



UNIVERSITY OF NAIROBI

SCHOOL OF COMPUTING AND INFORMATICS

**THE INFLUENCE OF ORGANIZATIONAL CULTURE ON THE ADOPTION OF ICT
INNOVATION FOLLOWING TECHNOLOGICAL DISRUPTION: A CASE OF ICT SMES
IN KENYA**

By

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the Degree of Master of Information Technology Management(ITM), School of Computing,
University of Nairobi.**

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DECLARATION

This project report is my original work and has not been presented for a degree in another University.

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ABSTRACT

Disruptive ICT technologies such as artificial intelligence, machine learning and mobile computing are transforming how organizations communicate, connect and discover. As a result, firms are being forced to restructure their strategies in order to survive in the market. Despite developing new strategies, an existent challenge facing the adoption of ICT innovation lies in the redesign of the human activity systems in which the technology is embedded thereby necessitating an evolution of employee behavior to facilitate adoption. In this study, it is aimed to investigate the influence of organizational culture on employee behaviour towards the adoption of ICT innovation. A survey of 83 managers and 43 employees drawn from 100 ICT Kenyan SMEs is conducted. The findings of the study revealed that employee behaviour facilitating the adoption of ICT innovation were fostered by organizational cultures that adopted adhocracy practices such as having informal manager-employee relationships and emphasizing on creating customer value. Additionally, organizational culture dimensions such as control, social control and customer orientation were linked to high ICT adoption rates.

Keywords: disruptive technology, organizational culture, ICT innovation adoption,

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
ABBREVIATIONS AND ACRONYMS	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the study	1
1.2 Rationale of the study	3
1.3 Problem statement	3
1.4 Research objectives	4
1.5 Significance of the study	4
1.6 Limitations of the study	5
CHAPTER TWO: LITERATURE REVIEW	6
2.1 Chapter introduction	6
2.2 Organization culture	6
2.2.1 Influence on employee behaviour	8
2.2.2 Influence on ICT adoption	10
2.3 ICT innovation and technological disruption	12
2.3.1 Concept of technological disruption	12
2.3.2 History of technological disruption	13
2.3.3 ICT innovation leading technological disruption	14
2.3.4 ICT innovation leading technological disruption in Kenya	15
2.4 Adoption of ICT innovation in Kenyan SMEs	17
2.5 Models to evaluate organization culture	19
2.6 Conceptual framework	20
2.6.1 Hofstede's Multi-focus model	21
2.6.2 Employee behavior	21
2.6.3 Hypotheses	22
2.6.4 Rationale of the research framework	22
2.7 Conclusion	23
CHAPTER THREE: RESEARCH METHODOLOGY	24
3.1 Introduction	24
3.2 Research philosophy	24
3.3 Research approach	25
3.4 Research strategy	25

3.5 Research choice and time horizon	26
3.6 Study Population	26
3.7 Exclusion / Inclusion criteria	26
3.8 Sampling	27
3.8.1 Sampling method	27
3.9 Data Collection and Analysis	27
3.10 Data reliability, validity and generalizability	28
3.11 Ethical considerations	29
3.12 Limitations of the methodology	29
3.13 Conclusion	30
CHAPTER FOUR: RESULTS & DISCUSSION	31
4.1 Chapter Introduction	31
4.2 Descriptive Analysis	31
4.3 Tests for Normality	34
4.4 Reliability and Validity	39
4.5 Inferential Analysis	40
4.5.1 Correlation Analysis	40
4.5.2 Regression Analysis	43
4.6 Hypotheses testing	46
4.7 Discussion	56
4.7.1 Influence of organization culture on employee behavior	56
4.7.2 Influence of employee behavior on ICT innovation adoption	59
4.7.3 Influence of organization culture on ICT innovation adoption	63
4.8 Conclusion	65
CHAPTER FIVE: CONCLUSION	66
5.1 Chapter introduction	66
5.2 Achievements	66
5.3 Recommendations	67
5.3.1 To tech SMEs in Kenya	67
5.3.2 Theoretical contribution	67
5.4 Suggestions for further research	68
5.5 Limitations of the study	68
REFERENCES	69
APPENDIX A: SPSS RESULTS	76
APPENDIX B: SURVEY QUESTIONNAIRE	80

LIST OF TABLES

Table 2.1 Constructs of Hofstede’s Multi-focus model (Hofstede, 2011).....	21
Table 2.2 Constructs of employee behavior model (Gao, Krogstie & Siau, 2011).....	21
Table 3.1 Questionnaire dimensions.....	28
Table 4.1 Respondents general information (author’s own).....	32
Table 4.2 Responses on dimensions of organization culture.....	33
Table 4.3 Responses on employee behavior.....	33
Table 4.4 Responses on adoption of ICT innovation.....	34
Table 4.5 Skewness and Kurtosis for organization culture.....	35
Table 4.6 Skewness and Kurtosis for employee behavior.....	36
Table 4.7 Skewness and Kurtosis for ICT adoption.....	36
Table 4.8 Shapiro Wilks results for organization culture.....	37
Table 4.9 Shapiro Wilks results for employee behavior.....	38
Table 4.10 Shapiro Wilks results for ICT adoption.....	38
Table 4.11 Cronbach’s Alpha for the different dimensions.....	40
Table 4.12 Correlation of organization culture and employee behavior.....	41
Table 4.13 Correlation of employee behaviour and ICT adoption.....	42
Table 4.14 Correlation of organization culture and ICT adoption.....	43
Table 4.15 Hypotheses 1 tests.....	47
Table 4.16 Hypotheses 2 tests.....	52
Table 4.17 Hypotheses 3 tests.....	54

LIST OF FIGURES

Figure 2.1 Levels of organisation culture (Schein, 2010).....	7
Figure 2.2 Conceptual framework (author's own).....	22
Figure 4.1 Kruskal Wallis test for organizational culture dimensions.....	44
Figure 4.2 Kruskal Wallis test for the employee behavior	45
Figure 4.3 Kruskal Wallis test for the ICT adoption	45

ABBREVIATIONS AND ACRONYMS

B2B	-	Business to Business
B2C	-	Business to Consumers
CBA	-	Commercial Bank of Africa
GDP	-	Gross Domestic Product
ICT	-	Information and Communications Technology
M-PESA	-	Mobile Pesa “Money”
KCB	-	Kenya Commercial Bank
SME	-	Small and Medium Enterprise

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Different thought leaders and authors have brought to the fore the notion that we live in an era of technological disruption where technological advancements such as social media, internet of things, mobile computing, big data analytics, artificial intelligence and machine learning are revolutionizing how business is being conducted. Technology is changing the manner in which people communicate, connect and discover thereby enabling businesses to create new business opportunities while enhancing their current business processes (Solis, 2014). As a result, businesses are coming to terms with the fact that in order to survive and remain competitive in their different environments, they need to be able to aptly adapt to the rapidly evolving technological and business changes.

In the wake of technological disruption, Information and Communication Technology (ICT) based innovation is enabling organizations to enhance their business models by introducing new innovative business approaches thereby enabling them to create more value for their customers. However, a challenge that often arises following implementation of technological innovation is facilitating the innovation to drive the business. Solis (2014) points out that the real threat or opportunity with technological disruption lies in the evolution of employee behavior, values and expectations towards enabling it to be adopted and thus work in the organization.

Mitchell and Yate (2002) postulate that the culture of an organization is the combination of value, faith, and understanding shared by members of the organization. The influence culture has on the behaviour and norms adopted by employees in a particular organization often influences their work environment. A study conducted by Melitski, Gavin and Gavin (2010) on the influence of organization culture on technological adoption in public

institutions found out that there exists a relationship between individual perception of organization culture and individual willingness to adopt technology. In consequence, their study concluded that organizational culture shapes the way in which organizations choose to use technology. Subsequently, fostering an enabling culture within organizations is paramount to enabling businesses to adopt and use ICT innovation as they strive to adapt to the rapidly changing business environment.

In the Kenyan economy, technological disruption has subsequently affected how business is conducted. M-pesa, a mobile money transfer application, immensely disrupted the banking sector by enabling mobile users to send and receive money without having a bank account. Consequently, banks have been forced to collaborate with the technology in order to survive in the market. Similarly, its Lipa na M-Pesa solution has enabled businesses to operate in a risk free manner with operations being maintained through virtual money. The solution has also enabled different individuals to pay their bills via mobile money, thereby eliminating the need to visit different utility service providers such as water and power providers. Mobile and web applications by e-commerce companies such as Jumia and Kilimall are similarly revolutionizing the shopping experience thereby eliminating the need to physically visit stores.

According to Njanja (2016), a survey of 1200 SMEs in Kenya dubbed “the ready business index” carried out by Safaricom in 2016 found out that 54% of Small and Medium Enterprises (SMEs) had adopted ICT. However, the report also found out that most of them were unable to find solutions that fit into their business environments. In addition, the report highlighted slow rate of ICT adoption among such enterprises owing to the lack of awareness about the existence of available solutions.

A recent economic survey by the Central Bank of Kenya (CBK) further identified that SMEs constitute 98 percent of all Kenyan businesses while contributing to 3 percent of the Gross Domestic Product (GDP) and creating over 30 percent of employment opportunities

annually (Africanreview.com, 2017). Given the significant contribution of SMEs in the Kenyan economy, an investigation into how their organization culture is enabling them to adopt and use ICT innovation to drive their business sparks an interest in the researcher especially given the current technological disruption in most markets.

1.2 Rationale of the study

Technological disruption has brought about advancements such as social media, mobile computing, artificial intelligence, big data, internet of things and machine learning which are revolutionizing the manner in which business is conducted. Consequently, businesses are coming to terms with the fact that they need to respond rapidly to the changing technological environments. Through adoption of ICT based innovation, organizations are developing new business approaches and enhancing their processes in an attempt to respond to technological disruption.

The culture developed by an organization has an influence on the behavior and attitudes of employees and consequently, on how employees adopt technological innovation. As a result, in order for the implemented ICT innovation to act as a tool to drive the business, there is need for organizations to foster an enabling culture among their employees to enable ICT innovation to be adopted and translated into daily use.

SMEs in Kenya make up the majority of businesses in the country. They contribute a significant percentage of the country's GDP as well as reducing the unemployment index. As a result, it is significant for such enterprises to understand the pivotal role played by the organization culture they foster as it influences employee behavior and attitudes and consequently, the overall adoption of ICT innovation.

1.3 Problem statement

The study aims to investigate the influence of organization culture on the behavior developed by employees in SMEs and thus on the adoption and use ICT innovation.

1.4 Research objectives

- i. To determine the correlation between organization culture and the behavior and attitudes developed by employees towards adoption of ICT innovation.
- ii. To determine the correlation between organization culture and the adoption of ICT innovation.
- iii. To determine the influence of employee behavior and attitudes on the adoption of ICT innovation.

1.5 Significance of the study

First, the study contributes to practice by offering key insight on the influence organization culture has on the attitudes and behavior developed by employees and overall on the adoption of ICT. Such insight is important in enabling SMEs to foster cultures that will facilitate adoption of ICT innovation. SMEs play a pivotal role in the attainment of vision 2030 economic goals as they contribute significantly to the overall GDP while offering employment to numerous individuals.

However, in the wake of technological disruption, most SMEs are coming to terms with the fact that only through adoption ICT innovation are they able to enhance their business processes. Such adoption is often challenging with only few of them being in a position to translate the innovation into daily use thereby using the same as a business tool.

Second, the study contributes to theory by providing knowledge on the influence of organization culture on adoption of ICT innovation in response to technological disruption in the Kenyan SME context. Such insight is an important addition to the body of knowledge and also provides groundwork for further research work in the area especially in developing a framework of an enabling culture for the adoption of ICT innovation.

1.6 Limitations of the study

The study is expected to face several limitations. First, the time available to conduct the study restrains the scope of SMEs that can be surveyed. Given that the research takes place over a short duration of time, only few SME organizations can be surveyed. Second, the research may encounter respondents who may not be willing to participate in the study in the interest of business protection concerns.

CHAPTER TWO: LITERATURE REVIEW

2.1 Chapter introduction

The chapter expounds on existing literature regarding organization culture, adoption of ICT innovation and technological disruption. As such, it reviews a wide variety of sources ranging from peer reviewed journal articles and books to relevant websites and conference papers in order to obtain different perspectives on the given areas. Additionally, it presents the conceptual framework that guides the study. Finally, a conclusion section provides a summary of the findings obtained in the chapter.

2.2 Organization culture

Over the years, numerous definitions of organization culture have emerged. An observation made with the definitions is that they arise from two main paradigms. First, is the aspect of how culture works out in the workplace and second, is the aspect of its influence on the behaviour of employees.

Based on the first paradigm, several definitions emerge. Deal and Kennedy (2002) on the one hand, consider organization culture to simply refer to how things get done in an organization. Schein (2010) on the other hand, defines organization culture as a system of shared assumptions learned by a given social group to solve its problems of external adaptation and internal integration, which has worked well enough to be considered valid, and thus is taught to new members as the correct way to think, perceive and feel in relation to the given problems.

Keyton (2011) notes that Schein's definition comprises of three main elements. The aspect of socialization, which denotes the manner in which new organizational members learn the culture, the aspect of the culture being composed of deeply held assumptions and finally, is the recognition that any organization can have more than one culture. Inceoglu

(2002), further notes that based on the perspective, culture is able to evolve as the organization encounters different problems and learns to solve them.

Schein (2010) further classifies organization culture into three main levels: artifacts; espoused values; and basic underlying assumptions. The author describes artifacts as visual organizational structures and processes that are easily seen and heard. Examples include the physical space architecture, artistic production and overt employee behaviour among others. Espoused values are described as strategies, goals and justifications that convict employees to face reality in a given manner. Finally, Schein (2010) describes basic assumptions as the learned responses to a group's problems of survival in the external environment and internal integration problems.

