ORGANISATIONAL CULTURE AND OPERATIONAL EXCELLENCE OF AGROCHEMICAL FIRMS IN NAIROBI

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DECLARATION

I declare that this Research Project is my original work and has never been submitted to the University of Nairobi or any other University for an award of a degree in examination or academic purposes.

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DEDICATION

I dedicate this Project to my family, my better half Eunice and the children Wayne, Joel, Therese and Jerome for the countless sacrifices made to realise this dream. To my parents and siblings. Thank you all for your support and may God bless you.

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ABBREVIATIONS AND ACRONYMS

AAK	Agrochemical Association of Kenya
CEO	Chief Executive Officer
DFSS	Design for Six Sigma
DMAIC	Design, Measure, Analyse, Improve and Control
EFQM	European Foundation for Quality Management
HR	Human Resource
JUSE	Union of Japanese Scientists and Engineers
KNQI	Kenya National Quality Institute
KPI	Key Performance Index (Indicator)
KQA	Kenya Quality Award
MBNQA	Malcolm Baldrige National Quality Award
OpEx	Operational Excellence
OsE	Operations Excellence
ROA	Return on Assets
ROE	Return on Equity
SME	Small and Medium Enterprise
TQM	Total Quality Management

ABSTRACT

Organisational culture can significantly affect operational excellence in firms. Culture continues to define who we are, what we do and how we do it, irrespective of the type of culture, influenced by information. Culture is therefore prescriptive in nature. These influences from culture, have been manifested in the work place to evolve into an organisational culture. Operational excellence within firms on the other hand, is part of the response to a dynamic environment in pursuit of customer satisfaction, quality system deployment among other strategic goals. The study of organisational culture and operational excellence of agrochemical firms in Nairobi is an attempt to establish the types of culture in these organisations. The study also sought to establish the effect of organisational culture on operational excellence within these same firms. The agrochemical association of Kenya membership list of 2017 provided a sample population for this study. To understand the relationship, statistical analytical technique and questionnaire was used. Regression analysis was used to test the operational excellence score against the six cultural dimensions. The competing value framework is the overarching theoretical basis for this research and the prescribed cultural typologies prescribed feature prominently. The organisational culture assessment instrument was used to measure culture within these firms and the results plotted on a Radar Chart. To check for operational excellence, the operational excellence audit sheet was adopted. The five operational excellence measure were customer satisfaction, health, safety and environment, teamwork, skill level and motivation, manufacturing, planning and control system and quality system deployment. The results bear evidence to a positive correlation between organisational culture and operational excellence at very significant values though dominant characteristics and criteria of success are the two most significant cultural dimensions that predict operational excellence. The agrochemical firms in Nairobi were found to be dominant in the market and clan culture types not only now but also in the immediate future as well. However, a limitation to the study was the fact that the respondents relied on their subjective perceptions of the different cultural types and the levels of operational excellence. There is evidence to show that a focus on the cultural dimensions can have an effect on operational excellence, it is a part of the organisational set up and as such should not be ignored. An analytical model based on statistics for illustrating the correlation between organisational culture and operational excellence within agrochemical firms in Nairobi was developed in this study. At this point, there is need for more research on other factors that have an effect on operational excellence within the agrochemical firms in Nairobi.

Keywords Organisational Culture, Operational Excellence, Cultural Dimensions.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The world today is competitive and this is also exacerbated by the globalised market conditions which therefore compel organisations to not only be strategically astute but also be excellent in their operations (Jaeger, Matyas & Sihn, 2014). “OpEx is a strategic weapon” (Fok-Yew, Ahmad & Baharin, 2013). The European Foundation for Quality Management (EFQM guidelines, 2017) defines excellence as the exemplary practice in the management of organisation and achievement of results. In many organisations, operations excellence is premised on four themes; learning, sharing, transforming and sustaining (Operations Excellence Program, 2018)). OpEx is by definition a dynamic state that seeks to continuously improve (Hillman, 1994). Looking at the service sector in Jordan, Shehadeh, Al-Zu'bi, Abdallah and Maqableh, (2016) described some critical factors that affect operational excellence, these critical factors include management of human resource practices, leadership, culture and the operations strategy.

Organisational culture has been defined variedly by different scholars, Edgar H. Schein, one of the foremost scholars in organisational culture, posits the following about the culture of a group as “a pattern of shared basic assumptions” these were learnt during problem solving by the group (Schein, 2004). There exists jargon of the following nature in corporate circles “we have a strong culture of continuous improvement” or “we need to change our culture around here” (Bussey, 2017). Most organisations have a hard time getting past this rhetoric and use culture as the trigger to propel improvement. Organisational culture is a “bundle” of knowledge repositories (Lemon & Sahota, 2004). Organisational culture in this context assumes that there are better or worse cultures, weaker or stronger cultures, therefore there must the “right” kind of culture that will influence how effective the organisation gets to be (Schein, 2004). There is however, some evidence on how the organisational culture has been tagged as an enabler towards operational excellence.

Operational Excellence (OpEx) and Operations Excellence (OsE) are considered synonymously however, this misconception belies the need for disambiguation between OpEx, being the sole focus on processes geared towards results, and OsE, the advancement of enablers

and principles specific to operations (Jaeger et al., 2014). Mohammad, Mann, Grigg and Wagner (2011) looked at the operational excellence and represented it as a model, the model had enablers, these enablers are the systems and processes essential for management to deliver on the goal of total quality (Hillman, 1994). These enablers include leadership focus, strategy focus, customer focus, process management, workforce focus, partnership, social responsibilities, and resources (Mohammad et al., 2011). OpEx is being prudent about how to manage people and resources and not merely about cost reduction and improving on quality (Fok-Yew et al., 2013).

"By nurturing a culture of excellence within your organisations, you open the path to success" (EFQM, 2017). Organisational culture as a role is strongly associated with a firms' competitive performance (Tseng, 2010). These cultures also need to be context specific, yield both tacit and explicit knowledge (Lemon et al., 2004). These different cultures become part of organisational memory and are embodied in standard operating procedures also known as SOP's, March and Simon (1958) as quoted by (Lemon et al., 2004). The promotion of encultured knowledge which is both tacit and collective, improves communication "shared assumptions" and are context and language specific. OpEx has a scope much broader than process excellence in that it looks at the total end to end process in the main and auxiliary functions, includes the organisational culture (Shingo Model Handbook, 2017). "OpEx is also reliant on empowerment of employees, sense of ownership and a continuous improvement culture" (Fok-Yew et al.,2013)

1.1.1 Organisational Culture

Successful organisations have over time, differentiated themselves in ways that transcends corporate strategy, market presence, and technological advantages. Though the latter are self-evident, highly prosperous organisations have leveraged on the latent power that grows in the development and management of an organisational culture that is unique (Quinn & Cameron, 2006). They also postulate these types of organisational culture: Clan culture, Adhocracy culture, Market culture and Hierarchy culture. Clan-oriented cultures are like family, with an emphasis on nurturing and mentoring, basically "doing things together." Adhocracy-oriented cultures are more entrepreneurial and dynamic, with emphasis on being less risk-averse, innovative, and "doing things first." Market-oriented cultures are more results oriented, with a

focus on competition, achievement, and "getting the job done." Hierarchy oriented cultures are controlled and structured, with emphasis on stability, efficiency and "doing things right."

The scientific study of organisational culture inevitably derives from cultural categories that already exist or can be invented and labelled with new words, in the process, we tend to become more abstract. As we develop these abstractions, hypothetical causal relationships are developed into typologies or theories to explain how things work (Schein, 2004). There is another organisational culture typology based on assumptions about participation and involvement – these are coercive, utilitarian and normative. Amitai Etzioni (as cited in Schein, 2004, p. 191). In the coercive culture, the assumption is that members are alienated and will exit at the earliest opportunity; in the utilitarian culture, it is also assumed to follow the mantra "you scratch my back, I scratch your back"; abide by essential rules and in the normative culture system, they are assumed to be morally involved and tend to identify with the organization.

