SUPPLY CHAIN QUALITY MANAGEMENT PRACTICES AND PERFORMANCE OF PRIVATE HOSPITALS IN KENYA

OKOTH, TOBIAS ONDIEK

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT OF THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION, FACULTY OF BUSINESS AND MANAGEMENT SCIENCE, UNIVERSITY OF NAIROBI

2021

DECLARATION

I declare that this thesis is my original work and has not been submitted for examination to the university or any other university.

Signature ~~[signature]~~ Date…13th August, 2021

Okoth Tobias Ondiek

D80/97610/2015

This research thesis has been submitted for examination with our approval as the University supervisors.

Signature...... [signature] .... Date……13/08/2021…………

Dr. Stephen Ochieng Odock,

Senior Lecturer, Department of Management Science and Project Planning

Faculty of Business and Management Science, University of Nairobi

Signature............[signature].................. Date……13th August 2021………

Prof. James Muranga Njihia,

Associate professor, Department of Management Science,

Faculty of Business and Management Science, University of Nairobi

Signature [signature] Date 13th August 2021

Prof. Peter K'Obonyo,

Professor of Management, Department of Business Administration,

Faculty of Business and Management Science, University of Nairobi

QUOTE

The best way to predict the future is to create it -Abraham Lincoln, the

16th President of the United States of America

ACKNOWLEDGEMENTS

DEDICATION

To my late father, Japuonj Athanas Joseph Ondiek and my late grandmother, Maria Oluoch

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

AMOS: Analysis of Moment Structures

AVE: Average Variance Extracted

BSC: Balanced Score Card

BEM: Business Excellence Model

CB-SEM: Covariance Based Structural Equation Modeling

CFA: Complementary Firm Assets

DV: Discriminant Value

EFQM: European Foundation for Quality Management

FBO: Faith Based Organizations

GoK: Government of Kenya

HRM: Human Resource Management

ICT: Information Communication Technology

IPMF: Integrated Performance Measurement Framework

KEMSA: Kenya Medical Supply Authority

KHCS: Kenya Health Care Sector

MEDS: Mission for Essential Drugs

MOH: Ministry of Health

NGO: Non-Governmental Organization

NHIF: National Health Insurance Fund

QM: Quality management

RBV: Resource-Based View

RMSEA: Root Mean Square Error Approximation

ROA: Return on Assets

ROI: Return on Investment

RV: Relational View

SNT: Social Network Theory

SCQM: Supply Chain Quality Management

SCQMPs: Supply Chain Quality Management practices

TBL: Triple Bottom Line

ABSTRACT

Prior studies have grappled with the problem of improving the performance of firms in general and hospitals in particular. Unfortunately, unlike many developed nations where public hospitals service contributes 100% of healthcare, in Kenya, private hospitals provide significant proportion of healthcare to local citizens and some from neighboring countries. Consequently, their performance is not only of interest to researchers but also to government and other stakeholders in healthcare. Moreover, balancing the practice of supply chain quality management practices and ever urgent demand of increasing the bottom-line – the profit is never trivial for private hospitals globally, and particularly in Kenya. For these reasons, this study aimed to investigate how supply chain quality management practices affects performance of private hospitals in Kenya. Additionally, the roles of competitive advantage as well as organizational factors on the link were examined. The performance metrics were; environmental, operational, market, societal as well as growth and development. This was achievable upon formulating objectives as well as four hypotheses. Upon comprehensive review of literature and relevant theories, conceptual framework was developed. The theories were; social network theory, stakeholders' theory, relational view and contingency theory. The study applied positivism as research philosophy. Descriptive, cross sectional survey was adopted as the research design. Empirical data was gathered from personnel responsible for making decisions that ensure quality along supply chain in 110 Kenyan private hospitals. CB-SEM was conducted in analyzing data to test four hypotheses. Hypothesis to test direct relationship was confirmed. The combined moderating effect of organizational factors on the relationship was positive but insignificant. However, the sub variables trust and corporate culture had significant positive effect. Further, competitive advantage exhibited a positive and significant mediating effect SCQM practices organizational performance correlation. Finally, joint effect of SCQM practices, organizational factors and competitive advantage on performance of private hospitals was greater compared to the individual variables. The conclusion of the study is that upon successful implementation of SCQM practices private hospitals acquire competitive advantage that helps them improve their overall performance. The findings improve researcher's knowledge by providing conceptual and methodological basis to conduct future studies. Additionally, there is theoretical contribution. Social networks enable firms improve their performance upon becoming more competitive. It is therefore recommended that Kenyan private hospitals need to embrace SCQM practices in their day to day operations, measure competitive advantage validly and reliably and use the comprehensive integrated performance measurement framework (IPMF) to measure financial and non-financial performance levels. The findings are limited to private hospitals in Kenya, internal organizational factors, single respondent from the organizations. Future research should be longitudinal, extend beyond the Kenyan borders and cover other industries. These should unravel reasons for inconsistency in findings on the role of organizational factors. Critical realism philosophy to be adopted for qualitative study to identify other models of SCQM practices, organizational factors, competitive advantage and organizational performance relationship.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The current business landscape exhibit ever escalating stakeholder power that pressurizes organizations to pursue multi-dimensional performance parameters to survive. Apart from investors, other key stakeholders specifically; customers, suppliers, governments, employees, society and environmentalists have continued to demand satisfaction to reciprocate their contributions to the organizations (Elkington, 1994; Kemble, Gunasekaran, Ghadge & Raut, 2020). The demand for quality service and products at reasonable prices through environmentally friendly and socially acceptable operations remains a key challenge that firms must address (Flynn, Huo & Zhao, 2010; Farnandes, Sampio, & Carvalho, 2014; Mathur, Gupta, Meena, & Dangayach, 2018; Abeysekara, Wang, & Kuruppuarachchi, 2019; Mamabolo & Myres, 2020). In response, organizations are opting to create systems and networks to extend quality along the supply chains to fulfill their financial obligations, compete, survive and prosper (Lin, Kuei, & Chai, 2013; Soares, Soltani & Liao, 2017; Bastas & Liyanage, 2018).

In literature, it is strongly articulated that supply chain quality management (SCQM) practices would integrate network members and stakeholders to ensure quality of input and products along supply chains (Azizi, Maleki, Moradi-Moghadam, & Cruz-Machado, 2016; Sampaio et al., 2016; Kemble et al., 2020). This is a conducive business environment for gaining sustainable competitive advantage (CA) and improved organizational performance (Sagalas, 2015; Yanya & Mahamat, 2020). The successful firms must possess certain unique internal characteristics to allow smooth execution of practices (Al-Dhaafri, Yusoff, & Al-Swidi., 2013; Zhang & Huo, 2013;

Abeysekara, Wang & Kuruppuarachchi, 2019; Basheer, Siam, Awn & Hassan, 2019). In view of the magnitude to which SCQM practices contribute to organizational success, there have been significant number of studies in literature that have tried to establish description of the link connecting SCQM practices to organizational performance (Soares et al., 2017; Chagooshi, Neshan, & Moghadam, 2015). Additionally, other studies to understand the role played by competitive advantage and organizational factors in such a relationship have captured the attention of many researchers (Truong, Sampaio, Carvalho, Fernandes, & An, 2014; Sampaio et al., 2016; Pereira- Moliner et al., 2016; Yanya & Mahamat, 2020).

The relationship between SCQM practices, organizational factors, competitive advantage (CA) and performance of organizations is predictable by means of five theories namely; social network theory, stakeholder's theory, relational view, theory of dynamic capability and general contingency theory. Social network theory (SNT) predicts the impact of networking and coordination among key stakeholders that is the key framework of SCQM practices and the impact it has on multidimensional organizational performance indicators (Soares et al., 2017). Stakeholders' theory explains how SCQM practices purpose to address concerns of prime stakeholders with both contradictive and cooperative interests (Tse, 2011; Freeman, 2010; Freudenreich, Lüdeke-Freund & Schaltegger, 2020). Relational view elucidates how firms with unique organizational factors develop network generated competitive advantage through SCQM practices for improved organizational performance (Dyer & Singh, 1998; Canevari-Luzardo Berkhout & Pelling, 2020)

General contingency theory proposes that firms with certain internal infrastructural and behavioral assets (organizational factors) dictate extent of success attributable to SCQM practices implementation that further influences the strength and direction of

their impact on organizational performance (Zang & Huo, 2015; Alizadeh, Makui & Paydar, 2020). The key motive for study was to resolve the argument in research revolving around whether or not successful adoption of SCQM practices yields improved organizational performance. Notably, the studies conducted so far are scattered in literature, inconclusive, incoherent in findings and largely conducted in the manufacturing sector. This study aimed at expanding knowledge on this subject with focus on health sector which is critical for quality health of the nation and economy.

Healthcare sector, specifically the private hospitals in Kenya, have experienced challenges partially emerging from conflicting interests among investors and society (Kazi & Noman, 2013; Yanya & Mahamat, 2020). In particular, patients have rights to access emergency treatment or a service that is not availed by local government hospital at any other health facility irrespective of the patient's ability to pay as stipulated in the Kenya national patients' rights charter of 2013. On the contrary, private hospitals have the obligation to generate adequate revenue to meet costs of operation, reward investors and other stakeholders.

This natural affinity for quality and reliable medical care has continued to compel the poor and the rich to seek services from private hospitals as opposed to public ones (Otieno & Macharia, 2014; Magak, 2014). The mounted pressure on private hospitals has pushed them to borrow modern practices from either manufacturing industry or other service industries for survival (Turkyilmaz, Bulak, & Zaim, 2015). The objective is to provide quality, reliable, affordable and accessible healthcare at the same time sustain their operations by being competitive and profitable like other commercial set ups.

There is scarcity of data on healthcare supply chain despite its uniqueness, importance and complexity compared to the manufacturing sector where studies relating SCQM practices to improve firm performance are near sufficient (Vries & Huijsman, 2011; Pan & Pokharel, 2007). The challenges evident in private hospital operations require immediate solutions (Law, 2016). SCQM tools and procedures significantly vary between service and manufacturing sector due to differences in operating environmental conditions (Ziaul, 2005). The World Health Organization's (WHO) attribute improved healthcare to delivery of cost effective, quality, reliable, safe and accessible healthcare (WHO, 2007). The Kenyan government has been advocating for affordable universal healthcare for all citizens which has hardly been achieved through the existing policies. There is need for thorough research to provide empirical data to complement these worthy efforts.

1.1.1 Supply Chain Quality Management

Integrating total quality management (TQM) into managing supply chain results to SCQM. Supply chain quality management is conceptualized as network characterized by contribution of all entities involved in work culture, services, goods and delivery improvement aimed at increasing productivity, competitiveness and ultimate total customer satisfaction and favorable business outcomes (Ross, 1998). Ferguson (2000) remarks that SCQM include all TQM operations within the confines of streaming and conversion of products from input to out as well as quality related information.

Simultaneous implementation of identified TQM and SCM are paramount strategies that synergistically lead to success of all business set ups including small and medium enterprises, manufacturing and service sector (Flynn & Flynn, 2005; Talib, Rahman, & Qureshi, 2011). A study conducted by Kaur, Singh, and Singh (2020) confirmed that integrating total quality principles into supply chains has a superior performance

4

outcome than SCM in isolation. Research findings have also validated that the approach catalyzes competitiveness of organizations (Nandurkar, Wakchaure, & Kallurkar, 2014). The contribution to firm performance and competitive advantage has made SCQM attract attention of researchers who have also attempted to define it in addition to ascertaining the relationship. Kuei et al. (2001) contended that SCQM is a production and distribution network where market demands are correctly met, customers satisfied and trust is enhanced within the supply system. According to Robinson and Malhotra (2005), SCQM is the mechanism of coordinating and integrating business operations among supply entities to perfect processes, services and goods to ultimately deliver superior multifaceted firm performance SCQM is supply chain management augmentation premeditated to enable business enterprises to accomplish aggressive supply chain through incorporating quality traditions (Kuei, Madu & Lin, 2008). Whereas total quality management emphasizes satisfying customer, SCM integrates internal firm functions with external business partners to achieve competitive advantage and ever improving performance outcomes (Fernandes, Sampaio, Sameiro & Truong, 2017)

Supply chain quality management is a system through which customers, their suppliers and other stakeholders are joined together to leverage on chances created in the commercial setting intended to improve the performance outcomes among organizations that claim its adoption (Foster & Ganguly, 2007; Foster, 2008). Truong et al. (2014) described SCQM as smooth alignment, synchronization and operationalization of all procedures in supply chain to achieve improved operational and product quality that optimize customer satisfaction. This is a fair and adequate journey towards understanding the concept since the features (elements and properties), roles (purpose) and processes (activity sequence combining the elements)

of SCQM are stated. Additionally, necessary and sufficient conditions of the concept are specified.