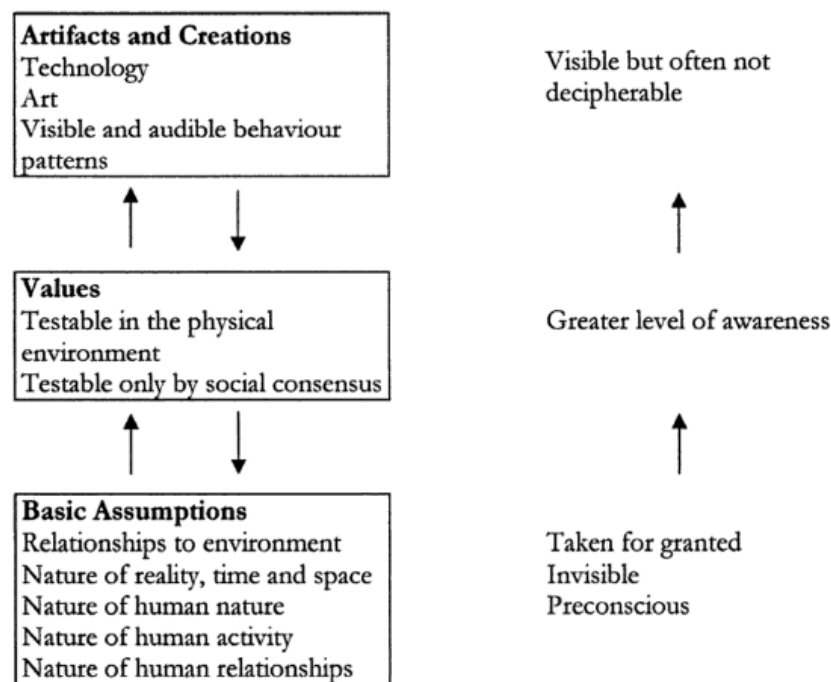


Figure 2.1 Levels of organisation culture (Schein, 2010)

The review of figure 2.1 above facilitates understanding of the process involved in creating and fostering culture in an organization. Schein (2010) argues that leaders in the organization act as the principal architects of culture. However, the author notes that the

culture so developed has an influence on the leadership that is eventually possible.

Consequently, this implies that leaders can create and likewise be created or influenced by the culture fostered at the workplace (Schein, 2010).

The second paradigm useful in defining organization culture considers it from a perspective of influencing employee behavior. Based on this view, organizations are seen to differ in the different ways in which their employees interact with one another, stakeholders and clients, based on their organization cultures. As such, it is argued that the culture fostered in the organization eventually impacts on how employees behave in different situations and how they identify with the organization (Schrodt, 2002).

2.2.1 Influence on employee behaviour

The review of Schein's formal definition of organization culture facilitates understanding of how it influences employee behaviour. According to Schein (2010), a major aspect of organization culture pertains to socialization. As such, this implies that members in the organization learn culture through behavior. The author further argues that since culture is associated with desired patterns, rituals and norms, it has a significant influence on employee behaviour.

Over the years, numerous studies have revealed an existent link between organization culture and employee behavior. A study by Denison, Haaland and Goelzer (2004) investigating the association between corporate culture and organization effectiveness, on 230 different organizations drawn from North America, Asia, Africa, Europe, and the Middle East, revealed that organizations that had strong, productive organization cultures were associated with increased growth in sales, satisfaction of employees, and overall performance of the organisation regardless of the physical location of the organization. While the study did not highlight the individual employee behaviour that was influenced by the organization

culture, it however pointed out that overall employee performance improved following the development of strong organization culture.

De Jong and Den Hartog (2007) on the other hand revealed that leaders in an organisation influence employee innovative behaviour through either deliberate actions when stimulating the idea generation process, or through the general, daily behaviour. The finding would later be reiterated by Schein (2010) in his argument that leaders influence and are influenced by the culture fostered in the organisation. The review of the different studies reveals that organization culture impacts the performance and the innovative behaviour of employees.

Alston and Tippett (2009) on the other hand, conducted a study on the influence of organization culture on the trust levels between managers and employees in technical organizations. Their study would reveal that employee-manager trust levels increased as perceived cultures became more organic. Consequently, their study was significant in that, it highlighted that culture had a direct impact on trust levels of the organization. Walters (2010) would further argue that the level of control in the organisation had a direct influence on the trust employees had towards managers. The author posits that higher commitment levels were observed where employees were given control over their work integrity and quality.

Suppiah and Singh Sandhu (2011) further highlighted the influence of organization culture on employee tacit knowledge sharing behavior. Their study would reveal that either positive or negative tacit knowledge sharing behavior was the direct result of organisation culture. The finding is significant in the current study since the adoption of technology in part relies on the sharing of tacit knowledge between employees. Price and Whiteley (2014) on the other hand, revealed the influence of culture on employee commitment levels and as a result, its overall performance.

In summary, the different studies reviewed reveal the indispensable link between employee behavior and organisation culture. The studies show that culture has an impact on commitment, performance, trust, tacit knowledge sharing ability and employee satisfaction which translates to overall organisation performance and productivity.

2.2.2 Influence on ICT adoption

As business environments evolve, the adoption and use of ICT in organizations is increasingly becoming an indispensable component in enabling organisations to sail through the ever changing environment (Melitski, Gavin and Gavin, 2010). Sharma (2012) argues that organizational culture has been linked to the failure in the implementation of innovation in different organisations. The author cites the influence of top management who play a guiding role in transforming the values held in organizations. Consequently, Sharma (2012) notes that how leaders choose to communicate on the implementation of innovation eventually influences its success in the organization. Top managerial attitudes towards risk and innovation are seen to have an impact on decision making strategies. However, different studies conducted on the influence of culture on adoption of technology have revealed disparate findings.

To begin with, Melitski, Gavin and Gavin (2010) revealed a positive association between the individual perception of organisation culture and the individual willingness to adopt technology among public organizations. Their study was significant in that it highlighted the influence of behavioral intent in facilitating technological adoption. Senarathna et al. (2014), on the other hand, revealed that organisations that fostered adhocracy cultures demonstrated a positive correlation towards e-commerce adoption while those that were structured in a hierarchical manner demonstrated a negative correlation. The findings from the two studies bring to the fore, the influence of individual perception of

organisation culture and flexible, and loosely structured cultures that enhanced adoption of technology.

A different study by Caccia-Bava, Guimaraes and Harrington (2006) revealed that organisation culture had a significant influence in the development of absorptive capacity in enabling hospitals embrace new technological innovations. Absorptive capacity, defined as the ability of organizations to recognize the value of new information, assimilate it and use it productively, was observed to be highly influenced by the culture fostered by hospitals (Caccia-Bava, Guimaraes and Harrington, 2006). On the other hand, it was observed that among Vietnamese and Polish migrants in Australia, culture had a significant influence on how they adopted highly innovative technology products (Slowikowski and Jarratt, 1996). The two studies reveal that organisation culture had a significant influence on individual perceptions and thus, willingness to adopt technology.

A study by Van de Weerd, Mangula and Brinkkemper (2016) on the adoption of Software as a Service (SaaS) among Indonesian firms revealed that organizational factors such as top management support had a significant influence on the success of the given adoption. A similar finding had been observed by Sharma (2012) as the author argued that top managerial attitudes and decisions had a significant impact on the successful implementation of technological innovation.

Chong et al. (2015), in a different study exploring factors affecting adoption of C-Commerce in Malaysia, revealed that information sharing culture had the highest influence in the adoption of c-commerce followed by factors such as external environment and readiness of the organization. The influence of organization culture in decision making was similarly seen to have the highest influence on adoption of technology in Greek banks (Dasgupta, Agarwal and Ioannidis, 2000).

In summary, the review of the different studies revealed a significant influence of organization culture on the adoption of ICT. Notable factors that were influenced by culture included top management attitudes, individual willingness to adopt technology, and perception towards technology among others.

2.3 ICT innovation and technological disruption

2.3.1 Concept of technological disruption

Christiansen, Turkina and Williams (2013) describe technological disruption as the packaging of existing technology in a new format that has more implications for business to business (B2B) transactions. Further, the authors note that while such disruption does not necessarily lead to increased business to customer (B2C) transactions, it may have an impact on the supply chain or on the input for new products sold commercially. In addition, they point out that apart from technological disruption, there also exists commercial disruption which focuses on the consumer market. With the latter, a new product integrated from existing or new technologies is developed and taken to the customer market.

Rouse (2017) on the other hand considers disruptive technology to be that which either displaces already established technology whilst shaking up industry or a ground breaking product that creates a completely new industry. While considering these definitions, an argument that arises regards how innovation is diffused. Rogers (1995) on the one hand popularized that technological change occurred in a linear fashion where few people begin by adopting the technology, then more until the technology is ubiquitous in nature.

However, as Christensen (1997) and Moore (1995) argue, technological change diffuses in a rather non-linear manner with adoption occurring at immensely high rates, sometimes overnight, for instance, M-PESA, a mobile money transfer service, that has disrupted the banking sector by enabling mobile phone users to send and receive money through their phones without the requirement of a bank account. As such, banks have been

forced to find ways to collaborate with the technology through ways such as offering, for instance, Kenya Commercial Bank (KCB) loans to Commercial Bank of Africa's (CBA) M-SHWARI platform where mobile phone users are able to save through the bank in a similar fashion to having a bank account.

2.3.2 History of technological disruption

Of importance to note is that technological disruption is not constrained to the current internet age as has been suggested by the major disruptions that have characterized the previous decades. Diphoko (2017) draws a parallelism between how mechanical refrigeration disrupted the ice trade in the 19th century and how emerging technologies are disrupting the current business environment.

As Diphoko (2017) notes, before the invention of refrigeration, Frederic Tudor had mastered the art of carving ice blocks from ponds in Massachusetts and shipping them off to distant lands as far as India in insulated ships. During the period, ice cutting had taken dominance with the Tudor company setting up ice houses in different countries such as Bombay, Madras, New Orleans, Jamaica etc. However, the invention of the refrigerator disrupted the industry with the increased commercialization of fridges allowing ice to be made in homes. With time, the ice houses lost business and shrunk in size as the refrigerators increased in popularity.

A second example of technological disruption was seen with the introduction of Gutenberg's printing press (Eisenstein, 1997). In the period before its invention, monks were responsible for copying manuscripts by hand. As such, the strong opposition from scribes and monks to the innovation stemmed from the notion that it would put them out of business. However, they were eventually put out of business, though gradually, as the printing press brought with it immense advantages such as easily reproducing copies in an efficient and effective manner.

Ross (2005) further highlights the technological disruption brought about by recording sound. He postulates that two different critics arose from the invention of the phonograph. On the one hand, musicians opposed the technology as recording sound would mean that the art of making live music would be eroded with people preferring to listen to recordings in the comfort of their own homes. On the other hand, supporters of the innovation saw it as a means to distribute music to distant geographical regions thereby alleviating the need to visit concert halls to listen to music. Music pirating became a contentious issue since lewd individuals would find ways to obtain music illegally thereby causing losses to musicians.

However, the prospect of monetizing music copies and protection by the copyright law has over time enabled musicians to benefit from their craft. With modern technologies such as iTunes, musicians are able to make profit from their skills. Similarly, the emergence of movie streaming technologies such as Netflix has been critiqued in a similar fashion as it disrupted movie theatre halls. While Netflix enables streaming of movies conveniently from one's home, movie theatres often lose business since individuals prefer to stay at home. However, theatre halls have been forced to keep innovating in order to be able to maintain their appeal among the general population. For instance, introduction of 3D movies provides an edge that customers appeal.

2.3.3 ICT innovation leading technological disruption

Juma (2016) highlights that mechanical innovations that disrupted business in the previous decades faced a lot of opposition. For instance, the author cites inventions such as the mechanical refrigerator and the printing press that were highly fought against before they were eventually accepted. Similarly, the author argues that ICT based technological innovations disrupting the business environment will face opposition from established social orders arising from the worry of business displacement arising from the new technology.

Manyika et al., (2013) in addition, highlight several innovations that are predicted to transform both how humans live and work that in the current decade. Such innovations include: mobile computing; automation of knowledge work; artificial intelligence; internet of things; cloud computing; advanced robotics; autonomous and near autonomous vehicles; next generation genomics; energy storage; 3D printing; advanced materials; advanced oil and gas exploration and recovery; and renewable energy.

Diphoko (2017) notes that the adoption of mobile computing is at the forefront of technological disruption. The author highlights that the functionalities of the phone have increased with time, with their use being transformed from the traditional calling functionality to the current scenario where they are utilized in carrying out of entire tasks remotely through intelligent apps that are installed in them. In addition, with artificially intelligent assistants from Apple's Siri to Samsung's Bixby, they are advancing to a point where they are easily handling complex computing functions thereby eliminating the need for working on desktops and laptop computers.

2.3.4 ICT innovation leading technological disruption in Kenya

While technological disruption is largely a global phenomenon, it is however being experienced in developing countries, Kenya being one of them. Several ICT innovations have been observed to lead business disruption in the Kenyan business environment. First, is the entry of Uber, a peer-to-peer ride-sharing taxi application that runs on mobile devices. With the solution, drivers are able to link with customers who require their services to transport them to required destinations.

However, as Juma (2017) notes, Uber's entry into the country faced numerous opposition from different social orders. The author notes that upon introduction into the Kenyan market, drivers from existing taxi companies resorted to physically attacking Uber drivers as they perceived that the technology was to rob them of current livelihoods. Over the

years, numerous ride sharing apps have emerged. Bright (2016) notes that Safaricom, Kenya's largest telecommunication network launched Little cab, a ride sharing app that has so with time rivaled Uber. The author similarly cites other transit solutions such as Maramoja and Dandia. Based on the observations, it is argued that the disruption brought about by Uber transformed the business environment to a point where the organizations were coerced to develop similar solutions in order to sail through business.

A second innovation that has been observed to disrupt the business environment is M-PESA, a mobile money transferring application that was founded in 2007 by Vodafone for Safaricom, Kenya's largest telecommunication network (vodafone.com, 2017). The solution, which capitalized on the fact that only 5% of Kenyans previously had access to banks, empowers its users who have access to mobile phones but are however limited in accessing bank accounts, to send and receive money, top up their airtime, make bill payments and even request for loans via its M-SHWARI solution (Ndemo, 2016).

A third innovation is the rise of e-commerce as the standard way of doing business. Collins (2014) notes that Jumia e-commerce solution has disrupted commercial activity around Africa with a business model that sees it deliver goods at the doorsteps of their customers. As a result of the company's success, different e-commerce companies have arisen offering diverse goods ranging from electronics such as phones and tablets to property and apparel. Businesses are as a result recognizing the need for e-commerce as an alternative channel for their products.

2.4 Adoption of ICT innovation in Kenyan SMEs

The increased disruption brought about by technological innovation has seen SMEs adopt ICT innovations in an increasing rate. Monks (2017) notes that since the launch of M-Pesa in 2007, the service has so far attained 30 million users in 10 countries. Further, in 2016 alone, the system processed about 6 billion transactions at a peak rate of 529 transactions per second.

The author also notes that despite other solutions cropping up, such as the Kenyan Bankers Association app that enables transfer of money across different accounts, M-PESA still dominates the market given its deep roots and ubiquitous nature in the region. In addition, Monks (2017) notes that M-PESA appeals to the people at the lower base of the pyramid thereby being dislodged by other competitors will take considerable time.

M-pesa as an ICT innovation has had considerable impact on the Kenyan economy and the manner in which businesses are conducted. Logan (2017) on the one hand describes how the innovation has enabled women-led households to alleviate themselves from poverty by enabling them to both change their occupations from subsistence farming to business oriented enterprises.

