always useful for management or owner-managers as many of them do not have sufficient understanding of IT (Thong et al., 1996). However, owner-managers should also take into consideration that not all suggestions or software packages fit the needs of an individual business (Izushi, 2005). Therefore, a clear definition or purpose behind pursuing new IT is essential. Lack of such preparation can impede the success of the process (Soh et al., 1992)

Information technology

There is a body of research that show that IT helps firms to streamline their business processes by changing the way people behave and work (Lau et al., 2001). IT is also a means to enhance the way people capture and distribute information (Claessen, 2005), lower production and labor costs, add value to products and services and increase the company's competitive advantage (Carbonara, 2005). This perspective not only focuses on the IT abilities, capabilities and capacities of the firm

as well. One refers to the skills, another refers to resources and strategies and the last one refers to the ability of firms to absorb, process and deliver the information that the firm holds. (Carbonara, 2005)

It is imperative that management should consider the appropriate applications for their firms when deciding whether or not to adopt new IT. These considerations are the size of the business, their employee's knowledge of IT and the amount of information that the organization has (Premkumar, 1999). Other areas to look into are cost, risk and competitive advantage. Proud lock et al (1999) suggests guidelines for IT adoption in these areas. Their strategies included expanding on existing IT, purchasing off-the- shelf applications, industry-standard software or market leading IT. It does not make sense for a firm to look at sophisticated systems, which contains a multi-tier data ware house with robust Human resource Information Systems when all it needs is a small program that could handle about one hundred records for its workforce. IT abilities, capabilities and capacities of the organization play an important role in the IT adoption process.

Abilities, capabilities and capacities

IT abilities of a firm include employee's collaboration among themselves, between departments and with their suppliers and customers. Mata et al., (1995) suggests that IT managers should not only understand and appreciate the business needs for the firm as a whole including the needs of its suppliers and customers, but also be able to work with them. IT is a resource that can assist firms to enhance their business practices so a clear definition or purpose in pursuing new IT should be defined before any decisions on IT adoption are made. According to Naslund and Newby (2005), many businesses implement new and robust information systems because everybody else in the market does so. Often, because there was no clear definition or strategy of the purposes of IT adoption, many projects fail due to this "management fad". (Naslund and Newby, 2005) state that to avoid IT adoption failure, it is essential that a firm has the ability to handle new IT and that management understands the need for new IT.

IT capabilities deal with a firm's capability of implementing and deploying (Zhang et al., 2004). Guan and Ma (2003) argue that IT innovation capability of a firm cannot be measured by a single dimension. It is a special asset comprised of technology infrastructure, production, process, knowledge, experiences and organization (Guan et al., 2006). IT capabilities are a collaboration between internal experience and experimental acquisition, which must include a wide variety of

assets and resources to lead to a successful implementation. Caldeira (2003) suggest that business capability comprise different components. They are organizational competences, organizational process, technical skills, managerial skills, business skills and the allocation of resources within the firms. These components contribute to the understanding and success of IT adoption in manufacturing SMEs.

IT capacity refers to a firm's ability to absorb and handle information and has a direct influence on the adoption decision (Gray, 2006). Normally, IT enhancement is not only for the current stage of the business but it must also be appropriate for the future short-term business expansion (Moss and Atre, 2003). As a result, selecting proper software packages to fit the business requirement is no less critical than other factors. Powell (1992) suggests firms should evaluate IS/IT systems using different techniques before implementation. In his study, he demonstrates strengths and weaknesses of the method such as evaluation of subject methods (i.e. user attitude surveys, event logging, and Delphi evidence) and object methods (cost-benefit analysis, value analysis, multiple criteria approaches, simulation techniques, etc.). This is particularly important for SMEs because of the lack of financial support as well as lack of IT knowledge. Most of them do not have the ability to invest in large infrastructure or enterprise application packages. Instead, they tend to seek off-the-shelf products they are able to afford (Shin,2006). When and how to change are also important (Andries and Debackere, 2006). They suggest that firms need new set of objectives if they decide to change and adopt new IT.

Barriers to adopting IT.

