

**THE INFLUENCE OF ORGANIZATIONAL CULTURE ON INNOVATION
IN TECHNOLOGY SMEs**

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ABSTRACT

Culture is often considered a crucial basis for how an organization operates. It can be used as an enabler for employees to develop certain habits and fills the gaps between what is formally announced and what actually happens. The main objective of this study was to evaluate the influence of organizational culture on innovation in Information Technology (IT) Small and Medium-sized Enterprises (SMEs) in Kenya. It sort to explore the dominant culture in these companies and how the organizations can enhance innovation by studying the factors that influence an innovation culture. The study used a framework for analysing organizational culture developed by Cameron and Quinn where culture is examined as a set of competing values in four dimensions. The study employed a descriptive survey research design. The population of study was employees in small and medium-sized information technology companies. A simple random sampling technique was used to select the companies and employees to respond to the survey. The study was conducted in more than twenty IT companies, with 66 out of 110 respondents returning the filled questionnaires. This represented a 60% response rate. Primary data was collected through self-administered questionnaires. Descriptive statistics and inferential data analysis method was used to analyze the gathered data. It was analysed using IBM SPSS software and presented in tables and figures. The study established that a market culture is dominant in technology SMEs and goes on to suggest that this is a potential hinderance to innovation due to its focus on stability and control. The findings showed that organizations with cultures that are flexible, collaborative and encouraged employee participation had the highest correlation to innovation. Clan and adhocracy cultures exhibited these charectristics. Latent factors that affect an innovation culture in organizations were also derived. Finally, the study recommends areas of further research like using qualitative methods of data collection and analysis to uncover deeper cultural aspects or using a different organizational culture model for the study.

The terms Information Technology (IT) and Information Communication and Technology (ICT) were used interchangeably throughout the study to mean the same industry.

Keywords: Innovation, Organizational culture, SME

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LIST OF ABBREVIATIONS

BRCK: Hardware and Cloud Technology platform

CCR: Creative Culture Questionnaire

CMA: Capital Markets Authority

CVF: Competing Values Framework

IBM: International Business Machines

ICT: Information Communication and Technology

IT: Information Technology

GDP: Gross Domestic Product

GII: Global Innovation Index

KEPSA: Kenya Private Sector Alliance

MSME: Micro, Small and Medium-sized Enterprises

NPD: New Product Development

NPI: New Process Innovation

OC: Organizational Culture

OCAI: Organizational Culture Assessment Instrument

SME: Small and Medium-sized Enterprise

SPSS: Statistical Package for Social Sciences

SBS: Strathmore Business School

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DEDICATION

This is for my girls: To my wife Ann, you are my greatest support, I could not ask for more. Your inspiration and belief in me has got me here. To my daughters Gabi and Abigail, you are the greatest gift I have. You make life worthwhile. To my awesome family, thank you for your support through the journey, I am grateful to have you. To my dear parents, you taught me the ethos of hard work, I will never forget.

CHAPTER ONE: INTRODUCTION

1.1 Background

This section presents an overview of the different concepts of organizational culture as well as an introduction to the concept of innovation.

1.1.1 Concept of Organizational Culture

“Culture is very, very important. It is the hardest thing for someone else to compete with, you can go out and get all the tangible things, the material things, the hardware things; but it’s very hard to compete with the spirit of the people at South West Airlines” (Herb Keller). (Welch & Byrne, 2001).

In the organizational sciences, organizational culture remains one of the difficult constructs to define, measure and understand due to its intangible nature (Fiol, 2001; Martins & Martins, 2002). Though culture is an abstraction, the forces that it creates around us, and especially in the organizations are powerful. These cultural forces are influential and self-fulfilling because they operate outside of our awareness. Managers refer to the “right kind of culture”, “culture of quality”, “customer focused culture” among other common phrases. This shows that culture should do with certain values that managers try to inculcate in their organizations. Equally, it can be argued that there are better or worse cultures, strong or weak cultures, and that the “right” culture has a major influence on the organizations success or failure (Schein, 2010). Gladwell (2008) in his best-selling book *Outliers*, provided some strong examples of how ethnic and organizational culture explain anomalies such as airline crashes, academic and professional success or failure.

Organizational culture is defined as the deeply seated (often subconscious) values and beliefs held by personnel in an organization (Martins & Terblanche, 2003). Culture is represented by artifacts, values and assumptions held in common by members of an organization (Detert, Schroeder, & Mauriel, 2000).

Cameron and Quinn (2011) pointed out that organizational culture is often ignored as a key factor in determining organizational performance as it encompasses the taken-for-granted values, assumptions, expectations, collective memories, and definitions present in an organization. It represents “how things are done around here”. It reflects the ideology that people carry around in their subconscious. Several models of organizational culture have been proposed by scholars and practitioners such as Cameron and Quin (2011) model, Handy (1993) model, Deal and Kennedy (1982) model and Hofstede (2003) model.

According to Handy (1993), an organization’s culture can be viewed either as; Power culture, role culture, task culture or person culture. Power culture can be illustrated as a spider’s web with all focus of the whole organization being in the center of the web and surrounded by widening circle of intimates and influence. The closer an employee is to the center of the circle, the more influential they are. Organizations with this kind of culture can quickly respond to changing environment due to the advantage of minimal consultation and quick decision making. However, there is over reliance on people at the center and thus success is dependent on their abilities. Role cultured organizations are characterized by strong functional, departmental and specialized areas. Influence in the organization is through rules and procedures of getting the work done. Task culture is job or project oriented and it seeks to put together people with the right mix of resources and skills to get the job done. Outcome of the team’s performance is more important than individual input or performance. This culture is heavily dependent on teamwork. Person culture espouses the individual as the focal point in the organization. Any structure in the organization is there to serve the interest of the individual. This is common in consulting firms, architect partnerships, academic experts among others.

Cameron and Quinn (2011), proposed a model popularly known as the Competing Values Framework (CVF), that defines four cultures: Adhocracy culture, clan culture, market culture and hierarchy culture. Clan culture is built around a friendly place to work that feels like an extended family. The organization is held by loyalty and tradition. Adhocracy culture is characterized by a dynamic, entrepreneurial and creative workplace.

Hierarchy culture is formalized and structured place to work. Procedures govern what people do. Finally, a market culture is results oriented. The glue that holds the organization together is an emphasis on winning. For this study, the organizational culture framework developed by Cameron and Quinn (2011) was used. This is because the competing values framework has been adopted by several scholars and practitioners as it considers all the facets of an organization, notably the dominant characteristics, leadership, management, strategic emphases, criteria for success, and the glue that holds the organization together. These dimensions of an organization influence how employees will engage in generating new ideas and how innovation will be perceived within the organization. This study sort to find which organizational cultures had a positive influence on innovation.

1.1.2 Concept of Innovation in technology SMEs

SMEs are often considered as the engine of economic growth in many developing countries (Beck & Demirguc-Kunt, 2006). Establishing a successful SME is a daunting task in any industry. Litvak (1992) argues that challenges in establishing one within the technology industry are more numerous due to long lead times in industrial application, short lead times in commercialization and accelerated obsolescence due to global competitive pressure from new product and process innovations. For managers of these companies, they must find a means to survive and succeed in such a turbulent environment. Due to the contributions that SMEs have in the economy, it is equally important, from a government perspective, for them to succeed. How they incorporate innovation into their thinking is a central theme. It determines growth or survival of this firms.

Today, consumers have vast access to real time information and suppliers. Due to this, they are empowered to demand an increasingly complex array of product features, higher quality, better service and favorable price/cost ratios (Brett & Okumura, 1998; Yukl, 2008). This reality has put incredible pressure on organizations to increase their efficiency and effectiveness and, more importantly, be innovative when it comes to product/process improvements and development (Andriopoulos & Lowe, 2000). This has driven motivation by practitioners and scholars to identify factors that can stimulate creativity in groups and organizations.

According to Jung, Chow and Wu (2003), research on the prerequisites for creativity has identified a wide array of factors. They range from the level of the individual, e.g. personality, technical knowledge, expertise, experience, to some at the group level, task structure, role structure, communication styles, autonomy to those at the organizational level, such as strategy, organizational structure, organizational culture, and resources. Through creation and sustaining of an organizational culture that nurtures creative efforts and facilitates diffusion of learning, leaders can significantly boost organizational innovation (Yukl, 2002). Bammens, Voordeckers and Van Gils (2008) argue that SMEs fail due to their lack of potential for growth. Innovation is a stimulant for a firm's growth and can lead to a company's success. It is also critical for a firm in gaining and sustaining a competitive advantage in the market.

Creating an organizational culture open to innovation has been highlighted as crucial to innovation success in SMEs (Ledwith, 2000; Laforet & Tann, 2006; Pullen, Weerd-Nederhof, Groen, Song, & Fisscher, 2009). Leaders should develop and maintain a system that appreciates and rewards creative work, through compensation and other human resource related policies. When a company offers intrinsic and extrinsic rewards for efforts to experiment with creative products and solutions, the desire for the employees for innovation is constantly strengthened (Jung, 2001).

Organizational cultures that emphasize efficient operations without making any mistakes or are not highly concerned with innovation will discourage employees from taking initiative in their work in creating new products or processes (Yukl, 2002). This is due to employees fearing a reprimand associated with consequences of a risky decision. Consequently, organizations that value initiative and innovative approaches provide employees with a platform to take calculated risks, accept challenging assignments and derive intrinsic motivation from their work. Organizational creativity and innovation are closely related. They involve the development of new ideas with subsequent implementation (Mumford & Simonton, 1997). The focus of this study was to bring-out how the established culture in technology SMEs was affecting innovation and behaviors that technology SMEs could adopt to develop innovation-centric cultures.

1.2 Problem Statement

Culture is often considered a crucial basis for innovation in many respects (Kaasa & Vadi, 2010). Innovation is often hampered by problems that can be explained by exploiting the concepts of culture. Culture is even mentioned as the first problem in the presentation of the "10 big" innovation killers. It can contribute or hinder the process of implementing new ideas (Wycoff, 2003). Ayyagari, Beck and Demirguc-Kunt, (2007) argue that SMEs play a critical role in economic development, diversification and employment creation, and they contribute 49 per cent of GDP on average in high-income countries and 29 per cent in low-income countries. SMEs are an integral part of the Kenyan economy. According to the Economic Survey report (2017), SMEs offer employment to 14 million people, contribute over 92 per cent of new jobs created annually and account to about 25 per cent of GDP.

The Global Competitiveness Report (2015) states that for SMEs, new product development (NPD) and process improvements are of high importance if the organizations are to survive and thrive. Companies must compete by producing new and different goods and services using sophisticated production methods or through innovation. The report classifies *innovation* as one of the key pillars for companies to be competitive. It argues that firms must design and develop cutting-edge products and processes to gain and maintain a competitive edge and move towards even higher value-added activities. The Global Innovation Index ranks Kenya eightieth (80th) and is considered a regional leader in innovation, behind South Africa and Mauritius (Cornell University, INSEAD, & WIPO, 2016). Özçelik and Taymaz (2004) opine that the existence of innovative and internationally competitive SMEs is a prerequisite for a country's future growth and prosperity. Despite this, a Kenya Private Sector Alliance report (KEPSA, 2016), justifies that most Kenyan SMEs have remained stagnant. Further, the report states that moving to a new competitive path of development from small-to-medium-to-large-to-multinational enterprises requires a supportive policy, legal and processes framework and an appetite for constantly innovating and boosting productivity. Culture has been identified as a key gap under Environment enablers that requires focus.

Culture can promote or hinder innovation which further influences the success chances of an SME. In their study on the impact of organizational culture on innovation in SMEs in Turkey, Çakar and Ertürk (2010) agree that most research has focused on innovativeness as an independent variable. SMEs must be competitive, not just nationally but also in the international market. Therefore, how they promote and sustain innovation should be a key focus area for managers of SMEs. Most studies of SME's have focused on variables not related to culture and innovation like access to financing (Okiro, 2016; Berg & Fuchs, 2013), factors affecting performance and productivity (Kamunge, Njeru, & Tirimba, 2014; Otunga, 2016), business challenges (Bowen, Morara, & Mureithi, 2009) among others. Jiménez-Jiménez and Sanz-Valle (2011) add that despite the importance given to culture as a stimulant for innovation, empirical research is limited. This study seeks to add new knowledge on the relationship of organizational culture and innovation, and how culture can be used as a stimulant for developing innovation capabilities in the Kenyan context of SMEs.

1.3 Objectives of the study

1.3.1 Main Objective

To evaluate the influence of organizational culture on innovation in information technology SMEs in Kenya.

1.3.2 Specific Objectives

- i. To explore the dominant organizational culture in IT SMEs using the CVF.
- ii. To evaluate the relationship between organizational culture and innovation in IT SMEs.
- iii. To determine the factors that influence a culture of innovation in IT SMEs.

1.4 Research Questions

- i. What is the dominant organizational culture in IT SMEs in Kenya?
- ii. How do the firms' culture influence innovation in IT SMEs?
- iii. What factors influence a culture of innovation in IT SMEs?

1.5 Scope of Study

This study surveyed technology SMEs in Kenya. Innovation in Information Communication and Technology (ICT) sector has widely been considered as a key growth pillar for Kenya in its pursuit of Vision 2030. A vision that aims at making Kenya a middle-income country by the year 2030. According to the National ICT Policy, the Government states that the vision for Kenya is to be a “prosperous ICT-driven society” and to make Kenya among the top 10 ICT hubs in the world (Ministry of ICT, 2016).

The definition of SME is derived from the Kenya Micro and Small Enterprises Act of 2012 that uses the number of employees and revenue turnover to determine the nature of the enterprise (National Assembly, 2017). Firms are considered “small” if they have between 11 and 50 employees and turnover not exceeding KES 5 million. “Medium” are firms with between 51 to 100 employees and an annual turnover not exceeding KES 250 million. Due to sensitivity and difficulty in obtaining sales turnover information from private non-listed companies, the number of employees was used in determining the classification of the firms.