Further, Logan (2017) notes that women have been availed an opportunity in financial inclusion thereby being able to access microfinance solutions through the solution. The Lipa na M-Pesa solution offered by the system has also enabled more businesses to operate in a risk free manner with operations being maintained through virtual money. The solution has also enabled different individuals to pay their bills via mobile money, thereby eliminating the need to visit different utility service providers such as water and power providers.

Ndemo and Weiss (2017) note that a second technological innovation that has been widely adopted is the Ushahidi mobile app. Ruffer (2011) posits that Ushahidi which translates to testimony in English, is an interactive mapping tool that is employed in crisis

situations that humanitarian workers can use to help them get assistance. Further, the author notes that despite the solution being used initially as a web solution that helped journalists map reports of violence after the 2008 Kenyan post election violence, it has since developed into a non-profit technology company that specializes in free and open source software for collection of information, visualization and information mapping. Currently, the innovation has been adopted across continents such as in rescuing survivors of the Haiti earthquake, floods in Pakistan and in crowd mapping plot tube strikes in London.

A third innovation that has changed how business is conducted is e-commerce. Collins (2014) notes that with the entry of Jumia, other e-commerce competitors have since emerged as they rival the giant. Further, diversified businesses have as well adopted e-commerce ranging from electronic supplies to property and clothing.

While the motivation for adopting ICT technological innovations arises from the need to improve business performance and to innovate business models in order to create more value for customers, different prerequisites are needed to lead the innovations to business success. Technical implementation often does not translate to business success as most businesses realize. Instead, various strategies are required in order to enable innovations to be translated into tools that drive business success.

People are at the centre of adoption of technological innovation as they only adopt innovation if they believe that enhances their utility when all things are considered (Rogers, 1995). Organisations are differentiated primarily by the cultures they choose to foster in addition to other factors. As such, organisation cultures that enhance the adoption and use of ICT innovation enable firms to translate such innovations into business tools.

2.5 Models to evaluate organization culture

Several models exist to facilitate the evaluation of organization culture in organizations. The current study reviewed two key models and based on the nature of the study, one was selected.

Competing Value Framework

The competing values framework consists of three levels, namely, people, practices and purposes (Quinn & Rohrbaugh, 1983). While people represent the individuals in the organization, practices on the one hand represent the culture and key competencies in the organization. Outcomes, on the other hand, represent the values the organization seeks to create. While the framework is useful in streamlining organizations and developing programs for supervision and management, it was not selected since the study focused on understanding the nature of the different SME organisation cultures.

Hofstede's Multi-focus model

According to Hofstede (2011), organization culture can be dimensionalized into six categories. The first relates to the effectiveness of the organization in terms of how and what gets done. As such, effectiveness is categorized into means and goal oriented cultures where with the former, organizations focus on how work gets done while with the latter, the focus is on the actual work delivered. The second dimension pertains to customer orientation where internally driven cultures have employees focusing on taking initiatives and acting according to what is best for their customers while externally driven cultures have employees focusing on delivering customer requests.

The third relates to aspects of control where easy going cultures have an informal and more structurally loose approach to work while strict disciplined cultures have a more structured approach to work that involves planning and strictness. The fourth relates to social control where in a local culture, employees identify easily with their leaders as teammates

while in a professional culture, such identification is on a more professional and work related manner.

The fifth, approachability, regards aspects of the ease with which new members join the organization. In open cultures, new employees are welcomed to the organization easily while in closed cultures, they have to prove themselves through their work before they can be accepted. Sixth, management philosophy, regards the level of concern given to employees' vis a vis performance at work. In employee-centered cultures, leaders take priority over their employees' well-being while in work centered cultures, priority is given to high task performance.

Several reasons were advanced for the use of the multi-focus model. First, it clearly categorized organizational culture into six dimensions that would be easily measured empirically. Second, the model has been extensively used in dimensionalizing organizational cultures in the Netherlands (Hofstede, 2011). The author cites its use in toy manufacturing companies and municipal corporations.

2.6 Conceptual framework

In order to evaluate the variables of interest in the study, organizational culture, employee behaviour, and ICT adoption, a conceptual framework was developed. The framework comprised of Hofstede's Multi-focus model to evaluate organization culture (Hofstede, 2011) and a model to assess employee behaviour towards ICT adoption.

2.6.1 Hofstede's Multi-focus model

Breakdown of the meaning of each construct

Effectiveness	Means vs goal oriented cultures
Customer Orientation	Internal vs external drive
Control	Easy going vs tight control
Social Control	Local vs professional identity
Approachability	Open vs closed systems
Management Philosophy	Employee concerns vs work completion

Table 2.1 Constructs of Hofstede's Multi-focus model (Hofstede, 2011)

2.6.2 Employee behavior

The model used is adopted from (Gao, Krogstie & Siau, 2011) who undertook a study on developing an instrument to measure the adoption of mobile services. The model was selected since it highlighted different employee behaviour that were seen to be significantly influenced by organizational culture.

Breakdown of the meaning of each construct

Trust	Belief that technologies do not pose threats to the organization
Personal Incentives	Willingness to experiment with new technologies
Perceived Usefulness	Extent to which employees believe that new technologies enhance their work
Ease of Use	Extent to which employees believe that using new technologies is free from effort
Intention to use	Likelihood to engage in the new technologies
Frequency of use	How frequently new technologies are used

Table 2.2 Constructs of employee behavior model (Gao, Krogstie & Siau, 2011)

2.6.3 Hypotheses

H₁: There is a relationship between organisation culture and employee behavior.

H₂: There is a relationship between employee behavior and the adoption of ICT innovation.

H₃: There is a relationship between organisation culture and the adoption of ICT innovation.

2.6.4 Rationale of the research framework

Numerous studies demonstrate that organisation culture influences the behaviour of employees particularly their work performance, engagement and commitment at the workplace. Consequently, based on this finding, the framework theorizes that organisation culture directly influences employee attitudes and behaviour and their intention to use ICT innovation (new technologies).

It hypothesizes that a relationship exists between organisation culture and employee behaviour as well as that between employee behaviour and their adoption of ICT innovation. Finally, it theorizes that a relationship exists between organisation culture and adoption of ICT innovation.

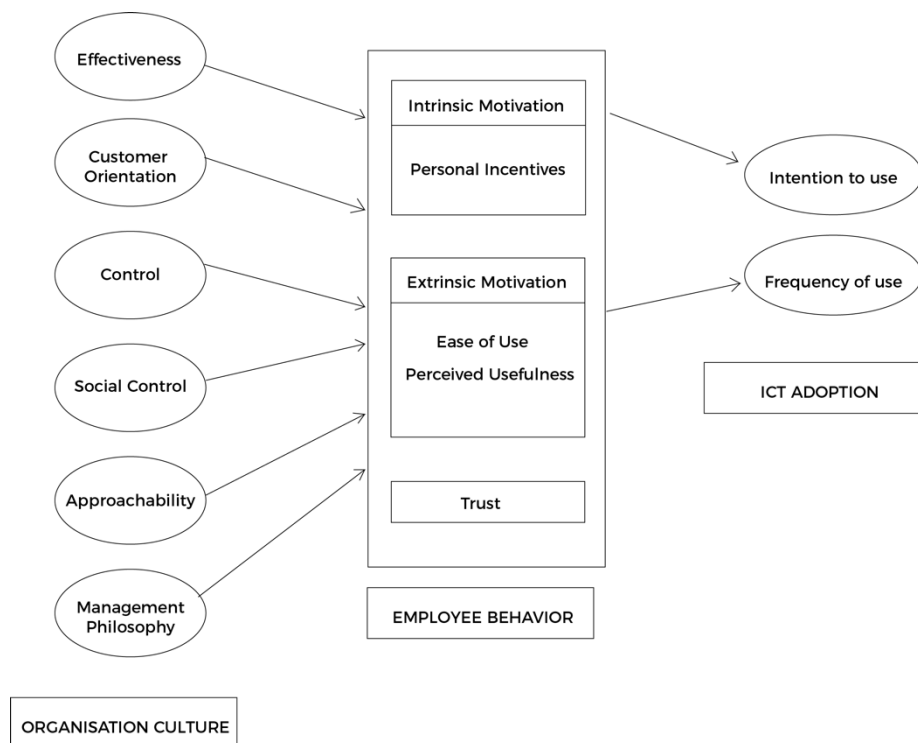


Figure 2.2 Conceptual framework (author's own)

The study assesses the organization culture dimensions from dimensions of organisation culture (Hofstede, 2001) on one end to their influence on developing behavior and attitudes on the other. Similarly, it seeks a correlation between these organization culture dimensions to the adoption of ICT (Gao, Krogstie & Siau, 2011) as well as the correlation between behavior developed as a result of organization culture and adoption of ICT.

2.7 Conclusion

The chapter has reviewed diverse literature sources elaborating on organization culture, employee behaviour, ICT adoption, and technological disruption. Further, it has developed a conceptual framework to guide the actual study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter elaborates on the methodology adopted in the study. It adopts the research onion framework to guide the research process (Saunders et al., 2009). A reason for its selection is that it provides stepwise guidance in carrying out a given research strategy thereby making the process structured and valid. The framework is divided into several layers which progressively increase in detail as the onion becomes ‘peeled away’.

At its outermost layer, the framework elaborates on the research philosophy and proceeds to describe the research strategy, choice, and time horizon aspects respectively. It also describes the techniques and procedures used in data collection and analysis. As the chapter concludes, it discusses various ethical considerations that the research methodology adheres to in addition to outlining anticipated limitations. It also describes concerns for validity, reliability and generalizability.

3.2 Research philosophy

According to Kothari (2014), the research philosophy delineates the belief about the manner in which data pertaining to a given phenomenon ought to be gathered, analyzed and utilized. The author further notes that four main philosophies exist: positivism; pragmatism; realism; and interpretivism. The author highlights that despite the paradigms being important in knowledge building, they however differ in their ontology, epistemology, and axiology.

The current study aims to investigate the influence of organization culture on the adoption of ICT adoption among Kenyan SMEs. As such, a positivist philosophy is adopted since the study seeks to investigate relationships between components in the phenomena using a scientific approach (Collins, 2010). Additionally, the philosophy is adopted since the study aims to investigate world phenomena without interfering with it.

3.3 Research approach

Kothari (2014) notes that two main research approaches exist: deductive and inductive. The author notes that a major difference between the two approaches stems from the fact that while the former takes a top-down approach with the researcher beginning by developing law-like generalizations and hypotheses that are later tested by collecting empirical observations. The latter, on the other hand, takes a bottom-up approach with the researcher beginning with empirical observations and proceeding to build theory from them.

A deductive research approach is adopted since at the onset of the study, there is need to explain the causal relationships between the study variables, organization culture and adoption of ICT innovation. Similarly, the study generates several hypotheses that will be tested through the collection and analysis of data. Once the data is analyzed, it will be possible to test the validity of the hypotheses (Kumar, 2008).

3.4 Research strategy

Kumar (2008) describes the research strategy as the actual technique employed by the researcher in carrying out the work. The author highlights various strategies available in undertaking research studies, namely, case studies, surveys, action research, experiments, systematic literature review, and information system development. Given that the study aims to collect data from a large sample in a standardized and systematic economic manner, a survey will be employed as the research strategy.

Mitchell & Jolley (2013) note that surveys are important when there is need to collect a lot of information from a large sample in a short duration of time. Similarly, surveys are a relatively inexpensive method to get information about peoples' attitudes, beliefs and behaviors. Such aspects are in line with the study as the time to conduct the research is limited and as well, the main concern on the study is getting information about people's perceptions. However, the authors acknowledge that surveys are limited since they have poor internal

validity and thus don't reveal why something happened. In addition, in case the respondents' self reports are inaccurate, the survey will have a poor construct validity.

3.5 Research choice and time horizon

De Vaus (2007) notes that two research choices may be adopted in any given study: mono and multiple method. The author highlights that while the mono method utilizes only one approach in collecting data, the multiple method uses a combination of two data collection approaches. De Vaus (2007) further adds that the multi-method is divided into two – the mixed and multi-method. With the mixed method, the researcher uses a combination of qualitative and quantitative data collection techniques while with the multi method, the data is segmented into sections, for which data is collected using either a qualitative or quantitative method.

Crowther & Lancaster (2008) describe two research time horizons that a study may adhere to: cross-sectional and longitudinal. With the latter, data is collected from the sample over a duration of time while with the former, the data is collected during a given point in time. The current study adopts a cross-sectional design since it aims to collect data at one point in time. Further, it adopts a mono research choice where quantitative data collection will be employed.

3.6 Study Population

The study aims to survey SMEs, based in Nairobi, that heavily rely on ICT as the backbone to drive their businesses. A reason for the selection is that given the impact of disruptive ICT in changing the manner in which business is conducted, such businesses have to adapt to the changing business environment in order to survive in the industry.

3.7 Exclusion / Inclusion criteria

The inclusion criteria in the study consists of all SME employees who agree to take part in the study voluntarily while the exclusion criterion consists of employees who do not give consent in taking part in the study.

3.8 Sampling

3.8.1 Sampling method

Babbie (2009) postulates that two types of sampling techniques exist – probability and non probability sampling. The author notes that probability sampling is the most suitable sampling technique as samples collected, are representative of the entire population thereby presenting credible results. The author adds that probability sampling is further divided into two – random and stratified sampling. On the other hand, Babbie (2009) highlights that non probability sampling is suitable where the researcher is not concerned with generalization of the entire population. Such sampling is common in social research where trying to generalize the entire population may be difficult and as well, end up being too expensive.

In the current study, the researcher targets to survey a representative sample of technology SME firms in Nairobi randomly. As such, simple random sampling technique is selected to obtain the study population given that all SMEs have an equal chance of being selected. Additionally, the technique is preferred due to its simplicity in use, being free from bias, and based on the fact that only limited knowledge is sufficient to utilize the method.

However, it is limited to several disadvantages such as difficulty in contacting widely dispersed members of the population and it is also associated with larger errors from the sample size unlike with other sampling techniques (Guest & Namey, 2015). The researcher targets to sample 100 respondents drawn from different SMEs using the simple random sampling technique.

3.9 Data Collection and Analysis

Due to the mono method adopted for the study, the data collection method adopted is quantitative in nature where questionnaires will be administered via an online survey monkey tool since it is an inexpensive and efficient method. Jones and Gratton (2015) note various advantages of using questionnaires in data collection such as: they maintain anonymity,

provide relatively cheap access over geographically distributed areas and as well they potentially reduce bias when well structured.

The questionnaire design is structured based on three key dimensions summarized in the table 3.1 below. The questions are further designed using Likert scales in order to gauge the different respondent perceptions.