There are other forms of culture that have also been espoused, by other scholarly work. Charles Handy classified culture into identified by power, task, role and support (Handy, 2006). For the purpose of this study, we shall rely on Quinn and Cameron's concept of culture simply because they offer perspectives congruent with results, innovation and excellence by their very definitive descriptions. Organisational culture does influence decision making and behaviour in the workplace and over time patterns of behaviour reflecting the culture (Bussey, 2017) which also influences other dimensions such as strategy, structure and systems.

1.1.2 Operational Excellence (OpEx)

Treacy and Wiersema (1993) were the first to be associated with the use of the term operational excellence as focus on the efficient delivery of good quality product package. This concept pays a premium to multi layered market demands and their competing priorities amongst themselves such as market share, low cost of sales and increase revenue and profitability all at the same time financial metrics such as growth in sales, bottom line, returns on both assets and equity will be ignored (Hubbard, 2009). As a result, there has been a shift in concept to utilise world class production and systems of delivery in essentials aspects of both a technical and social nature Assen (2011) as cited by Shehadeh et al.,(2016).

The resource based view (RBV) is a commonly used theory in empirical literature on internal capabilities and performance of organisations. The emphasis of this theory is in the use of internal resources and the development threshold within an organisation as a source of competitive advantage (Fok-Yew & Ahmad, 2014). Operational effectiveness is not strategy, it is the enculturation, extending and attaining best practise analogous to running the same race faster; on the other hand, strategic positioning relates to the choice of running a different race all the same by way of creating a unique and sustainable competitive position (Porter, 2007). This is a common strategic error that pits operations improvement versus strategic positioning, Porter concludes. Process excellence has the process as the main focus with a bias on efficiency and effectiveness of the said process (John, 2014). OpEx is the pragmatic, tool oriented deployment of concepts (Shingo Model Handbook, 2017).

1.1.3 Agro Chemicals sector in Kenya

The agricultural sector, is a key element of the economic fulcrum of Kenya's vision 2030. The vision's plan is to move up the value chain in key areas including agricultural and financial services and to consistently realise a growth rate of 10% per annum. The sector contributes about 26% of the gross domestic product (GDP) and 60% of the exports in Kenya can be directly attributed to it (World Bank Report, 2014). The agricultural sector can be further divided into subsectors such as: livestock and crop, land, water, cooperatives, environment, etc., (Government of Kenya, 2010). For all these, the agro chemical firms provide the much needed support in terms of marketing and distribution systems for plant protection chemicals and animal health.

The Agro Chemical Association of Kenya (AAK) is an umbrella body that is recognised for the registration and regulation of the agro chemicals sector in Kenya. AAK brings on board not only dealers in pesticides and other chemicals but also plant nutrition and soil conditioner distributors. The structure of the agro chemical sector is threefold, first the importers (note that majority of our agro chemicals are imported), secondly, distributors (wholesalers) and last the retailers also known as agro-vets. This distribution structure is almost entirely private sector led. The performances of these private firms and their contributions to the overall economic viability of this country should not be taken for granted. Efforts in the past have seen a plethora

of policies and interventions to revitalise the agricultural sector in general. There is significant presence of internationally renowned institutions involved in research, capacity building, financing and agro-based development initiatives with their headquarters in Kenya. Alliance for the Green Revolution in Africa (AGRA), is one of such institutions. The role of agriculture, by extension agro-chemicals is firmly established.

1.2 Research Problem

What organisational culture best supports innovation and what areas could be improved are some of the questions that are sought. Success is the result of continuous improvement with a focus on process, culture and results in a balanced approach as well as the establishment of leadership to enable operations improvement have the proper focus in the organisation (Price, 2017).

The Kenya's agro chemical sector exists in a very competitive and unpredictable agricultural sector environment. Government subsidy programmes such as 'kilimo biashara', climate change and demand for increasing output per unit area of land are some of these real challenges. The latter is also referred to as minding the gap between actual demand for food production and crop yields in an ever growing population. These concerns are valid to the sector's continued growth. OpEx in agricultural production to support advancements in agronomic practices needs to be well researched and documented. These agronomic practices (cultures) also need to be context specific, yield both tacit and explicit knowledge (Lemon et al., 2004).

Organisational culture has an influence on strategy. There are four (4) layers in culture, that is values, beliefs, behaviours and paradigm or assumptions taken for granted. It is not the beliefs and behaviours of individuals that should be the main focus but that of the collective group or organisation. The paradigm are less conspicuous for an insider of an organisation to identify but an independent external observer may find it much more conspicuous by simply listening to what people say (Johnson, Scholes & Whittington, 2008). As a consequence, various approaches have been used to "identify and operationalize culture" Ribiere & Sihar (as cited by Tseng, 2010) the mentality of an organisation is typified by the culture of an organisation,

which dictates to its members on how to carry oneself and have dealings within the organisation and also how the hierarchy of the company is designed.

There is evidence that OpEx yields to increase in the level of customer value perception in a firm. This is corroborated by the positive linear correlation between OpEx and customer value perception (Mwololo, 2015). There is a link between operational performance and a firms' manufacturing strategy (Muthama, 2014). Market culture and Hierarchy culture types as postulated by Quinn and Cameron, have an influence on employee performance according to a study of KTDA factories in South Rift (Chebet, 2017).

In this study, much more focus will be on the agro chemical firms in Nairobi and in particular, the following aspects; interaction of the different forms of organisational culture. What is/are the dominant type(s) of culture? and does the operational excellence in selected firms influenced by organisational culture?. These interactions can be direct or indirect. It will also be of keen interest to establish the effect of organisational culture on operational excellence in the same firms.

1.3 Research Objectives

The specific research objectives are:

i) To determine the type of organisational culture in agro-chemical firms in Nairobi.

ii) To establish the effect of Organisational culture on OpEx in agro-chemical firms in Nairobi.

1.4 Value of the Study

The findings of this study, sought to establish by exploring the organisational culture practices in Kenya's agro chemical sector and how it interacts with and/or contributes to operational excellence. This research also sought to contribute by informing the business leaders and operations managers in the agro chemical sector of the importance and need to integrate beneficial organisational culture in their strategic planning in order to create sustainable competitive advantage. "Operational excellence is building a sustainable competitive advantage through operations management" (Price, 2017). The study is also useful to other

researchers who may be interested in organisational culture and operational excellence in other firms besides the agrochemical sector in Nairobi.

The study also sought to align the focus of operations management on the 3 C's (Culture, Commitment and Communication), "the soft foundation" Oakland (2004) as a means of continuous improvement and firm overall performance. The study also sought to augment Kenya government efforts of policy direction and creating conducive, context specific organisational culture and enabling environment to help deliver on the long term vision 2030. According to the Kenya National Quality Institute (KNQI), an excellence award is equated to the ability to identify, recognise and spotlight role model organisations in Kenya whose performances are worth emulating (KNQI, 2017). It is important also to note that these performances are largely restricted to excellent delivery of customer value "which is what quality is all about" (KNQI, 2017). NQI propagates customer oriented structures to improve organisational performance as a result. These assessment frameworks ought to be context specific with respect to the organisation and to industry specific language (Jaeger et al., 2014).

There is need to ascertain the credibility of these models through more research as qualified approaches in pursuit of operational excellence (Talwar, 2011). While conducting a study of just over 30 excellence models in Europe Mavroidis, Toliopoulou and Agoritsas (2007) observed that the changes recently made to the National Quality Awards of some European countries can be attributed to cross cultural difference of the same countries. OpEx therefore transcends the religious application and use of these concepts and techniques. It is the underlying principles that have to be focussed on in OpEx (Rusev & Salonitis, 2016). Operations management and overall performance therefore have been an area of interest in industry and practise for the last 30 years consequently, literature on operational excellence is still growing (Fok-Yew et al., 2013). OpEx incorporates many facets in totality and most importantly all contributing towards the same goal. One of the top two challenges facing CEOs, a recent survey has revealed is operational excellence (Excelr8 Management Consulting, 2017).

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter offers insights into other studies that have been conducted by other scholars that offer theoretical and conceptual foundations to this project and its theme of study. The studies of concern in this regard include themes focussed on organisational culture and operational excellence, empirical literature review of the studies on operational excellence, organisational culture and the conceptual framework.