From the definitions the following observations are apparent. One, lack of clarity on nature of SCQM especially whether it is a system, a chain or a network, this aspect being a cause of confusion. This study supports the view of Forster (2008) who pinpointed that SCQM is a system considering that there are definite measurable input and output, clear boundaries and visible feedback mechanism. Secondly, it upholds two principles of continuous improvement and customer satisfaction as prime focus. In addition, due to complexity in SCQM practices, heterogeneous stakeholders may present conflicting demands that must be addressed by organizations. It is concluded that supply chain quality management is a system where products, processes, resources, partners, society and environment are purposefully put together for the optimal benefit of the potential key stakeholders.

1.1.2 Supply Chain Quality Management Practices

SCQM practices are activities effected within and across organizations to ensure that organizations consistently meet and exceed customer quality requirements (Talib, Rahman, & Qureshi, 2011). Three main sets of supply chain quality management practices are perceptible (Zeng, Phan, & Matsui, 2013). First, there is internal quality management or internal process management. Second, there is the interaction with suppliers which constitutes upstream arm of supply chain or upstream quality management. Lastly, firms have to manage quality upon interacting with their customers or downstream quality management.

There are supply chain quality management practices that have been acknowledged. Significant number of authors have confirmed that customer focus, managing supplier

relationships, sharing of information, postponement, process management and coordination of supply chain are the most common practices (Zhong et al., 2016; Sampaio et al., 2016; Bagchi & Gaur, 2018; Mamabolo & Myres, 2020). These practices interact to connect external with internal organizational operations, procedures and activities so as to monitor as well as proactively ensure quality along the entire supply chain (Sampaio et al., 2016). Synergy unveiled via interaction among the practices provides a conducive organizational environment for achieving competitive advantage and multidimensional improved performance (Zhong, Ma, Tu, & Li, 2016). SCQM practices target the full supply chain from upstream arm, interior process and customer facing arms of the supply chain. The practices therefore fundamentally emphasize extension of quality practices from within firms outwardly to boost competitiveness of complete supply network.

The primary goal of total quality management (TQM) and supply chain management (SCM) is sustained value addition to customers. Customer focus can be defined as efforts by organizations to address customers' complaints, build relationships with them and ensure their satisfaction (Kumar, Singh & Modgil, 2020). It is therefore emphasized that firms must direct all their energy towards value addition to customer. Firms generate more and sustained revenue from satisfied customers that translate to premium profits. To sustain success, organizations must attract and retain customer confidence together with that of other stakeholders on whom it depends. It is compulsory for all organizations to adequately understand present together with changes to the needs of customers in order to align the activities with the stated requirements for sustained success through research. Customer relationship also entails the practice that manages complaints by customers through feedback

mechanism. This helps to win strategic loyalties of customers while perfecting on their satisfaction (Soares et al., 2017).

When organizations better their engagements with customers, a scenario is crafted where there is concentration on making products that are appealing to their customers more than their competitors. This approach sustains customer loyalty and dramatically delivers undisputed value to the customers (Talib et al., 2011). Customer relationship is hence a precursor for competitive advantage (Gómez-Cedeño, Castán-Farrero, Guitart-Tarrés, & Matute-Vallejo, 2015). The pillar for positive exchange is resident in the value of relationships generated between customers and the organizations.

Performance of all organization is anchored on the activities of parties with interest in their businesses (Rajagopal, Zailani, & Sulaiman, 2009). For strategic triumph, firms are compelled to seamlessly manage their relationships with their stakeholders (Li, Ragu-Nathan, Ragu-Nathan, & Rao, 2004). Relationship management between firms, suppliers and other parties in the network is of great importance for long term survival. Supplier relationship management entails selection, development, monitoring and collaborating with suppliers (Yang & Zhang, 2017). The actions lead to long term coexistence which enables firms in the chain to avoid risks and share benefits (Prajago et al., 2012).

Through early engagement of suppliers and communication between organizations, suppliers are motivated to deliver exclusively good quality raw materials that guarantee desired outputs at reduced cost augmenting competitive advantage of the supplied firms (Robinson & Malhotra, 2005; Lin et al., 2013). In addition, the suppliers may guide their customer on cost effective design options, appropriate components and latest technology advancements (Haque & Islam, 2013). This kind of

arrangement further diminishes waste of time, resources and effort (Chang, 2009). Successful supplier relationship management is both a critical and sensitive SCQM practice as it edges the organization above others in terms of performance (Kushwaha, & Barman, 2010).

Information forms part of the intangible strategic assets of organizations and should flow fast and accurately so as to avoid gap errors and bottlenecks which jeopardize firm's profitability, customer satisfaction and organizational integrity (Zhao, Hu, & Wang, 2015). Sharing quality information is a critical aspect of effective SCQM because it supports real-time quality assessment and adherence in supply network (Lin et al., 2013). Information sharing allows firms to optimize inventories, effectively serve customers, generate revenues and manage capacity, transportation as well as production schedules (Sampaio et al., 2016). This calls for information technology driven organizations that are able to provide a platform for integration of all components of the supply chain quality manifested in form of quality data recording, reporting, storage and IT-driven operational processes (Kuei & Madu, 2001).

Information shared integrates and monitors intra and inter firms' activities (Al-Dhaafri et al., 2013). Li et al. (2004) explains that whenever high valuable information is communicated within the supply network, high level of trust is evident as there is sharing of vision between supply network cohorts which potentially eliminates uncertainty in supplies. Top leadership relies on accurate, timely, adequate and credible data to craft good strategies (Sharma & Modgil, 2020). Firms are on the contrary advised to share only necessary information that may not divulge their unique informational assets to the advantage of competition ((Meirovich, 2010).

Postponement means deferring of events throughout supply system pending availability of worthier market information to minimize uncertainty and save on inventory, transportation and production costs (Bagchi & Gaur, 2018). Postponement is applicable where products in the market place are characterized by high monetary value. The high monetary value can expose firms to significant financial losses. These products can be highly specialized to the extent that there are no wide ranges of ready alternatives to customers or may be of high demand uncertainty.

Zhong et al. (2016) described such products as: infrequently delivered, take long to be delivered or uneconomical to manufacture and transport so there is need for unique knowledge. These delicate situations call for agile supply networks that can respond rapidly and swiftly by availing products in response to unstable customer demands (Truong et al., 2014). Postponement means carrying forward certain operations or activities for example sourcing, production or even delivery at customer's convenience (Bagchi & Gaur, 2018). In this practice, various models of the product can be designed just to cope with changing customer demands or just alter the demand function. This serves to achieve customer satisfaction and minimize losses from high value products by participants in the supply network hence offer financial gains.

Internal firm process management activities encompass research and development, product design and processes. The activities dictate firm's level of productivity, time to market and employee performance important necessary for firms' competitiveness and improved performance (Zhong et al., 2016). For sustained success and competitive advantage, organizations must embrace an ongoing focus on continuous process improvement (Vanichchinchai & Igel, 2011). This is critical for firms that seek to realize agility of supply chains, improve on performance and smoothly adapt to dynamic customer (Talib et al., 2011). Continuous process improvement

is anchored on learning achieved through customer feedback, market research and investigations paving way for incremental and breakthrough improvement (Mellat-Parast, 2013).

Generally, principles, policies, technology and all systems that serve to improve efficiency of human resource, machines, tools, information technology and management are targets for meaningful process improvement (Parlakturk, 2012). The purpose is to accelerate productivity for customer satisfaction and ensure profits to the organizations. Stability and capability are normally achieved through process improvement procedures (Maiga, 2015). Significant processes improvement gives rise to improved operational performance (Samson & Terziovski, 1999). This is manifested in flexible production volumes, reduction in time to market and accurate time deliveries and these build up supply chain driven on quality (Kuei et al., 2001).

Coordination of supply chain entails managing transportation and logistics. It integrates firms, suppliers and customers to minimize waste of efforts and time resulting in increased productivity and customer satisfaction (Farnandes, Sampaio, & Carvalho, 2014). A quality product should be delivered economically, safely, timely and conveniently to the target customers (Meijboom, Schmidt-Bakx, & Westert, 2011). This is made possible through coordination which encompasses logistics and transportation. Logistics alone account for thirty percent of supply network costs thus can significantly affect profitability across the supply system (Parlakturk, 2012). It involves communication and actual transfer of products between supply system members.

Transportation costs half of the total logistics cost right from raw material until a quality product is delivered to customer (Law, 2016). Knowledge of the value adding

activities can be explored to reduce costs without jeopardizing customer service in terms of rapid and reliable product delivery to the destination (Pan & Pokharel, 2007). Reduction in distribution costs, lowering delivery times and management of functions across supply networks serves to smoothen operations so that multiple firms can work together to deliver admirable customer value (Abdallah et al., 2017). By so doing, organizational performance can be improved.

1.1.3 Organizational Factors

The organizational factors are internal organizational infrastructural and behavioral inputs that provide firms with a conducive environment to successfully implement SCQM practices that guarantee the required level of competitive advantage and prosperity (Farnandes et al., 2014; Truong et al., 2014). Efficient and effective SCQM practice execution is anchored on certain firm key characteristics for smooth flow of money, materials and information in either direction (Lin, Kuei & Chai, 2013). According to Sampio et al. (2016) these physical infrastructures and behavioral conditions that facilitate smooth implementation of SCQM practices are; human resource management, top management support, information and communication technology (ICT), trust among stakeholders and organizational culture. These factors affect strength of SCQM practices - organizational performance relationship in addition to altering the direction (Kuei et al., 2001; Zhang & Huo, 2013).

In a network of firms, success is attributable to exploitation and acquisition of new competencies, knowledge and skills by human resource through learning process (Mellat-Parast, 2013). This implies that the employee should have explicit knowledge on SCQM practices to ascertain smooth implementation. Extent to which human factor is involved dictates the extent of successful adoption and practice of SCQM

(Chang, 2009). It is therefore logical that the parties should have good knowledge of SCQM practice. Trained and motivated workforce effectively implements, owns and audits SCQM practices. This leads positive impact of SCQM practices on organizational performance (Lin et al., 2013). In the lenses of knowledge-based view (KBV), routine knowledge sharing enables firms to acquire competitive advantage (Dyer & Singh, 1998).

Leadership influences learning process in the networked firms and direct business strategic partnership formations (Zhang & Huo, 2013). Therefore, management support forms the framework upon which SCQM practices are initiated, developed and sustained (Kaynak & Hartley, 2008). This implies that effective leadership enhances firms' relationships with business partners. Introduction and implementation of SCQM practices is a strategic organizational objective. Sustained success of practices requires planning time and resources. The decisions and authority of this magnitude is operationalized at the firm's strategy level (Hyväri, 2016). Commitment by top managers to support SCQM practices is actualized by crafting strategies aligned to the activities, mobilizing adequate resources for execution, designing contents and creating structures that externalize and internalize SCQM practices. The outcome is stronger positive impact of SCQM practices on organizational performance (Mellat-Parast, 2013).

SCQM practices influence specialization, formalization and interdepartmental interactions. This has positive significant effect on key performance lead indicators namely total cost and competitive advantage that have to be managed at the firm apex (Pereira-Moliner, 2016). As such, top leadership need to design firm's structure that supports SCQM practices implementation in order to yield improved performance (Pullman & Dillard, 2010). As noted by Gawankar, Gunasekaran, and Kamble

(2020), lack of top leadership significantly catalyzes failure to create and implement modern business management practices such as SCQM practices besides diversity in culture and serves as a barrier to its sustainability.