Questionnaire dimensions
Personal details
Dimensions of organization culture
Adoption of ICT

Table 3.1 Questionnaire dimensions

Upon collecting data from the respondents, it will be analyzed using Statistical Package for Social Sciences (SPSS) using both descriptive and inferential statistics. With the former, measures such as means, frequencies standard deviation are utilized while with the latter, bivariate correlation using Pearson’s and Spearman’s correlations are employed in order to investigate the relationship between the dependent and independent variables (Beaver, Beaver & Mendenhall, 2006). In addition, univariate regression will be utilized to help identify the most important organization culture dimensions for the study.

3.10 Data reliability, validity and generalizability

To ensure that the data obtained is reliable, the researcher will ensure that the wordings of the questionnaires are clear to avoid ambiguity. In addition, the questionnaires will be administered at a time when the respondents’ mood is not compromised for instance, due to overwork (Anderson & Arsenault, 2005). The questionnaires will as well be administered to employees in tech SMEs in order to ensure validity is maintained in the study. Additionally, since the study focuses primarily on technology SMEs, it is anticipated that the results will be generalizable.

3.11 Ethical considerations

Various ethical issues are considered in the research study. First, is the requirement to ensure that the respondents are not harmed in any way. The data is collected via a public online portal thereby ensuring the data rights of respondents are protected. Second, is the requirement of obtaining consent from the respondents (Sng, Yip & Han, 2016). The researcher ensures that all participants give consent in taking part in the study by offering them a letter of consent detailing the aim of the research and providing an option for them to opt out of the research if deemed necessary.

A third aspect is the right to privacy where the questions presented to the participants are structured in such a way that no personal details are to be entered by the respondents (Bryman, 2012). For instance, their names or identification numbers. Further, in the analysis, the respondents are identified by pseudo names in order to maintain privacy. A fourth ethical concern is to avoid deceiving the respondents by breaching confidentiality in sharing their personal responses in public (Grinnell & Unrau, 2005). The study complies to the data protection act and ensures that all responses are maintained securely.

3.12 Limitations of the methodology

The research methodology is associated with several challenges. First, given that it is conducted using an online platform, this poses a risk of leaving out some of the population in SMEs as the study does not consider other offline methods that would suit them. For instance, printing and delivering questionnaires offers an alternative suitable solution for most respondents who do not prefer online media.

Second, it is also challenging to avoid online fraud as most random participants may give responses only for the sake of completing the activity rather than contributing to the survey. Third, the random sampling technique results in widely dispersed respondents which leads to further challenges in contacting them for the study.

3.13 Conclusion

The section has described the the methodology employed in undertaking the study using the research onion framework (Saunders et al., 2009). Additionally, it has highlighted important ethical issues that the study will adhere to in order to ensure the rights of participants are carefully considered. It has also identified various limitations that are anticipated.

CHAPTER FOUR: RESULTS & DISCUSSION

4.1 Chapter Introduction

The chapter presents the results collected in the study. As a result, it is divided into five sections where the first presents the descriptive characteristics of the data. In the second section, the data is tested for normality while in the third, reliability and validity checks are conducted. In the fourth section, correlation techniques are employed in undertaking inferential data analysis in order to draw meaningful implications from it. The last section tests the hypotheses identified at the onset of the study.

4.2 Descriptive Analysis

At the onset, the research targeted 150 respondents drawn from 100 different ICT SMEs in Kenya. However, 128 responded to the administered questionnaires leading to an 84.67% response rate. 2 responses had been partially filled thereby being deleted from the samples and in effect reducing the total responses to 126, an 84% response rate. The table 4.1 below summarizes the general information of the respondents.

Age Group	Count	Percentage
18-30	70	55.6%
31-40	43	34.1%
41-50	9	7.1%
50+	4	3.2%
Gender	Count	Percentage
Male	109	86.5%
Female	17	13.5%
Years working in ICT	Count	Percentage
Less than 1 year	3	2.4%
1-5 years	61	48.4%
6-10 years	41	32.5%
10 years+	21	16.7%
Role in Organization	Count	Percentage
Employee	43	34.1%
Manager	83	65.9%

Table 4.1 Respondents general information (author's own)

The results in table 4.1 revealed that there was a higher number of males (86.5%) than female (13.5%) respondents. Additionally, 80.9% of the respondents highlighted that they had worked in ICT for a period ranging from 1 to 10 years. Similarly, over half of the respondents (55.6%) were observed to be aged below 30 years while 65.9% of them were observed to be managers. 34.1% of the respondents were observed to be employees.

Table 4.2 below presents the results of the responses to the organisation culture dimensions.

Dimension	Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree
Effectiveness	21.4%	25.4%	16.7%	19.8%	16.7%
Customer orientation	60.3%	26.2%	10.3%	3.2%	0%
Control	31%	27.8%	25.4%	9.5%	6.3%
Social Control	40.5%	21.4%	20.6%	10.3%	7.1%
Approachability	28.6%	29.4%	19.8%	22.2%	8.7%
Management Philosophy	14.3%	19%	27.8%	24.6%	14.3%

Table 4.2 Responses on dimensions of organization culture

The results in table 4.2 revealed that apart from the management philosophy dimension that had 38.9% of the respondents differing with their counterparts, all other dimensions had higher percentages of respondents in agreement. For instance, effectiveness (46.8%), customer orientation (86.5%), control (58.8%), social control (61.9%) and approachability (58%). As such, this implied that respondents identified with a given type of organization culture.

Table 4.3 further presents results of the responses to employee behavior.

Dimension	Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree
Personal Incentives	42.1%	27%	17.5%	10.3%	3.2%
Trust	34.1%	37.3%	23%	4.8%	0.8%
Perceived usefulness	42.9%	39.7%	12.7%	4%	0.8%
Ease of use	25.4%	31%	31.7%	8.7%	3.2%

Table 4.3 Responses on employee behavior

Results in table 4.3 showed that with all dimensions assessed, all respondents had a high level of agreement to given employee behaviour in question. For instance, personal incentives (69.1%), trust (71.4%), perceived usefulness (82.6%), ease of use (56.4%).

Table 4.4 below highlights the summary of responses on the adoption of ICT innovation.

Dimension	Strongly Agree	Agree	Neither Agree nor disagree	Disagree	Strongly Disagree
Intention to Use	47.6%	37.3%	9.5%	4%	1.6%
Dimension	Very Often	Often	Sometimes	Rarely	Never
Frequency of Use	42.9%	41.3%	13.5%	2.4%	0%

Table 4.4 Responses on adoption of ICT innovation

The results in table 4.4 show that in the evaluation of ICT innovation adoption, there was a high level of agreement towards intention of use (84.9%) and high frequency of use (94.2%). On the other hand, a lower percentage of respondents disagreed with the intention of use dimension (2%) as well as demonstrating low frequency of use (2.4%).

4.3 Tests for Normality

Two approaches were adopted in testing for normality, namely, Skewness and Kurtosis measures and Shapiro Wilks constant.

Skewness and Kurtosis Measures

According to Morgan et al. (2001), for a given distribution, skewness refers to its measure of symmetry while kurtosis on the other hand refers to the heaviness of its tails. SPSS package reports both skewness and kurtosis scores in addition to a standard error score for the two measures (Kerr, Hall & Kozub, 2003). In order to interpret the measures, a rule of

thumb is applied whereby each of the scores is divided by its respective standard error. As such, skewness scores are divided by the skewness standard error while kurtosis scores are divided by the kurtosis standard error. Upon division, results greater than +1.96 or -1.96 lead to the conclusion that the data is not normally distributed. However, where the scores lie within the given scores, normality is concluded.

In the study, data tested for normality included the dimensions of organization culture, employee behavior and adoption of ict innovation. Results obtained are summarized in the table 4.6 below.

Dimension	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Effectiveness	126	-0.167	0.216	-1.286	0.428
Customer orientation	126	-1.333	0.216	1.029	0.428
Control	126	-0.610	0.216	-0.451	0.428
Social Control	126	-0.722	0.216	-0.581	0.428
Approachability	126	-0.550	0.216	-0.755	0.428
Management Philosophy	126	0.106	0.216	-0.968	0.428

Table 4.5 Skewness and Kurtosis for organization culture

From the skewness results shown in table 4.5, only effectiveness and management philosophy dimensions were seen to be normally distributed. Customer orientation, control, social control, and approachability violated normality as the negative scores implied that they were negatively skewed.

Dimension	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Personal Incentives	126	-0.843	0.216	-0.247	0.428
Trust	126	-0.618	0.216	-0.134	0.428
Perceived usefulness	126	-1.071	0.216	1.032	0.428
Ease of use	126	-0.430	0.216	-0.342	0.428

Table 4.6 Skewness and Kurtosis for employee behavior

Based on the skewness results displayed in table 4.6, all elements of employee behavior, namely, personal incentives, trust, perceived usefulness and ease of use were not normally distributed given that the scores exceeded the + or – 1.96 rule of thumb. Further, the negative scores implied that the distributions were negatively skewed.

Dimension	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Intention to Use	126	-0.430	0.216	2.003	0.428
Frequency of Use	126	-0.773	0.216	0.042	0.428

Table 4.7 Skewness and Kurtosis for ICT adoption

From table 4.7 above, it was concluded that ICT adoption scores were not normally distributed given the high negative scores that exceeded -1.96. See the appendix section for the summarized SPSS Skewness and Kurtosis results.

Shapiro Wilks

In addition to the skewness and kurtosis, the Shapiro Wilks (S-W) test was additionally used to test for normality. According to Sen & Srivastava (2012), the test is popularly used for smaller sample sizes while Kolmogorov-Smirnov (K-S) is used for large sample sizes. As such, the S-W test was selected in the study given that the population sample was small (n=126). The authors further note that with the test, the null hypothesis posits that the data is drawn from a normally distributed population while the alternative hypothesis posits that the population is not normally distributed.

Santos-Fernandez (2013) further notes that the rule of thumb used in determining normality is that where the statistic p values are greater than 0.05, the dataset is not normally distributed whereas p values less than 0.05 implies that the dataset is normally distributed. The results of the test are summarized in the tables below for the dimensions of organization culture, employee behavior and adoption of ict innovation.

Dimension	Shapiro Wilks		
	Statistic	df	sig
Effectiveness	0.885	126	0.000
Customer orientation	0.707	126	0.000
Control	0.871	126	0.000
Social Control	0.835	126	0.000
Approachability	0.874	126	0.000
Management Philosophy	0.911	126	0.000

Table 4.8 Shapiro Wilks results for organization culture

The results of the statistic in table 4.8 above showed that the test statistic for the different organization culture dimensions was greater than 0.05 in all instances. As a result, it was concluded that the data was not normally distributed.

Further, Shapiro Wilks was utilized in assessing the employee behaviour responses as shown in table 4.10 below.

Dimension	Shapiro Wilks		
	Statistic	df	sig
Personal Incentives	0.825	126	0.000
Trust	0.849	126	0.000
Perceived Usefulness	0.797	126	0.000
Ease of use	0.885	126	0.000

Table 4.9 Shapiro Wilks results for employee behavior

The results of the statistic in table 4.10 above showed that the test statistic for the different employee behaviour dimensions was greater than 0.05 in all instances. consequently, it was concluded that the data was not normally distributed.

Finally, Shapiro Wilks was utilized in testing for normality in the ICT adoption responses.

Dimension	Shapiro Wilks		
	Statistic	df	sig
Effectiveness	0.761	126	0.000
Customer orientation	0.798	126	0.000

Table 4.10 Shapiro Wilks results for ICT adoption

The results of the statistic in table 4.10 above showed that the data was not normally distributed given that $p > 0.05$ in all instances. Refer to the appendix section for the summarized SPSS Shapiro Wilks results.

Following the Shapiro Wilks results, histograms for each dimension were extrapolated in order to investigate the distribution further. The histograms for all the organisation culture dimensions were observed to be left skewed apart from the management philosophy dimension that demonstrated a right skew.

Similarly, with employee behavior, all dimensions were observed to be left skewed apart from ease of use dimension that demonstrated right skew. All ICT adoption dimensions demonstrated right skewedness. The implication of the results was that responses were seen to be concentrated towards a given extreme. Refer to the appendix section for further review of the Histograms.

4.4 Reliability and Validity

According to Brown (2007) the reliability of a survey instrument refers to its consistency in assessing what it is expected to measure each time it is employed. As such, this implies that upon administering the survey repeatedly similar responses are expected. Newman and McNeil (1998) identify two approaches useful in estimating the reliability of survey instruments. First, is the use of Cronbach's Alpha.

The method is suitable when dealing with scaled choice or dichotomous-choice items where respondents are expected to select only one alternative. Second, is through asking the same question a second time in a camouflaged manner and proceeding to assess the percentage agreement of the responses.

The current study adopted Likert scale based questions given that they enabled easy assessment of the degree to which respondents agreed or disagreed with the given statements. As a result, Cronbach's Alpha was used to determine the reliability of the different survey questions. With the test, the rule of thumb is that a co-efficient of 0.7 is deemed acceptable internal consistency (Bryman and Cramer, 2009). Table 4.12 below summarizes the results of the Cronbach Alpha test.

Dimension	Items	Cronbach's alpha
Employee behaviour	4	0.764
ICT Adoption	2	0.544

Table 4.11 Cronbach's Alpha for the different dimensions

On the other hand, validity refers to the aspect of an instrument measuring what it is expected to (Newman and McNeil, 1998). The authors note two key forms of validity are required for a survey instrument, namely, content and criterion validity. With the former, the emphasis is given to the degree to which the content of a test is representative of the domain it is designed to cover. However, with the latter, concern is whether a given test represents a concrete outcome.

In the current study, extensive literature research was undertaken in order to ensure appropriate questions were selected for the questionnaires. Hofstede's multi-focus model was used to classify the different types of organization culture dimensions while a model on employee behaviour (Gao, Krogstie & Siau, 2011) was used to assess different behaviors towards adoption of ICT innovation. As such, it could be argued that both content and criterion validity concerns were attained.

4.5 Inferential Analysis

4.5.1 Correlation Analysis

In order to analyze the association between the different variables, Spearman Rank Correlation was used. A reason for its selection over Pearson's correlation was that the population was not normally distributed (Yazici, Yazici and Lesaffre, 2016). To begin with, the association between organization culture and employee behaviour was sought. The results are summarized in table 4.12 below.

Organization culture	Employee behaviour							
	Personal Incentives	Sig	Trust	Sig	Perceived Usefulness	Sig	Ease of use	Sig
Effectiveness	-0.073	0.418	-0.079	0.379	-0.052	0.560	-0.136	0.129
Customer orientation	0.205	0.021	0.094	0.296	0.096	0.283	0.088	0.327
Control	0.165	0.064	0.310	0.000	0.135	0.130	0.239	0.007
Social Control	0.278	0.002	0.314	0.000	0.287	0.001	0.221	0.013
Approachability	0.069	0.440	0.025	0.785	0.126	0.158	-0.074	0.411
Management Philosophy	0.268	0.002	0.059	0.509	0.038	0.669	0.014	0.873

Table 4.12 Correlation of organization culture and employee behavior

According to Yazici, Yazici and Lesaffre (2016), a similar rule of thumb to Pearson's correlation is used in interpreting Spearman's rank correlation. As such, the strength of the correlation coefficient ranges from -1 to +1 with the former indicating a strong negative relationship and the latter indicating a strong positive relationship. Further, p values less than 0.05 indicate that the relationship between the variables is not statistically significant while values greater than 0.05 indicates that the relationship between variables is statistically significant (Yazici, Yazici and Lesaffre, 2016).