There is however an inclination to use interchangeably the following terms, Process Excellence and Operational Excellence. It is important also to understand the relationship between concepts (principles), systems and tools. (Shingo model Handbook, 2017). Stephen R. Covey as cited by Shingo Institute (2017) describes principles as fundamental truths, defined it as a universally accepted reality, whose meaning transcends time and is self-evident. Values preside over our actions but principles preside over the consequences of our actions

2.2 Theoretical Literature Review

Lean concept, Six Sigma can form basic building blocks for an enterprise solutions towards a quality management system (Montgomery, 2010). These assessment frameworks ought to be context specific with respect to the organisation and to industry specific language (Jaeger et al., 2014). Operational Excellence (OpEx) can be assessed for an organisation, since there are currently several institute based frameworks available such as EFQM, MBQA, KQA (Kenya Quality Awards) and the Deming Prize.

These frameworks appear to be consistent with most of the enabling themes around which they have been developed for instance culture, process improvement, strategic alignment and results. The culture of excellence ensures that everyone in the organisation understands the "why" behind the "how" and "what" (Shingo Model Handbook, 2017 p. 3). This awareness of the why, how and what is what is referred to as the constancy of purpose and thinking systematically, these are otherwise referred to as enterprise alignment (The Shingo model for operational excellence, 2017).

Additional research is required to ascertain the reliability of these models as efficacious approaches to attaining operational excellence (Talwar, 2011).

While conducting a study of just over 30 excellence models in Europe, an observation was made by Mavroidis et al., (2007) that the alterations recently made to specific NQA's of some European countries can be attributed to differences across cultures. Fok-Yew et al., (2013) states

Operational Excellence therefore, transcends the religious application and use of these concepts and techniques rather it is the underlying principles that have to be focussed on (Rusev et al., 2016). Operations management and overall performance as highlighted before have been an area of increasing interest in industry and practise subsequently, a lot of growth in the literature of operations and excellence continues to be written (Fok-Yew et al., 2013). Operational Excellence incorporates many facets in totality and most importantly all contributing towards the same goal. Organisational culture, strategic thinking at a management level together with process excellence (this borrow heavily on Six Sigma and Lean concepts) are in essence the focus of this research.

2.3 Organisational Culture Dimensions

There is a dangerous tendency in assessing particular cultures and assigning absolute attributes to them as "right" culture for an organisation. However, this attribution not only depends on the culture only per se but also on the relationship of the culture and the context it is used (Schein, 2004). In large organisations, there also exists subcultures brought about by difference between geographical divisions such Nairobi, Kakamega etc. or function groups such marketing, finance etc. There are two dimensions of note which are the competing value framework and the organisation culture profile.

2.3.1 The Competing Values Framework (CVF)

The CVF is practical in organising and interpreting variations of phenomena in an organisation. Four dominant culture types emerged that form the basis of OCAI (Organisational Culture Assessment Instrument). The framework is illustrated by culture types (quadrants) which are separated by continuum ranges that show the dynamism of organisational cohesion on one end

and of organisational independence on the other hand. All around the quadrant are what people value about an organisations' performance also known as effective indicators. These effective indicators represent competing assumptions at opposite ends such as flexibility and discretion against stability and control or integration and internal focus in completion with differentiation and external focal view. It is these effective indicators that represent core values upon which adjudication about an organisation are made. OCAI is comprised of six items, every item in turn has four variants. The aforementioned six items are dominant characteristics, organisational leadership and management of employees, organisation glue, strategic emphases and criteria of success (Quinn & Cameron, 2006).

2.3.2 Organisational Culture Profile (OCP)

In this profile, as espoused by O'Reilly, Chatman and Caldwell (1991) to assess person – organisation fit. Culture is explained in terms of seven different dimensions based on the dominant emphasis within an organisation. These dimensions are innovative, aggressive, stable, orientations based on team, people, detail and outcome. For instance, stable cultures are foreseeable, procedural and rule-oriented, while innovative cultures are malleable, conformable and experiment with novel ideas. Strong cultures can pose challenges when a change is required, especially when viewed as being either an asset or a liability. The OCP is considered a useful instrument to measure organisational culture (Carpenter, Bauer & Erdogan, 2010).

2.3.3 Bundles of Knowledge Framework Model

Lemon et al., (2004) conceptualised organisational culture as a multi-layered repository of knowledge also referred to as "bundles" of knowledge. Conceptualizing organisational culture in this way, each level of the organisation therefore is a type and nature of knowledge. These different cultures become part of organisational memory and are embodied in standard operating procedures also known as SOP's (March & Simon, 1958) as quoted by Lemon and Sahota (2004).

Measurement of culture therefore can be based on typological approach such as the competing value framework, the organisational culture profile or even the bundles of knowledge

framework model or the dimensional approach (Scott, Mannion, Davies & Marshall, 2003). Typological approach ordinarily gives rise to one or more types of organisational culture in an organisation while the dimensional approach offers to describe a culture by its own position based on a number of continuous variables Fletcher and Jones (1992) as cited by Scott et al., (2003). A simple Likert-scale questionnaire can be provided to persons supplying information to the same, to give indication of their preferred extent of concurrence with pre-defined questionnaire statements. A variety of measurement instruments are available to researchers albeit with characteristics that differ. These instruments are limited in varying degrees such as simplicity, scope or even empirical properties. Ultimately, the option of instrument adopted should be based on how organisational culture is conceptualised, the objective of the research, intended use of the results and resource availability (Scott et al., 2003).

2.4 Operational Excellence Models

Peter Drucker famously said “you cannot improve it, if you are unable to measure it". It follows therefore that without knowing the results, you can’t get better at that which you seek to improve. Better performance management would be preceded by a focussed drive towards measurement and reporting systems (Bertocco & McCreery, 2014). The full excellence model is a non-prescriptive framework for the attainment of good results, the focus on customer, people, society and KPI, through identifiable enablers such as leadership, strategy, processes and people (Oakland, 2004).

2.4.1 The OpEx Audit Sheet Model.

This is a tool that enables a fast check of a company’s operational performance. This has been developed by Alfens, Dreyer and Strandhagen (2008). It is premised on assessment frameworks within the lean concept in manufacturing. It defines 15 areas of operations excellence. A lean assessment tool is used to audit the performance of all lean practices that are relevant to the type of organisation (Omogbai & Salonitis, 2016).

This model has been rewardingly employed in many enterprise improvement projects. An adaptation of this model has been used in the the following five focus areas; customer satisfaction, health safety and environment, teamwork, manufacturing, planning and control

and quality system deployment. These form the basis of a mapping of the excellence measures on a five point likert-based scale. (Alfnes, Dreyer & Strandhagen, 2008)

2.4.2 The Deming Prize Model

The Deming Prize model is based on the work of Dr. William Edward Deming (1900-1993) in post-World War II Japan. The model is premised on TQM and effective planning and implementation of the organisation and its operations. It is composed of 6 categories modelled around the Deming wheel of Plan-Do-Check-Act. The first category involves policies and their deployment, this is the "Plan" part. Then the "Do" part involves new product development, work processes, maintenance, improvement and management systems. Deming's statistical quality control bias has a role in the "Check" part which includes information analysis and utilisation of information technology. Finally, HR development implies the "Act" part. The last two parts provide feedback to the core quality system component which carries 50% of the total points to be awarded based on this model. The other components 1, 5 and 6 all contribute to the balance 50% of the points to be awarded. This model has been in use in Japan since 1951, thanks mainly to the efforts of Kenichi Koyanagi, the then top executive of the Union of Japanese Scientists and Engineers (JUSE). (JUSE, 2017)

2.4.3 The EFQM Model

The EFQM model is based on what it asserts as the eight (8) fundamental concepts of excellence. Each of these concepts are important in their own right but the synergy between them in an organisational culture achieves the maximum benefit. These concepts include customer value addition, developing organisational capacity among others. For this reason, the model has primarily two components; enablers and results. The results component, focusses only on what the organisation achieves.