The focus of this research was in SMEs within the ICT industry, as defined in the MSME Act of 2012, engaged in the design, development and sales of technology products and providing services spanning enterprise resource planning systems, smart-phone based mobile applications, value added services, financial technology, e-commerce, telecommunications, farming and retail systems and applications.

1.6 Significance of the study

Kenya has widely been considered as a technology hub and the model “silicon savanna”, in sub-Saharan Africa. This metaphor is coined from Silicon Valley in the US, which is “home” to the world’s largest high-tech innovation corporations and thousands of start-up companies (Graham & Mann, 2013). Despite the association with the global innovation center, the number of breakthrough innovations originating from Kenyan technology companies has not lived up to the expectation. Firstly, by focusing on technology SMEs in Kenya, a key growth pillar, the study informs entrepreneurs, business leaders, and managers on how the employees perceive culture in their organizations, and its effect on innovation as an enabler or an inhibitor.

Secondly, the study provided an insight on how employees perceive the innovativeness, and management support of the same in the organization. Lastly, this study helps business leaders, entrepreneurs and managers to build or change the organization's culture, to one that stimulates creativity and innovation as a basic norm in the organization. In addition, it enables executives to understand how managerial strategies and cultural values produce differential effects on innovation capabilities.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review. It starts with a review of the theories of organizational culture and innovation. It further discusses the empirical literature on how culture develops and affects organizations. In addition, review of studies on the influence of firm culture on innovation is discussed as well as the factors affecting innovation culture in organizations. This is in line with the objectives of this study. The chapter concludes with a presentation of the conceptual framework for the study.

2.2 Theoretical Framework

2.2.1 Organizational Culture Theories

Handy's (1993) framework is one of the most popular organizational culture theories. It argues that culture can be classified based on degree of centralization and formalization. Centralization considers the extent to which power and authority is concentrated at the top of the organization. Formalization contents to the extent to which rules, policies and procedures direct organizational activities. The framework contends that there are four types of cultures in organizations. In Power or Club culture, Handy uses a spider's web as an analogy to depict the culture. Organizations that use this culture have divisions based on functions or products. However, relationship and connection to the spider in the middle matters most than formal titles and positions. Power and influence is concentrated at the center and loses importance the further you go from the center. This culture is mostly found in small entrepreneurial organizations. It is excellent for speed of decision, where is speed is more important, than the potential cost of a mistake. It is a good culture to work in, if you are a member of the club and close to the center. Employees in the club are valued, have a free hand and are handsomely rewarded. An incompetent, aging or disinterested "center" can quickly destroy the organization.

Role culture is the ideal organization, where roles and functions supersede personalities. The organization is divided in a structure of roles and responsibilities which are held together by rules, policies and procedures. The culture is analogized by a Greek Temple. The pillars represent the functions and division of roles in an organization.

Pillars are joined at the top which form the management committee or board. The culture is excellent where an organization is stable and predictable. In a role culture, the employee does their job, no more no less. Efficiency is getting the train on time, not early not late. This culture can be found in organizations that have a notion of predictability. Handy argues that role cultures respond to organizational changes (consumer preference, government regulation, new technology) by setting up multiple cross liaison groups to hold the structure together. If these do not work, the temple may collapse in a merger, acquisition, bankruptcy or reorganization. Task culture's approach to organizational management is through continuous and successful solution of problems. It defines the problem, develops a solution, allocates resources to the proposed solution, and waits for the solution. Performance is based on solved problems and teamwork towards a common goal. The organization is in units, each with a specific responsibility on the overall strategy. Expertise is the base or power and influence. Lastly is the person culture. The organizations are focused on individuals. The culture is analogized by a cluster. Members of the organization exist to support an individual (s) and the organization is subordinate. The culture is excellent if it's the talent of the individual that is central to the success of the organization. It is common in professional entities e.g. medical doctors, architecture partnerships, universities, law firms etc. where independence is of utmost importance.

Hofstede (2003), developed the Hofstede's dimensional culture theory. It is a framework that describes the effects of a societies culture on the value of its members and how they affect the behavior. It is based on a study that was conducted between 1967 and 1973 in a multinational corporation, IBM, across its subsidiary offices in 50 countries and three regions across the world. The model describes culture in six dimensions: Power distance, uncertainty avoidance, masculinity versus femininity, individualism versus collectivism, long term orientation versus short-term orientation, and indulgence versus restraint. Cameron and Quinn (2011) developed the Competing Values Framework which is one of the most widely used models for studying and analyzing culture in Organizations. This model has been extensively used to study organizational culture across different industries with high reliability (Deshpandé et al., 1993; Lau & Ngo, 2004). Culture is divided in to Clan, Adhocracy, Market and Hierarchy. The study was grounded on this model.

2.2.2 Innovation Theories

The Schumpeter theory of innovation was popularized by Joseph Schumpeter, an influential twentieth century economic thinker who argued that innovation-originated market power can provide better results than the invisible hand and price competition. Technological innovation creates temporary monopolies that lead to super normal profits which are sooner or later competed by rivals or imitators. The temporary monopolies provide an incentive for companies to develop new products and processes (Schumpeter, 2002). Schumpeter (1934) suggested a possible range of innovation alternatives, for example, developing new products or services, developing new methods of production, identifying new markets, discovering new sources of supply and developing new organizational forms.

According to the theory of disruptive innovation, “disruption” describes a process where a small company with fewer resources can challenge established incumbent businesses. The new entrants target often overlooked segments of the markets and continuously deliver more value often at lower prices (Christensen, 2006). Markides (2006), further argues that there are three kinds of disruptive innovation: Business model innovation, technological innovation and radical product innovation. Business model innovation is employment of a fundamentally different business model in an existing business. New customers are attracted into the market, or existing customers encouraged to consume more, examples include Amazon, Dell and South West Airlines. Technological innovation use technology to disrupt the current product or services offering to attract customers, for example Uber. Finally, radical innovation creates new-to-the-world products. They introduce products and value propositions that disturb prevailing customer habits and behaviors in a major way for example personal computers and mobile phones.

2.3 Empirical Literature

2.3.1 Culture in organizations

Every organization has a culture, which along with its strategy, structure, technology and employees, form part of the organization machine that can be controlled and managed. It is “given” to new employees, who have not participated in forming it. Simply, culture can be thought of as the identity of the organization. It influences how work gets done, how employees relate to each other, to management, to customers and to other external stakeholders. It affects both task issues – how an organization performs, as well as emotional issues – the attitudes and feelings of employees. It can be defined, controlled and changed (Buchanan & Huczynski, 2010; Deal & Kennedy, 1982; Pascale & Athos, 1982; Peters, Waterman, & Jones, 1982;). Since the early 1980’s, organizational culture has been adopted by managers, as a solution to organizational problems, and by academics, as an explanatory framework to understand organizational behavior (Alvesson, 2001; Deal & Kennedy, 2000). Ernst (2002) states that organizational culture evolves over the lifetime of an organization. It is not part of the formal organizational structure but has a bearing on the non-structural behavior. In addition, De Brentani and Kleinschmidt (2004) argue that it offers guidance to members’ perception on what is positive or negative, or what is important or not. Values and beliefs, which form the organization culture, may be communicated by top management in the form of the organizations mission statement (Amabile, 1988). However, of interest to the development of a culture that supports creativity and innovation, is not what management says, but what it does (Arad, Hanson, & Schneider, 1997). Therefore, culture plays a central role in the organizations behaviors.

All leading companies today, from large behemoths like Coca-Cola, General Electric, Google, IBM, South West Airlines and others, to entrepreneurial startups, large or small, have developed a unique culture that the employees can identify with. The culture can be created by the initial founder (s) (such as Walt Disney), emerge over time as the organization encounters challenges (such as Coca-Cola) or can be developed consciously by management to improve company’s performance in different ways (as did Google).

Despite that technology, strategy and market presence are of great importance, highly successful companies have harnessed a power that is present in a strong and exceptional organizational culture (Cameron, Quinn, DeGraff, & Thakor, 2014). Cameron et al. (2014), define organizational culture as the values, beliefs and hidden assumptions that organizational members have in common. It “expresses the shared assumptions, values and beliefs and is the social glue that holds an organization together” (p. 207). Organizational culture has been described as “how people behave when no one is watching” and “the collective programming of the mind” (Hofstede, 2003). Further, Schein (1990) defines organizational culture as a “pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems”. It is important to note that every organization has a culture. However, it can sometimes be indescribable and open to interpretations. Multiple cultures can also coexist in the same organization, some overriding others.

According to Schein (2010), organizational culture exists in three levels, distinguished by visibility to, or accessibility by individuals. The first level is the surface manifestation of the organizational culture. It represents the visible or observable things that a culture produces. It constitutes both physical and behavior patterns that can be seen, heard or felt. This level is the most visible to the outside world of employees, suppliers and customers. It consists of elements such as; artefacts, ceremonials, language, heroes, myths, norms, slogans, stories, mottos, etc. The second level of culture is the organizational values. Adler and Gundersen (2007) state that organizational values are accumulated beliefs on how work should get done, and situations dealt with. This can be conscious or subconscious. They can be summarized in words such as honesty, respect, innovation, teamwork, excellence, world-class among others. Organizational values are almost always driven and instilled from the top by senior management (Robbins & Judge, 2013). Buchanan and Huczynski (2010), argue that an alternation of the organizations structures and processes can change the culture, by changing the organizations values.

For example, creating self-managed work teams can give rise to an organic organizational structure which gives freedom to employees to select and control their own activities and can lead to a culture of risk taking, creativity and innovation. In contrast a mechanistic organizational structure which is centralized, little autonomy, and bureaucratic can create a culture of caution, predictability, stability and obeying authority with little room for innovativeness. Organizational cultures form when several people, with a significant shared past, involving problems develop a social learning process that permeated through the whole organization (Schein, 2010).

Finally, the third level of organizational culture are the basic assumptions, which are the most difficult to understand. They are often unspoken about how work should get done. They are tacit assumptions about how communication occurs, and individuals behave. They are frequently implicit, and hugely influential in the day to day operations of the organization. Since they are often invisible and subconscious, it is hard to “see” them (Notter & Grant, 2011). For example, in a high-power distance culture, employees expect that they should not question their superiors even when they differ in opinion or have a different, more efficient way of achieving the same result.

Cameron and Quin (2011), proposed a model which they referred to as the CVF. The CVF model has been extensively used to study organizational culture and provided a comprehensive framework for this research. The contrasting values used under CVF makes the framework rigorous over other models such as Handy (1993) and Hofstede (2003) discussed in the literature. This model is robust as it considers all the facets of an organization. It defines four cultures – adhocracy, clan, market and hierarchy – using two dimensions (Figure 1.1): flexibility and discretion versus stability and control, and internal focus and integration versus external focus and differentiation. Using these dimensions and six characteristics of the organization – dominant characteristics, organizational leadership, management of employees, organizational glue, strategic emphases and criteria of success – they define four types of organizational cultures.

Clan Culture is internally-oriented and characterized by a flexible organizational structure. It is characterized by a friendly place to work that feels like an extended family. Leaders are thought of as mentors and perhaps even as parent figures. The organization is held together by loyalty and tradition. Commitment is high. The organization emphasizes the long-term benefit of individual development, with high cohesion and morale being important. The organization places a premium on teamwork, participation, and consensus. A core belief is that the organizations trust and commitment to employees facilitates open communication and employee engagement. (Cameron & Ettington, 1988).

Adhocracy culture is externally oriented and is supported by a flexible organizational culture. It is characterized by a dynamic, entrepreneurial, and creative workplace. People stick their necks out and take risks. Effective leadership is visionary, innovative, and risk-oriented. A fundamental belief in adhocracy culture is that the idealistic and compelling vision induces members to be creative and take risks. The glue that holds the organization together is commitment to experimentation and innovation. The emphasis is on being at the leading edge of new knowledge, products, and services. Readiness for change and meeting new challenges are important. The organization's long-term emphasis is on rapid growth and acquiring new resources. Behaviors that emanate from these values include risk taking, creativity and adaptability (Kimberly & Quinn, 1984).

Market Culture is an externally oriented and supported by an organizational structure that is reinforced in control mechanisms. It is a results-oriented workplace. Leaders are hard-driving producers and competitors. They are tough and demanding. The glue that holds the organization together is an emphasis on winning. An underlying assumption is that focus on achievement produces competitiveness and increases productivity, and that clear goals are a source of motivation to employees. Market organizations value competence and achievement. The long-term concern is on competitive actions and achieving stretch goals and targets. Outpacing the competition and market leadership are important (Cameron & Quinn, 2011).

Hierarchy Culture is internally-oriented and characterized by structure and control mechanisms. The organization is supported by a formalized and structured place to work. It's core assumption is that control, stability and predictability foster efficiency. Procedures govern what people do. Effective leaders are good coordinators and organizers. Maintaining a smooth-running organization is important. The long-term concerns of the organization are stability, predictability, and efficiency. Formal rules and policies hold the organization together (Cameron et al, 2014).

It is important to note that the four culture types are not mutually exclusive. They represent dominant types. Deshpandé, Farley & Webster (1993) argue that firms usually have more than one type of culture. Therefore, different business units may have distinct cultures from each other.