From the results collected in table 4.12 above, it was observed that each employee behavior was influenced by particular organization culture dimensions. To begin with, it was noted that customer orientation ($r_s = 0.205$, $p=0.021$), social control ($r_s = 0.278$, $p=0.002$), and management philosophy ($r_s = 0.268$, $p=0.002$) dimensions of organization culture had a moderate impact on personal incentives behavior given that the coefficients ranged between 0.205 to 0.278. further, since it was also observed that $p<0.05$ in all cases, it was concluded that a statistically significant relationship existed between personal incentives and the three variables.

Secondly, it was observed that control ($r_s = 0.310$, $p < 0.001$) and social control ($r_s = 0.314$, $p < 0.001$) organization culture dimensions had an influence on trust. The correlation coefficients implied a strong relationship with trust behavior while p values less than 0.05 implied that the relationship was statistically significant. Only social control ($r_s = 0.287$, $p = 0.001$) was seen to influence perceived usefulness while control ($r_s = 0.239$, $p = 0.007$) and social control ($r_s = 0.221$, $p = 0.013$) were seen to influence ease of use perception. The strength of the coefficients implied that a moderate relationship existed between the variables while p values < 0.05 implied that the relationships were statistically significant.

Further, the correlation between employee behavior and ICT adoption was sought using Spearman correlation. Results are summarized in table 4.13 below.

Employee behaviour	ICT Adoption			
	Intention to use	Sig	Frequency of use	Sig
Personal Incentives	0.368	0.000	0.397	0.000
Trust	0.390	0.000	0.410	0.000
Perceived Usefulness	0.330	0.000	0.310	0.000
Ease of use	0.406	0.000	0.259	0.003

Table 4.13 Correlation of employee behaviour and ICT adoption

The results in table 4.13 above illustrated that each employee behaviour had a significant impact on both the intention to use and frequency of use given that $p < 0.05$ in all cases. Further, based on the strength of the coefficient, it was observed that ease of use had the highest impact on intention to use ($r_s = 0.406$, $p < 0.001$) based on the strength of the coefficient while trust had the highest influence on frequency of use ($r_s = 0.410$, $p < 0.001$).

Finally, the correlation between organization culture and ICT adoption was sought using Spearman correlation. Results are summarized in table 4.15 below.

Organization culture	ICT Adoption			
	Intention to use	Sig	Frequency of use	Sig
Effectiveness	-0.078	0.388	-0.013	0.889
Customer orientation	0.243	0.006	0.08	0.371
Control	0.203	0.022	0.025	0.780
Social Control	0.289	0.001	0.220	0.013
Approachability	0.067	0.454	0.039	0.661
Management Philosophy	-0.022	0.808	0.018	0.838

Table 4.14 Correlation of organization culture and ICT adoption

From the results in table 4.14, it was observed that there was a significant relationship between intention of use and organization culture dimensions, customer orientation ($r_s = 0.243$, $p=0.006$), control ($r_s = 0.203$, $p=0.022$), and social control ($r_s = 0.289$, $p=0.001$). Similarly, it was noted that a relationship existed between social control ($r_s = 0.220$, $p=0.013$) and frequency of use. Based on the range of coefficients (0.203 to 0.289), it was concluded that a weak to moderate relationship existed between the variables.

4.5.2 Regression Analysis

According to Urdan (2015), Kruskal Wallis test is an alternative for the ANOVA that is useful in comparing the means of two or more groups of the independent variable on one dependent variable to see if the group means are independent from one another. The test is non parametric in nature and does not require the normality assumption to be met. Given that the data in the survey was not normal, the test was conducted in order to investigate if the means of the dimensions would vary based on the dependent variables, employee behavior and ICT adoption.

To begin with, differences in the means of the organization culture dimensions were investigated based on the role one played in the organization. The null hypothesis postulated

that there were no significant differences in the means of the dimensions based on job role, i.e. being a manager or employee did not lead to significant differences in the different dimensions. Figure 4.1 below summarizes the results.

Kruskal-Wallis Test

Ranks			
	Role_in_Organization	N	Mean Rank
Effectiveness	Manager	83	59.85
	Employee	43	70.55
	Total	126	
Customer_Orientation	Manager	83	62.72
	Employee	43	65.01
	Total	126	
Control	Manager	83	64.24
	Employee	43	62.07
	Total	126	
Social_Control	Manager	83	65.92
	Employee	43	58.83
	Total	126	
Approachability	Manager	83	59.25
	Employee	43	71.71
	Total	126	
Management_Philosophy	Manager	83	62.03
	Employee	43	66.34
	Total	126	
Personal_Incentive	Manager	83	63.67
	Employee	43	63.16
	Total	126	

Test Statistics ^{a,b}							
	Effectiveness	Customer_Orientation	Control	Social_Control	Approachability	Management_Philosophy	Personal_Incentive
Chi-Square	2.540	.147	.108	1.171	3.508	.414	.006
df	1	1	1	1	1	1	1
Asymp. Sig.	.111	.702	.743	.279	.061	.520	.937

a. Kruskal Wallis Test

Figure 4.1 Kruskal Wallis test for organizational culture dimensions

Results of the test revealed a p value of 0.937 ($p > 0.05$) thereby implying that differences in the means of the organizational culture dimensions were not statistically significant.

Similarly, the influence of the job role on employee behavior was investigated. The null hypothesis posited that there was no significant difference in the means of employee behavior based on job role while the alternative postulated that significant differences arose from the same. Figure 4.2 below summarizes the results.

Kruskal-Wallis Test

Ranks			
	Role_in_Organization	N	Mean Rank
Personal_Incentive	Manager	83	63.67
	Employee	43	63.16
	Total	126	
Trust	Manager	83	62.68
	Employee	43	65.08
	Total	126	
Perceived_Usefulness	Manager	83	63.38
	Employee	43	63.73
	Total	126	
Ease_of_Use	Manager	83	66.54
	Employee	43	57.63
	Total	126	

Test Statistics ^{a,b}				
	Personal_Incentive	Trust	Perceived_Usefulness	Ease_of_Use
Chi-Square	.006	.137	.003	1.832
df	1	1	1	1
Asymp. Sig.	.937	.712	.956	.176

a. Kruskal Wallis Test
 b. Grouping Variable: Role_in_Organization

Figure 4.2 Kruskal Wallis test for the employee behavior

The significant value p from the test was recorded as 0.176. Since ($p > 0.05$) differences in the means of the employee behaviour were not statistically significant.

Finally, the influence of job role on ICT adoption was investigated. The null hypothesis posited that there were no significant differences in the means of ICT adoption factors based on employee role. Figure 4.3 summarizes the results.

Kruskal-Wallis Test

Ranks			
	Role_in_Organization	N	Mean Rank
Intention_to_Use	Manager	83	65.09
	Employee	43	60.43
	Total	126	
Frequency_of_Use	Manager	83	65.36
	Employee	43	59.91
	Total	126	

Test Statistics ^{a,b}		
	Intention_to_Use	Frequency_of_Use
Chi-Square	.550	.745
df	1	1
Asymp. Sig.	.458	.388

a. Kruskal Wallis Test
 b. Grouping Variable: Role_in_Organization

Figure 4.3 Kruskal Wallis test for the ICT adoption

The significant value p from the test was recorded as 0.388. Since ($p > 0.05$) differences in the means of the ICT adoption were not statistically significant.

4.6 Hypotheses testing

Three hypotheses were formulated in the study. (1) There is a relationship between organisation culture and employee behavior. (2) There is a relationship between employee behavior and the adoption of ICT innovation and (3) There is a relationship between organisation culture and the adoption of ICT innovation.

Hypothesis	Relationship	Correlation values	Result
H1	Effectiveness → Personal incentives	-0.073 (0.418)	Reject
	Effectiveness → Trust	-0.079 (0.379)	Reject
	Effectiveness → Perceived usefulness	-0.052 (0.560)	Reject
	Effectiveness → Ease of use	-0.136 (0.129)	Reject
	Customer orientation → Personal incentives	0.205 (0.021)	Accept
	Customer orientation → Trust	0.094 (0.296)	Reject
	Customer orientation → Perceived usefulness	0.096 (0.283)	Reject
	Customer orientation → Ease of use	0.088 (0.327)	Reject
	Control → Personal incentives	0.165 (0.064)	Reject
	Control → Trust	0.310 (0.000)	Accept
	Control → Perceived usefulness	0.135 (0.130)	Reject
	Control → Ease of use	0.239 (0.007)	Accept
	Social Control → Personal incentives	0.278 (0.002)	Accept
	Social Control → Trust	0.314 (0.000)	Accept
	Social Control → Perceived usefulness	0.287 (0.001)	Accept
	Social Control → Ease of use	0.221 (0.013)	Accept
	Approachability → Personal incentives	0.069 (0.440)	Reject
	Approachability → Trust	0.025 (0.785)	Reject
	Approachability → Perceived usefulness	0.126 (0.158)	Reject
	Approachability → Ease of use	-0.074 (0.411)	Reject
	Management Philosophy → Personal incentives	0.268 (0.002)	Accept
	Management Philosophy → Trust	0.059 (0.509)	Reject
	Management Philosophy → Perceived usefulness	0.038 (0.669)	Reject
	Management Philosophy → Ease of use	0.014 (0.873)	Reject

Table 4.15 Hypotheses 1 tests

Interpreting the Hypotheses 1 tests

Effectiveness → Personal incentives

A significant value of (0.418) showed that there was no statistical relationship between the two dimensions thereby implying that effectiveness did not influence an employee's personal incentive behaviour.

Effectiveness → Trust

The significant value (0.379) highlighted that the two dimensions did not have any statistical relationship between them thereby implying that the employee's trust was not influenced by the effectiveness dimension.

Effectiveness → Perceived usefulness

The significant value (0.560) revealed that the two dimensions were not related to each other thereby implying that perceived usefulness was not influenced by effectiveness.

Effectiveness → Ease of use

A significant value of (0.129) showed that the dimensions were unrelated to each other thereby leading to the conclusion that the influence of effectiveness on ease of use was non-existent.

Customer Orientation → Personal incentives

A significant value of (0.021) showed that employee personal incentives behaviour was positively influenced by the customer orientation dimension.

Customer Orientation → Trust

The significant value (0.296) highlighted that the two dimensions did not have any significant relationship between them thereby implying that the employee's trust was not influenced by customer orientation.

Customer Orientation → Perceived usefulness

The significant value (0.283) revealed that the two dimensions were not related to each other thereby implying that perceived usefulness was not influenced by customer orientation.

Customer Orientation → Ease of use

A significant value of (0.327) showed that the dimensions were unrelated to each other thereby leading to the conclusion that the influence of customer orientation on ease of use was non-existent.

Control → Personal incentives

A significant value of (0.064) showed that there was no statistical relationship between the two dimensions thereby implying that control did not influence an employee's personal incentive behaviour.

Control → Trust

The significant value (0.000) highlighted that the two dimensions had a statistically significant relationship between them thereby implying that the employee's trust was influenced by the control dimension.

Control → Perceived usefulness

The significant value (0.130) revealed that the two dimensions were not related to each other thereby implying that perceived usefulness was not influenced by control.

Control → Ease of use

A significant value of (0.007) showed that the dimensions were related to each other thereby leading to the conclusion that control had a positive influence on ease of use behaviour.

Social Control → Personal incentives

A significant value of (0.002) showed that there was a statistical relationship between the two dimensions thereby implying that social control influenced an employee's personal incentive behaviour.

Social Control → Trust

The significant value (0.000) highlighted that the two dimensions had a statistically significant relationship between them thereby implying that the employee's trust was influenced by the social control.

Social Control → Perceived usefulness

The significant value (0.001) revealed that the two dimensions were statistically related to each other thereby implying that perceived usefulness behaviour was influenced by social control.

Social Control → Ease of use

A significant value of (0.013) showed that the dimensions were related to each other thereby leading to the conclusion that social control had a positive influence on ease of use behaviour.

Approachability → Personal incentives

A significant value of (0.440) showed that there was no statistical relationship between the two dimensions thereby implying that approachability did not influence an employee's personal incentive behaviour.

Approachability → Trust

A significant value (0.785) highlighted that the two dimensions did not have a statistically significant relationship between them thereby implying that employee trust was influenced by approachability.

Approachability → Perceived usefulness

The significant value (0.158) revealed that the two dimensions were not related to each other thereby implying that perceived usefulness was not influenced by approachability.

Approachability —→ Ease of use

A significant value of (0.411) showed that the dimensions were not related to each other thereby leading to the conclusion that approachability did not have any influence on ease of use behaviour.

Management Philosophy —→ Personal incentives

A significant value of (0.002) showed that there was a statistically significant relationship between the two dimensions thereby implying that control influenced an employee's personal incentive behaviour.

Management Philosophy —→ Trust

The significant value (0.509) highlighted that the two dimensions did not have a statistically significant relationship between them thereby implying that the employee's trust was not influenced by the management philosophy.

Management Philosophy —→ Perceived usefulness

The significant value (0.669) revealed that the two dimensions were not statistically related to each other thereby implying that perceived usefulness was not influenced by management philosophy.

Management Philosophy —→ Ease of use

A significant value of (0.873) showed that the dimensions were not statistically related to each other thereby leading to the conclusion that control did not have an influence on ease of use behaviour.

The second hypothesis was also analyzed further to identify the relationship between employee behaviour and ICT innovation adoption.

Hypothesis	Relationship	Correlation values	Result
H2	Personal Incentives → Intention to use	0.368 (0.000)	Accept
	Personal Incentives → Frequency of use	0.397 (0.000)	Accept
	Trust → Intention to use	0.390 (0.000)	Accept
	Trust → Frequency of use	0.410 (0.000)	Accept
	Perceived usefulness → Intention to use	0.330 (0.000)	Accept
	Perceived usefulness → Frequency of use	0.310 (0.000)	Accept
	Ease of use → Intention to use	0.406 (0.000)	Accept
	Ease of use → Frequency of use	0.259 (0.003)	Accept

Table 4.16 Hypotheses 2 tests

Interpreting the Hypotheses 2 tests

Personal Incentives → Intention to use

The significant value → (0.000) revealed that the two dimensions were statistically related to each other thereby implying that personal incentives behaviour had an influence on intention to use.