Directly affecting the way owners manage their businesses is their educational and family background. Many do not have high level qualifications (Fuller,2006) or strong leadership skills. Their innovativeness influence the business performance and culture of the firm. They see their business as a reflection of themselves, an extension of their self-image or personal achievements. Some of them hold that their authority allows them to do whatever they want because their ownership of the businesses (Fuller, 2006). Some of these managers perceive they will lose their power, control and influence when it comes to IT adoption. In businesses where there are two or more owner-managers then it is a conflict over who should play the central role (Cromie,1990). Another problem is that often, in smaller firms, family members are hired to hold vital positions

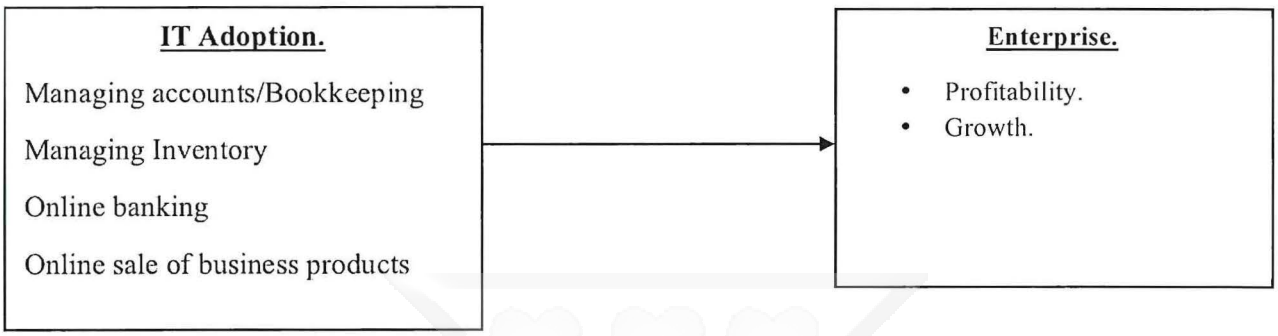
(Smith, 2007). This often leads to management problems due to non-qualification for positions compared to external hires who are better fitted for the positions.

Another factor that prevents or inhibits the adoption of IT in small firms is the cost of the project (Premkumar, 2003). Cost seem to be the problem for the majority of SMEs although others argue that both time and costs are fundamental issues. A study by Lefebvre et al., (1995) suggests that there is no link between IT investment and financial performance. The reason behind this is that gains normally offset the cost of investment so the change is not significant. A study by Ballantine 1998 examines the IS/IT investment in UK companies and suggests that it is difficult to measure the benefits associated with such investment.

SMEs when working with larger enterprises, are often unable to keep up with efficiency of their larger partners although there is a recognition that knowledge benefit lies in supply chain management. Another issue is SMEs lack of codification of their business processes are compared to large corporations (Ward,2004). Another barrier is that IT adoption requires long term planning and investment. For some companies acquiring new IT is planned, as it is seen as providing competitive advantage or an investment toward growth in the future. However, for many others, acquiring IT is not planned as managers do not have enough time to focus on the long-term planning process (Fuller,2006).

Conceptual Framework

Independent Variables **Dependent Variables**



Research Gap.

The literature focusing on IT adoption in SMEs, is mainly on factors and barriers. Extensive research has been done on models on IT adoption process, reasons for IT adoption, drivers for IT adoption, factors that facilitate the adoption process and barriers hindering the successful adoption of IT in SMEs. But what really happens after IT is successfully adopted in a firm? There has been barely any research that has been undertaken in Kenya to highlight the effects of IT adoption in SMEs. This study seeks to find out the effect of aspects of IT adoption on business performance both positive and negative, that happen to a business after successfully adopting IT.

CHAPTER THREE

Research Methodology.

This chapter of the research project focuses on the research design used in the study. It will also define the research population and the sample size of the study.

Research design.

In this study, the approach of a descriptive research methodology was taken. This study is mainly qualitative in nature. As part of data collection, participants were required to complete a questionnaire. Then the data collected from the questionnaires was analyzed using multivariate regression.

Population and sample.