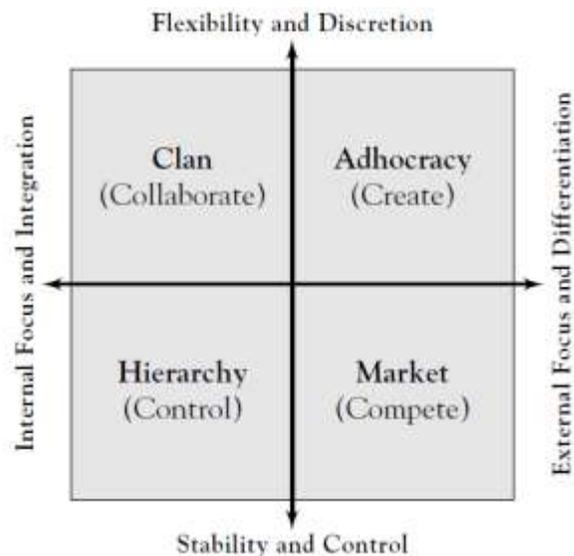


Figure 1. 1 The Competing Values Framework

Source: Cameron & Quin (2011, p. 39)

2.3.2 Organizational culture and innovation

Increased competition, industry turbulence, change and uncertainty in the twenty first century has put focus on innovation. Firms are continually operating in an environment characterized by global competition, changing customer demands, rapid technology changes and uncertainty (Droge, Calantone, & Harmancioglu, 2008; Im, Montoya, & Workman, 2013). To sustain competitive advantages in this context, organizations must constantly innovate (Damanpour & Gopalakrishnan, 2001). Drucker (1985) opined that innovative firms are more likely to respond to change quickly as they can go an extra mile when it comes to creating new opportunities and exploiting existing ones. Wang and Ahmed (2004), defined an organization's innovativeness as the capacity of an organization to introduce new products to the market, or open new markets through combining strategic orientation with innovative behavior and process. Organizations have embraced innovation as a core part of corporate strategy. How to enhance organizational innovativeness is a long-standing research question for scholars and practitioners (Keskin, 2006). Some studies have attempted to identify the factors that can increase innovation (Koc & Ceylan, 2007). Innovation performance is often defined based on the number of products introduced into the market, new processes or new devices (Freeman & Soete, 2009).

Organizational culture is one of the variables that has been consistently identified as a key driver for innovation (Büschgens, Bausch, & Balkin, 2013; Lin, McDonough, Lin, & Lin, 2013). According to Herzog (2008) there is often a misunderstanding in theory and practice on the term "innovation". Many people confuse the term innovation with invention. Further, the term innovation shares the following underlying common aspects: "Innovations are qualitatively new products or processes which markedly differ from the preceding status" (Kleinschmidt, De Brentani, & Salomo, 2007, p 910). They further opine that invention by itself is not an innovation. Rather, an invention must be commercially validated and exploited before it can be termed as an innovation. Therefore, an invention must be first introduced into the market as a new product or be used as a new process in production to be qualified as an innovation.

The degrees of innovativeness broadly differentiate the two main types of innovation: Incremental innovation and radical innovation, both of which affect the technological and market related competencies of an organization in different ways.

From a technological standpoint, incremental innovations build on an organizations existing competencies and products and is characterized by minor technological changes. On the other hand, radical innovations fundamentally change the technological landscape (Green, Gavin, & Aiman-Smith, 1995; Tushman, & Anderson, 1986). From a market perspective, incremental innovation satisfies the needs of the existing customers. Radical innovation leads to fundamental changes in technology and can evoke new markets before customers have identified a need (Broring, Leker, & Ruhmer, 2006). Innovations designed for new markets are usually characterized by significant organizational changes and departures from existing activities including new market insights (Benner & Tushman, 2003). Literature shows that there is a strong relationship between innovativeness and culture. From the various studies conducted on the relationship between innovation and culture, the following four characteristics have a consensus as drivers of innovation; creativity, freedom/autonomy, a risk-taking attitude and teamwork (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016). To identify which organizational culture types have a positive effect on innovation, we examine the dimensions of the CVF model.

Mumford (2000) argues that innovation relies on conception of novel and inventive ideas and is achieved by combining creativity and implementation of such ideas. An organization requires creative people to develop the concepts, as well people to select, assess and execute the ideas (Jamrog, Vickers, & Bear, 2006; McLean, 2005). An innovative firm should therefore allow employees freedom and time to come up with new and creative ideas and experiment on those ideas. Freedom is evidenced in empowerment, autonomy and participation in decision making (Isaksen, & Ekvall, 2010; Martins, & Martins, 2002). An environment of autonomy will increase the employees' intrinsic motivation. This subsequently promotes creativity which is core to promoting innovation (McLean, 2005). Regarding risk-taking, successful innovation is rarely achieved on the first try. Breakthrough innovation is usually a culmination of several trials, experiments and iterations (Martins & Martins, 2002).

Companies that avoid costs associated with risky ventures have a low or no chance of supporting creative ideas. Employees will therefore not take any risks in pursuit of creative ideas and experiments (Filipescu, 2007).

Based on these key characteristics that are pre-requisites for innovation, a comparison with Cameron and Quinn (2005) model of culture leads to the conclusion that, it is expected that flexibility-oriented cultures will favor innovative orientation, while stability-oriented cultures will hinder it. This is because flexibility, lack of formality and organic structures imply a proactive strategic orientation since autonomy and freedom encourage creativity, which is the key for developing pioneer innovations. For the second dimension, internal focus looks inwards into the organization on product effectiveness and process efficiency (McLean, 2005). External focus is however more concerned with a customer orientation and aggressive competition in the market for innovation and market share. Naranjo-Valencia et al. (2016), in a study of Spanish companies further argue that organizational culture is a key determinant in the creativity-innovation link. Culture can foster innovation or act as a barrier to it. Clan culture puts importance on teamwork and participation and thus may foster an innovation culture. If diversity of talent which produces creative ideas is present in the team, innovativeness may occur. However, the internal orientation of clan culture could also be a hindrance to innovation.

Adhocracy culture is expected to have the highest positive correlation to innovation as it emphasizes flexibility, experimentation, risk-taking and is externally-oriented. An example of flexibility in organizations is making use of job rotation or eliminating formal and inflexible job descriptions. Hierarchy culture on the other hand inhibits innovation as it emphasizes control, stability, process and has an internal orientation (Martins & Terblanche, 2003; McLean, 2005; Naranjo-Valencia & Calderón-Hernández, 2015). The external orientation of a market culture may encourage innovation, as it focusses on achieving market share by satisfying customer needs which can be through new ideas (Reid & De Brentani, 2004; Salavou, Baltas, & Lioukas, 2004; Song, Thieme, & Xie, 1998). On the contrary, Baker and Sinkula (2002), argue that excessive focus on needs of the current customers can be a barrier to breakthrough innovation that attracts completely new customers and new markets.

Tidd, Bessant and Pavitt (2005), developed a diamond model of managing innovation that considers five key dimensions necessary for an innovative company. These are strategy, learning, linkages, processes, and the organization structure. Strategy considers whether innovation is a strategic focus of the organization. Processes look at how the internal procedures are designed to support new products or services and that everyone is involved in the innovation process. Learning measures the organizations commitment to training and development which is a key pillar of innovation. In addition, it considers the ability of the organization to gather knowledge, learn from its successes and failures and communicate the same to the entire organization. Linkages will measure how the organization can leverage its external entities such as customers, suppliers, other industries, competitors and use these links for knowledge and information. Finally, is the organization itself. This measure whether the organization structure encourages, rather than stifles new ideas through, top-down, bottom-up, and lateral communication and coordination within the firm. Further, it measures if management has put in place a system that encourages employees to come up with new ideas.

Wang and Ahmed (2004) on the other hand, developed a framework that measures innovation in an organization. They identified five areas that determine an organization's overall innovativeness. They are product innovativeness, market innovativeness, process innovativeness, behavioral innovativeness and strategic innovativeness. Product innovativeness considers the novelty of new products introduced to the market. Innovative products present great opportunities for the firm in terms of growth and expansion into new areas (Danneels, Kleinschmidt, & Cooper, 2001). Market innovativeness is the newness of approach to attack the target market (Andrews & Smith, 1996). Process innovativeness refers to an organizations ability to exploit its resources and capabilities to meet creative production. Behavioral innovativeness is demonstrated through individuals, teams and management, enables the formation of an innovative culture. It defines the receptivity to new ideas and innovation. Strategic innovation is the ability of a firm to identify gaps in the industry and position itself to take advantage of them (Wang & Ahmed, 2004). Literature therefore suggests that externally, flexible oriented cultures, will be associated with high innovation. Adhocracy culture therefore has the highest correlation to an innovative organization.

2.3.3 Factors affecting a culture of innovation

Tushman and O'Reilly (1996), argue that organizational culture lies at the heart of innovation. Culture of innovation is a way of doing and acting that creates, develops and establishes values and attitudes within a company that require an emergence, acceptance and support of new ideas that support improvement from the existing products, processes, business models or organizational structure (Çakar & Ertürk, 2010). Despite scholars and practitioners agreeing that organizational culture has a strong correlation on innovation and innovation success, empirical evidence remains scarce. Organizational cultures are complex and multi-faceted. Herzog (2008, p. 61) poses the question, “Would it not be desirable if managers could change and modify the organizations culture to certain circumstances and to follow specific purposes? The answer to the question if culture is managed heavily depends on the underlying conceptions of organizational culture”. A study by Dobni (2008) defined an innovation culture as a multi-dimensional context that includes the intention to be innovative, infrastructure to support innovation, market orientation and the environment to implement innovation.

Herzog (2008) states that culture is an internal variable which develops within the organization. Therefore, it can be molded and influenced by management to direct the course of the organization and pursue strategic goals. Gudmundson and Hartman (2003) argue that culture can be a stimulant among members of an organization since it can lead to acceptance of innovation as a basic value of the organization and foster commitment to it. Research has also provided evidence of the relationship between culture and innovation. However, empirical literature is not clear on the types of culture that enhance or inhibit innovation (Büschgens et al., 2013; Chang & Lee, 2007; Lau & Ngo, 2004; Lin et al., 2013; Miron, Erez, & Naveh, 2004; Naranjo-Valencia et al., 2016). Drawing from the definition of organizational culture, innovation culture can be thought of as organizational wide shared basic values and norms that support innovation, and perceptible innovation-oriented practices i.e. artifacts and behaviors. Scholars and practitioners have attempted to research on which values, norms and practices support an innovation culture.

Herzog (2011) studied innovation culture from the following dimensions; market orientation, organizational learning, entrepreneurial spirit and creativity. Keskin (2006) emphasizes that scholars in general management and marketing literature back the inter-relationship between market orientation, learning orientation, firm innovativeness and their combined impact on performance in organizations. The important study of Kohli and Jaworski (1990) defines market orientation as a set of behaviors and processes, or an aspect of culture to create a superior customer value. Further, Slater and Narver (1995) refer to market orientation as culture that places highest priority on profitable creation and maintenance of superior customer value at the same time considering the interests of other stakeholders. For this to be achieved, it requires some attribute of innovation. A factor which has synergy with market orientation is learning-orientation. In addition, market-orientation only enhances innovation when it is combined with learning-orientation. (Baker & Sinkula, 1999, p.412) define learning-orientation as “a mechanism that directly affects a firm’s ability to challenge old assumptions about the market and how a firm should be organized to address it”. Market oriented firms focus on customers and can sometimes ignore emerging markets, new technologies, or competition.

Learning-orientation embraces an organizational commitment to learning that enhances open-mindedness, knowledge sharing and knowledge-enhancing values that leverage the adaptive behaviors provided by market-orientation to a higher order learning that leads to development of breakthrough products, services, technologies and exploration of new markets (Farrell & Katz, 2000; Slater & Naver, 1995). Hurley and Hult (1998) contend that levels of innovation in an organization are associated with cultures that emphasize learning development and participative decision making. In addition to learning-orientation, firm innovativeness is a portion of the firm’s culture that promotes and supports novel ideas, experimentation, and openness to new ideas (Garcia & Calantone, 2002). In their work, Martin and Martins (2002) found that many organization are trying to build an institutional framework where creativity and innovation are basic cultural norms. The norms of behavior and shared values influence performance, morale and innovation.

The theoretical study by Martins and Terblanche (2003) found that the key factors for a culture of innovation were: A strategy that promotes development of new products, a structure that allows flexibility, freedom and cooperative teamwork, support mechanisms such as reward and recognition, behaviors that support innovation such as how mistakes are handled, and finally an organization that supports open and transparent communication which builds on trust.

2.4 Gaps in research

Studies on organizational culture have focused its effect on different other variables like productivity and performance. Prajogo and McDermott (2005) focussed on the multidimensional relationship between organizational culture and operational performance, examining the relationship between the four cultural dimensions of the CVF and firm performance across four dimensions i.e. product quality, process quality, product innovation and process innovation in Australian companies. This study cannot be applied in Kenya because of the different cultural contexts between the two countries. Jung et al. (2003) studied the role of transformational leadership in enhancing organizational innovation in Taiwanese companies, in the electronics and Telecoms industry. Ngugi, McOrege and Muiro (2013) studied the influence of innovativeness on growth in SMEs in Kenya.

Otunga (2016) studied the effect of culture on productivity in Kenya universities which inferred a positive relationship between culture and productivity. Martins and Terblanche (2003) focused their study on the determinants of culture which influence creativity. Odhiambo, Kibera and Musyoka (2015) focused their study on the influence of organizational culture and marketing capabilities on performance of micro-finance institutions and found that culture had a significant effect on performance. Çakar and Ertürk (2010) used Hofstede's culture framework to study the impact of organizational culture and empowerment on innovation capabilities of Turkish SMEs. In Kenya, innovation mainly comprises marginal improvements and is not as productivity enhancing as in peer countries like Egypt and South Africa (World Bank, 2014).

This confirms that Kenya still has a long way to go to be a considered an innovation giant and thus making the area of culture and innovation rich for further research for how Kenyan SMEs can be competitive through innovation.

2.5 Conceptual Framework

The conceptual framework below proposes that if an organization has the right type of culture, it will enhance its capabilities of organizational innovation. The culture is further broken down according to the Cameron and Quinn (2011) model as Clan, Adhocracy, Market and Hierarchy cultures which form the independent variable.