Personal Incentives → Frequency of use

The significant value → (0.000) revealed that the two dimensions were statistically related to each other thereby implying that personal incentives behaviour had an influence on frequency of use.

Trust → Intention to use

The significant value (0.000) revealed that the two dimensions were statistically related to each other thereby implying that trust behaviour had an influence on intention to use.

Trust → Frequency of use

The significant value (0.000) revealed that the two dimensions were statistically related to each other thereby implying that trust behaviour had an influence on frequency of use.

Perceived usefulness → Intention to use

The significant value (0.000) revealed that the two dimensions were statistically related to each other thereby implying that perceived usefulness behaviour had an influence on intention to use.

Perceived usefulness → Frequency of use

The significant value (0.000) revealed that the two dimensions were statistically related to each other thereby implying that perceived usefulness behaviour had an influence on frequency of use.

Ease of use → Intention to use

The significant value (0.000) revealed that the two dimensions were statistically related to each other thereby implying that ease of use behaviour had an influence on intention to use.

Ease of use → Frequency of use

The significant value (0.003) revealed that the two dimensions were statistically related to each other thereby implying that ease of use behaviour had an influence on frequency of use.

Finally, the last hypothesis evaluating the influence of organization culture on ict innovation adoption was as well tested as shown in table 4.18 below.

Hypothesis	Relationship	Correlation values	Result
H3	Effectiveness → Intention to use	-0.078 (0.388)	Reject
	Effectiveness → Frequency of use	-0.013 (0.889)	Reject
	Customer orientation → Intention to use	0.243 (0.006)	Accept
	Customer orientation → Frequency of use	0.08 (0.371)	Reject
	Control → Intention to use	0.203 (0.022)	Accept
	Control → Frequency of use	0.025 (0.780)	Reject
	Social Control → Intention to use	0.289 (0.001)	Accept
	Social Control → Frequency of use	0.220 (0.013)	Accept
	Approachability → Intention to use	0.067 (0.454)	Reject
	Approachability → Frequency of use	0.039 (0.661)	Reject
	Management Philosophy → Intention to use	-0.022 (0.808)	Reject
	Management Philosophy → Frequency of use	0.018 (0.838)	Reject

Table 4.17 Hypotheses 3 tests

Effectiveness → Intention to use

The significant value (0.388) revealed that the two dimensions were not statistically related to each other thereby implying that effectiveness dimension did not have an influence on intention to use.

Effectiveness → Frequency of use

The significant value (0.889) revealed that the two dimensions were not statistically related to each other thereby implying that effectiveness dimension did not have an influence on frequency of use.

Customer orientation → Intention to use

The significant value (0.006) revealed that the two dimensions were statistically related to each other thereby implying that customer orientation had an influence on intention to use.

Customer orientation → Frequency of use

The significant value (0.371) revealed that the two dimensions were not statistically related to each other thereby implying that customer orientation did not have an influence on frequency of use.

Control → Intention to use

The significant value (0.022) revealed that the two dimensions were statistically related to each other thereby implying that control dimension had an influence on intention to use.

Control → Frequency of use

The significant value (0.780) revealed that the two dimensions were not statistically related to each other thereby implying that control did not have an influence on frequency of use.

Social Control → Intention to use

The significant value (0.001) revealed that the two dimensions were statistically related to each other thereby implying that social control had an influence on intention to use.

Social Control → Frequency of use

The significant value (0.013) revealed that the two dimensions were statistically related to each other thereby implying that social control had an influence on frequency of use.

Approachability → Intention to use

The significant value (0.454) revealed that the two dimensions were not statistically related to each other thereby implying that approachability did not influence intention to use.

Approachability → Frequency of use

The significant value (0.661) revealed that the two dimensions were not statistically related to each other thereby implying that approachability did not influence frequency of use.

Management Philosophy —→ Intention to use

The significant value (0.808) revealed that the two dimensions were not statistically related to each other thereby implying that management philosophy did not influence intention to use.

Management Philosophy —→ Frequency of use

The significant value (0.838) revealed that the two dimensions were statistically related to each other thereby implying that management philosophy did not influence frequency of use.

4.7 Discussion

4.7.1 Influence of organization culture on employee behavior

The study adopted Hofstede's multi-focus model (Hofstede, 2001) to dimensionalize organization culture. As such, six key dimensions were identified as illustrated in table 2.1. Similarly, based on a model (Gao, Krogstie & Siau, 2011) employee behavior was assessed using four key dimensions summarized in table 2.2. Both constructs were assessed using Likert scales thereby generating varying responses as shown in tables 4.2 and 4.3. Correlation between the dimensions of organization culture and employee behaviour was then done as shown in table 4.13.

The analysis of the correlation results showed that different dimensions of organization culture had a significant impact on different employee behavior. To begin with, it was observed that customer orientation, control and management philosophy had a moderate influence on personal incentives employee behaviour. Among the three factors, social control ($r_s = 0.278$, $p=0.002$) was observed to have the strongest coefficient. Similarly, results in table 4.2 had previously revealed that 61.9% of employees agreed that they related with their leaders as teammates rather than on professional and work related terms. As such, this implied that regarding leaders as teammates led to a significant impact on the willingness of employees in experimenting with ICT innovations.

The finding reiterated De Jong and Den Hartog (2007) who revealed that leaders influenced the innovative behaviour of their employees through either deliberate actions as they stimulated idea generation or through daily behaviour. The finding as well reiterated Schein (2010) who argued that leaders shaped the culture fostered in the organization. The implication of the finding was that organizations that had employees relating with their leaders on a professional, work related manner resulted in lower personal incentives towards new ICT technologies.

Further, moderate correlation was observed between personal incentives and management philosophy ($r_s = 0.268$, $p=0.002$). Previous results in table 4.2 revealed that about 33.3% of employees agreed that their organizations were employee centered where preference was given to their wellbeing at the expense of their tasks. Consequently, this implied that higher levels of personal incentives would be observed where the management focused on the wellbeing of their workers. The finding reiterated Price and Whiteley (2014) who revealed that employee commitment levels would be a direct result of their perception of their organization culture. As such, the implication of the finding was that organizations that had an emphasis on task performance over employee well being would have lower levels of personal incentives.

A lower correlation was observed between personal incentives and customer orientation ($r_s = 0.205$, $p=0.021$). Additionally, results in table 4.2 revealed that 86.5% of respondents had agreed that their organization had been structured to attend to customer requests rather than personal goals. The implication of the finding was that higher levels of personal incentives would be observed in organizations that focused on meeting customer needs thus being effective. The finding reiterated Denison, Haaland and Goelzer (2004) who revealed that organizations that had strong, productive organization cultures were associated

with increased growth in sales, satisfaction of employees, and overall performance of the organisation regardless of the physical location of the organization.

It was observed that the control dimension of organization culture had a strong influence on trust ($r_s = 0.310$, $p < 0.001$). Results in table 4.2 revealed that 58.8% of employees agreed that their organizations had an easy going culture thereby having an informal approach to work and were structured loosely. The implication of the finding was that easy going cultures promoted trust relationships between employees and managers. The finding reiterated Alston and Tippett (2009) who revealed that employee-manager trust levels increased as perceived cultures became more organic, that is, more informal.

Further, it was observed that the social control dimension of organization culture had a strong influence on trust ($r_s = 0.314$, $p < 0.001$). Results in table 4.2 previously revealed that 61.9% of respondents agreed that they related with their leaders as teammates rather than on professional and work related terms. As such, this implied that regarding leaders as teammates led to a significant impact on the employee-manager trust relationships in the organizations. A similar finding had been highlighted by Walters (2010) who revealed that the level of control in the organisation had a direct influence on the trust employees held towards their managers. The author would further argue that higher commitment levels were observed where employees were given control over their work integrity and quality.

It was also important to investigate the influence of organization culture on employee perceived usefulness of new technologies thereby their belief that new technologies would enhance their work. Correlation results in table 4.13 revealed that only social control had a statistically significant relationship with perceived usefulness ($r_s = 0.287$, $p = 0.001$). Additionally, results in table 4.2 had previously revealed that 61.9% of respondents agreed that they related with their leaders as teammates rather than on professional and work related terms.

The implication of the finding was that the usefulness perception towards new technologies improved where leaders related with employees as teammates. The finding reiterated De Jong and Den Hartog (2007) who revealed that leaders influenced the innovative behaviour of their employees through either deliberate actions as they stimulated idea generation or through daily behaviour. By extension, the finding also reiterated Suppiah and Singh Sandhu (2011) who revealed an influence of organization culture on tacit knowledge sharing among employees. It could be argued that a reason why social control influenced perceived usefulness was that as leaders easily interacted with employees as teammates, innovativeness improved through the sharing of tacit knowledge.

Finally, it was also observed that social control ($r_s = 0.221$, $p=0.013$) and control ($r_s = 0.239$, $p=0.007$) were seen to influence ease of use perception by employees towards new technologies. Results in table 4.2 revealed that 61.9% of respondents agreed that they related with their leaders as teammates rather than on professional and work related terms while 58.8% of employees agreed that their organizations had an easy going culture thereby having an informal approach to work and were structured loosely. The finding implied that organizations that had easy going cultures and had employees relate with leaders as teammates eventually improved perceptions towards ease of use of the new technologies. The finding would reiterate De Jong and Den Hartog (2007) who argued that leaders had an influence on the innovativeness of employees either through daily behavior or through deliberate action. It could be argued that as leaders related easily with employees, they influenced their perception towards the ease of use of new technologies.

4.7.2 Influence of employee behavior on ICT innovation adoption

In the study, important relationships were observed upon correlating employee behaviour and ICT adoption of ICT as shown in table 4.14. To begin with, it was observed that the ease of use employee behaviour demonstrated the highest correlation coefficient with

intention to use ($r_s = 0.406$, $p < 0.001$). The coefficient, interpreted as being high, implied that organizations that fostered a culture that led to higher ease of use would as a result have higher ICT adoption rates. Additionally, it was observed from results in table 4.3 that 56.4% of respondents agreed that they considered new technologies as being useful in their work.

The finding reiterated De Jong and Den Hartog (2007) who argued that leaders had an influence on the innovativeness of employees. In this regard, perception of ease of use would be regarded as part of employee innovativeness. Consequently, it would be argued that organizations whose prevailing culture fostered beliefs that the usage of new technologies was free from effort would record higher adoption rates.

The second employee behaviour that demonstrated significant influence on intention to use was trust ($r_s = 0.390$, $p < 0.001$). Additionally, it was observed from results in table 4.3 that 71.4% of respondents agreed that they trusted new technologies in their work. The implication of the finding was that as trust relationship with new technologies and among employees improved, higher adoption rates would result. The finding reiterated Alston and Tippett (2009) who earlier revealed that employee-manager trust levels increased as organizational cultures became more organic and adopted adhocracy.

The third employee behaviour illustrating significant influence on intention to use was personal incentives ($r_s = 0.368$, $p < 0.001$). Results from table 4.3 showed that about 69.1% of the respondents agreed that they experimented with new technologies. The results implied that high adoption rates would be observed where higher levels of personal incentives were encouraged. While the finding would directly reiterate De Jong and Den Hartog (2007) who argued that leaders had an influence on the innovativeness of employees, it as well reiterated Senarathna et al. (2014) who revealed that organisations that fostered adhocracy cultures demonstrated a positive correlation towards e-commerce adoption while those that were structured in a hierarchical manner demonstrated a negative correlation. Consequently, the

findings implied that adhocracy cultures coupled with top management actions would lead to higher personal incentives among employees.

Finally, perceived usefulness ($r_s = 0.368$, $p < 0.001$) was observed to have the least influence on intention to use compared to other employee behaviour. Similarly, results from table 4.3 showed that about 82.6% of the respondents agreed that they considered new technologies as being useful in their work. The result of the placement as the least contributing factor was unexpected since without high levels of usefulness perception, ICT innovation adoption would not be expected. It would be expected that high correlation would exist between perceived usefulness and intention to use. The finding was contrary to studies conducted on IS adoption that cited it as a major factor (Adams, Nelson & Todd, 1992; Gefen & Straub, 2000). Similarly, the deviation was argued to arise from the small sample size used in the study.

On the other hand, it was observed that with frequency of use, trust behaviour demonstrated the highest impact on adoption of ICT innovation ($r_s = 0.410$, $p < 0.001$). Additionally, results from table 4.4 showed that 84.3% of respondents used new technologies very often. The implication of the result was that as employees increased their trust levels on new technologies, higher usage frequencies would result. Further, improved trust relationships between employees and managers would as well be argued to lead to higher adoption rates. The finding in part, reiterated Walters (2010) who revealed that the level of control in the organisation had a direct influence on the trust employees held towards their managers. Consequently, it would be argued that organizations that had relaxed control over their employees would further lead to improved trust relationships between leaders and managers thereby improving frequency of usage.

The second employee behaviour that demonstrated significant influence on frequency of use was personal incentives ($r_s = 0.397$, $p < 0.001$). Additionally, results from table 4.4

showed that 84.3% of respondents used new technologies very often. The result implied that where personal incentives were encouraged in organizations, higher frequency of usage with new technologies followed as a result. The finding reiterated De Jong and Den Hartog (2007) who revealed that employee innovative behaviour such as experimenting with new technologies was significantly influenced by the leadership prevalent in the organization. Similarly, the finding would reiterate Price and Whiteley (2014) who revealed that employee commitment levels would be a direct result of their perception of their organization culture. As such, as employee commitment levels increased towards their organizations, personal incentives would increase as well.

The third employee behaviour that demonstrated significant influence on frequency of use was perceived usefulness ($r_s = 0.310, p < 0.001$). Additionally, results from table 4.4 showed that 84.3% of respondents used new technologies very often. The result implied that higher frequency of usage would result following the perception that new technologies were useful in daily work processes. The finding however reiterated Caccia-Bava, Guimaraes and Harrington (2006) who revealed that hospitals tended to embrace new innovations as they deemed them useful.

Finally, ease of use was observed to have the lowest influence on frequency of usage of new technologies ($r_s = 0.259, p < 0.001$). Additionally, results from table 4.4 showed that 84.3% of respondents used new technologies very often. While the result implied that frequency of usage improved with the perception of ease of use, the placement as the least influential factor appeared to deviate anticipate expectations. A reason for this was that frequency of usage would only increase as employees considered the technologies easy to use.

4.7.3 Influence of organization culture on ICT innovation adoption

Analysis of the relationship between organization culture and ICT adoption revealed important findings. To begin with it was observed that a significant relationship existed between customer orientation ($r_s = 0.243$, $p=0.006$) and intention to use. Results from table 4.2 revealed that 86.5% of respondents had agreed that their organization had been structured to attend to customer requests rather than personal goals while those from table 4.4 showed that 84.9% of respondents agreed that provided they were granted access to new technologies, they would use them.