Basheer, Siam, Awn and Hassan (2019) emphasize that cost-effective and smooth flow of information and materials within an organization at operational level and downstream arm of supply chain minimizes transaction cost. Firms with direct computer-to-computer links, use ICT-enabled transaction processing and shipments have their information sharing across supply networks expedited for efficiency (Sampaio et al., 2016). In the process, buyers and suppliers become seamlessly connected to commonly pursue the diverse objectives resulting in stronger positive relationship (Vanichchinchai & Igel, 2011).

Trust is a behavioral organizational factor that can be defined as a person's or an entity's assurance in the goodwill of other parties or individuals in a specified cohort and faith of the others who will make efforts in line with the group's objective (Mellat-Parast, 2013). It is posited and acknowledged in management literature that trust is a crucial moderator of networking and a critical input of quality management (Fynes et al., 2010). Successful management of relationships is basically anchored on trust and it serves to cement intra and inter-organizational relationships which amplify organizational performance (Czakon & Czernek, 2016). This is because trust dictates the level of cooperation between firms with their customers and suppliers. It also determines the extent of information sharing both internally and externally. Again, trust defines a firm's integrity. These are basic business practices that influence long term organizational performance (Ha et al., 2011). Trust among customers, firms, employees and suppliers strengthen their integration with net positive effect of SCQM

practices on competitive advantage and organizational performance outcomes (Zhang & Huo, 2013).

Culture refers to configurations of morals and philosophies that are demonstrated in practices, behaviors and artefacts that are communal in organizations (Chen & Paulraj, 2013). Cultural compatibility is a prerequisite for aligning intra-firm practices with inter-organizational relationships (Fawcett, Magnan, & McCarter, 2008). This implies that inability to align corporate cultures management of quality along supply chain is a potential foundation of failure for firms that attempt to implement SCQM practices. Cultural fit between business partners enable them to share information and manage partnerships relating to suppliers and customers (Cadden, Humphreys, & McHugh, 2010; Prajogo & McDermott, 2011; Lee & Yu, 2013). Low productivity, customer satisfaction, financial performance results and increased level of conflicts have been shown to emerge from culture incongruence despite adoption of effective business ideas such us SCQM practices (Mello & Stank, 2005; Fawcett et. al., 2008; Meirovich, 2010; Deshpande & Farley, 2013).

The findings emphasize the relevance of culture compatibility between firms in networks together with their customers in determining level of multi-dimensional performance (Mello & Stank, 2005). The studies also reported significant relationship between corporate culture and operational strategies and influence of culture incongruence on differing levels of performance outcomes among firms (Cadden et al., 2010). These results suggest that organizational culture provides insight into the context dependence of supply chain quality management practices.

Relational view posits that network members need inter-organizational cultural harmony to strategically bond together and merge resources such assets, knowledge

and capabilities. This further competitively positions them better among competitors to achieve continuously improving firm performance (Fawcett et al., 2008; Prajogo & McDermott, 2011). Conversely, corporate culture variability among firms may impede extent of SCQM practices implementation negating or weakening the link between the variable and organizational performance (Cadden et al., 2010; Vanichchinchai & Igel, 2011).

1.1.4 Competitive Advantage

Empirical evidence from qualitative or quantitative data analyses support the viewpoint that management at all levels appear to misperceive the conceptual definition of competitive advantage with what causes it (Sigalas, Pekka-Economou, & Georgopoulos, 2013; Sagalas, 2015). Sagalas (2015) particularly describes competitive advantage as 'the popular but least known concept'. Lack of concise theoretical, stipulative and operational definition of competitive advantage presents difficulties in subjecting competitive advantage as a variable to meaningful empirical study.

From the onset, Ansoff (1965), regarded as the first scholar to define competitive advantage stated that the variable refers to distinct characteristics of discrete product markets that grant an organization a convincing and robust competitive position. It is near common knowledge that Porter (1985) introduced the concept in the business strategy literature. However, the author hardly provides a clear conceptual definition. Instead, discussion advanced on competitive advantage is inclined towards its ability to give higher value to firms' customers. This is attributable to offering lower prices than competition while maintaining same advantages or delivering distinctive values that are more than compensated elevated price (Sigalas et al., 2013). Sigalas and

Pekka-Economou (2013) argue that the approach defines sources of competitive advantage while the second conforms to benefits that accrue from gaining competitive advantage which is advanced by market and strategy led theorists. To this extent, three issues remain vaguely addressed hence require further knowledge fulfillment. These are the concept competitive advantage, causes of competitive advantage and the benefits of gaining competitive advantage to a firm.

Newbert (2008) defined competitive advantage as a firm's position above than the industry average attained upon utilizing unique opportunities in the market, reduction of cost and counteracting competitor threats. Chagooshi et al. (2015) operationalized competitive advantage as differentiation, flexibility, delivery dependability, reduced cost, time to market and innovation which relate more to operational performance metrics than competitive advantage. The cost reduction commonly indicated by the above authors relates more to operational performance rather than status of a firm among its peers. These definitions in a nutshell present a dichotomous view of competitive advantage as either above or below industry average (Grahovac & Miller, 2009).

Conceptualizing competitive advantage has been largely elusive and this is extended to its operational definition (O'Shannassy, 2008). Despite the aforementioned difficulties in concisely defining and operationalizing the concept, terms and conditions of any research dictate that a variable must be operationalized and measured to allow scientific, falsifiable and truth-seeking empirical investigation (Popper's, 1959). Without a robust operational and clear definition, the variable competitive advantage remains a fad that is merely used for convenience or political rhetoric (Arend, 2003). Sagalas (2015) argued that operational definition of competitive advantage should neither include indicators of performance nor sources

of competitive advantage. The author defined competitive advantage as being positioned higher than an average of industry as a result of exploiting market opportunities and neutralizing threat from competitors which this study adopted.

To measure competitive advantage validly and reliably, there must be unambiguous and robust operational definition to permit positivist research orientation (Arend, 2003). The key objective is to scientifically determine position of a firm in the lenses of exploiting market opportunities and neutralizing threat from competitors. Sigalas and Pekka-Economou (2013) explained the process of determining competitive advantage. The competitiveness of focused organizations based on extent to which the organization exploits market opportunities and neutralize competitor threats is first established. The indicators position organizations among peers as either above or below average. Similar process is repeated in case of neutralizing all competitive threats and fully neutralizing the competitive threats.

This study adopted a similar approach because the process logically and scientifically measures, predicts and explains competitive advantage based on theoretical and operational conceptualization. This is a departure from the past perception by managers and scholars that abstract competitive advantages exist among firms. Kim, Hoskisson and Lee (2015) argued that as much as particular environmental conditions can create competitive advantage, a similar situation also makes it difficult for the firms to sustain the competitive advantage. This point to the dynamic nature of competitive advantage hence has to be continuously monitored and pursued by managers. Past studies have found that competitive advantage mediate the effect of SCQM practices on organizational performance (Dyer & Singh, 1998; Li et al., 2004; Chaghooshi, Soltani-Neshan, & Moradi-Moghadam, 2015; Ibrahim, Elshaer & Augustyn, 2016).

1.1.5 Organizational Performance

Measuring performance of an organization is important yet quite complex multidimensional phenomenon. This is attributed to diversified objectives of heterogeneous stakeholders, purpose for measurement and the role of the person measuring it. Generally, organizational performance refers to a measure of reward or satisfaction in return to contribution by key stakeholders (Rouse & Putterill, 2003). The measures reveal extent to which explicitly or implicitly communicated organizational vision and mission respond to stakeholder expectations and requirement. Traditionally, financial outcome has been used widely to gauge performance. This measure has been challenged in literature as narrow, short term, historical and lacking universal applicability and strategic orientation (Chagooshi et al., 2015). Essentially, the metric fails to address societal, environmental and economic concerns (Freeman, 2010). In response, researchers and scholars are making efforts to avail holistic, balanced and strategic performance measurement scales to address the plight of all stakeholders (Rouse & Putterill, 2003).

There are models that are being advanced in literature aimed at degrading the merits of finance as performance metric. These are triple bottom line (TBL), balanced scorecard (BSC), European foundation for quality management (EFQM) business excellence model and The V formation model (Elkington, 1994; Kaplan & Norton, 1996; Vijande & Gonzalez, 2007; Myrah & Tina, 2013). These tools guide management teams on how to measure, improve and sustain performance to the satisfaction of all stakeholders. Freeman (2010) defined stakeholders as a distinct group or individuals who influence or are controlled by goals of a firm. The stakeholders are listed as employees, partners, community, governments and owners. They provide input for production and service processes in terms of labor, capital and

material. Their requirements and expectation therefore dictate environment and constrains that an organizational operation must be aligned to.

Elkington (1994) developed the triple bottom line (TBL) model to the benefit of businesses, not for profit organizations and various governments. It was purposed to measure performance and the sustainability of environments, operations, profits, projects or policies customized to their particular needs in the category of economy, society and environment. There are challenges to putting the TBL into practice. The first key drawback that has been identified upon adopting the measurement tool is its inability to measure all the three classes of performance metrics. The other demerit is inaccessibility to reliable and applicable data. Finally, complication emerges in aligning a project or policy's input to sustainability. Most importantly, TBL framework allows users to evaluate the implications of their decisions strategically.

Balanced Score Card (BSC) captures learning and growth, finance, customer satisfaction and managing internal processes as key pointers of performance (Kaplan & Norton, 1996). Rouse and Putterill (2003) argued that BSC ignores regulators, employees and suppliers who equally contribute or expect satisfaction. The authors suggested performance prism that is capable of appraising satisfaction of prime stakeholder, assessing impact of operational strategies, efficiency of internal processes and optimizing capabilities while reflecting stakeholder contribution. Wilcox and Bourne (2003) emphasize that performance must have lagging (financial) and leading (non- financial) indicators reflecting on firms' strategic goals with testable cause and effect attributes. The other model developed is the EFQM business excellence model which measures the impact of a management decision on customers, processes, strategy, human resource and society (Vijande & Gonzalez, 2007). As

much as this model looks comprehensive, it ignores such important metrics like environment, learning and growth.

Finally, V-Formation model stresses the need for firms to craft strategies that address money, society, environment and mission. The indicators capture social entrepreneurship and corporate social responsibility philosophies. Chagooshi et al. (2015) strongly advocated for assessment of environmental impact as a measure of organizational performance. It can therefore be noted from the foregone debate that literature is devoid of a near complete model that addresses the interest of all key stakeholders. As such, this study adopted hybrid model to fill in the gaps left by the past researchers. The model is conceptualized as integrated performance measurement framework (IPMF) capable of assessing the impact of SCQM practices on financial, market, operational, societal, environmental, customer, learning and growth perspectives since all these elements interact. IPMF is holistic, balances firm's macro and micro view, measures work rather than cost in addition to predicting future performance.

1.1.6 Healthcare Sector

Kenya's strategic development agenda (Vision 2030) recognizes the pivotal role played by health sector. As a developing nation, the dream is to compete in the global market, achieve status of industrialized nation and provide high quality of life to her citizens. This is against the background that a population with good health catalyzes national development and sustainable growth velocity, accumulates wealth and eradicates poverty. The Kenyan constitution further assures the entire population the right to the best of healthcare, including reproductive health irrespective of socio-economic status. Healthcare provides goods, services and activities intended for

curative and preventive care and provision of therapeutic agents from the elaborate pharmaceutical supply chain. In reality, healthcare sector is currently facing increasing costs of medication and related devices, pressure for high quality services, need for sophisticated equipment in addition to ever changing and unpredictable patterns of diseases (WHO, 2010). The recent corona virus 2019 (COVID- 19) pandemic which scared all economies in the world and caused massive deaths has exposed undisputed evidence on the magnitude of this healthcare pitfall.