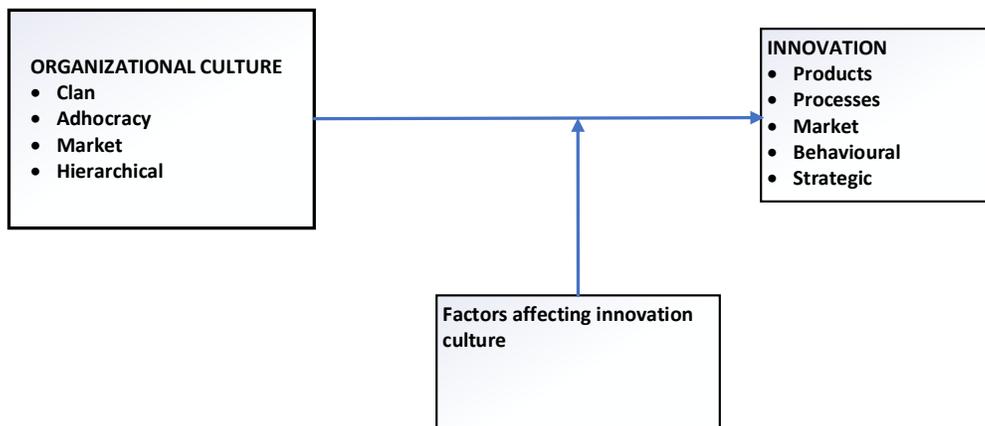


Figure 2. 1 Conceptual Framework

Variable Key:

Independent variable – Organizational culture

Intervening variable – Factors affecting innovation culture

Dependent variable – Innovation

2.6 Operationalization of variables

Organizational culture will be measured using the Organizational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn (2011). Each culture type will be measured based on the dominant characteristics, leadership style, management of employees and criteria for success. Organization innovation will be measured using an organizational innovativeness assessment tool developed by Ahmed and Wang (2004).

Table 2. 1: Operationalization of variables

VARIABLE	INDICATOR	MEASURE	QUESTIONNAIRE
Organizational culture	Work environment, organizational structure, competitiveness, leadership-style, management-style, commitment, loyalty, efficiency	Five-point scale: 1-Strongly agree 2-Agree 3-Neutral 4-Disagree 5-Strongly disagree	Section B
Innovation	Number of new products, success rate of new products, use of technology, new processes, new marketing techniques, new management approaches, adoption of new business processes	Five-point scale: 1-Strongly agree 2-Agree 3-Neutral 4-Disagree 5-Strongly disagree	Section C and D

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focusses on the methodology that was used for the study. The chapter discusses research design, population and sampling, data collection procedure, and data analysis. Research quality and ethical considerations are also discussed.

3.2 Research Design

According to Saunders, Lewis and Thornhill (2012), research design is generally the plan of how the researcher will go about answering the research questions. For this study, a descriptive survey was used. This design was appropriate for the study as a descriptive design determines and reports the way things are. It portrays an accurate profile of persons, events or situations (Kothari, 2004). It allowed the researcher to draw conclusions about the variables under study. A mixed methods approach was used for the study. Quantitative research methods based on feedback of organizations members to structured questionnaires was used to measure organizations members' perceptions of their organizations culture. A qualitative approach allows the researcher to make knowledge claims based primarily on individual experiences and social meaning with an intent of developing theory or pattern (Creswell, 2014). Open-ended questions were used with the primary intent of developing themes from the data.

3.3 Population and Sampling

Cooper and Schindler (2006), define a population as the total collection of elements about which we wish to make inferences. This can be a group of individuals, persons, objects, or items from which samples are taken for measurement. Sampling involving selecting a section of the elements of the population and using it to draw conclusions for the whole population. Sampling provides valid alternatives when it is impractical to survey the entire population in addition to time and budgetary constraints (Saunders et al., 2012).

The sample population for this study was drawn from ICT SMEs which are key drivers of economic growth and job creation in Kenya. Companies selected fell within the Small (10 to 49 employees) and Medium (50 to 99 employees) Enterprise bracket based on the number of employees as defined by the MSME Bill (2009).

In addition, their core business was in the design, development, implementation and sale of products or solutions that are ICT related. The unit of analysis was individual employees in the different organizations. According to the Economic Survey report (2017), a publication of the Kenya National Bureau of Statistics (KNBS), there are 6,280,500-people employed in MSME sector. Licensed SMEs account for 7.8% of employment. Out of this, 88,900 are in ICT. As this study only considers small and medium-sized firms, the population of interest is 7.8 per cent. The sample size was calculated using Cochran (1977) formula:

$$n_0 = \frac{Z^2 pq}{e^2}$$

$$n_0 = 1.96^2 * 0.078 * 0.922 / (0.05^2)$$

$$n_0 = 110$$

The value for Z represents the confidence level, found in statistical tables which contain the area under the normal curve. For this study, 95% confidence level was used, where Z = 1.96.

e is the desired level of precision,

p is the estimated proportion of an attribute that is present in the population and q is 1-p.

A random sampling approach was used for the study. Since a sampling frame had been identified, which was employees working in ICT SMEs, the samples were randomly drawn from across the organizational and different business units or divisions; operational staff, middle management and senior management. A list of all employees in each company was written and each employee assigned a unique number. Random numbers representing employees were then picked for the study sample.

3.4 Data Collection Procedure

Choice of the data collection tool depends on the research design. Primary data was used for the study which was collected through self-administered questionnaires. According to Mugenda & Mugenda (2003), a questionnaire helps in presentation of first-hand information on the study and provides privacy of the respondents since the response is anonymous.

The questionnaire to measure organizational culture was adopted from OCAI (Cameron & Quinn, 2011). It is divided into six parts each with four questions. For this study, the measurement areas were: Dominant characteristics, organizational leadership, management of employees and criteria for success, as these are correlated with Innovation. This questionnaire was robust since it considered all facets of an organization. An organization's innovation framework developed by Wang and Ahmed (2004) was used to measure innovation through a five-point Likert scale. The questionnaires were divided into Section A, B and C as demographic data, organizational culture and Innovation respectively. Section D contained open-ended questions to provide a deeper understanding on innovation drivers. The questionnaires were administered anonymously through the internet or via "drop and pick later" basis. A formal request was sought from the management of each of the companies before the questionnaires were administered. The questionnaires were individually completed by the respondents.

3.5 Data Analysis

The completed questionnaires were tabulated and analyzed using the IBM SPSS statistical analysis software. Analysis of quantitative data was done using descriptive statistics i.e. means, median, percentages, and standard deviation. Analysis for the relationship between the different organizational culture types and innovation was conducted. For objective one, to find the dominant culture in ICT companies, this was derived from responses through computation of the mean and standard deviation for each of the cultures with the most dominant being the one with the highest mean.

Objective two was analyzed using spearman's rank correlation coefficient to allow for assessment of the association between organizational culture and innovation based on the respondents' answers to Section B and C of the questionnaire. The resulting correlation coefficients were assessed to show the significant associations between culture and innovation. For objective three, the factors with significant correlation were highlighted and a factor analysis conducted to assess how these factors group to generate the latent factors that inform organizational innovation.

3.6 Research Quality

3.6.1 Reliability

Reliability ensures that the research can be replicated by another researcher doing a similar research in the ICT industry. If this is possible, the research is said to be reliable. To achieve this, a pilot study was conducted with ten respondents to ensure that the questions on the questionnaire were clear and free from ambiguity, bias and misunderstanding between the respondent and the researcher. The study of different companies ensured that the research was robust in terms of studying different organizations to avoid the bias of considering a single organization.

3.6.2 Validity

Validity can be broadly defined as the ability of a scale to measure what it is intended to measure (Saunders et al., 2012). To ensure validity in the research, simple and clear questions were used in the questionnaire. In addition, the pilot study was used to test for internal validity by ensuring the understanding of the respondents is the same as the intended meaning of the question. External validity refers the extent to which the findings of a study can be generalized to other relevant settings or groups (Saunders et al., 2012). This was achieved by conducting the study in a real life setting and comparing the findings with literature from previous studies.

3.7 Ethical Considerations

The research was conducted ethically and professionally so that results collected for the study were valid. Prior to interacting with respondents, formal approval was sought from management of the individual companies with introductory documents from Strathmore Business School (SBS). The respondents were also given a participant consent form and were clearly explained to of their rights and freedoms to voluntarily participate in the research. In addition, all completed responses were anonymous, and treated as confidential.

CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter provides a detailed analysis of that data collected in accordance with the main objective of the study - the influence of organizational culture on innovation in technology SMEs in Kenya. The chapter is delineated into six main sections - response rate; reliability and validity; descriptive statistics; objective one – To explore the dominant organizational culture in technology SMEs using the CVF; objective two – To evaluate the relationship between organizational culture and innovation in technology SMEs; and objective three - To determine the factors that influence a culture of innovation in technology SMEs.

4.2 Response Rate

The total sample size computed for the study was 110 respondents. Of these, 66 filled and returned their questionnaires which constituted 60% response rate. Baruch and Holtom (2008) observe that there is growing apathy in response to academic data gathering approaches, an observation drawn from a study of over 1000 questionnaire-based academic research initiatives. The authors summarize that the average acceptable response rate – as observed from the studies – is 52.7%. It was therefore observed that the study had achieved a sufficient response rate to address the objectives.

4.3 Validity and Reliability

Validity and reliability were assessed using a pilot test and the computation of Cronbach's alpha for the scales used. Furthermore, pre-tested collection instruments were used – specifically OCAI for organizational culture and the innovation assessment framework (Cameron & Quin, 2011; Wang & Ahmed, 2004). The computed Cronbach alphas for the various scales used are depicted in Table 4.1.

Table 4. 1 Cronbach Alpha

Scale	Cronbach's Alpha (α)
Organization Culture	0.883
Innovativeness	0.920

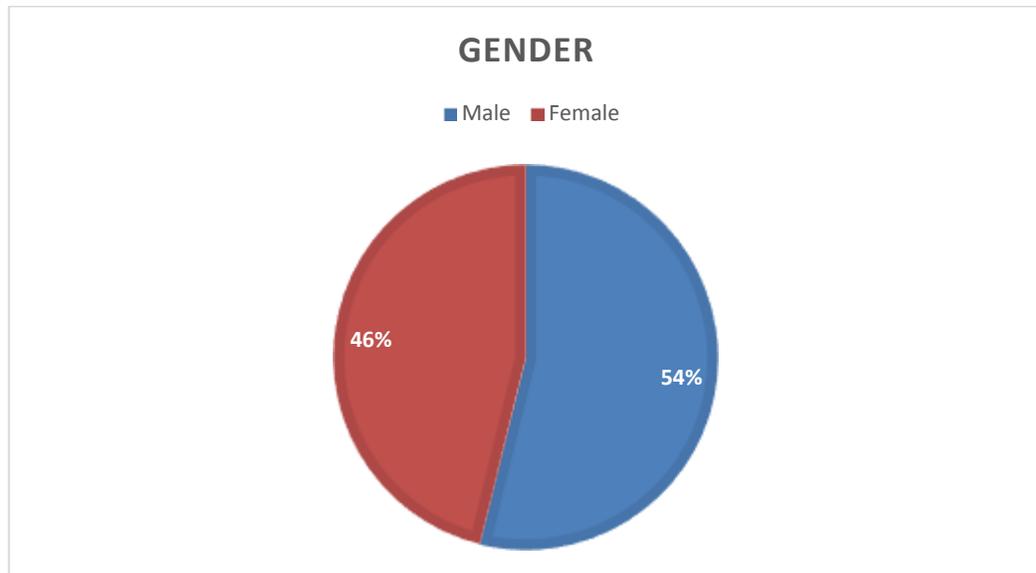
Source: Survey Data

According to Diedenhofen and Musch (2016), a threshold Cronbach's alpha value of 0.7 has grown to be considered as the standard minimum in assessment of the reliability of a scale. It was therefore observed that the two scales used for the study were reliable.

4.4 Descriptive Statistics

4.4.1 Demographic Information

Figure 4. 1 Gender Proportions

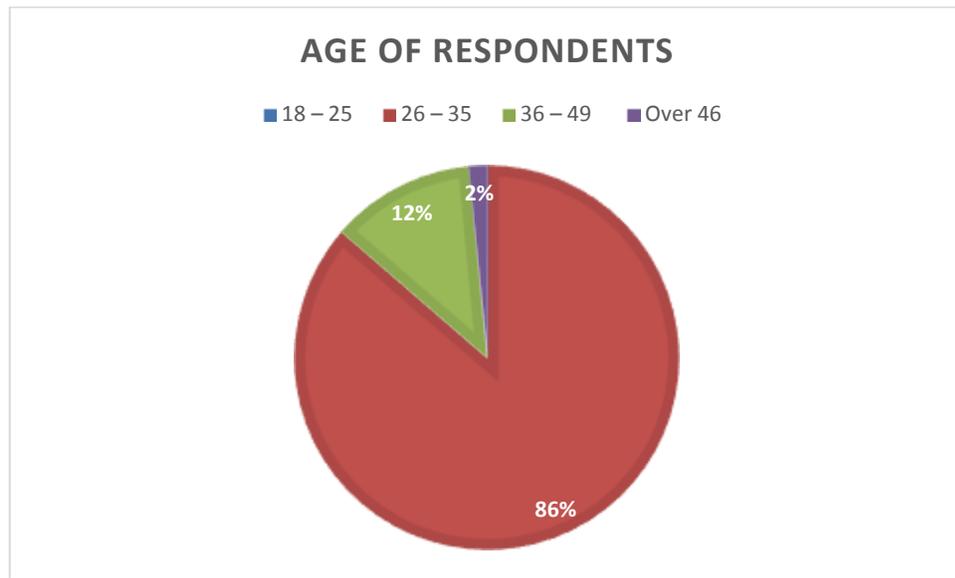


Of the 66 respondents, 35 indicated that they were male whereas 30 indicated that they were female. One respondent did not indicate his/her gender. Cohoon and Aspray (2006) contend that technology remains a male-dominated field even after twenty five years of wide-ranging efforts on promotion of women in technology.

4.4.2 Age of respondents

The modal category, regarding age, was 26 to 35 with 57 respondents falling in this category. Eight respondents were in the category 36 to 49 and one respondent was over 46 years of age. This is depicted in Figure 4.2. Rouvinen (2014) in his study of characteristics of product and process innovators, argues that the willingness to adapt to new products or processes reduces with age. Therefore, the probability of implementing changes reduces with age.