The implication of the results was that the likelihood to engage in new technologies was directly influenced by the organization's plan to meet customer needs. As such, it would be argued that employees in tech SMEs in Kenya would adopt new technologies provided they helped them meet their customer needs. The finding reiterated Caccia-Bava, Guimaraes and Harrington (2006) who revealed that organization culture had a significant influence in the development of absorptive capacity in enabling hospitals embrace new technological innovations. The authors further defined absorptive capacity as the ability of organizations to recognize the value of new information, assimilate it and use it productively.

Secondly, it was observed that intention of use was significantly influenced by control in organizations ($r_s = 0.203$, $p=0.022$). Results in table 4.2 revealed that 58.8% of employees agreed that their organizations had an easy going culture thereby having an informal approach to work and were structured loosely. Further results in table 4.4 showed that 84.9% of respondents agreed that provided they were granted access to new technologies, they would use them. The results implied that easy going cultures improved adoption rates of new technologies among Kenyan tech SMEs.

The finding reiterated Senarathna et al. (2014) who revealed that organisations that fostered adhocracy cultures demonstrated a positive correlation towards e-commerce

adoption while those that were structured in a hierarchical manner demonstrated a negative correlation. Similarly, the findings reiterated Sharma (2012) who highlighted that how leaders chose to communicate on the implementation of innovation eventually influenced its success in the organization. As such, it would be argued that organizations that fostered adhocracy cultures eventually had high adoption rates of ICT innovations due to the easy going culture evident in the organization. The implication of the finding was that organizations that enforced strict discipline hampered adoption of ICT innovations.

Thirdly, it was also observed that intention of use was significantly influenced by social control in organizations ($r_s = 0.289$, $p=0.001$). Results in table 4.2 revealed that 61.9% of employees agreed that they related with their leaders as teammates rather than on professional and work related terms while those in table 4.4 showed that 84.9% of respondents agreed that provided they were granted access to new technologies, they would use them. The implication of the results was that the relation between employees and managers had a significant influence on the likelihood of using new technologies where informal employee-manager relations would lead to higher adoption rates while work related relationships between leaders and employees would hamper adoption of ICT innovations.

The finding reiterated Sharma (2012) who argued that decisions by top management towards risk and innovation had a significant influence on the successful implementation of innovation. The finding would as well reiterate van de Weerd, Mangula and Brinkkemper (2016) who revealed that with the adoption of Software as a Service (SaaS) among Indonesian firms, organizational factors such as top management support had a significant influence on the success of the given implementation.

A separate study by Chong et al. (2015) would highlight similar findings as it showed that information sharing culture had the highest influence in the adoption of e-commerce among Malaysian firms as compared to influences from the external environment and

organization readiness. Consequently, it could be argued that in the current study, informal engagement between leaders and employees as teammates improved adoption rates for new technologies.

Two reasons are argued in an attempt to explain the given observation. First, informal employee-manager relationships would be argued to lead to improved communication and knowledge sharing between them thereby leading to high adoption rates. Second, informal relationships between managers and employees would lead to improved top management support as improved communication eliminated any risks that would be associated with such implementation.

With the frequency of use, only social control was observed to illustrate a statistically significant relationship ($r_s = 0.220$, $p=0.013$). Results from table 4.2 showed that 61.9% of respondents agreed that they related with their leaders as teammates rather than on professional and work related terms while those in table 4.4 revealed that 84.2% of respondents agreed that used new technologies frequently. The implication of the results was that informal employee-manager relationships led to high frequency of usage with the new technologies. With the observation, it would be argued that high frequency of usage resulted from the ease with which knowledge would be shared between leaders and employees, a finding revealed by Chong et al. (2015) in their study on adoption of e-commerce in Malaysian organizations.

4.8 Conclusion

The chapter reviewed the results analyzed in the results section and proceeded to relate them to past studies. Consequently, important findings were obtained in the study in regards to the influence of organization culture on employee behaviour, employee behaviour on ICT adoption and organization culture on ICT adoption.

CHAPTER FIVE: CONCLUSION

5.1 Chapter introduction

The chapter provides a conclusive summary of the entire study by elaborating on the process used to undertake the study, strengths and weaknesses experienced, and main conclusions from the study. Additionally, it describes theoretical and practical recommendations as well as suggestions for further research.

5.2 Achievements

The current research was successful in achieving the objectives identified at the onset of the study. A major strength in the study was the selection of an area of study that is currently relevant in modern society. Adoption of ICT innovation and technological disruption have in recent years received increased attention following their impact on transforming how business is conducted. Consequently, this eased the literature search process given the numerous studies conducted by different researchers on the area.

The review of diverse ICT adoption studies enabled the development of a conceptual framework that facilitated examination of the influence of organization culture on employee behaviour and ICT innovation adoption. Additionally, the influence of employee behaviour on adoption of ICT innovation was also evaluated. The framework further enabled the formulation of relevant hypotheses that would be tested through data collection.

Selection of tech SMEs as the study population facilitated the acquisition of data for due to their large number in the country. Similarly, use of online survey collection technique using Google Forms reduced costs while improving the reach of the different respondents. Hypotheses would then be tested from the collected data and further analysis undertaken to reveal underlying explanations for the given observations.

5.3 Recommendations

5.3.1 To tech SMEs in Kenya

The study revealed a significant relationship between organization culture, employee behaviour, and ICT adoption. In the wake of technological disruption, it would be recommended for tech SMEs to foster organization culture that facilitates employee behaviour towards ICT adoption. Consequently, this implies that they structure their policies to foster employee behaviour of trust, personal incentives, perceived usefulness and perceived ease of use.

The study revealed that in order to foster trust, organizations should ensure their culture promotes easy going control and informal relationships between managers and employees. To foster personal incentives, SMEs ought to ensure they focus on meeting customer needs, adopt an employee centered work approach and enforce an adhocracy culture that has a loosely structured work approach. To foster perceived usefulness and ease of use, it would be recommended that SMEs ensure that leaders relate with employees as teammates and as well, embrace adhocracy cultures that are easy going in nature.

In addition to SMEs structuring their organizations to foster employee behaviour that leads to higher adoption rates of ICT innovation, it is also recommended that they structure their organizations to easily adopt ICT. In this regard, it would be recommended that SMEs focus on meeting customer needs, embrace an easy going adhocracy culture and ensure informal relationships exist between managers and employees.

5.3.2 Theoretical contribution

The study led to significant theoretical contribution by highlighting the particular manner in which organizational culture influenced ICT innovation adoption. The study showed that culture has an influence on employee behaviour that facilitates ICT adoption in addition to having an influence on actual adoption of ICT within the organization. In the

latter's case, it revealed the influence of culture on intention to use and actual frequency of use.

5.4 Suggestions for further research

The study was significant in demonstrating the relationship between organization culture, employee behaviour and ICT innovation adoption. However, there exists several areas where further research is necessary. First, it is important to undertake a similar study in the corporate setting in order to investigate how their corporate culture directly impacts their adoption of ICT.

Secondly, it is suggested that in further studies, a larger study population is considered in order to determine if there are significant differences or similarities with the current study. Finally, it would be recommended that a similar study is carried out in a developed country in order to determine if there exists any location based differences.

5.5 Limitations of the study

One of the weaknesses experienced in the study was uncooperative respondents. While the large number of SMEs facilitated data collection, a challenge however arose from uncooperative respondents. As a result, the researcher would make follow up calls in order to coerce respondents to provide required data.

Secondly, it was challenging to contact respondents who resided in regions located in distant locations. While online questionnaires would solve the challenge easily, in some instances, respondents required to have the data collected through traditional manual forms. The implication of their requests was that it led to an increase in time required to collect and analyze data.

REFERENCES

- Adams, D., Nelson, R., & Todd, P. (1992). Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication. *MIS Quarterly*, 16(2), 227. doi: 10.2307/249577
- Africanreview.com. (2017). *SMES are growing Kenya's economy*. *African Review*. Retrieved 12 October 2017, from <http://www.africanreview.com/finance/business/smes-are-growing-kenya-s-economy-3>
- Alston, F. and Tippett, D. (2009). Does a Technology-Driven Organization's Culture Influence the Trust Employees Have in Their Managers? *Engineering Management Journal*, 21(2), pp.3-10.
- Anderson, G. and Arsenault, N. (2005). *Fundamentals Of Educational Research*. Hoboken: Taylor & Francis Ltd.
- Babbie, E. (2009). *The practice of social research*. London: Cengage.
- Beaver, B., Beaver, R., & Mendenhall, W. (2006). *Introduction to probability and statistics*. Belmont, CA: Duxbury/Thomson Brooks/Cole.
- Bright, J. (2016). *In Kenya, Safaricom's Little Cab app goes head to head with Uber*. [online] TechCrunch. Available at: <https://beta.techcrunch.com/2016/07/31/in-kenya-safaricom-small-cab-app-goes-head-to-head-with-uber/> [Accessed 10 Mar. 2018].
- Brown, J. (2007). *Using surveys in language programs*. Cambridge, U.K.: Cambridge University Press.
- Bryman, A. and Cramer, D. (2009). *Quantitative data analysis with SPSS 14, 15 and 16*. London: Routledge.
- Caccia-Bava, M., Guimaraes, T. and Harrington, S. (2006). Hospital organization culture, capacity to innovate and success in technology adoption. *Journal of Health Organization and Management*, 20(3), pp.194-217.

- Christiansen, B., Turkina, E. and Williams, N. (2013). *Cultural and technological influences on global business*. Hershey PA: Business Science Reference.
- Christensen, C. (1997). *The innovator's dilemma*. Boston, Mass.: Harvard Business School.
- Chong, A., Lin, B., Ooi, K. and Raman, M. (2015). Factors affecting the Adoption Level of C-Commerce: An Empirical Study. *Journal of Computer Information Systems*, 50(2), pp.13-22.
- Collins, K. (2014). *How WhatsApp helped Jumia disrupt African commerce*. [online] Wired.co.uk. Available at: <http://www.wired.co.uk/article/jumia-christina-hawley> [Accessed 10 Mar. 2018].
- Crowther, D. and Lancaster, G. (2008). *Research methods in education*. 2nd ed. Oxford: Elsevier Limited.
- Dasgupta, S., Agarwal, D. and Ioannidis, A. (2000). Information Technology Adoption in the Greek Banking Industry. *Journal of Global Information Technology Management*, 3(3), pp.32-51.
- Deal, T. and Kennedy, A. (2002). *Corporate cultures*. New York: Basic Books.
- De Vaus, D. (2007). *Research design*. London: SAGE.
- Denison, D., Haaland, S. and Goelzer, P. (2004). Corporate Culture and Organizational Effectiveness. *Organizational Dynamics*, 33(1), pp.98-109.
- De Jong, J. and Den Hartog, D. (2007). How leaders influence employees' innovative behaviour. *European Journal of Innovation Management*, 10(1), pp.41-64.
- Diphoko, W. (2017). *Smartphone, PC screen in line for tech disruption*. [online] Pressreader.com. Available at: <https://www.pressreader.com/south-africa/pretoria-news/20170901/282776356678989> [Accessed 30 Sep. 2017].
- Eisenstein, E. (1997). *The printing press as an agent of change*. Cambridge [England]: Cambridge University Press.

- Gao, S., Krogstie, J., & Siau, K. (2011). Developing an Instrument to Measure the Adoption of Mobile Services. *Mobile Information Systems*, 7(1), 45-67.
<http://dx.doi.org/10.1155/2011/831018>
- Gefen, D., & Straub, D. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption. *Journal of The Association for Information Systems*, 1(8), 1-28.
- Goodwin, T. (2015). *The Battle Is For The Customer Interface*. [online] TechCrunch. Available at: <https://techcrunch.com/2015/03/03/in-the-age-of-disintermediation-the-battle-is-all-for-the-customer-interface/> [Accessed 30 Sep. 2017].
- Grinnell, R., & Unrau, Y. (2005). *Social work research and evaluation*. New York: Oxford University Press.
- Guest, G., & Namey, E. (2015). *Public health research methods*. Los Angeles: SAGE.
- Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1).
- Inceoglu, I. (2002). *Organizational culture, team climate, workplace bullying and team effectiveness*. München: Utz, Wiss.
- Jones, I., & Gratton, C. (2015). *Research methods for sports studies*. London: Routledge.
- Juma, C. (2016). *Innovation and its enemies*. Oxford: Oxford University Press.
- Juma, C. (2017). *What innovation and technological disruption really means for Africa*. [online] Quartz. Available at: <https://qz.com/972157/what-innovation-and-technological-disruption-really-means-for-africa/> [Accessed 30 Sep. 2017].
- Logan, S. (2017). *M-pesa has completely transformed Kenya's economy, this is how... - CNBC Africa*. [online] CNBC Africa. Available at: <https://www.cnbc.com/news/east-africa/2017/01/04/mpesa-economic-impact-on-kenya/> [Accessed 30 Sep. 2017].

- Kerr, A., Hall, H. and Kozub, S. (2003). *Doing statistics with SPSS*. London: SAGE.
- Keyton, J. (2011). *Communication and organizational culture*. Thousand Oaks: Sage Publications.
- Kumar, C. (2008). *Research methodology*. New Delhi: APH Publishing.
- MacNeil, K., Kelly, F., & Newman, I. (1998). *Testing research hypotheses with the general linear model*. Carbondale: Southern Illinois Univ. Press.
- Manyika, J., Chui, M., Bughin, J., Dobbs, R., Bisson, P. and Marrs, A. (2013). [online] Mckinsey. Available at: <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies> [Accessed 30 Sep. 2017].
- Mitchell, M. A., & Yate, D. (2002). How to use your organizational culture as a competitive tool *Nonprofit World*, 20 (2), 2002, pp. 33-34
- Mitchell, M., & Jolley, J. (2013). *Research design explained*. Australia: Wadsworth, Cengage Learning.
- Morgan, G., Griego, O., Gloeckner, G. and Leech, N. (2001). *SPSS for Windows*. Mahwah N.J.: L. Erlbaum.
- Monks, K. (2017). *M-Pesa: Kenya's mobile success story turns 10*. [online] CNN. Available at: <http://edition.cnn.com/2017/02/21/africa/mpesa-10th-anniversary/index.html> [Accessed 30 Sep. 2017].
- Moore, G. (1995). *Crossing the chasm: marketing and selling high-tech products to mainstream customers*. New York, N.Y: Harper.
- Newman, I. and McNeil, K. (1998). *Conducting survey research in the social sciences*. Lanham [u.a.]: Univ. Press of America.
- Ndemo, B. and Weiss, T. (2017). *Digital Kenya*. London: Palgrave Macmillan.