Law (2016) alluded to the fact that SCQM practices can provide an avenue for ensuring that cost, quality and time objectives of private hospital are met to gain competitive advantage and performance improvement. Drupsteen, Vaart, and Donte (2016) similarly found that failure by the health institutions to address quality concerns along supply chains leads to high cost of medication, poor service levels, unacceptably long patient waiting times, poor clinical outcomes and lack of capacity to manage medical emergencies.

To contain the challenges, healthcare organizations need to adopt modern operation systems especially SCQM practices to meet healthcare needs, be competitive and adequately address the plights of key stakeholders (Law, 2016). SCQM practices integrate suppliers, hospitals and patients therefore determining the level of performance in the health industry with significant contributions and benefits to industry's stakeholders in terms reducing costs, wastes and eliciting competitive advantage among private hospitals (Vries & Huijsman, 2011). Hospitals supply chain is complex and comprises of the upstream (manufacturers, wholesalers and distributors), internal chain (patient care units, pharmacy, physicians and medical store) and downstream represented by patients or customers.

1.1.7 Private Hospitals in Kenya

Debates on what really constitutes private or public organizations are far from conclusion. The fundamental issues for categorization advanced in literature include; stockholding, profit motive, openness to external influence, scope of sharing benefits outcomes (communal or restricted to individuals), extent of accessing the health facilities, its resources or confidential information (Vries & Huijsman, 2011; Awuor & Kinuthia, 2013; WHO, 2015). Additional guide is whether the person or the organization is acting on behalf of the entire community or restricted to the individual. As such, public organizations are confined to state ownership and funding. On the other hand, privately owned firms constitute those owned and funded through individual(s), sales revenue or personal investments (Lachman, 1985). Private hospitals therefore encompass both for-profit and not-for-profit health entities that are not funded through the exchequer and heavily influenced by their economic markets. Public and private hospitals compete with and complement each other in providing healthcare. There is notable fierce competition among private hospitals since they presumably provide similar types of services (Turkyilmaz, Bulak, & Zaim, 2015).

The Kenyan Vision 2030, which is a strategic plan, was intended to guide Kenya towards provision of efficient, integrated and high-quality but affordable healthcare system. However, the country being a developing nation is yet to overcome healthcare related challenges. Despite devolving health sector to make it affordable and accessible, majority of Kenyans still prefer private hospitals which are relatively costly in meeting their health needs (Ministry of Health, Government of Kenya, 2014). This has compelled the Kenyan Government to extend the use of National Hospital Fund (NHIF) to private hospitals aimed at easing government expenditure on hospital bills.

Both devolution and extension of NHIF are government's deliberate attempts to meet its objectives, cater for high healthcare demand and provision of health security. To attain equilibrium, managers of private hospitals in Kenya need to embrace modern approaches such as SCQM practices to reduce cost of operation, improve service quality, improve patient safety, generate adequate revenue and meet expectations of all other stakeholders. In the developing economies such as Kenya, demand for healthcare services in the private hospitals which overrides public counterparts has continued to grow in response to preference for high quality of services, efficiency, the expanding middle class, higher health insurance penetration and low resource constraints. (UNIDO, 2016).

There are 158 private hospitals according to National Hospital Insurance Fund (NHIF). Government of Kenya (GoK) spends 6.7% of its GDP on health sector but is still far from attaining the targeted Millennium Development Goals (Kenya National Bureau of Statistics, (KNBS, 2019). There is serious concerted effort by the administration to provide universal healthcare to its citizen, a goal that is yet to be accomplished. Pharmacy and Poisons Board (PPB) regulate entry and circulation of medical products in Kenya. Medical supply chain among private hospitals must comply with provision of chapters 244 – the Pharmacy and Poisons Act in addition to chapter 245 - the Dangerous Drugs Act of the laws of Kenya (PPB, 2012).

Due low quality of Kenyan manufactured drugs and other healthcare commodities, private hospitals source the items from different continents. The global sourcing from multinational pharmaceutical companies lengthens and complicates Kenyan healthcare supply chain (UNIDO, 2016). As such, an exhaustive research on the medical supply system among private hospitals in Kenya needed to be pursued with haste. Such research availed local data to bring out a clearer picture and relevant

information on how SCQM practices can grant private hospitals competitive advantage and improve performance without compromising the urge to fix the healthcare needs in Kenya. This study was aimed at adding knowledge on the sector by finding out how SCQM practices would guarantee improved performance among Kenyan private hospitals.

1.2 Research Problem

Organizations are aggressively and desperately searching for new management procedures to minimize pressures from investors, governments, society and competition (Law, 2016). In manufacturing and other services sectors, possible solutions have been linked to SCQM practices that not only create competitive advantage but also improve general performance (Sampaio et al., 2016; Robinson & Malhotra, 2005). However, there is fundamental evidence missing from a body of research reviewed on this particular topic that could otherwise potentially answer the questions of researchers, practitioner groups, administrators, policy-makers and other important stakeholders specifically in the healthcare industry. After critically reviewing the studies, significant gaps were pinpointed. These were captured as knowledge, theoretical, findings, methodological, geographical and contextual gaps.

In terms of knowledge, there is trepidation as to whether successful SCQM practices translate into competitive advantage or multifaceted organizational performance to the satisfaction of all stakeholders in all organizations. Still, the other question raised relates to the extent of contribution of organizational factors in the successful adoption of SCQM practices to adequately explain differences among firms in achieving specific levels of performance or competitive advantage (Farnandes et al., 2017). Also noted are significant differences in conceptualization and operationalization of SCQM practices, organizational factors, competitive advantage

and organizational performance. This evidence shows existence of uncertainty among researchers, policy makers and practitioners. Further, there is clear lack of consensus on what comprises the sub variables and by extension the indicators of SCQM practices, organizational factors, competitive advantage and organizational performance among researchers. Most authors appear to differ in operational definition of the variables.

Evidently, past researchers have focused on profit outcomes, operational performance, quality outcomes, market performance and not all facets of performance which would otherwise give a clearer vision of the nature of the relationship. Specifically, the impact of SCQM practices on the environment, society, growth and development have received inadequate attention in most of the studies. SCQM practices interact with each other to impact variably on the various facets of performance. Also, various organizational factors support implementation of SCQM practices with differing magnitudes. The operationalization of the variables adopted by this study augmented with application of CB-SEM using AMOS graphics gives superior grasp of the link between the variables. Findings reveal presence of interactions between sub variables and their level of contribution can be visualized on a single path diagram better than most data analytical techniques routinely used in other past studies (Hair et al., 2014).

Health sector management practice is based on ethics and knowledge hence findings must be rationally coherent and grounded on ethics (Connelly, 2000). According to Bastas and Liyanage (2018), there is sufficient data linking SCQM practices to improved performance and competitive advantage in the manufacturing sector with limited information on the relationship in the service sector. In the important and critical healthcare systems, there is insignificant data on this crucial issue (Gardner, Linderman & McFadden, 2018).

Absolute evidence from primary studies that link SCQM practices to performance of private hospitals in Kenya is lacking. Given the unique nature of health service operations as well as dimensions of quality, transferring SCQM practices from industrial sector to healthcare is not a well understood phenomenon and that's why it may not work as expected. As such, there is need to minimize generative mechanisms common in other sectors since health sector is characterized by power-knowledge belief which closes door to external criticism or adequate automatic learning by health sector managers. The health sector contributes significantly to GDP, employment, labor productivity and quality of life in Kenya (UNIDO, 2016). The increased demand for perceived reliable, timely and high-quality healthcare offered by private sector which on the contrary is costly is a critical challenge that needs immediate attention.

Private hospitals can shrink the cost of medication and other related undesirable manifestations by adopting SCQM practices. This system wide approach can potentially address the conflicting interests of the hospitals and their essential stakeholders. Additionally, the holistic intervention aids in monitoring quality of products and services along the supply chain. This serves to minimize wastages, reduce patient waiting times, minimize lead times, improve patient treatment outcomes and generate adequate revenues to the organizations to sustain operations (Sharma & Modgil, 2020). From the reviewed literature, there is virtually inadequacy of updated data on the impact of SCQM practices on how Kenyan private hospitals perform. This study sought to add empirical evidence from Kenyan private hospitals context to the previous research on the subject matter.

Findings presented in literature on the topic SCQMPs and performance of organizations are inconsistent and demonstrate contradictions. Therefore, quality, operations, supply chain practitioners and management scientists in general are

increasingly getting interested in authenticating whether SCQM practices lead to improved organization performance as demonstrated by substantial number of studies targeting the subject matter (Samson & Terziovski ,1999; Li et al., 2004; Keynak & Hartley, 2008; Flynn, Huo & Zhao, 2010; Vries & Huijsman, 2011; Vanichchinchai & Igel, 2014; Chagooshi et al., 2015; Nostratpour & Hamid, 2015; Quang, et al., 2016; Okoth and Ochieng 2016; Farnandes et al. 2017; Ombwayo & Atambo, 2017). While some researchers found positive relationship (Li et al., 2004; Keynak & Hartley, 2008; Flynn et al., 2010; Okoth & Ochieng, 2016; Omwayo & Atambo, 2017), other studies reported mixed positive, negative, weak or no correlations between some dimensions of latent variables (Samson & Terziovski, 1999; Nostratpour & Hamid, 2015). Yet, others found SCQM practices to lead to competitive advantage (Chagooshi et al., 2015). Reasons for contradictions range from differences in contextual, methodological and conceptual approaches among the researchers. This study addressed the contradictions by conducting a thorough literature review to identify most critical sub-variables in different contexts for all the four variables of the study for precise conclusion.

The inconsistency in findings in prior work could also be due to possibility of the effect of either mediation or moderation in the linkage. Information mediation or moderation role of competitive advantage and organizational factors respectively is quite scanty. Li et al. (2004) reported mediation of competitive advantage without assessing the quality component along the supply chain. Ibrahim, Marcjanna, and Augustyn (2016) found that quality management generates competitive advantage resulting into better financial performance. Chaghooshi et al. (2015) showed that SCQM practices have a significant relationship with competitive advantage. The findings have visible level of variance which needed harmonization through research.

Organizational factor, top leadership commitment, was found to distinguish firms with better financial performance than competitors in hotel industry (Farnandes et al., 2017). Baird et al. (2011) found out that organizational culture moderates the relationship between TQM and performance of organizations. Sampaio et al. (2016) reported that support given by top leadership, HRM and ICT alter strength and direction of the relationship between SCQM practices and performance of business entities. Effect of culture and trust were also reported in separate studies (Chaghooshi et al., 2015; Farnandes et al., 2017). The studies reviewed present a conundrum since they fail to provide adequate first-level evidence to predict whether or not all the four variables are related. To add more evidence to this debate, this study tested effect of SCQM practices on organizational performance directly. It further assessed the role competitive advantage and organizational factors play in this relationship.

Geographically, there is inadequate local data on the impact of SCQM practices on performance of private hospitals in Africa and by extension, Kenya. A significant proportion of studies focus on Asian, American and European continents which have demographic, economic, technological and political disparities with Africa (Pan & Pokharel, 2007; Vries & Huijsman, 2011; Law, 2016; Sabella et al., 2015). Studies on SCQM practices in healthcare set ups are even more limited despite growing adoption in the manufacturing sector and other service sectors (Mustaffa & Potter, 2009). This study was conducted to narrow this particular gap by providing primary local data.

Complexities in healthcare operations inhibit generalization based on the evidence gathered from manufacturing sector. In Kenya, scanty literature is accessible pertaining to relationship between SCQM practices and organizational performance. The studies reviewed focused on SACCOs in Nakuru and pharmaceutical distributors in Mombasa County respectively (Ombwayo & Atambo, 2017; Okoth & Ochieng,

2016). These studies were also limited to specific counties and not Kenya. Very low study population of less than 20 respondents and restricted to direct relationships between SCQM practices and organizational performance with no attempt to find moderation and mediation effect is also evident. The studies also used regression analysis in spite of the fact that the dependent latent variable was measured on an ordinal scale. The current study employed a more robust SEM for data analysis.