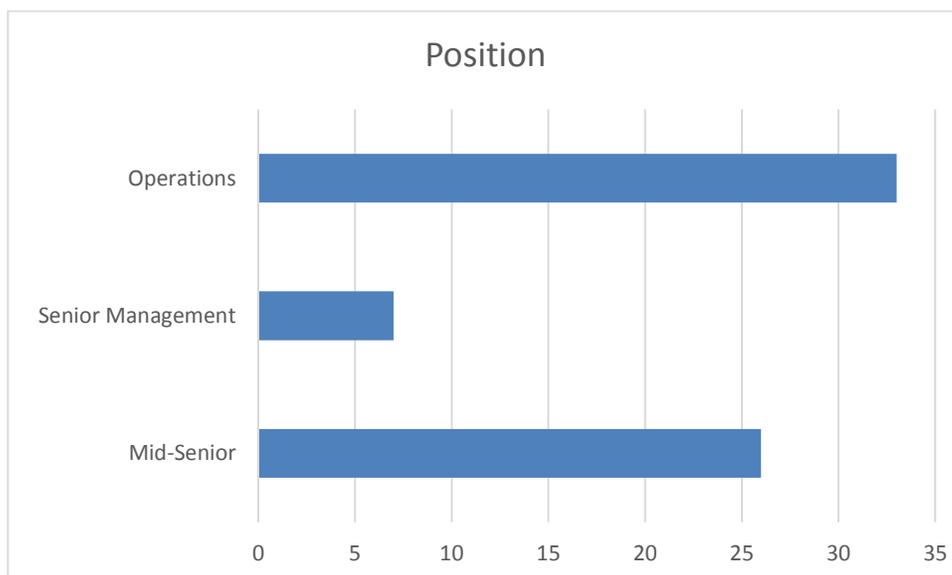
Figure 4. 2 Age of respondents



4.4.3 Position in Organization

Regarding position in organization, three main categories of respondents were created – Operations, Mid-senior and Senior management. Most respondents were of the "Operations" rank. This is in line with the expected normal distribution of employees in an organization. The frequency of responses is depicted in Figure 4.3.

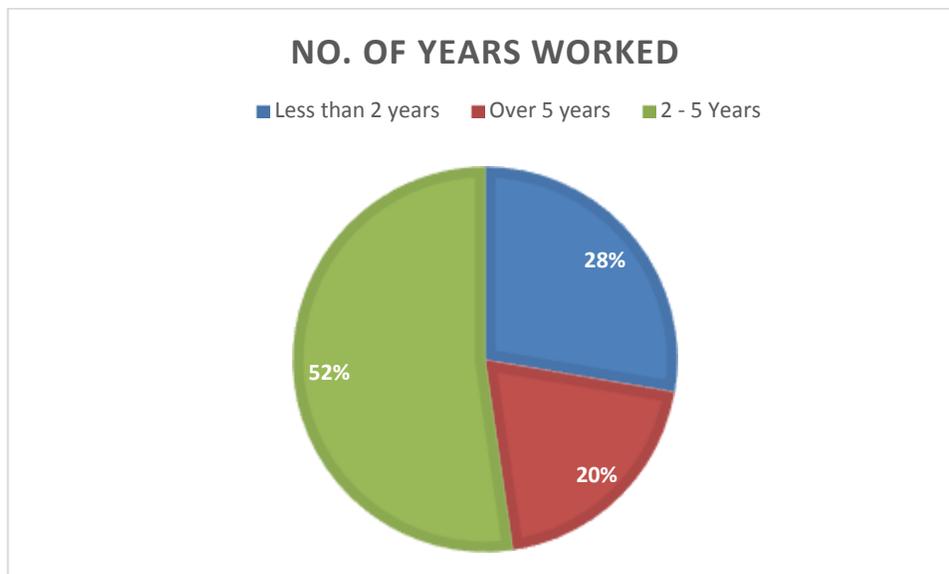
Figure 4. 3 Position in organization



4.4.4 Number of years worked

Most of the respondents had worked within their employing organizations for two to five years; this was the modal category and represented 52% of responses. The category with the lowest frequency was "over 5 years" with 20% of responses. This is possibly related to high competition for talent within the industry, which may result to attrition. The relative proportions for the categories are depicted in Figure 4.4 below. Ng and Feldman (2013) proposed that organizational tenure is likely to increase technical knowledge which is relevant in promoting organizational innovation.

Figure 4. 4 Number of years worked



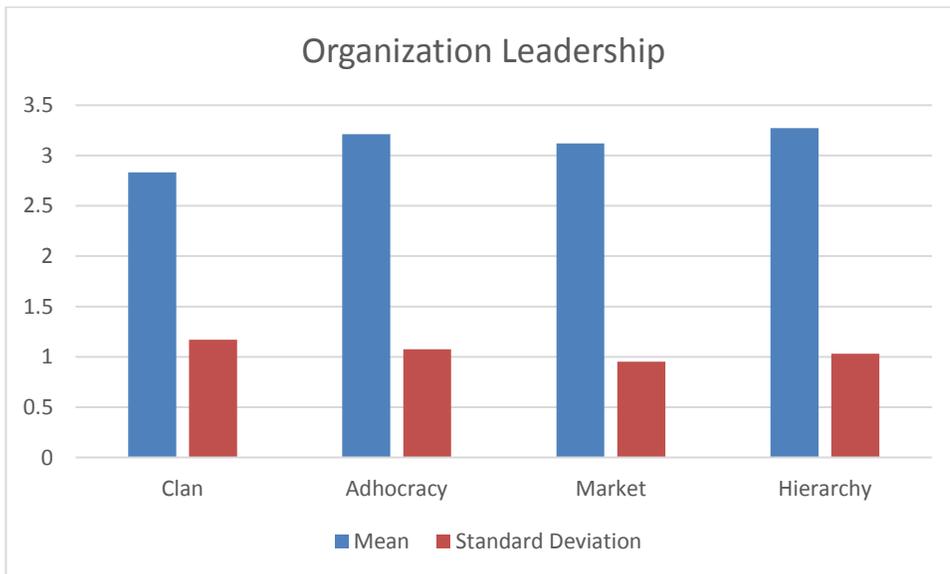
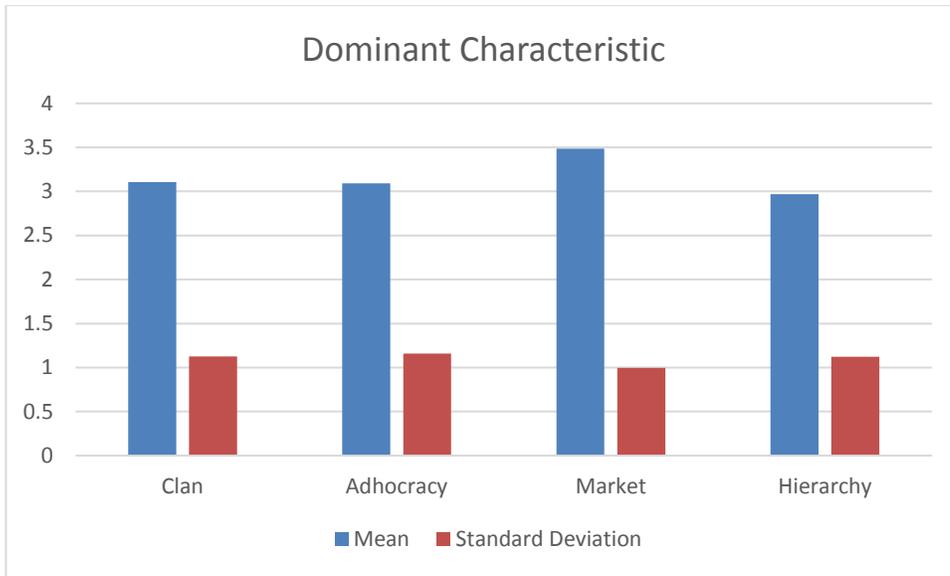
4.5 To explore the dominant culture in IT SMEs using the CVF

Four main organizational cultures were addressed through four main dimensions – dominant characteristics, organizational leadership, management of employees, and criteria of success. These dimensions were deemed relevant since they represented a wholistic view of an organization. Each question in the four dimensions addressed a specific organizational culture. Questions addressing specific dimensions were then grouped and the means and standard deviations calculated for each dimension and subsequently, for each culture.

4.5.1 Dominant culture per dimension

Table 4.2 depicts the mean and standard deviations for each culture dimension. The dominant culture under each dimension, as derived from the mean for each culture, is further depicted in Figure 4.5 – Figure 4.9.

Figure 4. 5 Culture by dimension – Descriptive



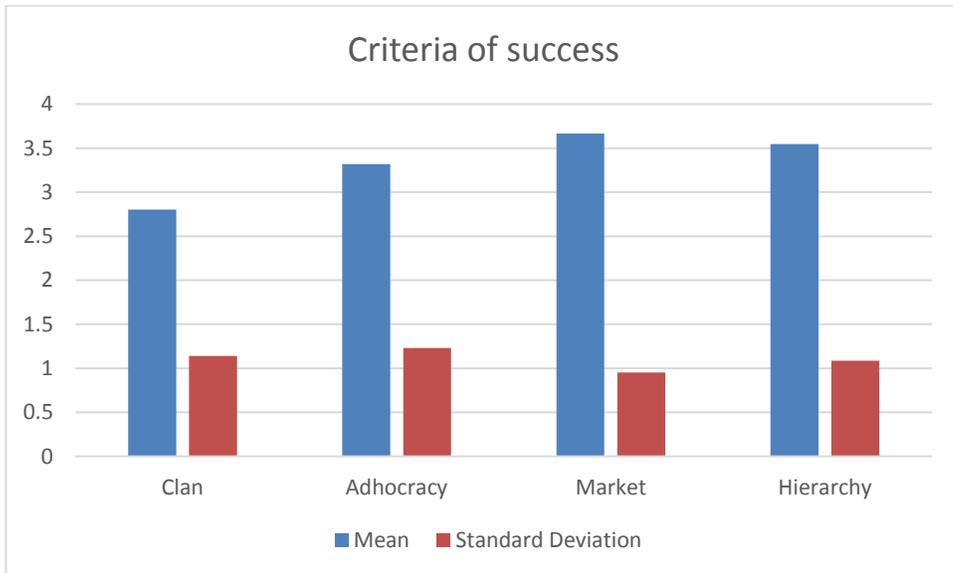
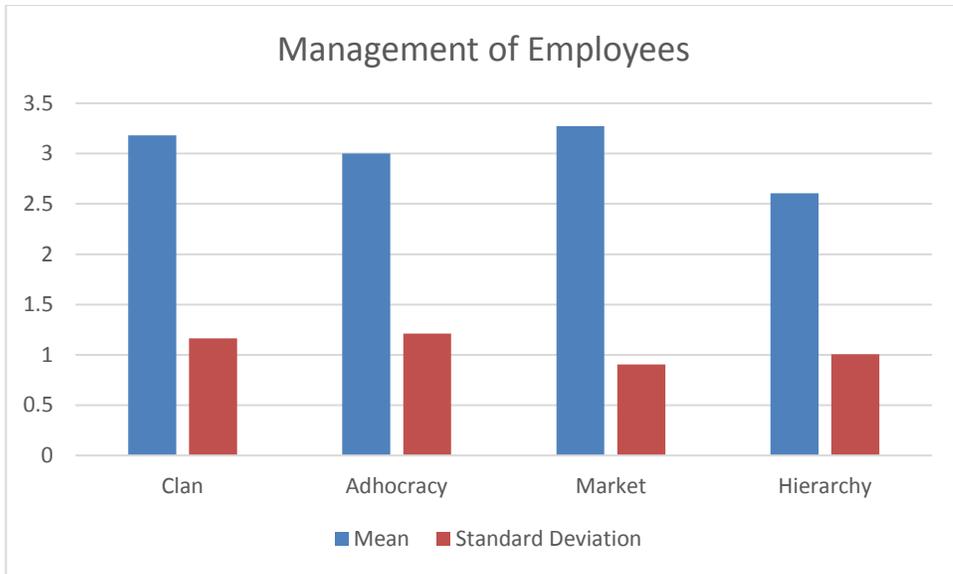
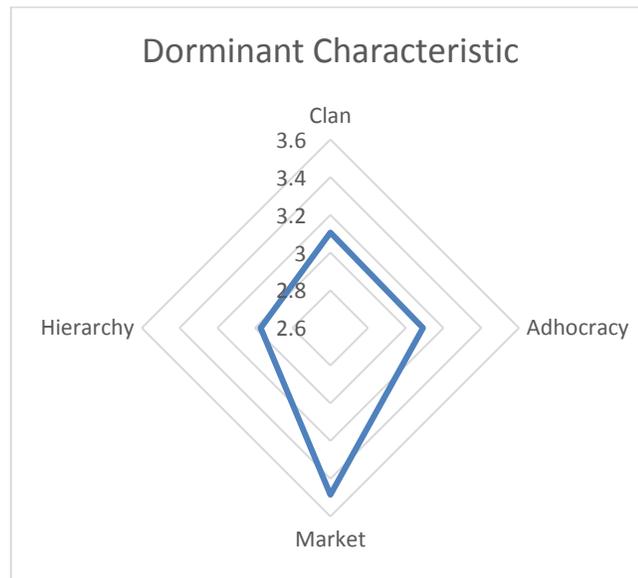


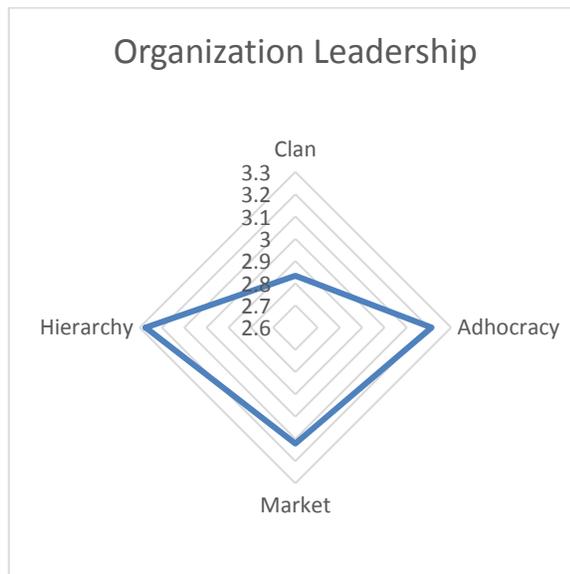
Figure 4.5 shows that the dominant culture under each dimension can vary. The mean was used to find how the employees perceived culture in their organizations under different variables represented by each dimension. The culture with the highest mean represented the dominant culture under that dimension.