The research is based on entrepreneurs between the age of 20 and 37, focusing on millennials, (Lloyd et al., 2013) in Kenya. The sample population will are the businesses that have been incubated at ibiz, Strathmore and other incubation labs. ibiz was chosen since most of the businesses incubated there have a background IT. Most of these businesses also have well-kept records. 100 questionnaires were issued out and 61 responses were received.

Measurement instruments.

Aspects of IT adoption:

- According to Thong (1999) and Chuang et al. (2007), they look at a composite measure of the extent of aspects of IT adoption. This composite measure looks at eight aspects of IT adoption. These are; online banking, for an e-mail or internet connection, purchase business products and services, sell business products and services, apply for loans or other forms of credit, manage inventory, for administrative functions such as word processing, manage the firm's accounts/bookkeeping. However, this study will focus on four of these aspects since these affects have direct attribution to the financial performance of the firm Thong (1999). These are; Managing accounts/Bookkeeping, managing Inventory, online banking, online sale of business products on your firm. After collecting data with the use of questionnaires, the data was coded to quantify it for the purpose of analysis.

Independent variables.

- Managing accounts/Bookkeeping
- Managing Inventory
- Online banking
- Online sale of business products on your firm

Measures of independent variables.

These variables are qualitative in nature and therefore numerical values are assigned to them so that they can fit in the quantitative regression model. The numerical values assigned to the qualitative variables are known as attributes. For our case we used two attributes (0) and (1). For instance for bookkeeping, if the entrepreneur used any form of technology in managing his accounts, then this was assigned the value (1), otherwise (0).If an entrepreneur managed his inventory using any technology, they were assigned a value (1) and if not, they were assigned (0). Online banking used in any enterprise was assigned a value (1) and (0) otherwise. If the business made sales on any online platform then they were assigned the value (1) and (0) otherwise.

Measures of dependent variables.

Profitability was measured using Pre Tax Profit, Turnover & Net Assets.

Growth was measured using Assets, liabilities, Pre Tax Profit, customer orders, change of number of employees.

Data Analysis.

The multivariate regression analysis was done to explain the relationship among the independent variables and the dependent variable. Excel was used to analyze the data.

Multivariate research model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 +$$

Where: y_i is the firm's growth (dependent variable);

$\beta_0, \beta_1, \beta_2, \beta_3 \; and \; \beta_4$ Are coefficients that explain how aspects of IT affect business performance (growth)

X_1 Bookkeeping

X_2 Online banking

X_3 Inventory management

X_4 Online sale of business products

e is the error term

CHAPTER FOUR

Data results and analysis.

Data Description

The study was based on questionnaires that were issued to 100 entrepreneurs. Of the 100, there were 61 respondents from whom the data was collected. The study was meant to analyze how technology adoption would impact businesses in the millennial age. Given the above, we settled on the following key variables which we assumed would be directly impacted by the adoption of technology: book keeping, inventory management, online banking and online sales.

Summary of responses

41% of the respondents were male. 4.9% the respondents did not fall within the millennial age bracket and were therefore excluded in the analysis. 18% of the respondents had education up to secondary level, 52.46% had an advanced diploma or a university degree and 29.5% had a Masters degree. 55.7% of the respondents had experience in business management tasks in earlier employment before to going into business. 90% of the respondents have attended IT training. Out of those, 85.45% attended the training between now and 5 years ago. Out of those that attended IT training, 14.54% did it as a subject in high school, 63% did it as a professional course and 21.8% did it as an undergraduate course.

Out of the total respondents, 57.38% established their firm between now and 3 years ago, 36% established their firm between 3 and 5 years ago and 6.6% have more than 5 years in their current businesses. 65.6 % of the respondents have their businesses as a sole proprietorship and 34.4% have it as a partnership. Of these businesses, 75.4% are retailer enterprises, 11.5% are wholesale enterprises and 13.1% are manufacturing firms. 93.4% of the businesses used in the analysis are in Nairobi County leaving 6.6% being out of Nairobi County.65.5% of the businesses adopted IT between now and 2 years ago, 29.5 % adopted IT between 2-5 years ago while 5% adopted IT more than 5 years ago. Using a Likert scale of 1 to 5 to describe the company's assets development since the adoption of IT, none of the entrepreneurs responded to 1, 5% responded to 2, 34.4% responded to 3, 55.7% responded to 4 and 5% responded to 5. Using the same scale to describe the change in business profits since adoption of IT, no respondent rated 0, 6.6% responded to 2, 31.1% responded to 3, 52.5% responded to 4 and 9.8% responded to 5. Enquiring on why these

entrepreneurs took up IT in their firms, 18% were advised by IT experts, 44.2% were doing it as a way of keeping up with the market, 21.3% did it as own innovation, 19.3% did it as keeping up with the markets and because they were advised by IT experts.