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2.5 Summary of Literature Review

Table 1: Summary of Literature Review

Author/Year	Study topic	Study objective(s)	Key findings	Knowledge gaps
Quinn, R., & Cameron, K. (2006).	Diagnosing and changing organisational culture based on the Competing Values Framework (CVF)	The use of the competing value framework (CVF) in organisational change	Four types of culture (hierarchy, market, clan and adhocracy) that build up the competing value framework	CVF is based on fundamental assumptions of how organisations work and are managed.
Alfnes, E., Dreyer, H., Strandhagen, J.O. (2008)	The operational excellence audit sheet.	OpEx audit sheet for a quick assessment.	An approach for analysing enterprise operations.	The ideal state scenario (to-be state) remains largely subjective.
Schein, E. (2004).	Organizational culture and leadership	The definition of culture.	Understanding organisational culture and the context it exists	Stability, consistency and meaning brings utility out of culture. p.17
Tseng, T. (2009).	The correlation between organizational culture and knowledge conversion on corporate performance.	To empirically test the link between knowledge conversion, OpEx and organisational culture.	The adhocracy culture enhances both knowledge conversion and corporate performance.	Extend the study to other regions with different sets of attitudes and behaviour since regions differs in culture.
Johnson, G., Scholes, K., & Whittington, R. (2008). (8th ed., pp. 199-206).	Exploring corporate strategy	To discuss Culture and Strategy – What is culture and why is it important?	Cultural web framework can be used to both comprehend the existing culture and its effects.	There are four layers in culture: values, beliefs, behaviour and paradigm.

2.6 Conceptual Framework

The conceptual framework has been developed with the assistance of the various scholarly work that has been conducted in similar studies. There are two key variables that is organisational culture and OpEx. Therefore the construct is between these two as the independent and dependent variables respectfully. These approaches 'vary in the extent of their use in empirical studies and the extent to which their reliability and validity have been evaluated' Lenartowicz & Roth (as cited by Soares, Farhanngmehr & Shoham, 2006) reports of the 10 respected journals during a four year period 1996 to 2000, one in ten of the published articles had used culture as an independent variable.

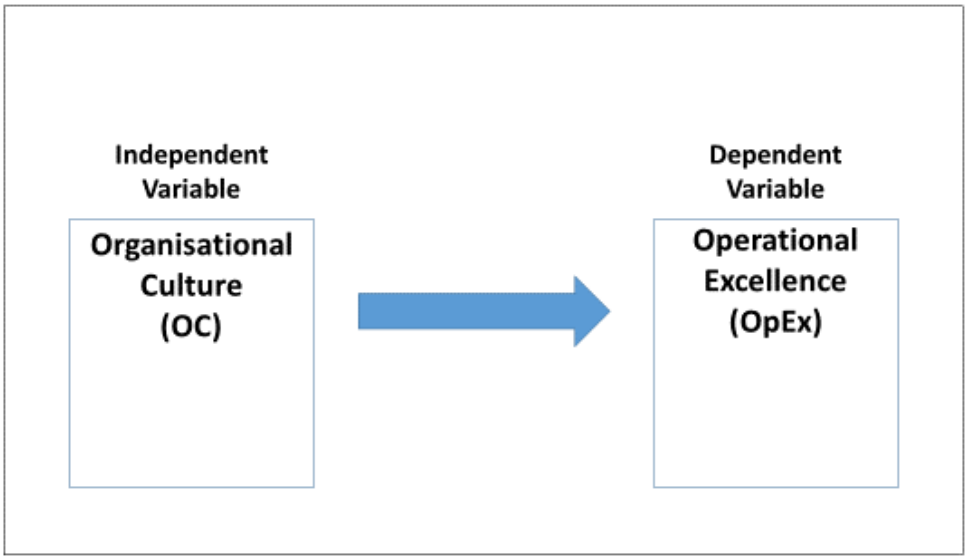

Figure 1: Conceptual model
Source: Own Compilation.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology in use for this study. It indicates the target population, sample size, research design, the collection, measurement and analysis of data.

3.2 Research Design

The study employed the use of descriptive research design and quantitative approaches. The instrument used ought to have a fairly good face validity in order to assess an array of cultural dimensions, including leadership, communication, teamwork, innovation commitment, and also the attitudes to change. It should also be able to attempt to address the different layers of culture including artefacts, espoused values, and paradigms (Schein, 2004). The organisational culture assessment instrument methodology as developed by Quinn and Cameron has been used in the measurement of culture. Quantitative approach to assess the numerical summary of the dimensions and the indicators of OpEx especially results such as customer satisfaction, quality system deployment etc. and the effect of organisational culture on OpEx.

3.3 Target Population

For the purposed of this study, firms that are authorised to manufacture, import or distribute agro chemicals in Kenya constitute the whole population. To be able to manage the study, the entire membership of the Agro Chemical Association of Kenya (AAK) within Nairobi was adopted as being representative of the firms within this particular sector. AAK was established in 1958. A census survey was used on the 59 members of the AAK for the year 2017 who are doing business within Nairobi County.

3.4 Data Collection

A three tier Questionnaire was designed to gather information from respondents of the population of the agro chemical firms in Nairobi in a short online survey powered by google forms (an online questionnaire platform) sent by email for filling methodology. The respondents were expected to rate the key dimensions of organisational culture traits that best represent their firm's (if any). Simple likert-scaled statements to respondents to help assess the organisational culture and the level of operational excellence was used. This information was

codified and used for quantitative analysis of the research. The study respondents were the top to middle level management employees in these firms

3.5 Data Analysis

The study employed Excel Data Analysis, a computerised data analysis technique to develop Radar Charts, measures of central tendencies, measures of dispersion and regression. Section B and Section C was analysed using descriptive and inferential techniques. This was accomplished by the developed thematic framework in section B and section C, and from the key issues, concepts and themes emanating from the questionnaire. The information generated was then be interpreted and explained.

A conceptualised regression model shown below was used to determine the effect of organisational culture (OC) on operational excellence (OpEx)

$$Y1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Y1 = Operational Excellence

α = represent the model constant (intercept)

$\boldsymbol{\beta_i}$ $where\ i = 1 - 6$ = regression coefficient which measures unit changes included in $\boldsymbol{Y}$ for each unit change in $\boldsymbol{X_i}$ variables

X_1= Dominant characteristics.

X_2= Organisational leadership.

X_3= Management of employees.

X_4= Organisation glue.

X_5= Strategic emphasis.

X_6= Criteria of success.

ε = Error term

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter presents data analysis, results and findings of the study. The data is summarised descriptively in percentages and distributions

4.2 Response Rate

A total of 59 questionnaires were distributed to the target population but only 32 responses were returned. The respondents were middle to top management equivalents in their respective organisations. This is a representation of 54% of the sample. Mugenda and Mugenda (2003) indicate that any response rate above 50% is generally representative for a descriptive study. The response rate of 54% grants the research the threshold for data analysis.

4.3 Demographic Data

In this section the information about the respondent's demographic data is presented with respect to gender, age, management level, duration of work within the organisation, AAK membership status and academic qualification.

Table 2: Section A: Summary of Demographic Data

Section A: Demographic Data Analysis		
Data Characteristic	**Frequency**	**Percentage (%)**
Gender		
Male	20	62.5
Female	12	37.5
	32	**100**
Age in years		
18-30	3	9.38
31-40	17	53.12
41-49	10	31.25
50 and above	2	6.25
	32	**100**
Level of Management		
Top Level	8	25
Middle Level	24	75
	32	**100**

Table 2: (continued).

Duration of work		
Below 5 years	6	19
6-10 years	15	47
More than 10 years	11	34
	32	**100**
AAK Membership		
Full Member	21	66
Associate Member	11	34
Grower Member	0	0
	32	**100**
Qualification Level		
PhD Degree	1	3
Master's Degree	5	16
Bachelor's Degree	13	40
Diploma	7	22
Professional Certificate	6	19
	32	**100**

Source: Research Data (2018)

4.3.1 Response by Gender

The study among other interests, sought to establish the gender distribution of respondents. The findings have been presented in Table 2 above.

Based on the findings illustrated in Table 2, the study established that 20 of the total respondents who participated in the study were male, representing 62.5% while 12 of the total respondents were female, representing 37.5%. The responses therefore indicate a bias of male perception of organisation culture and operational excellence.