Figure 4. 6 Dominant characteristics



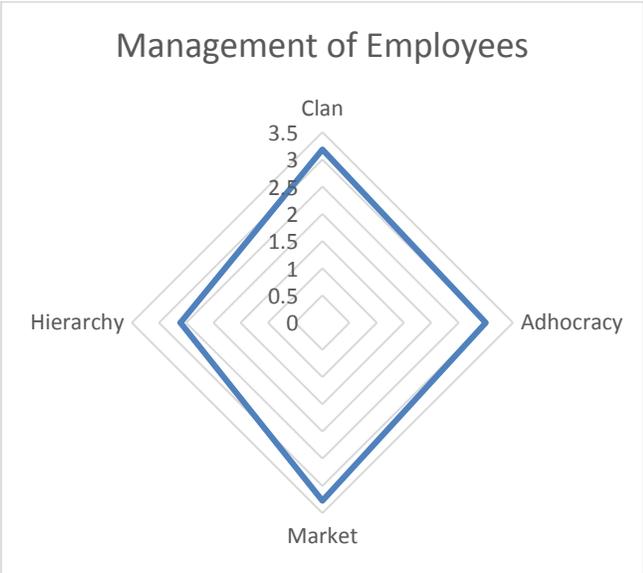
On the dominant characteristic dimension, Market culture had the highest mean of 3.48 as shown in Figure 4.6. This inferred that the organizations were results oriented and the major concern is getting the job done. In addition, people are competitive and achievement oriented.

Figure 4. 7 Organization Leadership



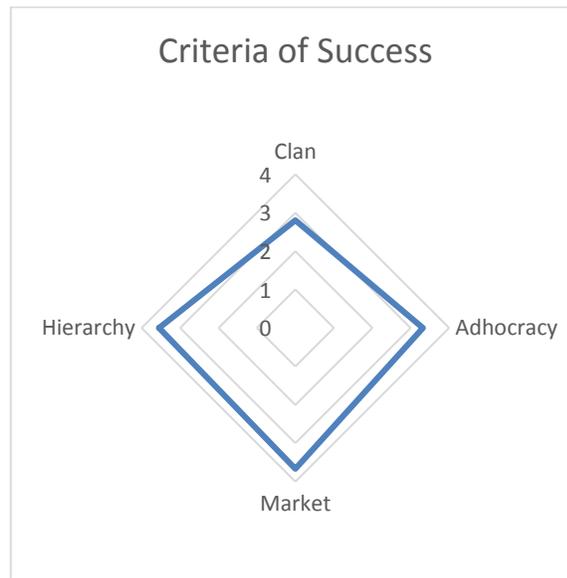
Organizational leadership dimension measured the perception of employees on the leaders and heads of the organization. The results showed that the organizations studied exhibited a Hierarchical culture with a mean of 3.27. This means that the leaders were perceived as coordinators and organizers with a strong sense of control and efficiency. Adhocracy and Market cultures also had means of 3.21 and 3.12 respectively. This suggests that was also a significant number of leaders who are perceived as innovators and risk takers, as well as hard-drivers for results.

Figure 4. 8 Management of employees



On management of employees, the strongest culture was Market with a mean of 3.27. This meant that management was perceived as hard-driving for results and goal oriented. Clan and Adhocracy cultures were considerably strong with means of 3.18 and 3.00 respectively. This pointed to management that demonstrated team work and participation, as in Clan culture, and risk taking and innovation, as demonstrated in Adhocracy culture.

Figure 4. 9 Criteria for success



On the criteria for success, it was observed that the dominant culture-type was Market, with a mean of 3.66. This inferred that the definition for success in most organizations was winning in the market place and outpacing competition. Hierarchical culture had the second highest mean of 3.54 which inferred that efficiency and smooth delivery were a key success factor. It was observed that market culture was dominant for three of the dimensions with the exception being organization leadership where hierarchy culture was dominant.

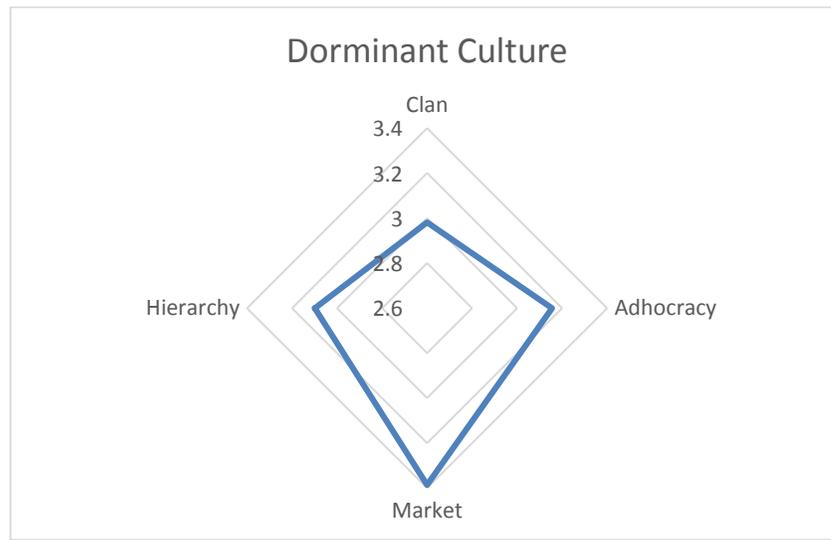
4.5.2 Overall Dominant culture

All questions assessing each culture for all four dimensions were assessed for means and standard deviation. The results are depicted in Table 4.3 and Figure 4.10 respectively.

Table 4. 2 Organizational culture descriptive statistics

	Mean	Standard Deviation
Clan	2.981061	0.191003
Adhocracy	3.155303	0.139072
Market	3.386364	0.239087
Hierarchy	3.098485	0.403819

Figure 4. 10 Dominant culture



It was observed that Market culture, with a mean of 3.39 and standard deviation of 0.24 emerged as the most dominant culture overall. Adhocracy, with a mean of 3.15 was the second most dominant culture with a lower standard deviation of 0.13.

4.6 To evaluate the relationship between culture and innovation in IT SMEs

Innovativeness was assessed under five main parameters – Product innovativeness, market innovativeness, strategic innovativeness, process innovation and behavior innovativeness. The mean for each type of innovativeness was calculated for each respondent and this correlated with the mean for each organizational culture per respondent.

Spearman's rank correlation coefficient was used in assessment of the relationship between the resulting aggregative data. The strength of the correlation was assessed as follows - 0.00 - 0.19 “very weak”, 0.20 - 0.39 “weak”, 0.40 - 0.59 “moderate”, 0.60 - 0.79 “strong”, 0.80 - 1.0 “very strong” (Liu et al., 2017). Correlations in the strong and very strong categories were of key interest and are highlighted in bold in Table 4.4.

Table 4. 3 Spearman's Rank Correlation Coefficients

			Product Innovation	Market Innovation	Strategic Innovation	Process Innovation	Behavior Innovation
Spearman's rho	CLAN	Correlation Coefficient	.629**	.373**	.530**	.562**	.708**
		Sig. (2-tailed)	0.000	0.002	0.000	0.000	0.000
		N	66	66	66	66	66
	ADHOCRACY	Correlation Coefficient	.603**	.417**	.511**	.443**	.777**
		Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
		N	66	66	66	66	66
	MARKET	Correlation Coefficient	.313*	0.055	0.161	0.187	.296*
		Sig. (2-tailed)	0.010	0.658	0.195	0.132	0.016
		N	66	66	66	66	66
	HIERARCHY	Correlation Coefficient	.443**	0.109	.268*	.300*	.418**
		Sig. (2-tailed)	0.000	0.382	0.030	0.014	0.000
		N	66	66	66	66	66

** - Correlation is significant at the 0.01 level (2-tailed)

* - Correlation is significant at the 0.05 level (2-tailed).

Adhocracy culture showed a strong positive correlation with indicators of innovation. Behavioral innovation had a correlation coefficient of 0.777. This indicated that the individuals and management in the organizations with an adhocracy culture had an internal receptivity to new ideas, new ways of doing things and innovation. In addition, this could be achieved by creation of a tolerant atmosphere in which mistakes are accepted as part of taking initiative, using them as learning experiences, and assuming that the chance of being successful was congruent to taking risks (Martins & Terblanche, 2003).

Clan culture also showed a strong positive correlation with behavioral innovation (0.708) and product innovation (0.629) indicators. Strong teamwork and participation from the employees leads to development of trust, open communication and collaboration which are drivers for innovation. These organizations encouraged employees to think and share new ideas. The organizations' new products and services were often on the cutting edge of technology, and they were able to generate more new products than their competitors. This culture-type also showed moderate correlation with strategic and process innovation.

Hierarchical cultures presented moderate to weak correlations with the five categories of innovativeness i.e. product, market, process, strategic and behavioral innovation. Market culture had the weakest correlation on all the categories of innovation. The strongest observed correlation was between adhocracy and behavior innovation with a correlation coefficient of 0.77 which was significant at α 0.05.

4.7 To determine the factors that influence a culture of innovation in IT SMEs

To determine the factors that influence a culture of innovation in technology SMEs, the findings in objective two were used to conduct a factor analysis. The different attributes of the culture i.e. Clan, Adhocracy, Market and Hierarchy were correlated with at least two indicators of innovation. A factor analysis was done to derive the latent factors that influence an innovation culture in the technology companies.

As indicated in Table 4.1, the scale assessing organizational culture presented a Cronbach's alpha of 0.883 thereby indicating that the scale is reliable and suitable for extraction of latent factors. As reported by Yong and Pearce (2013), an eigenvalue of 1 is effective as the threshold value for extraction of latent factors, this value was used in the factor analysis.

Given the relatedness of the variables assessing innovation, it was deemed necessary to employ an Oblimin rotation; this is in accordance with Buss and Perry's (1992) observation on the suitability of the approach. The data presented a Kaiser-Meyer-Olkin (KMO) value of 0.787 hence this was higher than the lower bound of 0.5 as indicated by (Kaiser, 1974). Table 4.5 shows the resulting KMO value. The significance value derived for Bartlett's test of sphericity was lower than 0.001 hence indicating that the data was suitable for extraction of latent factors.

Table 4. 4 KMO and Bartlett's Test

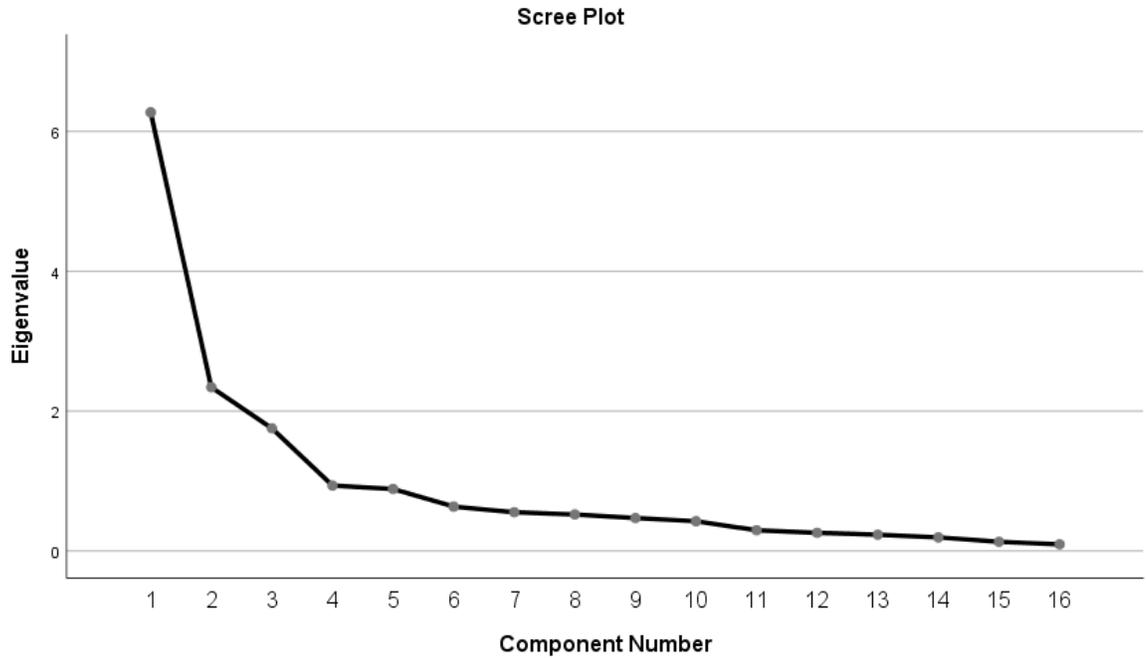
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.787
Bartlett's Test of Sphericity	Approx. Chi-Square	554.786
	df	120
	Sig.	0

Table 4. 5 Total Variance Explained

Total Variance Explained							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings	Rotation Sums of Squared Loadings ^a		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.272	39.202	39.202	6.272	39.202	39.202	5.486
2	2.341	14.632	53.834	2.341	14.632	53.834	2.588
3	1.754	10.963	64.797	1.754	10.963	64.797	4.078

A total of three factors with eigenvalues greater than 1 were extracted. These accounted for 64.78% of the variability in the data set (Table 4.6). The various eigenvalues are indicated in Table 4.6 above. The scree plot indicating the various components is shown in Figure 4.11 below.

Figure 4. 11 Scree plot



A pattern matrix for the observed factors was used in outlining the various variables under each component. The component matrix resulting from the analysis depicting the loading of each variable into its respective latent factor is depicted in Table 4.7. The statements were derived from the OCAI tool on Section B of Appendix II, which is used to evaluate culture in the organizations.