- Ndemo, B. (2016). *In Opinion: How did Kenya become the cradle of Africa's technological innovation?* [online] Newsweek. Available at: <http://www.newsweek.com/how-kenya-became-cradle-africas-ict-innovation-534694> [Accessed 30 Sep. 2017].
- Njanja, A. (2016). *Ignore technology adoption at own peril, new study tells.* *Business Daily*. Retrieved 25 September 2017, from <http://www.businessdailyafrica.com/Ignore-technology-adoption-at-own-peril/1248928-3279752-y5cui0/index.html>
- Price, C. and Whiteley, A. (2014). Corporate Culture and Employee Identity: Cooption or Commitment through Contestation? *Journal of Change Management*, 14(2), pp.210-235.
- Quinn, R., & Rohrbaugh, J. (1983). A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis. *Management Science*, 29(3), 363-377. <http://dx.doi.org/10.1287/mnsc.29.3.363>
- Rogers, E. (1995). *Diffusion of innovations*. New York: The Free Press.
- Ross, A. (2005). *The Record Effect*. [online] The New Yorker. Available at: <https://www.newyorker.com/magazine/2005/06/06/the-record-effect> [Accessed 30 Sep. 2017].
- Rouse, M. (2017). *What is disruptive technology? - Definition from WhatIs.com*. [online] WhatIs.com. Available at: <http://whatis.techtarget.com/definition/disruptive-technology> [Accessed 30 Sep. 2017].
- Ruffer, G. (2011). *What Ushahidi can do to track displacement | Forced Migration Review*. [online] Fmreview.org. Available at: <http://www.fmreview.org/technology/ruffer.html> [Accessed 30 Sep. 2017].
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Harlow (Essex): Pearson.

- Schrodt, P. (2002). The relationship between organizational identification and organizational culture: Employee perceptions of culture and identification in a retail sales organization. *Communication Studies*, 53(2), pp.189-202.
- Senarathna, I., Warren, M., Yeoh, W. and Salzman, S. (2014). The influence of organisation culture on E-commerce adoption. *Industrial Management & Data Systems*, 114(7), pp.1007-1021.
- Sharma, S. (2012). *E-adoption and technologies for empowering developing countries*. Hershey, Pa.: IGI Global.
- Santos-Fernandez, E. (2013). *Multivariate statistical quality control using R*. New York: Springer.
- Schein, E. (2010). *Organizational culture and leadership*. 4th ed. San Francisco: Wiley.
- Sen, A. and Srivastava, M. (2012). *Regression analysis*. London: Springer.
- Solis, B. (2014). Digital Darwinism: How Disruptive Technology Is Changing Business for Good. Retrieved from <https://www.wired.com/insights/2014/04/digital-darwinism-disruptive-technology-changing-business-good/>
- Sng, B., Yip, C., & Han, N. (2016). Legal and ethical issues in research. *Indian Journal Of Anaesthesia*, 60(9), 684. doi: 10.4103/0019-5049.190627
- Slowikowski, S. and Jarratt, D. (1996). The Impact of Culture on the Adoption of High Technology Products. *Asia Pacific Journal of Marketing and Logistics*, 8(3), pp.14-31.
- Suppiah, V. and Singh Sandhu, M. (2011). Organisational culture's influence on tacit knowledge-sharing behaviour. *Journal of Knowledge Management*, 15(3), pp.462-477.
- Urdan, T. (2015). *Statistics in plain English*, third edition. London: Routledge.
- Van de Weerd, I., Mangula, I. and Brinkkemper, S. (2016). Adoption of software as a service in Indonesia: Examining the influence of organizational factors. *Information & Management*, 53(7), pp.915-928.

Vodafone.com (2017). *M-Pesa from Vodafone*. [online] Vodafone.com. Available at:

<http://www.vodafone.com/content/index/what/m-pesa.html#> [Accessed 30 Sep. 2017]

Walters, J. (2010). *Positive management*. New York: Business Expert Press.

Yazici, H., Yazici, Y. and Lesaffre, E. (2016). *Understanding evidence-based rheumatology*.

London: Springer.

APPENDIX A: SPSS RESULTS

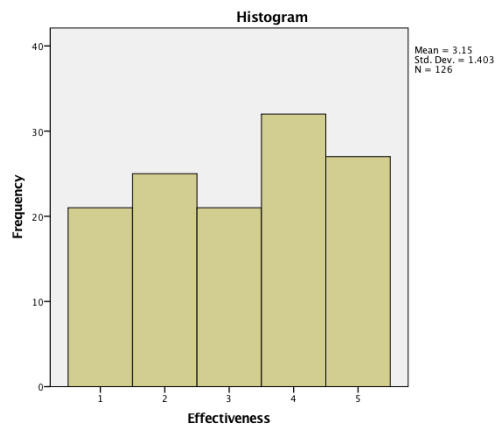


Figure 4.1 Histogram of the effectiveness dimension

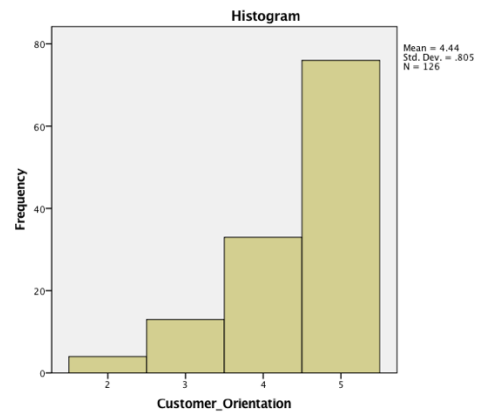


Figure 4.2 Histogram of the customer orientation dimension

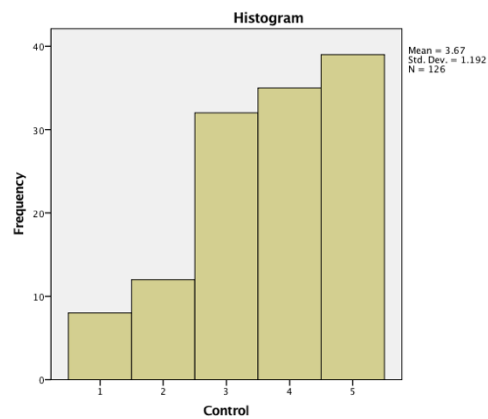


Figure 4.3 Histogram of the control dimension

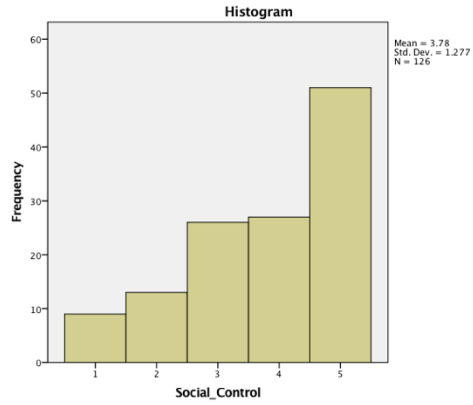


Figure 4.4 Histogram of the social control dimension

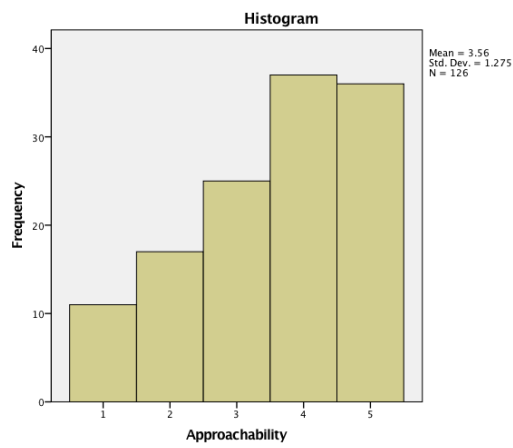


Figure 4.5 Histogram of the approachability dimension



Figure 4.2 Histogram of the management philosophy dimension

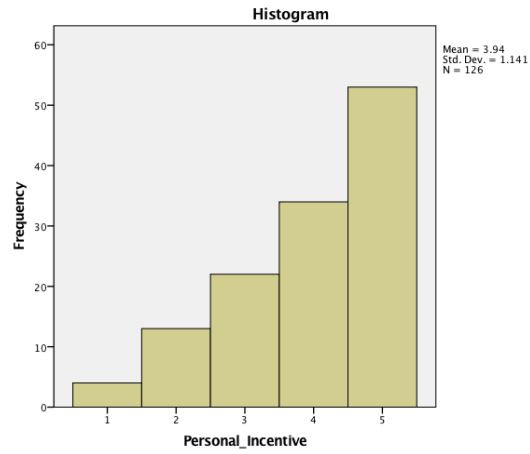


Figure 4.2 Histogram of the personal incentive dimension

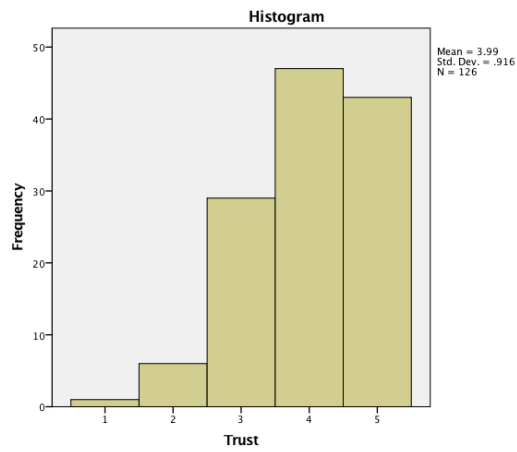


Figure 4.2 Histogram of the trust dimension

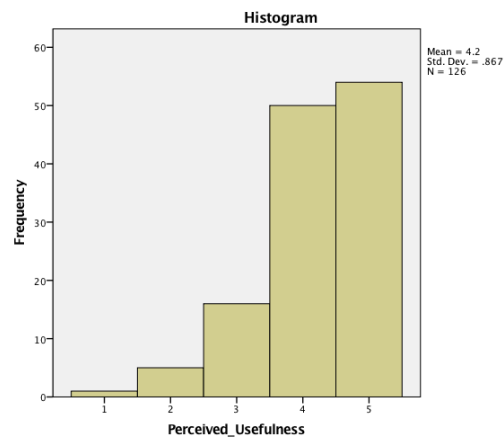


Figure 4.2 Histogram of the perceived usefulness dimension

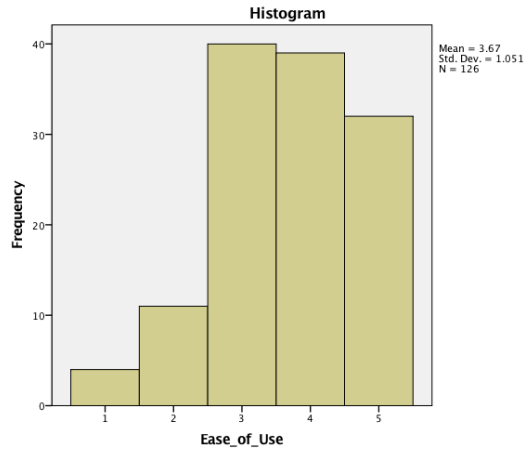


Figure 4.2 Histogram of the ease of use dimension

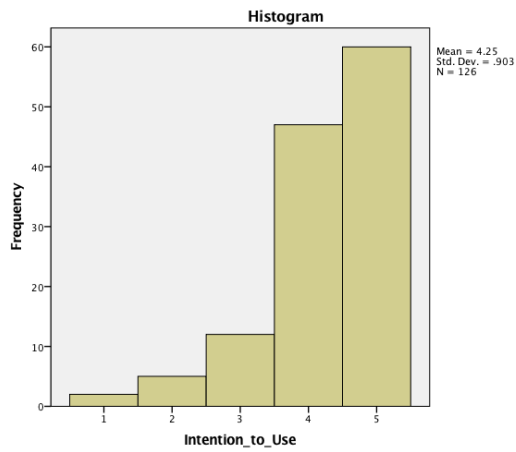


Figure 4.2 Histogram of the intention to use dimension

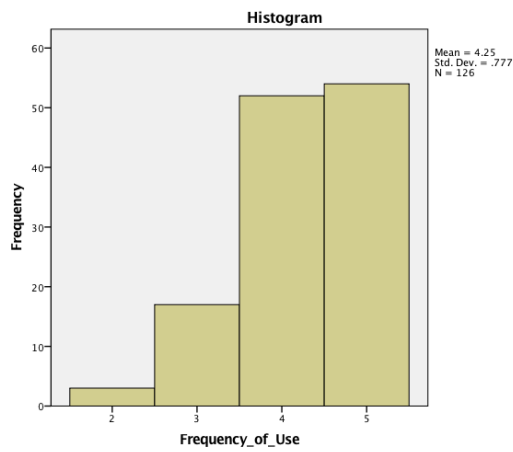


Figure 4.2 Histogram of the frequency of use dimension

APPENDIX B: SURVEY QUESTIONNAIRE



UNIVERSITY OF NAIROBI

SCHOOL OF COMPUTING AND INFORMATICS

SURVEY QUESTIONNAIRE

Dear participant,

My name is Francis Kagumba and I am a Masters student from the School of Computing at University of Nairobi. I am carrying out a study investigating the influence of organisation culture on the adoption of ICT innovation in Kenyan SMEs and have identified you as a potential participant. In this regard, I would like to survey some of your IT practitioners through administering a questionnaire. There will be no costs for participating in the survey, nor will you benefit from participating. Your participation in this research project is completely voluntary. You may decline altogether, or leave blank any questions you don't wish to answer. There are no known risks to participation. Your responses will be confidential and data from this research will be reported only as a collective combined total. The survey will only take 3 minutes of your time. Thank you for your assistance in this important endeavour.

General Information

1. What's your age group?

- 18-30
- 31-40
- 41-50
- 51-60
- 60+

2. What's your gender? Male Female

3. How many years have you been working in the IT industry?

- Less than 1 year
- 1-5 years
- 6-10 years
- 10+ years

4. What role do you play in the organization?

- Manager
- Employee

Dimensions of organization culture

5. Please rate how much you agree with the following statements in regard to your organization.

Focus is on how work gets done rather than what work is actually delivered

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Work is centred around fulfilling customer requirements rather than personal initiatives

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

There is a strict work discipline with adherence to structure compared to an easy going work discipline

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employees identify their leaders as teammates rather than on professional and job related terms

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

As a new worker, one has to prove themselves before they are accepted into the organization compared to easily being welcomed into the organization.

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Emphasis is given to well being of workers even at the expense of task performance

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employee Behavior

6. Please rate how much you agree with the following statements in regard to your organization.

Employees easily access new ICT technologies e.g. software

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employees experiment with new ICT technologies

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employees trust the use of new ICT technologies

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employees consider new ICT technologies as being useful in their work

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

Employees consider new ICT technologies as being easy to use in their work

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

ICT Adoption

7. Please rate how much you agree with the following statements in regard to your organization.

Provided I have access to new technologies, I interact with them

- Strongly Disagree Disagree Neither Agree / Disagree
 Strongly Agree Agree

I interact with new technologies

Never

Rarely

Sometimes

Often

Very Often