4.3.2 Response by Age Bracket

The distribution of respondents based on age is presented in Table 2 above.

As shown in Table 2, 53% of the respondents were aged between 31-40 years, 31% were aged between 41-49 years, 9% were aged between 18-30 years while 6% were aged 50 years and above. The results indicate that the majority of the respondents were aged between 31-40 years which suggest sufficient maturity to provide data that was reliable regarding organisational culture.

4.3.3 Response by Management

The distribution of respondents based on level of management is presented in Table 2

As shown in Table 2, 75% of the respondents represent the middle level management or its equivalent in the study population while 25% of the respondents identified themselves as top level management or its equivalent in their respective organisations. A determination of the management level in the organisations was important to have a measure of the level of understanding of long term goals and interpretation of plans and setting of actions in these organisations. These are beneficial in assessing organisational culture and operational excellence.

4.3.4 Response by Duration of Work

The distribution of respondents based on duration with the organisations they work for is presented in Table 2

As shown in Table 2, 47% of the respondents had worked for the organisation between 6-10 years while 34% of the respondents had worked for the organisation for more than 10 years. In fact, 81% of the respondents had worked for 6 years or more which is gives reliability to the information provided based on the work experience in these organisations. Only 19% of the respondents had less than 5 years' work experience in their organisation. There is 81% reliability of the information provided in the questionnaire based on the duration of work in the organisations that responded to the questionnaire.

4.3.5 Response by AAK Membership

The distribution of respondents based on AAK membership of the organisations they work for is presented in Table 2

As shown in Table 2, 66% of the respondents belonged to organisations who are full members of the AAK (Agrochemical Association of Kenya) while 34% of the respondents belonged to organisations who are associate members. There was no respondent who represented the grower members.

4.3.6 Response by Highest Education Level

The distribution of respondents based on their highest level of education is presented in Table 2

As shown in Table 2, 40% of the respondents have a Bachelor's Degree, 22% have a Diploma, 19% have a Professional Certificate and 16% have a Master's Degree while only 3% of the respondents have a PhD Degree. This suggests a well-balanced academic qualification across the respondents. This represents as well a balanced view on the aspects of organisational culture and operational excellence as very little bias on any level is manifested.

4.4 Organisational Culture Assessment Findings

The research data was scored as per the respondent's perception of culture their current work environment as restricted within the competing value framework structure and their agreement with the four forms of culture codified as A for Clan Culture, B for Adhocracy Culture, C for Market Culture and D for Hierarchy Culture. Computed the average of all the A responses from the NOW part of the questions for all the six components namely Dominant Characteristics, Organisational Leadership, Management of Employees, Organisation Glue, Strategic Emphases and Criteria of Success expressed in percent. The same was done for the PREFERRED responses.

The following is a summary of how the culture types scored (expressed in percent).

Table 3: Summary Assessment Data (expressed in percentage)

	NOW				PREFERRED			
Obs	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**
1	24	25	27	24	26	27	23	24
2	18	18	35	28	23	18	30	28
3	28	28	22	23	27	27	23	22
4	22	26	28	24	25	25	25	25
5	30	22	20	27	25	23	25	27
6	25	26	25	23	19	23	29	27
7	27	24	25	25	25	25	25	25
8	25	25	24	26	26	26	24	24
9	30	22	20	27	25	23	25	27
10	24	27	28	22	22	28	27	24
11	30	22	20	27	25	23	25	27
12	29	29	22	20	26	25	23	25
13	22	26	28	24	25	25	25	25
14	26	22	24	27	24	25	26	25
15	22	26	28	24	25	25	25	25
16	23	28	28	21	26	20	28	25
17	23	27	28	21	26	20	28	25
18	22	29	29	21	27	23	28	22
19	22	26	30	21	27	23	28	22
20	30	22	20	27	25	23	25	27
21	30	22	20	27	25	23	25	27
22	25	26	25	24	22	26	27	25
23	22	26	28	24	25	25	25	25
24	30	22	20	27	25	23	25	27
25	28	24	28	20	26	24	25	25
26	25	26	25	24	22	26	27	25
27	22	26	28	24	25	25	25	25
28	30	23	24	22	27	24	26	23
29	22	26	28	24	25	25	25	25
30	22	26	31	21	26	23	25	26
31	30	22	20	27	25	23	25	27
32	25	27	27	21	26	25	23	26
Mean	25.406	24.875	25.468	23.968	24.937	24.031	25.625	25.218
SD	3.417	2.497	3.808	2.430	1.694	2.054	1.728	1.536

Table 4: Section B: Summary of the Culture Scores (Now & Preferred)

NOW		PREFERRED	
A (Clan)	25	A (Clan)	25
B (Adhocracy)	25	B (Adhocracy)	24
C (Market)	26	C (Market)	26
D (Hierarchy)	24	D (Hierarchy)	25
Total	**100**	**Total**	**100**

Source: Research Data (2018)

Clan and Market Culture are unchanged between NOW and PREFERRED scores. There is however movement towards less of the Adhocracy culture and a slight incline towards the Hierarchy Culture. A radar chart was used to graphically display the multiple measurements of the different culture types NOW. This therefore, provides a snapshot of the finding of the different types of culture NOW as tabulated above.

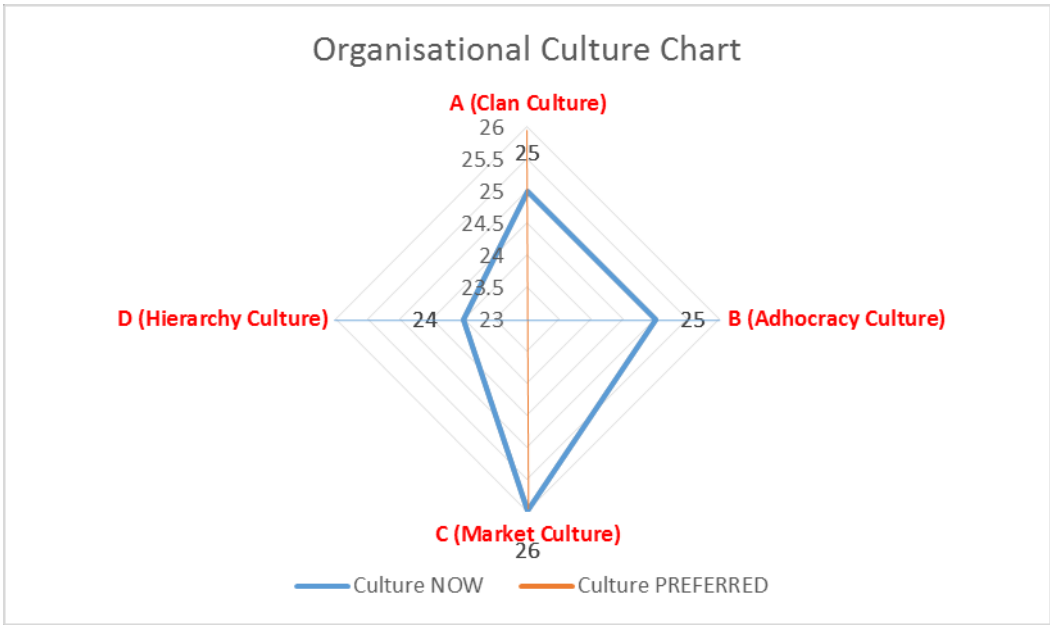

Figure 2: Organisational Culture NOW Chart
Source: Research Data (2018)

Therefore, based on the findings in Table 4, the dominant culture type at the time of data collection (NOW) was the Market Culture though just marginally edging out the other types.