Table 4. 6 Pattern Matrix

Pattern Matrix^a			
	Component		
	1	2	3
The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.	0.898	-0.151	-0.145
The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.	0.897		
The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	0.809		-0.114
The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.	0.799		
The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	0.692	0.289	
The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	0.563	-0.325	0.317

The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	0.495	0.371	0.274
The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.		0.793	0.100
The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	0.262	0.683	0.418
The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	0.365	-0.572	0.331
The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	0.302	-0.469	0.326
The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	-0.106	-0.145	0.876
The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.		0.113	0.747
The organization is a very controlled and structured place. Formal procedures generally govern what people do.	-0.161	0.261	0.697

The management style in the organization is characterized by teamwork, consensus, and participation.	0.263	-0.513	0.559
The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	0.327	-0.295	0.465
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.			
a. Rotation converged in 23 iterations.			

As depicted in Table 4.7, seven variables loaded into the first component, four into the second, and five into the third; these are shown with highlighted loading factors. It was therefore observed that three main latent cultural factors influence an innovation culture within organizations. The components were grouped in Table 4.8 below.

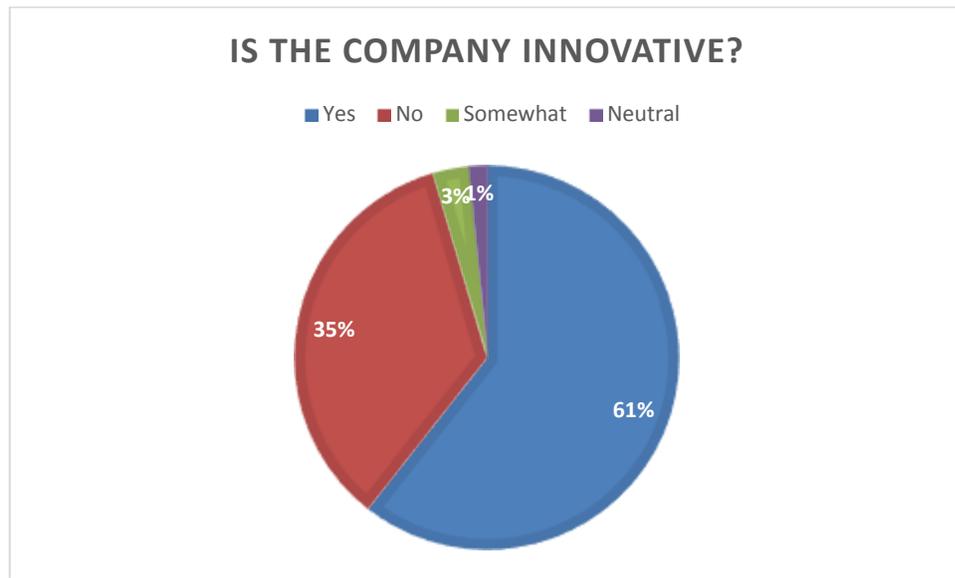
Table 4. 7 Naming of Factors

FACTOR	NAMING
Factor 1	Intrapreneurship and risk taking
Factor 2	Working environment
Factor 3	Organizational structure

The three components were grouped into; Intrapreneurship and risk-taking, working environment and organizational structure. These factors are discussed in further detail in Chapter 5.

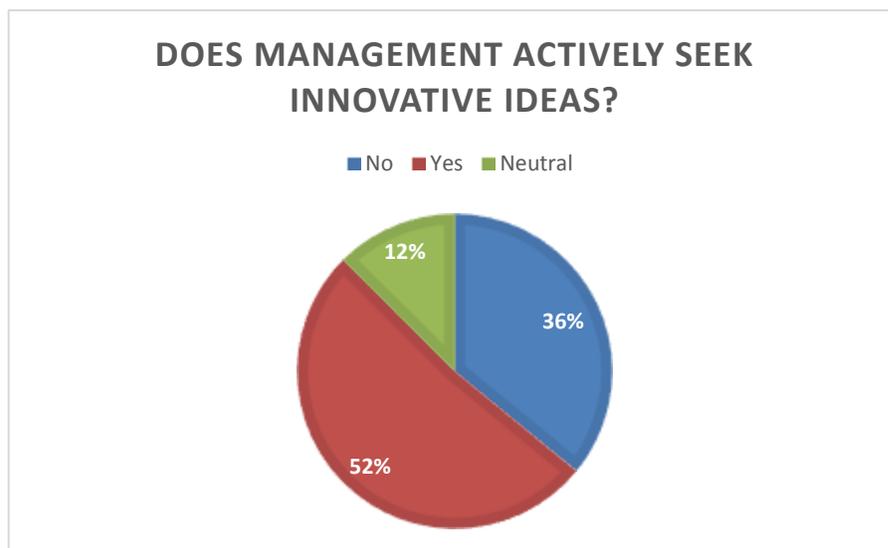
Qualitative data collected to assess innovativeness in companies indicated that 61% of the respondents viewed their employing company as innovative. This is depicted in Figure 4.12.

Figure 4. 12 Innovativeness of companies



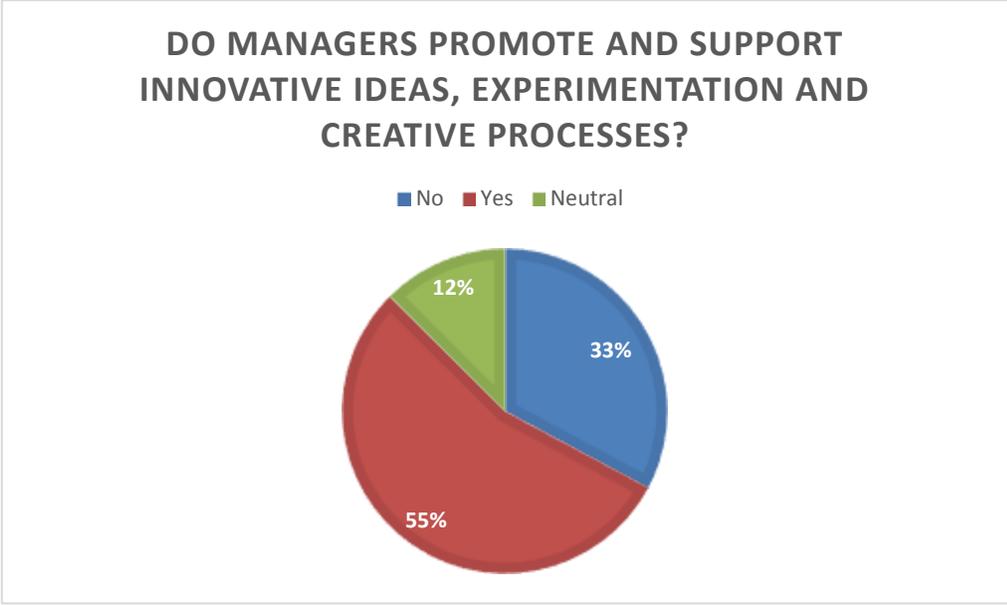
In assessing whether managers seek innovative ideas – Figure 4.13 – it emerged that most do. Assessing this finding considering that on the innovativeness of companies, it emerged that there was a discrepancy in that although the companies were largely viewed as innovative (61% respondents) the proportion of managers that was viewed as innovative was lower (51%). This means that there was a conflict between the organizations receptiveness towards innovation and how the employees perceived the attitude of management towards the same.

Figure 4. 13 Innovation among managers



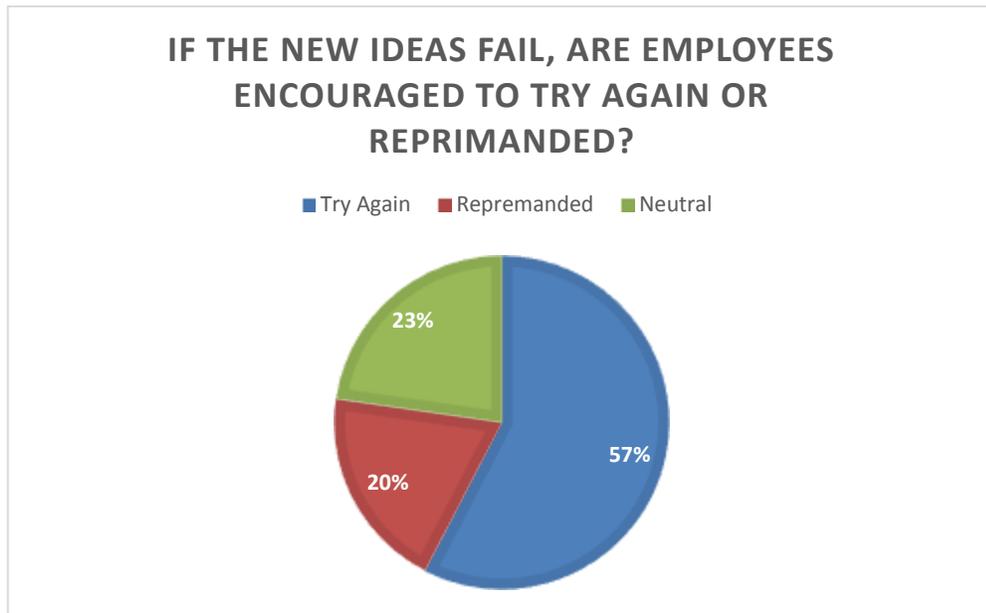
Regarding support of innovative ideas, experimentation and creative processes, it emerged that managers were generally supportive, creating an environment for innovation. This is depicted in Figure 4.14.

Figure 4. 14 Managers support for innovativeness



In assessing the reaction to failure, Figure 4.14, it was observed that generally, employees that failed were encouraged to try again. This is an antecedent for innovation in the organization. Employees are therefore encouraged to experiment on new ideas and be creative in their work.

Figure 4. 15 Reaction to failure



Key themes and patterns were derived from the qualitative data collected on the open-ended questionnaire. Response on what management could do to nurture innovativeness, showed that the main way was to incentivize employees was through both personal incentives and showing appreciation for innovative ideas at a top-organization level. Management was viewed as being the main driver of innovativeness and was generally adjudged as apathetical to issues of innovation. It was also emergent that not enough resources were allocated to research and development. Respondents indicated that this resulted in a lack of established innovation approaches hence stagnation in progress. Group innovation was also suggested as an option whereby people should be encouraged to work together to innovate. This finding supports that clan culture, where teamwork is encouraged, has a positive correlation with innovation. It was also observed that management did not pay enough attention to innovative ideas presented by employees, especially on the lower cadres. This led to a hold-back by employees when it comes to suggesting new ideas. Some respondents indicated that innovation practices were in place and that they should be nurtured further to perpetuate growth.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a discussion and summary of the findings to the research problem and research objectives. It looks at discussion of the findings, conclusions, recommendations and limitations of the study. The findings and recommendations have been used to inform areas for further research.

5.2 Discussion of findings

This section discusses the findings of the study based on the study objectives that were proposed namely; To explore the dominant organizational culture in technology SMEs using the CVF; To evaluate the relationship between organizational culture and innovation in technology SMEs; To determine the factors that influence a culture of innovation in technology SMEs.

5.3 Dominant organizational culture in IT SMEs

The OCAI based on the CVF was developed by Cameron and Quin (2011) and is a dominant framework used across the world as a tool for measuring organizational culture. The tool has been used to study organization culture in previous research (Deshpandé et al., 1993; Lau & Ngo, 2004; Obenchain, Johnson, & Dion, 2004). The four core values of the framework represent opposites or competing assumptions i.e. flexibility versus stability, and internal versus external focus. Four dimensions of the OCAI model were used to measure culture; Dominant characteristics, leadership style, management of employees and criteria for success. Other studies have used a similar number of dimensions, or fewer, to measure organizational culture (Naranjo-Valencia et al., 2016; Deshpandé et al., 1993; Lau & Ngo, 2004). From the data analysis presented, it was deduced that the dominant culture within the SME companies in the IT industry is a Market culture, which had the highest mean of 3.39. Adhocracy culture, with a mean of 3.15 was the second most dominant culture. A Market culture, as assessed in the OCAI is a results-oriented workplace. According to most of the respondents, the leaders in their organizations were hard-driving producers and competitors who are tough and demanding.

Market culture is externally focused but control-oriented. Most of the employees perceived that the glue that held the organization together was an emphasis on winning. Success in their organizations was defined in terms of market share, profitability, penetration and competitiveness. Outpacing competition and market leadership are most important attributes (Naranjo-Valencia et al., 2016). This is supported by the fact that these organizations play in a very competitive industry and are therefore focused on keeping and growing their market share. The entry of global high-tech companies like Amazon, Microsoft, Oracle, Google, IBM among others in Kenya gives a strong incentive for local IT companies to aggressively ring-fence and defend their market share. Otherwise, these companies could easily lose their market position and be driven out of business. Some of the respondents confirmed that their organizations preferred to only marginally improve their current products and were stuck doing “what they knew best”. The leaders were unwilling to implement radical new ideas. This is a probable reason why there are few breakthrough or radical innovations in the Kenya technology scene.

The second most dominant culture was adhocracy culture. Respondents exhibited a focus on quickly adapting to new opportunities. Information technology is a highly dynamic industry and therefore readiness to change and meeting new opportunities is necessary. These organizations were committed to experimentation and innovation. Management supported new ideas, risk taking and experimentation. It was also noted that though market culture was dominant for three of the four dimensions that were measured, under organizational leadership, hierarchical culture was most dominant. This showed that leadership in most of the organizations was dominated by a command and control model, and a rigid organizational structure which could be an inhibitor for innovation. There was evidence as some respondents cited management’s choice of efficiency over experimentation for new ideas.

5.4 Relationship between culture and innovation in IT SMEs

An organization's innovativeness was measured based on the following dimensions of innovation: Product innovation, process innovation, market innovation, behavior innovation and strategic innovation. This model has been used in previous studies to measure innovativeness in organizations (Wang & Ahmed, 2004; Markides, 2006). Organization innovation is measured by rate of adoption of innovations or new ideas over a period of time. From the analysis, the Spearman's correlation tests showed strong correlation between organizational culture and the measures of innovativeness.