Methodological (method and research design) gap was equally a significant concern to be addressed by conducting the study. A variation in research methods is required to generate new insights or to avoid distorted findings. Many studies conducted on SCQM practices-performance relationship employed different and or multiple data analysis techniques which may be linked to mixed research findings. Soares et al. (2017); Sharma and Modgil (2015) used multivariate regression analysis. Lee et al. (2011) used structural equation modeling. Hair et al. (2014) suggested that CB-SEM is prioritized where nature of complex relationships have to be unveiled. The preference is anchored on the ability of the technique to simultaneously test direct relationships apart from moderation and mediation effects. Additionally, it can explicitly model measurement error variance/covariance structures and ensures reliability based on a factor analytic measurement.

This study adopted CB-SEM technique that is made up of different which can allow the testing of several models. The robust data analytical technique tests multiple hypotheses and hence shed more light than previous studies. Equally important is the ability of the approach to minimize mixed outcomes as a result of using multiple data analytical techniques. The technique is also very well suited for analyzing perceptual data. The knowledge gaps discussed above were significant enough to necessitate a study that would improve understanding by scholars, practitioners and researchers in

this particular field. Specifically, the study sort to answer the question: What is nature of the relationship among SCQM practices, organizational factors, competitive advantage and performance of private hospitals in Kenya?

1.3 Research Objectives

The general objective of the study was to establish how SCQM practices and performance of private hospitals in Kenya are linked. The specific objectives were to:

 i. Establish the connection amid SCQM practices and performance of private hospitals in Kenya.

 ii. Determine influence of organizational factors on the SCQM practices and performance of Kenyan private hospitals linkage.

iii. Examine effect of competitive advantage on the SCQM practices and performance of Kenyan private hospitals nexus.

iv. Determine combined effect of SCQM practices, organizational factors plus competitive advantage on how private hospitals perform in Kenya.

1.4 Value of the Study

The study contributed to theory upon testing if social network theory, stakeholder's theory, relational view and general contingency theory predicted the link among SCQM practices, organizational factors, competitive advantage and organizational performance. The findings expanded knowledge on the influence SCQM practices on hospital performance which was anchored on SNT suggested by Soares et al. (2017); Pagell and Shevchenko (2014) and stakeholder's theory advanced by Freeman (2010). In addition, the study examined the role played by organizational factors and competitive advantage on the relationship between SCQMPs and organizational

performance based on general contingency theory and relational view (Dyer & Singh, 1998; Zang & Huo, 2015).

Elements of SCQM practices and aspects of performance measurements were pinpointed and their interrelationships explored. The study established the nature of the direct, indirect and joint relationships among the study variables. Specifically the study confirmed the positive significant direct link amid SCQM practices and performance of private hospitals. Additionally, it established partial mediation of competitive advantage. Also, the study ascertained greater joint effect of SCQM practices, competitive advantage and organizational factors on performance of private hospitals compared to effect of the individual variables on the dependent variable. However, the moderating effect of organizational factors was not confirmed based on the data that was gathered.

The management practitioners' benefit from enhanced knowledge on how to improve business performance through SCQM practices adoption. The findings of this study will help managers to focus on SCQM practices and organizational factors which were found critical in generating competitive advantage and improving the performance of their institutions. By establishing the differential contribution of certain practices to specific facets of performance, managers are guided to pay more attention to what satisfies a specified cohort of stakeholders. The study also exposed areas for further research for scholars to pursue.

The government through the relevant authorities, agencies and departments can take advantage of the benefits derived from embracing SCQM practices with the aim of improving healthcare service delivery. The persons charged with the responsibility of making policies can use evidence from this study to make informed decisions on

resources allocation, improve policies and laws regarding medical supply chain to realize Vision 2030 prescription. This will boost the government's efforts to avail safe, affordable and reliable medication to her citizens. By establishing the differential contribution of certain practices to specific facets of performance, government officials are guided to pay more attention to the practices that support their efforts to reduce cost of healthcare which skyrockets with every passing day.

The study provides evidence that SCQM could address the performance issues in healthcare systems and should be adopted much more widely in healthcare industry. The resultant framework can be used as a reference to formulate legislation that can improve the management of supply chain networks to prop the Kenyan dream of providing universal healthcare. The results show that SCQM practices is not a quick-fix solution to problems in the health care industry but rather long-term sustainable remedy as implied by their impacts on both lagging and leading performance indicators. The outcomes could provide a valuable guide in the crafting government policies that may reduce the burden of providing healthcare on the economy.

1.5 Summary

The chapter presented the variables and context of the study. It started by giving concise debates of the concepts, theoretical foundation and context of the study. It then proceeded to provide definitions of all the concepts of the study and highlighted the relationships among the variables. Detailed discussion of the context was followed thereafter. After which the research problem was stated and then objectives listed. The chapter concluded by discussing value of the study in terms of contribution to policy, theory and practice.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examines theories and empirical evidence on the relationships between SCQM practices, organizational factors, competitive advantage and organizational performance. A summary of past studies, knowledge gaps, how this study addresses them, conceptual framework and hypotheses are also contained in the chapter.

2.2 Theoretical Foundation of the Study

Theory refers to a group of logically organized laws or relationships that constitutes explanation in a discipline (Wilson & Campbell 2020). The study was grounded on five major theories. They are social networks theory, stakeholder theory, network theory, theory dynamic capability and general contingency theory. Their main objective is to aid in comprehending the possible relationship between SCQM practices, competitive advantage, organizational factors and organizational performance of an organization.

2.2.1 Social Networks Theory

Social network is a predetermined collection or collections of participants specifically individuals, firms, organizations and the connection or connections prescribed on or by them (Cheng, 2017). Social network theory (SNT) explains two consequences of forming networks namely; contagion (homogeneity creation or spread) and evaluative (performance output) for network members (Yamin & Kurt, 2018). The theory contends that since organizations are influenced by their networks, their performance measurement should follow a similar pattern (Soares et al., 2017). SNT elucidates that networking with stakeholders leads to extra multifaceted performance benefits. The

strength of network theory is embedded in social capital with a view that better performing organizations also have better networks or connections. From social network viewpoint, formal and informal interactions through supply chain quality management practices mechanisms among individuals and firms in networks play critical role in ensuring quality along supply chains.

Proactive informal networking is intended for learning whereas relational inter-firm collaboration is purposed to achieve connections with suppliers and customers in the supply chain (Schoenherr, Narasimhan, & Bandyopadhyay, 2015). In this study, it is posited that these networks and relationships formed when implementing SCQM practices impact positively on performance outcomes of organizations in the networks. Firms in networks also strive to leverage on information and knowledge advantages created by better firms in the networks to generate competitive advantage. Both improved performance and competitive advantage enable the firms to address a bigger proportion of stakeholders than just making profits for investors and neglecting other stakeholders in their businesses (Freeman, 2010).

At the same time, it is argued that intra and inter-organizational connectivity that enable firms to sustain competitive advantage are based on certain firm level behavioral and infrastructural resources (Che, Li, Fam & Bai, 2018). The organizational internal factors cited include organizational culture, attitudes and behaviors of human resource, senior leadership commitment, trust level and information and communication technology which influence magnitude of connectedness among the actors in the networks or strength of ties. As such, firms tend to form networks to address interests of their key stakeholders such as customers, suppliers, employees, society and environment. Pagell and Shevchenko (2014) argued that interrelationships and interdependence of system characterizing SCQM practices

can lead to improved profits, customer satisfaction, growth and increased market share. Sharma and Modgil (2015) stated that the reconfigured interactions between organizations and key stakeholders also shape firm's competitive advantage and organizational performance.

Soares et al. (2017) applied SNT in a study and demonstrated that there is improved quality performance upon successful implementation SCQM practices. The author posited that even though organizational research has used SNT since the 1930s, it is still relevant especially in operations and SCM context to explain how networks and structure of the interactions between firms affect performance outcomes. Previous researchers have argued and presented evidence that the postulations behind SNT can provide generic explanation on impact of SCQM practices (network variables) on performance metrics of interest (Kuei & Madu, 2001; Kaynak & Hartley, 2008; Zhong et al., 2016; Sampaio et al., 2016). The network variables include; supplier management, sharing information, postponement, coordination of supply chain activities and focusing on customers to develop and deliver prime-quality products in the market place (Truong et al., 2014; Sharma & Modgil, 2015; Sampaio et al., 2016).

Even though SNT explains how networks propagated by SCQM practices improve performance, it fails to justify the erratic nature of some networks and the technical mechanisms of supply chains. Anchoring studies on social network theory per se has led to disparate research findings attributed to differences in definition of networks, adoption of different levels of analysis, use of diverse research methods and ignoring indirect connections. As Halldórsson, Hsuan, and Kotzab (2015) observed, SCM and quality management are integrative, multi-layered and suffers from conceptual slack and therefore cannot be adequately explained by a single theory but need complementary theories for ease of communication to be understood by

heterogeneous decision-makers. This study adopted social network theory as the key anchoring theory

SNT highlights exchange of resources through SCQM practices as an important explaining factor for inter-organizational relationships. This enables interconnected firms to adjust and interweave transaction chains, accommodate routines that were strange before, transfer activities to other actors and build up common recipes, standards and cognitive maps. In the course of this process, the network becomes either sustainable, enables growth or learning, or it stagnates performance, or even collapses businesses. The cogenerated social capital of an organization makes it feasible to get easier access to information, technical know-how and financial boost. However, on the contrary, the relationships may trigger social liability by reducing the possibilities to relate to companies outside the network, risking spillover and high co-ordination costs of the network-relations. Social network theory therefore preempts ability of SCQM practices generate competitive advantage explain the improved firm performance.

2.2.2 Stakeholders Theory

Stakeholders' theory posits that management activities must target expectations of both internal and external stakeholders (Freeman, 2010). According to Miles (2017), stakeholders are defined in three perspectives. First, as a group that can be markets, environment, networks or society. Second, the group can as well be comprised of individuals such as actors, agents, constituents, participants or partners. Finally, as entities like institutions or organizations that may be human or non-human including the environment or even the natural entity. The general view in management literature is that firms that embrace stakeholder management as a

philosophy are able to achieve and sustain better performance than their counterparts that myopically pursue interests of the shareholders. This rests on the normative argument that stakeholders have intrinsic moral values and rights that have to be recognized and addressed by the organizations (Miles, 2017).

As stated by Freeman (2017), businesses thrive on creating valuable activities and relationships among interconnected stakeholders specifically customers, suppliers, employees, investors, communities, environment and managers. This implies that firms' strategic decisions are shaped by pressure from stakeholders or simply managing for stakeholders. The stakeholder theory explains the view that interconnectedness and interactions of the stakeholders through implementation of SCQM practices brings about competitive advantage and improves organizational performance as organizational factors provide a conducive internal environment for implementation (Lahouel, Peretti, & Autissier, 2014).

From stakeholder theoretical framework viewpoint, committed and skilled leadership manage relationships with different stakeholders in such a manner that yields organizational success. On the other hand, determined and interested cohort of stakeholders positively drives strategic performance agenda of an organization. Fundamentally, a firm's clear knowledge interests, preferences, positions, contributions, relative value of key stakeholders vis-à-vis their objectives provide an avenue for reliably measuring the level of their satisfaction. Stakeholders' theory proposes that SCQM practices harmonize competitive and cooperative interests for synergy and value addition that enable firms to achieve financial, social and environmental performance targets (Laplum, Sonopar, & Litz, 2008). The theory therefore provides a framework for probing management activities and the consequential firm performance objectives. Stakeholders' theory blends well with the

suggested IPMF to measure and predict performance upon successful SCQM practices implementation.

Despite the favorable debate around the stakeholders' theory, there are significant critiques. First, stakeholders' theory suffers from central construct ambiguity. Two, recognition of a stakeholder has widely been contested and has been subjected to multiple interpretations. In fact, the bare minimum conditions set for such are recognition, level of significance, identifiability, distinguishability or visibility, which are essentially devoid of universal interpretability.