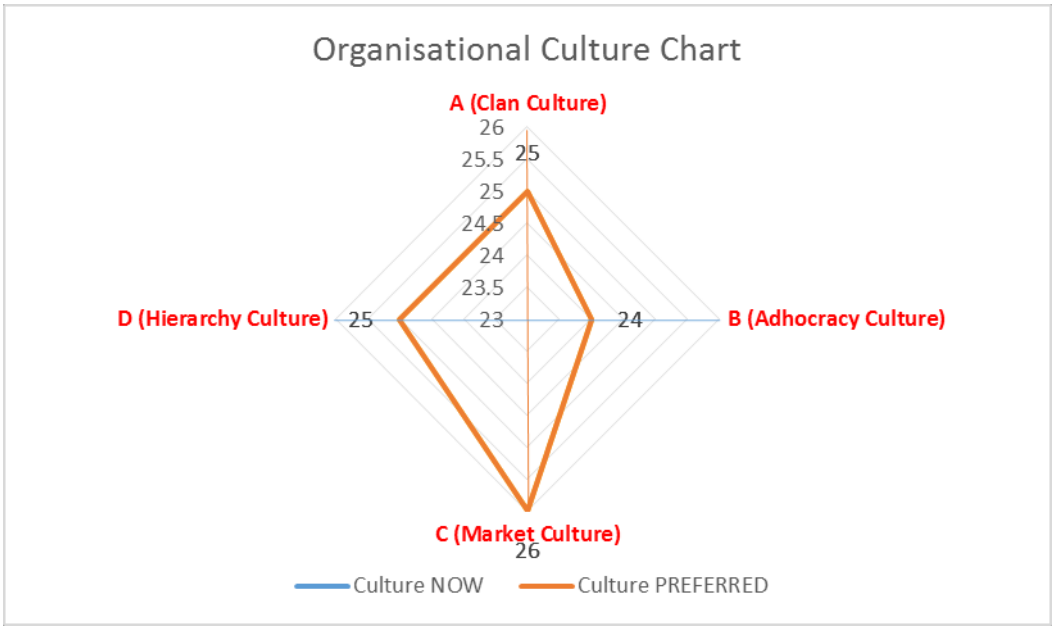

Figure 3: Organisational Culture PREFERRED Chart
Source: Research Data (2018)

It is also interesting to note that the Market Culture still remains the dominant preferred culture. The agrochemical firms are therefore market oriented culture organisations more than any other cultural attribute. This also means that a results oriented workplace will continue to dominate the target population of this study.

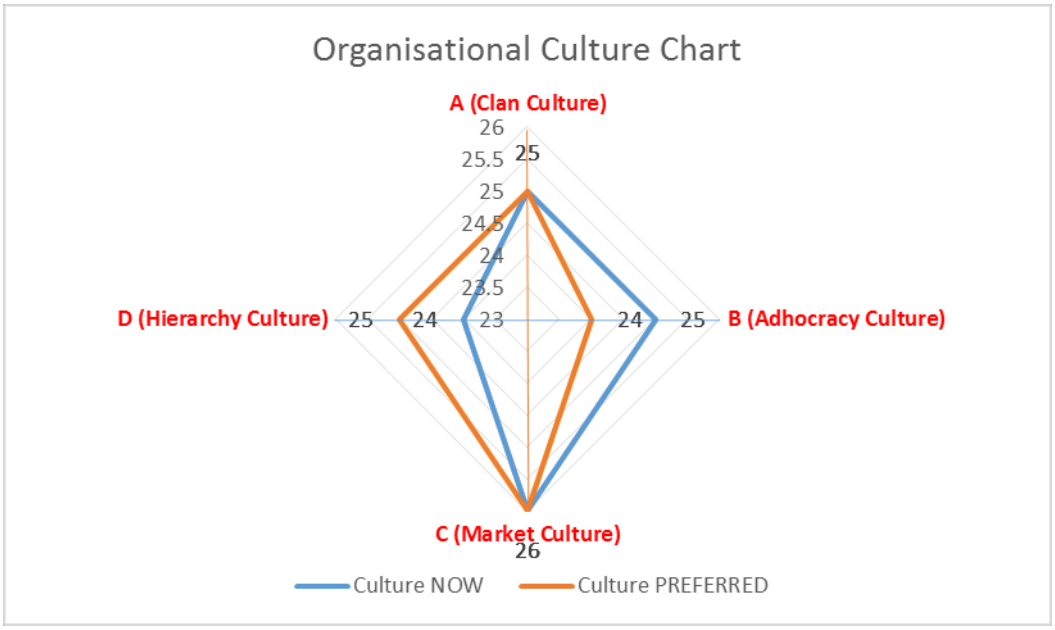

Figure 4: Organisational Culture Chart
Source: Research Data (2018)

4.5 Operational Excellence Assessment Findings

The OpEx was tested based on five measures namely customer satisfaction, health, safety and environment, teamwork, skill level and motivation, manufacturing, planning and control system and quality deployment systems. The findings were as follows ranked in percent scored.

Table 5: Section C: Summary of Operational Excellence Audit Score

		Frequency of scores						
	Measure	**1**	**2**	**3**	**4**	**5**	**Mean**	**SD***
1	Customer Satisfaction	0	0	12	16	4	3.750	0.672
2	Teamwork, Skill Level and Motivation	0	0	14	16	2	3.625	0.609
3	Manufacturing, Planning and Control	1	1	13	13	4	3.563	0.878
4	Health, Safety and Environment	0	3	11	18	0	3.469	0.671
5	Quality System Deployment	1	1	14	15	1	3.438	0.759

*SD is Standard Deviation.
Source: Research Data (2018)

The OpEx audit score in Table 5, indicates that perception of excellence in Customer Satisfaction was the highest with a mean score of 3.750, this is also supported by the dominance of Market Culture in both the now and preferred culture states. Teamwork, Skill Level and Motivation is the second highest mean score of 3.625, this also is supported by the fact that the Clan Culture is also the second dominant culture. The fact that the Quality System Deployment scored the least indicates an under reliance on systems.

4.6 Cronbach's Alpha Test

The Cronbach test is an estimate of reliability (internal consistency reliability) of a set of scales, or a series of items. The questionnaire in Section B and C made use of a 5-point Likert Scale. In research, it is desired that we have good reliability, good consistency and error variance to be lower. A score of .00 indicates no consistency at all while a score of 1.00 indicates perfect consistency. The following is the rule of thumb for alpha results.

Table 6: Cronbach's Rule of Thumb Table

Cronbach's alpha	Internal consistency
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Good
0.8 > α ≥ 0.7	Acceptable
0.7 > α ≥ 0.6	Questionable
0.6 > α ≥ 0.5	Poor
0.5 > α	Unacceptable

Source:

The formula is as follows

$$\alpha = \left(\frac{k}{k-1}\right) x \left(1 - \frac{\sum_{i=1}^{k} s_i^2}{s_t^2}\right)$$

where k = items or components

$\sum_{i=1}^{k} S_i^2$= sum of the variances

S_t^2 = variance of total scores.

Table 7: Cronbach's Alpha Test Results

Section B: Organisational Culture Questionnaire	
Number of components	48
Sum of item variances	44.99609
Variance of total scores	905.03226
Cronbach's α	**0.97050**

Section C: Operational Excellence Questionnaire	
Number of components	5
Sum of item variances	2.53809
Variance of total scores	6.08496
Cronbach's α	**0.72861**

Source: Research Data (2018)

The Cronbach's alpha score for the Section B: Questionnaire in Table 7 above is 0.97. This means 97% of the variance in the score is reliable variance and only 3% is error variance. The rule of thumb indicates the data is an excellent score and acceptable and that the scale in the questionnaire is internally consistent.

The Cronbach's alpha for Section C: Operational Excellence Questionnaire in Table 7 above is 0.73. This means 73% of the variance in the score is reliable variance and only 27% is error variance. The rule of thumb indicates the data is acceptable and that the scale in the questionnaire is internally consistent.

4.7 Multiple Regression Analysis

The Regression Analysis in statistics helps to study one response variables, in this case Operational Excellence to multiple predictors, in this case the six components of Organisational Culture. These six components are Dominant Characteristics, Organisational Leadership, Management of Employees, Organisation Glue, Strategic Emphases and Criteria of Success. These will form part of the regression model that was tested.