From the findings, adhocracy culture presented a strong correlation with the measures of innovation. The correlation coefficient of 0.77 at α 0.05 significance level for behavioral innovation depicts a strong positive relationship. Market culture showed the weakest correlation with categories of innovativeness at 0.313 and 0.187 for product and process innovations respectively at α 0.05 significance level. These results support the theoretical framework and previous studies (De Brentani & Kleinschmidt, 2004; Naranjo-Valencia et al., 2011; Damanpour, 1991). According to the findings, adhocracy culture fosters innovation as the organization emphasizes risk taking, creativity, an entrepreneurial mindset, generating new ideas and experimentation which are enablers for innovation. There was also a strong positive correlation with product innovation at 0.603. Respondents that demonstrated an adhocracy culture came from companies that originated new products and services which were often perceived as novel by the customers and introduced more innovative products in the past five years in comparison to their competitors. There was a moderate correlation with strategic and process innovation. Despite most of the organizations having an innovation strategy, the organizational structure, processes and policies were not supportive of an environment that would fosters an adhocracy culture. The findings support that most of the organizations have "innovation" as a company objective but for which is not practiced or encouraged through structures and policies.

Market culture, which was found to be the dominant culture in IT companies has the lowest correlation to innovation. The dominant characteristic in these organizations is getting the job done. Leaders exemplified a results-oriented approach and competitiveness. This can hinder teamwork, participation and sharing of new ideas as employees are overly competitive. This is consistent with previous empirical studies (De Brentani & Kleinschmidt, 2004; McLean, 2005). This could inform the high concentration of IT companies in Kenya but for which radical and breakthrough innovation has been lagging from the local IT industry. Most of the companies make small changes from their existing product offering and show little innovation in other novelty dimensions.

Clan culture showed a high positive correlation to innovation at 0.629 and 0.708 for product and behavioral innovation respectively. This means that teamwork, empowerment and employee engagement are drivers of innovation. Employees are likely to come up with new creative ideas in teams that are aligned on a common goal and have mutual trust within the group or the organization. Hierarchical culture had moderate to weak correlation to innovation. Formal rules, policies and control have a negative effect on innovation. This is supported by theoretical studies that indicate that control in the form of information flow, decision making, or empowerment diminishes creativity and innovation in organizations (Amabile, 1988; McLean, 2005).

5.5 Factors that influence a culture of innovation in IT SMEs

A factor analysis was conducted to derive the latent factors that drive innovation in IT firms. Three components were derived, Table 4.6. Analysis of the pattern matrix (Table 4.7) showed that the factors can be grouped as; Intrapreneurship and risk-taking, working environment and organizational structure (Table 4.8). According to the study, organizations that encouraged intrapreneurship and risk-taking had a strong correlation with innovation. Intrapreneurship is a concept that focusses employees of a company that have many attributes of an entrepreneur. Intrapreneurs take risks to solve a problem. Management should create values and demonstrate that risk taking, and experimentation is an acceptable behavior.

The organization should define parameters for calculated risks to allow employees have room for taking risks. Often, innovative employees are motivated by the possibility of success, rather than the results of success. This is supported by the empirical study of Martins and Martins (2002) on organizational culture and creativity. An intrapreneur mindset allows the employees to think “outside-the-box” in coming up with ideas for new products hence encouraging an innovation culture.

The working environment is defined by how people interact within the organization in getting the job done. It also determines if people can achieve and reach their personal goals while pursuing organizational goals and objectives. This component demonstrated that organizations which are competitive, and achievement oriented developed a culture of innovation. In addition, an environment of teamwork and concern for people spurred an innovation culture. In creating a culture of competitiveness, managers should encourage debating of ideas and create an environment where constructive conflict will lead to information sharing (Martins & Terblanche, 2003).

The final factor that showed an underlying influence on the innovation culture of the organization was the structure. This is evidenced by the fact that achieving efficiency requires continued innovation of processes which translates to a positive influence on innovation culture. A good organizational structure allows for quick decision making and effective communication top-down, bottom-up and across the organization. Moreover, a defined structure ensures that there is a clear system for choosing innovation projects. This is supported by (Martins & Martins, 2002; McLean, 2005; Tidd, Bessant, & Pavitt, 2005).

Findings from the qualitative data showed that 61% of the respondents’ organizations had an innovation strategy. However, only 51% of managers were reported to be open to new and innovative ideas. This justifies the assertion that even though most of the companies had an innovation mantra, it was in fact not practiced or supported by most of management. This can be developed by building a trust relationship that allows management and employees to act openly towards each other. Management should show trust and backing for the process of innovation from higher to lower levels of the organization by showing support for innovative projects (Filipczak, 1997).

Incentives and rewards emerged as one of the highest responses on how the organization could enhance an innovation culture. This is supported by Tidd et al. (2005) who argue that an organization structure with incentives for innovation are highly successful in managing innovation. Even though management was viewed as the main driver for innovation, it was considered apathetic in most cases. It was observed that management did not pay attention to the innovative ideas coming from the lower tiers of the organization hence a lack of motivation to share new ideas.

5.6 Conclusion

The results of this study confirm that organizational culture is an important construct that should be managed as an enabler for innovation. The study concluded that technology companies within the SME sector have a dominant market culture, which was found to have a weak correlation with innovation. This is a possible justification to a KEPSA report (2016) that IT SMEs in Kenya have remained behind with respect to radical innovation of game changing technology products such as MPESA, Ushahidi, BRCK and BitPesa, which were innovated in Kenya and now causing disruption in other parts of the worlds. Innovations from Kenyan technology SMEs continue to leap-frog those from countries such as South Africa and Egypt. To achieve high growth for SMEs in the IT industry, managing innovation must be an area of strategic focus within the organizations, which goes together with the culture that the leadership and management promotes and nurtures. Factors that encourage innovation like the working environment, structure and risk-taking must be encouraged.

5.7 Recommendations and areas of further study

It was clear from the study how culture within the organization can be an enabler or an inhibitor for innovation. The study shows that organizations should not have innovation as a “nice-to-have” tagline in the company’s mission statement, but this must be backed by a structure, processes and a working environment that encourage employees to share new ideas, new ways of doing things, use of “idea men” who generate ideas, and experimentation of ideas through selecting and pivoting ideas that have the potential to bring the greatest value to the company, and its customers.

Employees should also be encouraged to try out their ideas. Those that fail ought to form part of lessons learnt and can be used to build up on other new ideas. The different culture-types have their own unique strengths and limitations, and an organization will rarely have only one type of culture. Often there is a mix of the four organization cultures. Though one culture may be better than others in some situations, there is no ultimate “best” organizational culture. Self-administered questionnaires and open-ended questions were used to collect information from employees across the organizations for this study, which may have introduced individual biases. A similar study should be conducted using interviews, focus groups and observation to gather information as this may add to the depth of the assessment of culture and uncover certain critical underlying elements of culture in organizations that cannot be otherwise brought to the surface through questionnaires and individual assessments. Further studies can also be conducted using other frameworks of organizational culture like the Denison’s model or other popular models.

5.8 Limitations of study

Firstly, IT companies are generally considered very discreet as they protect their competitive edge and intellectual property. Most firms have reservations taking part in surveys conducted by external parties for fear of revealing trade secrets and information which could be exploited by the competition. Due to this fact, access to these companies was challenging and getting willing respondents was a hinderance. Secondly, more organizations would have been reached to ensure a more representative population. The MSME bill of 2009 classifies SME’s based on number of employees and revenue. Access to annual revenue information from private non-listed companies especially SMEs was an arduous task as most firms were not willing to disclose the information. Companies were therefore classified as small or medium, solely based on the number of employees. Despite these challenges, this study provides a foundation that gives managers insights on how the employees perceive culture in their organizations and how it affects innovation. It also gives awareness to business leaders and managers to build organizations that have “innovation-centric” cultures and a basis for future studies on culture and innovation in Kenyan companies.

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APPENDICES

Appendix 1: INTRODUCTION LETTER



Strathmore Business School

Tuesday, 13th March 2018

To whom it may concern

Dear Sir/Madam,

RE: FACILITATION OF RESEARCH – MICHAEL WADIMRI

This is to introduce Michael, who is a Master of Business Administration student at Strathmore Business School, admission number MBA/93377/16. As part of our MBA Program, Michael is expected to do applied research and to undertake a project. This is in partial fulfilment of the requirements of the MBA course. To this effect, he would like to request for appropriate data from your organization.

Michael is undertaking a research paper on, "The influence of Organizational Culture on Innovation in Small and Medium-sized Technology companies. A survey of selected IT companies." The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and we shall be willing to provide any further information if required.

Yours sincerely,

Muriithi Njogu
Director – MBA Programs



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Appendix 2: QUESTIONNAIRE

I would like to start by telling you a little about my research. I am a Master of Business Administration (MBA) student at Strathmore Business School. As part of the MBA Program, I will be doing an applied research in Management and Business. This research is about organizational culture and how it influences innovation in Small and Medium-sized Information companies operating in Kenya.

The information obtained from this survey is voluntary, anonymous and shall be treated confidentially. It will be used for academic purposes only. Your response is highly appreciated.

SECTION A: General Information

1. Please select your gender: Male Female
2. Age (Years): 18 – 25 26 – 35 36 – 49 Over 50
3. Name of the IT company you are currently engaged:.....
4. Position: Operations
 Middle-level
 Senior management
5. Years worked in the company: Less than 2
2 – 5 years
Over 5 years

SECTION B: Organizational Culture

Please rate how you agree with the questions below relating to your place of work on a scale of 1 – 5. Where:

1 – Strongly disagree; 2 – Disagree; 3 – Neutral; 4 – Agree; 5 – Strong agree

		1	2	3	4	5
1	The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.					
2	The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.					
3	The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.					
4	The organization is a very controlled and structured place. Formal procedures generally govern what people do.					
5	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.					
6	The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.					
7	The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.					
8	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.					
9	The management style in the organization is characterized by teamwork, consensus, and participation.					
10	The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.					
11	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.					
12	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.					
13	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.					
14	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.					
15	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.					
16	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.					

SECTION C: Organizational Innovation

Please rate how you agree with the questions below relating to your place of work on a scale of 1 – 5. Where:

1 – Strongly disagree; 2 – Disagree; 3 – Neutral; 4 – Agree; 5 – Strong agree

		1	2	3	4	5
1	In new product and service introductions, our company is often first-to-market					
2	Our new products and services are often perceived as very novel by customers					
3	Our recent new products and services are only minor changes from our previous products and services					
4	New products and services in our company often take us up against new competitors					
5	In comparison with our competitors, our company has introduced more innovative products and services during the past five years					
6	In comparison with our competitors, our company has a lower success rate in new products and services launch					
7	In marketing innovations (entering new markets, new products, new pricing methods, new distribution models, etc.) our company is better than competitors.					
8	In new product and service introductions, our company is often at the cutting edge of technology					
9	Our firm’s R&D or product development resources are not adequate to handle the development need of new products and services					
10	We are constantly improving our business processes					
11	Development of new channels for products and services offered by our company is an on-going process.					
12	During the past five years, our company has developed many new management approaches					
13	We get a lot of support from managers if we want to try new ways of doing things					
14	Key executives of the firm are willing to take risks to seize and explore “chancy” growth opportunities					
15	Senior executives constantly seek unusual, novel solutions to problems via the use of “idea men”					
16	In our company, we tolerate individuals who do things in a different way					
17	We are willing to try new ways of doing things and seek unusual, novel solutions					
18	We encourage people to think and behave in original and novel ways					
19	When we see new ways of doing things, we are last at adopting them					
20	When we cannot solve a problem using conventional methods, we improvise on new methods					

SECTION D: Open-ended Questionnaire

- i. Would you describe the company as innovative? Why or why not? Do you have an innovation Strategy?.....
.....
- ii. Does management actively seek innovative ideas?
.....
.....
- iii. Do managers promote and support innovative ideas, experimentation and creative processes?.....
.....
- iv. If the new ideas fail, are employees encouraged to try again or reprimanded?
.....
.....
- v. In your view, how can the organization inspire or enhance an innovation culture?.....
.....
.....

Appendix 3: Participant Consent Form

You are being asked to take part in a research study. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please ask the researcher if there is anything that is not clear or if you need more information. Answer the questions below as appropriate.

TITLE: The influence of organizational culture on innovation in technology SMEs in Kenya

PRINCIPAL INVESTIGATOR: Michael Waimiri, Strathmore Business School

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the Information Sheet dated _____.	<input type="checkbox"/>
2.	I have been given the opportunity to ask questions about the project and my participation.	<input type="checkbox"/>
3.	I voluntarily agree to participate in the project.	<input type="checkbox"/>
4.	I understand I can withdraw at any time without giving reasons and that I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	<input type="checkbox"/>
5.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me.	<input type="checkbox"/>
6.	If applicable, separate terms of consent for interviews, audio, video or other forms of data collection have been explained and provided to me.	<input type="checkbox"/>
7.	The use of the data in research, publications, sharing and archiving has been explained to me.	<input type="checkbox"/>
8.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	<input type="checkbox"/>
9.	I, along with the Researcher, agree to sign and date this participant consent form.	<input type="checkbox"/>

Participant:

Name of Participant

Signature

Date

Researcher:

Name of Researcher

Signature

Date

Appendix 4: COMPANIES

COMPANY
Mobile Decisioning
Jumo
Goal IT Services
Farm Drive
Inclusion Media
Onmobile Telecommunications
Oxygen 8 East Africa Ltd.
Computech Limited
Cellulant
Red Sphere Consulting
Emomentum Interactive Systems
Doublenet Technologies Ltd.
Paid Loyalty
Jamii Telecom
Tangazo Letu
Saida
Onfon Media
Software Technologies
Compulynx
Novel Technologies
Specicom Technologies
Total Solutions
Trans Business Machines
Optiware communications ltd.
Stoic fleet watch
Circuit Business Systems
Bluesky Technologies