Third, the heterogeneity of roles (claimant, influencer, recipient or collaborator) and power in the relationships may fuel conflict of interest while the theory posits symbiotic relationships. Fourth, the survival of the theory as a business concept is threatened by misappropriation. Finally, stakeholders burden firms and reduce investors' profitability (Freeman, 2010). It is therefore necessary to systematize the knowledge produced to accommodate multiple objectives of the key stakeholders. The expected benefits to the stakeholders should be formalized and clearly stated by firms at conception. Despite the setbacks the theory serves to explain the business relationships and their roles in organizations as long as the conditions are clearly stated.

2.2.3 Relational View

Relational view argues that networks formed through inter-organizational linkages are sources of relational rents and competitive advantage (Eloranta &Turunen, 2015). The networked business environment propagates development of social capital (Lavie, 2006). The networks can deliberately be conceived and advanced by partnering organizations (Kang, Asare, Brashear-Alejandro, EGranot, & Li, 2018). This shifts

unit of analysis for sources of competitive advantage from firms to networks as opposed to firm-level nature of strategic resources postulated by resource-based theorist. The idiosyncratic, inter-firm linkages also propel customer satisfaction, superior performance and are critical to a firm's overall multidimensional success (Kang et al., 2018).

The inter-firm resources and procedures are catalysts of network generated competitive advantage through assets unique to the relations, their effective management, knowledge sharing and complementary capabilities (Dyer & Singh, 1998). SCQM practices craft co-generated relational rents via integration of firms, customers, suppliers and other stakeholders (Kaynak & Hartley, 2008). The integrated networks synergistically marshal joint competitive advantage among firms when market opportunities are fully utilized and competitor threats thwarted (Sagalas, 2015). The relational view elucidates competitive advantage in the lens of networks of businesses and interdependence of stakeholders. Crick (2019) used relational view to explain the moderation effect of organizational factors on the correlation between managing inter organizational relationships and the performance.

Key drawback of the theory is that business relations may restrict firms to formal partners only. Since firms are heterogeneous in nature in terms of resources, some firms in the relationships may burden others with capacities and advanced traits (He, Sun, Ni, & Ng, 2017). Additionally, relationships are characterized by uncertainties which may be counterproductive due to misalignment, variance and lack of trust. Even though the value of business relationships in improving performance is real, their permanence, relevance and stability need to be continually reevaluated to be aligned to the environmental changes.

2.2.4 Theory of Dynamic Capabilities

Theory of dynamic capabilities states that firms that are able to adapt, integrate, develop, and reconfigure operational competencies and assets to be aligned to dynamic environments do gain competitive advantage that is superior to counterparts without such capacity (Teece, Pisano, & Shuen, 1997). These capabilities range from behavioral, infrastructural, and managerial to firm-specific processes that are reconfigurable (Eloranta & Turunen, 2015). This implies that static resources unique to firms must therefore be frequently adjusted to cope with agility, volatility and dynamism prevailing in today's business environment for them to be valuable in generating competitive advantage.

Organizations continuously learn, customer preference and technology keep on changing as business alliances keep drifting. At the same time, stakeholders' power continues to gain more strength. The scenarios call for a system's approach to operations that integrates all stakeholders specifically customers, suppliers, and complementary network firms. Organizational factors thus add value by securing a match between intra firm process and the external stakeholders through commercial alliances. SCQM practices execution has been demonstrated to be facilitated by these internal firm assets which fit them in the network (Zang & Huo, 2015). Trust, information technology, commitment of leadership, organizational culture and human resource mount influence level of SCQM practices adoption among networked firms and the stakeholders (Crick, 2019; Chenget al., 2014). Organizational factors support supplier management, information sharing, coordination, postponement, customer focus and process management (Scott & Davis, 2007). This harmonization and adaptation serve as undisputable source of competitive advantage and improved organizational performance (Wales et al., 2013). Networked units need to harmonize

their internal structures so as to pursue external supply chain objectives jointly and curtail possible conflicts. The theory is only applicable in situations where organizations are homogeneously constituted. In real life situations, this is hardly achievable since organizations have cultural variations, different human resource compositions, varied resources and diverse leadership styles.

2.2.5 General Contingency Theory

The fundamental premise of contingency theory is the fit concept. Fit concept proposes positive organizational performance outcomes from aligned internal and external organizational conditions (Tuai, 2015). This implies that it is not the universality of appropriate internal conditions across organizations which guarantee firms success. Rather, the specific organizational attributes or contextual factors determine firms' effectiveness in implementing and sustaining SCQM practices so as to achieve competitive advantage that leads to enhanced organizational performance (Wadongo & Abdel-Kader, 2014). Such internal organizational factors are behavioral and structural. They include leadership commitment, trust, information and communication technology, organizational culture or human resource.

General contingency theory explains the importance of contingency variables in examining congruence or interaction fits between variables, adopting systems or structural modelling lenses (Tuai, 2015). This theory is constrained by the fact that it ignores unbalanced power that may accrue among partners due to differential resource ownership (He et al., 2017). The authors further contend that firms tend to have heterogeneous strategies, visions and missions which inform their internal design. As a remedy, firms in the partnerships can opt to make joint decisions regarding resources, merge complementary competencies and commit to the formal arrangement

(Dyer & Singh, 1998). Contingency theory provides basis for linking operational strategy to internal organizational configuration. Individual organizations are configured by their physical resources, human resources, technology and leadership styles. These can be aligned to support network formation. The value of such networks is the cogenerated competitive advantage and improved performance by networked firms.

The theory explains interdependence category of contingency that defines the linkage among partners in supply chain and quality related activities among networked groups and the relationship with competitive advantage as a mediating variable in SCQM practices organizational performance relationship (Wadongo & Abdel-Kader, 2014). This study was anchored on Social Network Theory, Stakeholder Theory, relational view dynamic capabilities theory and general contingency theory since they can predict organizational performance outcome as a result SCQM practices. Similarly, the five theories were used as the basis for testing for moderating effect of organizational factors and the mediation outcome of competitive advantage. These theories additionally formed basis for constructing conceptual framework.

2.3. Supply Chain Quality Management Practices and Organizational Performance

A large number of researchers have studied effect of SCM practices on organizational output (Flynn, Huo & Zhao 2010; Azar, Kahnali, & Taghavi, 2010) or quality management and organizational performance (Kuei & Madu, 2001; Li et al., 2004; Turkyilmaz et al., 2015). Sharma and Modgil (2015) associated quality management impact with employee involvement and SCM to cost reduction. Upon reviewing literature, it is revealed that pursuing both SCM and quality management

simultaneously brings about synergy that improves organizational performance and creates competitive advantage (Flynn & Flynn, 2005; Kashwaha & Barman 2010).

Few studies that have been conducted aimed at directly linking SCQM practices to organizational performance have posted positive results (Lin et al, 2013; Han, Omta & Trienekens, 2007; Okoth & Ochieng, 2016; Ombwayo & Atambo, 2017; Nguyen, 2019). There are a number of theoretical explanations behind the findings. SCQM practices lamps up product quality and value together at every node of supply chain to improve performance of every firm in the network. The implementation of SCQM practices is also perceived to minimize operational cost and improve the image of the organization known to place the firm in more competitive status in the market (Farnandes et al., 2014; Quang et al., 2016; Vanichchinchaia & Igel, 2011; Zhong et al., 2016).

This relationship is further supported by SNT theory, stakeholders' theory, relational view, dynamic capabilities theory and contingency theory. For example, Soares et al. (2017) based his study on social network theory (SNT) to positively link SCQM practices to quality performance. Lahouel et al. (2014) SCQM used stakeholder theory to get similar results. Eloranta and Turunen (2015) posited that based on relational view, firms benefit from relational rents and competitive advantage created by SCQM practices to improve performance.

However, studies reviewed presented serious variations in conceptualization, nomenclature and operationalization of both dependent and independent variables that is potential for impeding clear comprehension of the relationship, execution of practices and further research. Foster, Wallin, and Ogden (2011) conceptualized SCQM practices as training, data analysis, SCM, customer relationship management

and project management. Kuei et al. (2011) studied the SCQM practices sub variables under the headings; plan for six sigma, international standards, global leadership and HRM. In service industry, the SCQM practices were identified as customer relationship, information sharing, trust and inter-organizational integration (Sarico & Rosa, 2016). The trend indicates that almost each researcher differs with the other on this subject matter. Even from literature review conducted to build consensus on what constitutes SCQM practices failed to achieve the objective (Sampaio et al., 2016; Farnandes et al., 2017).

Apart from mixed results and difficulty in interpretation of the findings, these differences have also yielded contradicting or inconsistent research reports at the sub construct level. Li et al. (2004) found that supplier partnership impacts positively on organizational performance. Nostratpour and Hamid (2015) reported a non-relationship between the same variables. Additionally, Keynak and Hartley (2008) indicated that internal process management positively influences organizational performance. Flynn et al. (2010) found a negative relationship as Samson and Terziovski (1999) found no relationship between similar variables.

The dependent variable, performance, has also been measured differently by many authors. SCQM practices have been found to lead to; supply chain performance, quality performance, competitive advantage, operational performance or organizational performance and competitive advantage (Li et al., 2004; Lee et al., 2011; Abeysekara., 2019; Kemble et al., 2020).Whereas some studies established SCQM practices affects competitive advantage others found that SCQM practices lead to improved organizational performance (Vanichchinchai & igel 2011; Chagooshi et al., 2015; Zhong et al., 2016; Ibrahim et al., 2016; Abeysekara et al., 2019).

Apart from adopting different performance metrics, some studies have been restricted to measuring financial performance or market performance in addition to adopting different levels of analysis. Organizational performance should be a measure of total performance to fairly address interests of the stakeholders (Rouse & Putterill, 2003; Freeman, 2010; Chagooshi et al., 2015; Miles, 2017). Literature therefore presents conceptual and theoretical gap on SCQM practices-organizational performance bond. As much as there are disparate findings, SCQM practices appear to have either direct or indirect relationship with organizational performance. The study therefore proposed to determine the direct linkage between SCQM practices and organizational performance from a multidimensional perspective.

2.4 Supply Chain Quality Management Practices, Organizational Factors and Organizational Performance

Realigning internal human behavior and infrastructure within individual organizations to support SCQM practices implementation may enhance ability of organizations to improve their performance. The same may also reduce mixed and inconsistent reports on the relationship between SCQM practices which could be linked to variance in intra organizational factors among firms. To adequately improve organizational performance; leadership commitment, corporate culture, trust, human resource and ICT must be aligned to ensure conducive environment for SCQM practices adoption (Vanichchinchai & Igel, 2009; Talib et al., 2011).

Lin et al. (2013) reiterated that the success or failure of SCQM practices to yield improved performance leans on intra organizational factors that determine the level of implementation and sustainability. Zhang and Huo (2013) associate top management support to motivation for and allocation of adequate resources for effective

implementation of customer focus, quality supplier management, process management and information sharing which may render the relationship stronger, weaker, positive or negative.

Sampaio et al. (2016) explain that ICT integrate firms to their customers and suppliers and enable information sharing through quality data generation and exchange which aids decision making and timely problem solving. SCQM practices link key stakeholders with divergent interest exposing them to possible conflicts and uncertainties that can be minimized if trust is incorporated in the daily undertakings (Truong et al., 2014; Fanandes et al., 2016). Maiga (2015) relates effective SCQM practices implementation to motivation, knowledge and attitude of firm employees which leads to improved performance. The study confirmed that proper management of human resources significantly and positively contributes to improved organizational performance as a result of successful implementation of SCQM practices.

The role of organizational factors among the variables (SCQM practices and organizational performance) is further explained using dynamic capabilities and contingency theories (Tuai, 2015; Wadongo & Abdel-Kader, 2014; Eloranta & Turunen, 2015). The above discussion suggests that the firms with certain internal configuration of HRM, leadership support, trust, ICT and organizational culture better SCQM practices implementation that impact positively on their performance. The role of these factors has been identified in the previous studies especially in literature review (Kuei et al., 2002; Truong et al., 2014).