Table 8: Multiple Regression Analysis Model Summary Output

Regression Statistics	
Multiple R	0.8557
R Square	**0.7323**
Adjusted R Square	**0.6680**
Standard Error	0.4346
Observations	32

Source: Research Data (2018)

The correlation coefficient (Multiple R) illustrated in Table 8 above is shown to be 0.856 indicating that there is a strong linear relationship between OpEx and OC. If the value of R is close to positive one (+1) this indicates a strong relationship. The R^2 (R Square) is shown to be 0.732, this reading implies that 73% of the data collected taken as a set i.e. all the cultural dimensions together, fits the regression model being tested. It simply tells us how many points fall on the regression line and can also explain 73% of the variability of the data collected.

However, the Adjusted R^2 gives a reading of 0.669 or 67%. This particular result is more useful in explaining variability of more than one *X* variable, for it adjusts for the number of terms in the model. We can therefore state that 67% of the data collected indicates that the six cultural dimensions do influence operational excellence in the work place of the study population. However, this reading does not tell us the significance of each of these six cultural dimensions in explaining the variability in OpEx. It could mean that one of these cultural dimensions could account for say 60% of the rest 7%! This concern is clarified below.

Table 9: Analysis of Variance (ANOVA)

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	12.91648962	2.15275	**11.397**	**0.000003886**
Residual	25	4.722182252	0.189		
Total	31	17.63867188			

Source: Research Data (2018)

The analysis of variance indicates that the significance associated with the P-value is 0.000003886. This is significantly lower in comparison to the alpha value of 0.05 used in this analysis. The conclusion therefore is that the overall test is significant.

Table 10: Summary of the Coefficients

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	1.0824	0.5219	2.0738	0.0486	0.0074	2.1573	0.0074	2.1573
Dominant Characteristics (X_1)	-0.1509	0.0718	-2.1019	**0.0458**	-0.2987	-0.0030	-0.2987	-0.0030
Organisational Leadership (X_2)	-0.0622	0.0785	-0.7928	0.4354	-0.2239	0.0994	-0.2239	0.0994
Management of Employees (X_3)	0.0157	0.0696	0.2258	0.8232	-0.1276	0.1591	-0.1276	0.1591
Organisation Glue (X_4)	0.0953	0.0613	1.5560	0.1323	-0.0308	0.2215	-0.0308	0.2215
Strategic Emphasis (X_5)	0.0218	0.0499	0.4365	0.6662	-0.0810	0.1245	-0.0810	0.1245
Criteria of Success (X_6)	0.3290	0.0926	3.5539	**0.0015**	0.1383	0.5196	0.1383	0.5196

Source: Research Data (2018)

From the findings in Table 10 above, the established regression equation therefore becomes

$$Y = 1.082 - 0.151X_1 - 0.062X_2 + 0.016X_3 + 0.095X_4 + 0.022X_5 + 0.329X_6$$

From the above regression model, holding dominant characteristic, organisational leadership, management of employees, organisation glue, strategic emphasis and criteria of success to constant zero, then operational excellence would be at 1.082. It also suggests the any variation in dominant characteristics would cause a change in operational excellence by -0.151. A variation in organisational leadership would lead to a change in operational excellence by -0.062. A variation in management of employees would create a difference in operational excellence by +0.016. A variation in organisation glue would create a change in operational excellence by 0.095. A variation in the strategic emphasis would lead to a change in operational excellence by 0.022 and finally a variation in criteria for success would cause a change in operational excellence by 0.329. This shows that there is a strong evidence of positive relationship between management of employees, organisation glue, strategic emphasis and criteria of success on operational excellence.

Table 10 above also tells us a bit more about the individual predictors to this model. Looking at the predictors' individual P-values, both dominant characteristics and criteria of success have P-values of less than the alpha level of 0.05. This means that these two predictors are account for a significant amount of unique variance in OpEx. The other predictors' individually i.e. organisational leadership, management of employees, organisation glue and strategic emphasis are not significant in the amount of unique variation in OpEx.

Table 11: Regression Analysis Summary Output – Female Respondents

Female Respondents Summary Output	
Regression Statistics	
Multiple R	0.9829
R Square	**0.9660**
Adjusted R Square	**0.9252**
Standard Error	0.1336
Observations	12

Female Respondents ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	2.5374	0.4229	**23.6871**	**0.0016**
Residual	5	0.0893	0.0179		
Total	11	2.6267			

Source: Research Data (2018)

The female respondents correlation coefficient (Multiple R) illustrated in Table 11 above is shown to be 0.983 indicating that there is a strong linear relationship between OpEx and OC. The R^2 (R Square) is shown to be 0.966, this reading implies that 97% of the data collected taken as a set i.e. all the cultural dimensions together, fits the regression model being tested and can also explain 93% of the variability of the data collected. This is higher compared to the study population findings.

Table 12: Female Respondents Summary of the Coefficients

	Coefficients	Std Error	t Stat	P-value	Lower 95%	Upper 95%	ower 95.0%	Upper 95.0%
Intercept	2.3432	0.3996	5.8633	0.0020	1.3159	3.3705	1.3159	3.3705
Dominant Characteristic	-0.0644	0.1070	-0.6020	**0.5734**	-0.3395	0.2106	-0.3395	0.2106
Organisation Leadership	-0.1382	0.0623	-2.2185	**0.0773**	-0.2983	0.0219	-0.2983	0.0219
Management of Employees	-0.1362	0.0678	-2.0079	**0.1009**	-0.3106	0.0382	-0.3106	0.0382
Organisation Glue	-0.0227	0.0929	-0.2441	**0.8168**	-0.2616	0.2162	-0.2616	0.2162
Strategic Emphasis	0.0892	0.0500	1.7823	**0.1348**	-0.0394	0.2178	-0.0394	0.2178
Criteria for Success	0.3507	0.0468	7.4951	**0.0007**	0.2304	0.4709	0.2304	0.4709

Source: Research Data (2018)

Table 12 above also tells us a bit more about the individual predictors to this model of the female respondents. Looking at the predictors' individual P-values, the only significant cultural dimension is the Criteria for Success with P-values of 0.0007 which is far less than the alpha level of 0.05. All the other predictors in this model have a higher P-value that the alpha level of 0.05. Criteria for Success is therefore the only predictor that accounts for a significant amount of unique variance in OpEx among the female respondents. All the other predictors' individually i.e. dominant characteristics, organisational leadership, management of employees, organisation glue and strategic emphasis are not significant in the amount of unique variation in OpEx among the female respondents.

Table 13: Regression Analysis Summary Output – Male Respondents

Male Respondents Summary Output	
Regression Statistics	
Multiple R	0.8763
R Square	**0.7679**
Adjusted R Square	**0.6607**
Standard Error	0.3758
Observations	20

Male Respondents ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	6.0737	1.0123	**7.1666**	**0.0015**
Residual	13	1.8363	0.1413		
Total	19	7.91			

Source: Research Data (2018)

The male respondents correlation coefficient (Multiple R) illustrated in Table 13 above is shown to be 0.876 indicating that there is a strong linear relationship between OpEx and OC. The R^2 (R Square) is shown to be 0.661, this reading implies that 66% of the data collected taken as a set i.e. all the cultural dimensions together, fits the regression model being tested and can also explain 66% of the variability of the data collected. This is however a much lower statistic compared to the study population findings and the female respondents.

Table 14: Male Respondents Summary of the Coefficients

	Coefficients	Std Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.4183	0.5608	0.7459	0.4690	-0.7932	1.6297	-0.7932	1.6297
Dominant Characteristic	-0.0654	0.0894	-0.7316	**0.4774**	-0.2586	0.1278	-0.2586	0.1278
Organisation Leadership	-0.0196	0.0800	-0.2452	**0.8101**	-0.1926	0.1533	-0.1926	0.1533
Management of Employees	0.0070	0.0828	0.0843	**0.9341**	-0.1718	0.1858	-0.1718	0.1858
Organisation Glue	0.0882	0.0645	1.3680	**0.1945**	-0.0511	0.2276	-0.0511	0.2276
Strategic Emphasis	0.0117	0.0577	0.2035	**0.8419**	-0.1129	0.1363	-0.1129	0.1363
Criteria for Success	0.2108	0.1193	1.7669	**0.1007**	-0.0469	0.4684	-0.0469	0.4684

Source: Research Data (2018**)**

Table 14 above also tells us a bit more about the individual predictors to this model of the male respondents. Looking at the predictors' individual P-values, there is no significant cultural dimension with P-values of less than the alpha level of 0.05. The study population respondents had two significant predictors, the female respondents only had one significant predictor. Criteria for Success appears significant to both the study population and the female respondents. The findings appear to ask more questions among the male respondents who not only have a lower Adjusted R squares in comparison to the study population and the female respondents but also have no significant predictor among the cultural dimension.