Of all the data collected, the following was more specific to our research; out of the total sample, 36.06% had taken up technology in bookkeeping, 37.7% had adopted inventory management using IT, 52.45% were using online banking platforms in their enterprises and 57.38% were using online platforms to sell their goods.44% had taken up online banking and online sale of goods, 16.4% had taken up online banking and technological management of inventory, 11.5% had taken up online banking, bookkeeping and managing inventory, 9.8% had taken up online banking, bookkeeping and managing inventory and online sale of goods.

Data Analysis.

The study adopted a multivariate analysis method whereby an ordinary least squares approach was used with the variables above being the independent variables. The dependent variable was the firm's growth. The study therefore tests for a linear relationship between the independent variables and the dependent variables.

From the analysis, the following observations were made:

There was a positive correlation between the adoption of technology and the performance of the entities assessed. This was shown by the positive coefficients obtained for all the variables used in the study. However, based on the p-values, only some of the variables were statistically significant. The variables inventory management and online sales were shown to have no statistical significance in the model courtesy of p-values of 0.2123 and 0.4873, both which are above the acceptable threshold of 0.05. The remaining variables: the intercept, bookkeeping and online banking were statistically significant.

The intercept showed that exogenous factors, not captured in the model, had the greatest impact on the model courtesy of the high coefficient of 3.0306. These factors are assumed to be macroeconomic factors that have a general impact on businesses, both technology adopters and non-adopters.

Furthermore, the model showed that the adoption of technology for the book-keeping and online banking activities would have a positive impact on the growth of the business by 0.438 and 0.462 units respectively at a 95% confidence level.

The above information is depicted in the table below:

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
ercept	3.03065484	0.155028	19.54905	1.09121E-26	2.720095966	3.341214	2.720096	3.341214
naging								
:ounts/Bookkeeping	0.438103313	0.171559	2.553656	0.013409506	0.094428889	0.781778	0.094429	0.781778
naging Inventory	0.21699713	0.172014	1.261505	0.212356511	-0.127589246	0.561584	-0.12759	0.561584
line banking	0.462235847	0.198148	2.332785	0.023277945	0.065298468	0.859173	0.065298	0.859173
line sale of business								
)ducts on your firm	0.14075137	0.201318	0.69915	0.487351912	-0.26253653	0.544039	-0.26254	0.544039

The model's predictive power was seen to be 22.02% based on the adjusted R squared. This signifies that the independent variables have a 22.02% explanatory power over the dependent variable: the firm's growth.

Regression Statistics	
Multiple R	0.521761621
R Square	0.272235189
Adjusted R Square	0.220251988
Standard Error	0.632197847
Observations	61

Despite the low figure, the model's general explanatory power, based on the significance of the F statistic, is shown to be significant. The F statistic is 0.001178, lower than the alpha value of 0.05. As such, the model is thus a god measure for the growth of a firm which has adopted IT and the variables therein in explaining the growth as its drivers.

This is all depicted in the chart below:

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	8.372348	2.093087	5.23698396	0.001178656
Residual	56	22.38175	0.399674		
Total	60	30.7541			

CHAPTER FIVE.

Conclusion.

From the study above, we obtained that there exists a linear relationship between the adoption of technology and the returns of the company. Furthermore, the above stated relationship exists positively for all variables. However, not all these variables are statistically significant.

The adoption of technology will have a positive impact on the returns of a company. This is especially so for the adoption of technology in book keeping and online banking which, according to our results, will have a statistically significant impact on the company's profitability and growth.

Recommendation.

From the above, we have concluded that the adoption of technology will have a positive impact on the performance of a firm. As such, despite the significant initial costs, the payoffs associated with the efficient systems attributable to the adoption of technology will be beneficial for the business in the long run.