Empirical studies that looked at the consolidated and isolated effect of the factors on the relationship between SCQM practices and organizational factors remain scanty.

Each factor has either been considered in isolation or a few of the factors combined in a single study. Evidently there is interaction between the factors themselves or with sub-variables of both independent and dependent variables. The available studies that confirm this role in the relationship are scanty and have used incomplete set of the factors (Mello & Stank, 2005; Meirovic, 2010; Zhang & Huo, 2013; Otieno & Macharia, 2014). The role played by organizational factors is scattered in literature hence needed to be consolidated in a study to test the impact interaction of these factors. There is also scarcity of empirical studies with theoretical basis. This proposal is explained by dynamic capabilities theory and general contingency theory as has been previously presented in the document.

2.5 Supply Chain Quality Management Practices, Competitive Advantage and Organizational Performance

This section discusses literature relating to three items. First, information on relationship between SCQM practices and competitive advantage is analyzed and presented. Then, discussion focuses on the link between competitive advantage and organizational performance. Finally, information on competitive advantage as a mediating variable is debated.

2.5.1 Supply Chain Quality Management and Competitive Advantage

There are empirical data and theoretical explanation that support positive and significant relationship between SCQM practices and competitive advantage (Chagooshi et al., 2015; Dyer & Singh, 1998). Globally, it is a common knowledge among practitioners, researchers and management that competition in a market is now among the supply chains and not individual organizations (Fawcett et al., 2006). In that regard, there is significant correlation between a group of firms that commit to

strategic quality, integrate their supply chains and share information and competitiveness of the firms. The competitiveness of an organization is used to measure the organization's competitive advantage (Sigalas & Pekka-Economou, 2013). Firms which adhere to high quality practices have the potential to acquire competitive edge. Success in the implementation of SCQM practices abates negative repercussions of lack of common-sense quality practices among all the participants in the supply chain devoid of restrictions by the organizational boundaries. Pursuing quality along the supply chain potentially creates unique competitive status among the networked firms (Hoskisson & Lee, 2015; Chagooshi et al., 2015).

Social network theory and relational view underscore the vision that networking and collaborations with customers, suppliers and other prime stakeholders to through SCQM practices craft competitive advantage which explains the variances in performance among organizations (Kaynak & Hartley, 2008; Cheng, 2017). As pointed out by Ritala and Ellonen (2010), other theories like resource-based view and industrial organization economics strongly support the view that individual organizations gain competitive advantage by utilizing interfirm cooperation. Sagalas (2015) explain that the networks formed by partner firms excel in the neutralization of competitor activities and exploitation of unique market opportunities to define competitive advantage.

Organizations which focus on their customers, manage supplier relationships, share information with stakeholders, manage their internal processes well, adopt postponement strategy and efficiently coordinate supply chain tend to constrain competitor activities and improve access to niche markets. Chagooshi et al. (2015) conducted a study which found a significant positive relationship between SCQM and competitive advantage. The researcher operationalized competitive advantage as

differentiation, flexibility, delivery dependability, minimizing cost, time to market and innovation. They employed canonical correlation for data analysis. Elshaer and Augustyn (2016) conducted a study which ascertained that maintaining good quality standards in daily operations is an undisputed source of competitive advantage.

2.5.2 Competitive Advantage and Organizational Performance

Explaining reasons for variance in performance among firms is a pointer to the possibility of such organizations occupying a superior position or competitive advantage among others (Porter, 1991). Organizations that are able to neutralize competitor activities and exploit niche markets realize increased market share (Newbert, 2008). The increased market share and customer satisfaction enable these firms to generate sufficient revenue to address environmental and societal needs that are performance lead indicators (Kaplan & Norton, 1992). When firms generate competitive advantage from adopting quality along the supply chains, they are able to reduce costs, improve on delivery time targets and efficiency that ultimately ensure improved operational performance. The reduced cost of production lowers organizational expenses and improves revenue. These firms ultimately improve the financial aspect of performance. Sound financial position allows these firms to meet their statutory as well as corporate social responsibility obligations. At the same time, sound financial health grants the organizations inherent capability to grow and develop in various aspects.

The link between competitive advantage and performance is underpinned by stakeholders' theory. The theory supports the view point that addressing the needs of customers, suppliers, employees, investors, communities, environment and managers gives the firms competitive advantage that results to long term better performance.

This is because networking with stakeholders propels the firms to pursue a common goal of ever improving performance (Freeman, Dmytriyev, & Strand, 2017). As much as SCQM practices enable organizations to be competitive and gain competitive advantage, the ultimate objective of a firm is to reap higher performance benefits to all key stakeholders (Rouse & Putterill, 2003; Chagooshi et al., 2015). Any management practice like SCQM practices should target all firm stakeholder based on stakeholder theory (Freeman, 2010). Long term survival and profitability of organizations depend on the involvement of the society which provides labor, infrastructure, security and customers to an organization making the society inevitable and important stakeholder (Davis et al., 2018; Di Maddaloni & Davis 2018).

A study by Srivastava, Franklin, and Martinette (2013) established that senior leadership commitment and supplier engagement contribute to competitive advantage which is instrumental in stabilizing continuous high performance. From the same study, doubts on customers focus and managing employees would cause competitive advantage was apparent. It was also recorded that managing internal processes and information sharing fail to yield any competitive advantage. The same study only tested the quality management internal to organizations with no regard to the supply chain alongside addressing just the financial dimension of performance. Evidently, this report capture attention due to the mixed results that needed to be addressed through research.

2.5.3 Mediating Role of Competitive Advantage on the Relationship Between SCQM Practices and Organizational Performance

Mediation is an account of the mechanism through which a predictor variable affects the outcome variable. A significant number of previous studies have directly or

indirectly hinted that competitive advantage is a possible mechanism through which SCQM practices would improve organizational performance (Dyer & Singh, 1998; Li et al., 2004; Chaghooshi, et al., 2015; Ibrahim, Elshaer, & Augustyn, 2016). Competitive advantage arises from network tangible and intangible resources that operate in synergy and complement each other. Business premises embrace SCQM practices to augment their network competitive advantage by efficiently integrating their internal and external operations which hypothetically contribute to costs reduction, swifter operations, high quality, flexibility and agility advantages. The competences generated in context of networks breed shared values that guarantee multifaceted sustainable organizational performance. To sustain organizational performance, a firm must uphold competitive advantage by relentlessly exploiting niche market opportunities and neutralizing competitor threats (Sigalas, Pekka-econmou & Georgopoulos, 2013)

Li et al. (2004) conducted a study to establish how SCM, competitive advantage plus performance (market and finance) are interlinked. They operationalized as supply chain as partnership with suppliers, sharing information, relating with customers, postponement. 196 firms were surveyed to obtain data which was analyzed using SEM. The researchers established that SCM, competitive advantage and organizational performance are linked in the manufacturing industry. The research findings suggested mediation role of competitive advantage on the two variables. The study made significant contributions to the debate on the role of competitive advantage on SCM firm-performance relationship. However, it is worthwhile to note that, the quality aspect in the supply chain was not addressed.

Quality management is a valuable internal attribute of organizational processes whereas SCM addresses the exterior portion of firm's processes. When the

management of the two are pursued in tandem studies show that the organizational performance is amplified (Zhong et al., 2016). Also, the study findings hold for the manufacturing sector in USA which is a developed economy and may not be applicable to service sector like in hospitals which is uniquely constituted especially in developing part of the world.

Cadden, Humfreys and McHugh (2013) used series of ANOVA's to analyse data from first moving consumer goods (FMCG) supply chains. They found out that competitive advantage is a mediating variable between SCM and firm performance. Firm characteristics moderate, while competitive advantage intervenes in the relationship between SCM and performance of organizations. Chaghooshi et al. (2015) used canonical correlation to analyze data so as to assess the relationship between SCQM practices and competitive advantage. They found out that SCQM practices positively impact competitive advantage. From the evidence gathered, competitive advantage plays some role in the SCQM practices-organizational performance link. The role appears certainly unclear especially in the context of private hospitals in Kenya.

A study that looks at the link between SCQM practices, competitive advantage and organizational performance among private hospitals in a developing nation was necessary in order to clarify this relationship. Specifically, the study was meant to test mediating effect of competitive advantage. A mediating variable explains the mechanism through which the independent variable, SCQM practices, affects the dependent variable organizational performance (Byrne, 2010). This study hypothesized that competitive advantage explains the mechanism through which SCQM practices influence organizational performance hence plays a mediating role.

2.6 Supply Chain Quality Management Practices, Organizational Factors, Competitive Advantage and Organizational Performance

Smooth adoption of SCQM practices dictates that firms align and embrace significant changes in a number of organizational variables to be differentiated in terms of competitiveness and high performance. Organizational factors such as committed leadership, advanced ICT, knowledgeable and motivated human resource, trust and right corporate culture enable firms to effectively adopt SCQM practices to gain competitive advantage that permits them to perform better than the other firms with contrary firm traits (Sampaio et al., 2016; Zhong et al., 2016). The proposition is supported by SNT, stakeholders' theory, relational view and general contingency theory.

Based on social network theory, organized and systemic interactions among firms through SCQM practices supported by conducive environment availed by organizational factors leads to competitive advantage that result to satisfaction for all stakeholders (Cheng, 2017). Organizations that have holistic view of the four variables and pursue them in tandem benefit from synergy with better results than when variables are pursued in isolation (Kuei & Madu, 2001). As earlier explained by Miles (2017), a wider view of stakeholders includes networks, actors, human or non-human like the environment among others. This implies that all factors within and outside organizations contribute significantly to performance improvement and therefore should entirely be included during research to avoid inconsistent and mixed findings.

System-based approach is necessary for practice (Forster, 2008). According to Lin et al. (2013), SCQM practices create competitive advantage that sustainably improves

performance. Isolated studies have documented the role of trust, employees, organizational culture, top leadership commitment and ICT on implementation of the SCQM practices to generate competitive advantage and improve multiple dimensions of performance (Baird et al., 2011; Vanichchinchai & Igel, 2011; Lin et al., 2013; Sampaio et al., 2016; Farnandes et al., 2016 Abdallah et al., 2017).

Sampaio et al. (2016) conducted a study to develop a comprehensive conceptual framework intended to illustrate how SCQM practices is connected with various aspects of performance. Indirect relationship mainly focused on the role of support practices or organizational factors in the relationship. The study only focused on operations, profits and customer satisfaction dimensions of performance. Notably, this study omitted effects of SCQM practices on society, environment and market share, growth and development dimensions of organizations as proposed in majority of the studies (Kaplan & Norton, 1992; Putterril, 2003; Freeman, 2010; Chagooshi et al., 2015). Such omission equally ignores the interest of strategic stakeholders who sustain improved organizational performance. Better still, findings from holistic approach alters managers' mindset from the conventional firm-centric and outcome-based to modern an inter-business networking approach.

Lee et al. (2011) research focused on how innovation in supply chains influences performance in the healthcare sector in South Korea with positive outcomes. A study by Karim and Rafiee (2013) revealed that better economic, operational, environmental and customer performance is achieved through competitive advantage upon successful supply chain management practices adoption. Sarrico and Rosa (2016) state that service industry like education face unique challenges when adopting SCQM practices. These challenges relate to information sharing, trust, integration and leadership. The study confirmed the ability of SEM to establish such relationships.

This study proposed that organizational factors moderate relationship between SCQM practices and organizational performance while competitive advantage mediates the same relationship.

2.7 Summary of Knowledge Gaps

Table 2.1 highlights studies conducted on SCQM practices, competitive advantage, organizational factors and organizational performance in terms of study focus, methodology, findings and knowledge gaps and how this study sought to address the gaps.