It is plausible to indicate that there are other factors at play within the male population that remains unknown. We could make the conclusion that among the male respondents in the study population, cultural dimensions are not a significant test within the regression model, however 66% of the variance in the male respondents can be explained. We could also say that as much as statistical significance tests help to account for potential sampling errors, non-sampling errors could be involved such as people lying on the survey.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The study validates the Organisational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn in measurement of organisational culture. There was also the validation of regression technique to model operational excellence as dependent on organisation culture attributes. Regression allows for predicted probabilities of composite variables to be calculated from individual responses.

5.2 Summary of the Discussion of the Findings

The Radar Chart used to graphically display the four dominant culture types, the clan and market culture types as developed by Quinn and Cameron, appear firmly entrenched in the agro chemical firms in Nairobi. This means that not only now but also in the immediate future, the two culture types retained their popularity with no change at all. There was however a preference of movement towards hierarchy going forward as compared to the adhocracy culture type. The agro chemical firm therefore retain a results oriented, getting the job done attitude and values competition and achievement. It also means that the same firms have more focus on mentoring, nurturing and encourage participation in their organisations. There is also a desire to move towards more of a structured, controlled, coordinated, efficient and stable organisations as opposed to the dynamic and entrepreneurial risk-taking set up.

Based on the regression analysis, it is evident that the model is credible with an Adjusted R^2 at 67%. This implies that there is a variation of 67% in operational excellence with joint changes in the six cultural dimensions, namely dominant characteristics, organisational leadership, management of employees, organisation glue, strategic emphasis and criteria of success within the agrochemical firms in Nairobi. There is however, according to the study, a negative effect on operational excellence attributable to dominant characteristics and organisational leadership that needs to be investigated further. However, dominant characteristics is significant as it accounts for a significant amount of unique variance in OpEx in agrochemical firms in Nairobi. Criteria for success is also another cultural dimension that emerged significant in determining OpEx within the same firms according to the findings. It is evident too that there are other factors that affect operational excellence besides organisational culture.

5.3 Conclusion

From this study, the conclusion made was that it is significantly important to focus more on dominant characteristics and criteria for success to realise higher operational excellence. It also indicates that the cocktail of the different cultural dimensions needs to positively well-balanced since they all have an effect on operational excellence. Therefore an awareness of these cultural dimensions and their continuous measurement and monitoring would enhance positively operational excellence. The agrochemical firms in Nairobi still remain largely competitive and market driven.

5.4 Limitations

The researcher heavily relied on subjective personal views that express the respondents understanding of the research questionnaire. Culture to a large extent is a perception issue and varies from one respondent to another. Validation of the organisational culture responses therefore became a challenge in this study. The study on the effect on organisational culture on operational excellence, had to rely only on the now responses, since they had a direct relation to operational excellence scores which are in any case predicated for the present moment, the now. In this regard, the preferred responses were ignored in the regression analysis.

The study population was only limited to the agrochemical firms within Nairobi, which may not be representative of culture and opinions of employees in other organisations. This means more research needs to be done on organisational culture and operational excellence at a national level. The study sample size was small (n=32), representing 54% of the targeted population. Such a small sample size makes it difficult to generalise the results to the entire population. Therefore some caution needs to be taken in interpreting and generalizing the findings of this study. Increasing the sample size, could yield to more statistically significant results.

5.5 Recommendations for Further Research

There is need for more research on other factors that contribute to operational excellence that might not have been considered in this study. The use of the competing value framework as the overarching theoretical basis for this research might have limited the study altogether, a comparative study based on a different theoretical foundation could be useful. The study can also be done in future with a much bigger sample size.

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APPENDICES

APPENDIX I : Letter of Introduction

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 29/10/2018

TO WHOM IT MAY CONCERN

The bearer of this letter BWIBO DAVID SHIKUKU

Registration No. D61/85670/2016

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
29 OCT 2018

PROF. JAMES M. NJIHIA
DEAN, SCHOOL OF BUSINESS

APPENDIX II : Questionnaire

Section A: Demographics of the respondents

1. Please indicate your gender

   Male ( ) Female ( )

2. Please indicate your age in the bracket as the respondent in this questionnaire.

   18-30 ( ) 31-40 ( ) 41-49 ( ) 50 and above ( )

3. Kindly indicate the management level that most represents where you fall under (select only one option)

   Top level management ( )

   Middle level management ( )

4. Please indicate the duration you have been with this organisation (select only one option)

   Below 5 years ( ) 6-10 years ( ) More than 10 years ( )

5. Please indicate AAK membership classificatioin that your organisation is registered under

Full Member ( ) Associate Member ( ) Grower Member ( )

6. Which of the following represents your highest education level

   PhD Degree ( ) Master's Degree ( ) Bachelor's Degree ( )

   Diploma ( ) Professional certificate ( )

Others specify……

Section B: Questionnaire for Organisational Culture

Adopted the Organisational Culture Instrument of Assessment

1. Most Dominant Attributes		**Now**	**Preferred**
A	The organization is a private place, like a home environment and there is a lot in common		
B	The organization is entrepreneurial and on the move. There is a willingness in taking risks among the people.		
C	The organization is outcome oriented. Concern is to get the job done. There is a tendency of competitiveness and result driven		
D	The organization is a defined structure. Standard Operating Procedures guide what instructs employee action		

2. The leadership in the Organisation is		**Now**	**Preferred**
A	Considered to exhibit mentorship, facilitation, or coaching.		
B	Considered to exhibit risk taking, entrepreneurship and innovation.		
C	Considered to exhibit an outcome focus, go-getting attitude.		
D	Considered to exhibit proper management in controlling, organizing, planning and efficient operation.		

3. Human Resource Management is		**Now**	**Preferred**
A	Characterized by collegiality, consensus, and employee involvement.		
B	Characterized by innovation, individual freedom and encouragement of uniqueness.		
C	Characterized by no nonsense competition, demanding and outcome oriented expectation.		
D	Characterized by compliance, security of tenure, assurance, and stable associations		

4. The bond that binds the organisation		Now	Preferred
A	Together is mutual loyalty, trust. Dedication runs high in this organisation.		
B	Together is determination to innovate and novel development. Cutting edge issues runs high in this organisation.		
C	Together is the insistence on goal attainment and outcomes. Success and aggressiveness runs high in this organisation.		
D	Together is bureaucracy. Sustaining a well organised workplace runs high in this organisation..		

5. The Strategic Priority		Now	Preferred
A	Is development of the human resource. Openness, employee involvement and trustworthiness.		
B	Is getting resources and milestones that are new. Attempting new undertakings and looking out for novel opportunities		
C	Is competitive initiatives and results orientation. Meeting set targets and success in the market are more desirable.		
D	Is stability and performance. Control, smooth operations and efficiency are important.		

6. Determination of Success		Now	Preferred
A	On the basis of the human resource development, collegiality, employee engagement and commitment and genuine concern for each person.		
B	On the basis of being distinct or novel concepts and products. It is about being a market leader and an industry shaper.		
C	On the basis of success in the customer base and leading the competitors. A competitive market leadership is a criteria for success.		
D	On the basis of reliable delivery, least cost of operation and efficient production is imperative.		

Section C: Questionnaire for Operational Excellence

Score by indicating an '**X**' in the appropriate cells. Column totals show the number of entries in each column.

	Poor	Below Average	Average	Above Average	Excellent	Scores
Score	1	2	3	4	5	
Test Focus						
Customer Satisfaction						
Health, Safety and Environment						
Teamwork, Skill level and motivation						
Manufacturing, Planning and control system						
Quality system deployment						
Totals						

Source: Adapted from information in Alfnes, E.,Dreyer, & H., Strandhagen, J.O. (2008)