Such systems would therefore be beneficial to both start-ups and growing businesses. For the former, it would be important that they adopt this technology as early as possible in order to benefit from it earlier in the operating life. For the latter, current adoption would be pivotal to their increased performance. These systems would ensure that the businesses continue operating at higher performance levels.

As such, we conclude that the adoption of technology will ensure that businesses boost their performance.

REFERENCES.

Andries, P. and Debackere, K. (2006), "*Adaptation in new technology-based ventures: insights at the company level*", *International Journal of Management Reviews*, Vol. 8 No. 2, pp. 91-112.

Ballantine, J. and Stray, S. (1998), "*Financial appraisal and the IS/IT investment decision making process*", *Journal of Information Technology*, Vol. 13 No. 1, pp. 3-14.

Bassellier, G., Benbasat, I. and Reich, B. (2003), "*The influence of business managers' IT competence on championing IT*", *Information Systems Research*, Vol. 14 No. 4, pp. 317-36.

Bull, C. (2003), "*Strategic issues in customer relationship management (CRM) implementation*", *Business Process Management Journal*, Vol. 9 No. 5, pp. 592-602.

Caldeira, M. and Ward, J. (2003), "*Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing small and medium-sized enterprises*", *European Journal of Information Systems*,

Cromie, S. (1990), "*The problems experienced by young firms*", *International Small Business Journal*, Vol. 9 No. 3, pp. 43-61.

Denison, D.R. and Mishra, A.K. (1995), "*Toward a theory of organizational culture and effectiveness*", *Organization Science*, Vol. 6 No. 2, pp. 204-23.

Druilhe, C. and Garnsey, E. (2004), "*Do academic spin-outs differ and does it matter?*", *Journal of Technology Transfer*, Vol. 29 Nos 3-4, pp. 269-85.

Fuller, T. (1996), "*Fulfilling IT needs in small businesses; a recursive learning model*", *International Small Business Journal*, Vol. 14 No. 4, pp. 25-44.

Fuller-Love, N. (2006), "*Management development in small firms*", *International Journal of Management Reviews*, Vol. 8 No. 3, pp. 175-90.

Gray, C. (2006), "*Absorptive capacity, knowledge management and innovation in entrepreneurial small firms*", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 12 No. 6, pp. 345-60

Hall, A., Melin, L. and Norqvist, M. (2001), "*Entrepreneurship as radical change in the family business: exploring the role of cultural patterns*", *Family Business Review*, Vol. 14 No. 3, pp. 193-208.

Keh, H., Foo, M. and Lim, B. (2002), "*Opportunity evaluation under risky conditions: the cognitive processes of entrepreneurs*", *Entrepreneurship: Theory and Practice*, Vol. 27 No. 2, pp. 125-48.

Khan, A. and Manopichetwattana, V. (1989), "*Innovative and noninnovative small firms: types and characteristics*", *Management Science*, Vol. 35 No. 5, pp. 597-606.

Laudon, K. and Laudon, J. (2007), *Essentials of Business Information Systems*, 7th ed., Prentice-Hall, Englewood Cliffs, NJ.Lefebvre, L. and Lefebvre, E. (1993), "*Competitive positioning and innovative effort in SMEs*", *Small Business Economics*, Vol. 5 No. 4, pp. 297-305.

Macpherson, A., Jones, O., Zhang, M. and Wilson, A. (2003), "*Re-conceptualising learning spaces: developing capabilities in a high-tech small firm*", *Journal of Workplace Learning*, Vol. 15 No. 6, pp. 259-70.

Oakey, R.P. and Cooper, S.Y. (1991), "*The relationship between product technology and innovation performance in high technology small firms*", *Technovation*, Vol. 11 No. 2, pp. 79-92.

Premkumar, G. (2003), "*A meta-analysis of research on information technology implementation in small business*", *Journal of Organizational Computing and Electronic Commerce*, Vol. 13 No. 2, pp. 91-121.

Thong, J. (1999), "*An integrated model of information systems adoption in small businesses*", *Journal of Management Information Systems*, Vol. 15 No. 4, pp. 187-214.