Table 2.1   Summary of Knowledge Gaps

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Kumar, Singh & Modgil (2020)	Data-driven supply chain quality management practices (DDSCQMP), performance, retailing firms in India	PLS- SEM	Relationship between DDSCQMP and performance is positive and significant	Low effective response rate of 44%; Findings limited to data driven employee relationship, training, customer focus; Overall competitive position, Productivity, Service quality and India	Review the literature to exhaust all possible sub-variables of SCQM practices, Organizational performance; Test for moderation and mediation, Use CB- SEM and AMOS to allow testing for more relationships, Improve response rate
Peng, Prybutok & Xie (2020)	SCM, QM and Organizational framewok	Cross sectional survey and PLS -SEM	SCM mediate between leadership, measurement, analysis and knowledge management that affect organizational results	Confined to Baldrige framework for measuring performance and SCM, Partial consideration of variables.	comprehensive treatment of observed and measured variables; Consider roles played by Competitive advantage and organizational factors

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Wilson & Campbell (2020)	ISO 9001:2015, QM, Knowledge management, competitive advantage	Literature Review, Content analysis.	Quality Management and Knowledge Management are complimentary to each other in crafting competitive advantage and improving performance among organizations	Empirical evidence is lacking, SCM not included in the analysis	Collect and analyze primary data, include SCM
Yanya & Mahamat (2020)	SCM, QM and Competitive Advantage; pharmaceutical industry of Thailand	Survey, SEM (PLS)	Relationship between TQM, logistics integration and competitive advantage significant; no moderation effect between organizational	Organizational performance, SCM, organizational factors not considered	Use more comprehensive conceptual framework that includes the omitted variable, Use CB- SEM with AMOS which is a more robust

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
			learning and competitive advantage		confirmatory test.
Singh, Sandhu, Metri & Kaur (2018)	Food supply chain, SCM practices, ICT, Organizational performance	Case study of food distribution agency, PLS–SEM	Significant link between ICT and SCM practices; Relationship between SCM practices and performance positive and significant	Moderation and mediation not examined, Data not from healthcare industry in Kenya	Conduct survey to enhance external validity; Test for moderation, mediation and join effect in addition to direct relationships to give a more compressive view of the links
Abdallah et al. (2017)	Trust, supplier integration and performance	Survey of private hospitals in Jordan, SEM	Trust has positive impact on supplier integration and performance	Findings based on single observable indicators of organizational factors and SCQM	Establish the joint effect of SCQM, organizational factors and competitive advantage on performance of hospitals in Kenya.
Okoth and	SCQM, (postponement,	Census	Positive and negative	Four SCQM practices,	Six dimensions of both SCQM

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Ochien'g (2016)	customer relationship, information sharing, supplier relationship), performance (market and finance)	survey of 20 pharmaceutical distributers and wholesalers in Mombasa, regression analysis	relationship between SCQM and performance variables	Market and finance performance metrics. Limited to pharmaceutical wholesalers and distributors in Mombasa not hospitals in Kenya which was a low sample size. No mediating or moderating variables	and performance. Cross sectional survey of hospitals in Kenya. Include moderating and mediating variables
Ramish and Aslam (2016)	SCM implementation, firm (culture, trust and knowledge characteristics, competitive advantage	Literature review	There is a connection between SCM implementation, firm (culture, trust and knowledge characteristics,	SCM not SCQM investigated, Relationship not empirically tested, role of top leadership not investigated	Consider SCQM practices as predictor variable and organizational performance as dependent variable, collect data on emerging economy Kenya,

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
	and firm performance		competitive advantage and firm performance.		investigate the role of firm characteristic top leadership
Quang et al. (2016)	Firm characteristic, SCQM and performance	Literature review	Organizational factors moderate SCQM and performance relationship.	Study findings lack empirical evidence. Limited to moderation effect.	Test the model based on empirical evidence. Test the role competitive advantage play in the relationship
Zhong et al. (2016)	SCQ, synergistic of effect QM and SCM on performance	Survey of hospitality industry in China, SEM	Quality management and supply chain practices significantly correlate, SCQ mediate the SCM/CM practices and hotel performance relationship, new Chinese state of the economy moderate	Moderation, mediation, and joint effects of variables of Organizational factor, SCQM practices, and competitive advantage not examined, Findings related to hospitality	Clear arrangement of SCQM, organizational factors, CA and OP in the study. SCQM as the independent variable Hospitals in Kenya.

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
			QM/SCM practices and SCQ relationship.	industry in China	
Chaghooshi et al. (2015)	Assess the relationship between SCQM and competitive advantage	Used conical correlation to analyze data	SCQM practices positively impact on competitive advantage. .	The study was limited to SCQM and competitive advantage. The study did not test the moderation	Test roles played organizational factors. Use multidimensional performance indicators to ensure organizational performance as latent dependent variable
Nosratpour and Hamid (2015)	SCQM practices and performance	Cross sectional survey Structural equation modeling	SCQM practices positively impacts on organizational performance.	Findings relate to automobile/manufacturing industry. Study relates to financial and operational dimensions of	Collect data from service industry. Investigate other five dimensions of organizational performance. Study the complete supply chain.

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
			organizational performance.		
Lin et al. (2013)	Content, structure and institution's enablers of SCQM, performance	Abductive reasoning, content analysis and formal concept analysis (FCA),	training, ISO certification, and supplier quality assessment programs and motivation constitute SCQM implementation moderated by the supplier relationship, ICT, top leadership support, HRM, managing quality, strategic planning,	Literature review, SCQM and performance not investigated, role of competitive advantage not identified.	Conduct empirical research, establish relationships between variables SCQM, firm characteristics, competitive advantage and performance using SEM

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Cadden et al. (2013)	Organizational culture, competitive advantage supply chains and performance.	Series of ANOVA's to analyse and triangulation of qualitative data FMCG supply chains	Firm characteristics moderate, while competitive advantage intervene in the relationship between SCM and performance	SCM not SCQM investigated. FMCG and not hospitals considered	Experiential investigation of relationship between SCQM and organizational performance in Kenyan hospitals. SEM
Mehra, Joyal, and Rhee (2011)	Role of Quality business operations (training, financial incentives to employees, team work and role expansion) in performance(financial)	Survey of USA Banking retail managers	Positive relationship exhibited between variables.	Inform on role of service quality in operation demonstrated	Service industry where there is rear movement of material except money with simply supply network. Indirect performance measurement.

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Vanichichinc hai, and Igel (2010)	Assessed relationship btw TQM, SCM and supply performance.	Case study of two Thailand automobile firms. Used SEM and Path analysis.	SCM mediates positive relationship between TQM and supply performance	Case studies limit generalizability of study findings	SCQM to be used as independent variable. Determine role of competitive advantage and OFs through survey of hospitals and regression analysis
Chi et al. (2009)	commercial environment physiognomies, competitive priorities, supply chain infrastructures and firm performance	Survey, SEM	Confirmed corroboration between the variables	Link in SCQM, firm characteristics, competitive advantage and performance not studied	Conduct empirical survey to find the relationship

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
Han, Omta, and Trienekens (2007)	QM practices, SC integration internal and external integration, coordinating buyer supplier relationships, integrating IT and logistics management) and firm performance (rate of growth, share of market, profitability and level of customer satisfaction)	Survey of pork firms in China; factor analysis; structural equation modeling	SC integration exhibit direct relationship with firms' market and financial performance. Quality management intervenes between SC integration and firm performance.	Confirmed the significant contribution of quality practice in supply chain to performance in the pork SC	Confined to Chinese pork industry. Not exhausted all performance metrics. Not clear on the positioning of the variable
Li et al. (2004)	Relationship between SCM (supplier	196 firms were	Competitive advantage and performance can be	Provided model relating SCM, competitive	No element of quality

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
	partnership, level of information sharing customer relationship, postponement competitive advantage and performance (market and financial	surveyed to obtain data which was using structural equation modeling to establish the variables	improved by SCM practice. Performance and competitive advantage relate positively	advantage and performance. Highlighted some constructs of SCM Identified components of competitive advantage	Only two Performance metrics; market and financial. variables not exhaustive. No intervening variable
Flynn and Flynn (2005)	Value added by QM on SC performance	survey of top European and American firm across	Simultaneous execution of quality and supply chain is preferable	Demonstrated synergistic effect of pursuing quality and SC goals in tandem	Used QM and SCM performance. Limited to top performing industry in Europe and America.

66

Author	Study Focus	Methodology	Findings	Knowledge Gap(s)	How the study addresses the Gap(s)
		industry			
Martinez-Lorente, Dewhurst and Gallego-Rodriguez (2000)	How TQM practice changes purchasing performance	Case study	Purchasing performance is positively influenced by TQM practice	Demonstrated role of TQM purchasing in purchasing performance	Narrowed on purchasing and not on SCQM

Source: Researcher (2019)

2.8 Conceptual Framework

First, the study sought to establish how SCQM practices and organizational performance are related. Second, the research was intended to establish moderating role of organizational factors on SCQM practices and organization performance relationship. Third, the study endeavored to find out if competitive advantage mediates the relationship between SCQM practices and organizational performance. Finally, the study tested the joint influence of SCQMP, organizational factors and competitive advantage on performance of private hospital. Such findings would shed more light on the disparities in current information on SCQM practices in Table 2.1.

Figure 2. 1   Conceptual Framework

H₂

SCQM PRACTICES (Independent Variable)
- Supplier quality management
- Customer focus
- Information sharing
- Postponement
- Process management
- Coordination of supply chain

ORGANIZATIONAL FACTORS (Moderating Variable)
- Leadership commitment
- HRM
- ICT
- Trust
- Corporate culture

ORGANIZATION APERFORMANCE (Dependent Variable)
- Financial performance
- Market performance
- Environmental performance
- Societal performance
- Operational performance
- Learning and growth
- Environmental performance

H₄

COMPETITIVE ADVANTAGE (Mediating Variable)
- Utilization of market opportunities
- Neutralization of competitor activity

H₃

H₁

2.9 Conceptual Hypotheses

The hypothesized relationships between variables were:

H₁: There is direct significant association amid SCQM practices and performance of private hospitals in Kenya.

H₂: The moderating effect of organizational factors on relationship between SCQM practices and performance of private hospitals is significant.

H₃: Competitive advantage significantly mediates SCQM practices and the performance of private hospitals relationship.

H₄: The joint effect of SCQM practices, organizational factors and competitive advantage is significantly more than the individual effects of each of the variables on performance of private hospitals.

2.10 Summary

This chapter was presented as follows: At the beginning, the abstract basis of the study was explained. Secondly, the relationships among important variables in the study were discussed. Third, a summary of crucial studies was presented and knowledge gaps identified then tabulated. Finally, the conceptual model to guide on investigation of the relationship among the variables of interest was developed. Upon comprehensive literature review four broad hypotheses were advanced and narrated.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter first discusses research methodology that was adopted by the researcher. It commences by summarizing the philosophical orientation of the study. Then, the justification for the research design and the population is deliberated. Next, the overview of the techniques employed to collect data, scales adopted for measurements and operationalization of key variables of the study is narrated. After which, the methods applied to conduct diagnostic tests are highlighted. Lastly, data analysis procedure is explained.

3.2 Research Philosophy

The dominant epistemological dimensions identified in research are positivism, critical realism and phenomenology. Positivists view the universe as closed system in which one can observe and record empirical data to determine cause-effect relationships conclusively. Positivists therefore tend to utilize optimization techniques. Cooper and Schindler (2008) argued that these generalizable theoretical models generated explain and predict outcomes of cause effect relationships. Positivism proposes that characteristics and behavior of human beings and institutions in the social world are measurable, controllable and explainable through objective scientific methods (Alakwe, 2017). Researches that are inclined towards positivist philosophy usually test hypotheses which are established from literature and fundamental theories (Alharahsheh & Pius, 2020). However, Saunders, Lewis and Thornhill (2007) pointed out that positivism dilutes reality by imposing significant assumptions on the universe.

Critical realism argues that researchers need to critique the social world and advance provisional explanations (Fletcher, 2017). This is inclined on the premise that the world is an open system and its existence extends beyond the knowledge of the human beings (Danermark, Ekström & Karlsson, 2019). In this regard, critical realism adopts abductive reasoning to research that avails opportunity for alternative theoretical frameworks apart from the framework that a researcher develops from theories and literature review. This philosophical orientation is therefore suitable for interdisciplinary research such as establishing multilayer linkages. This enables multilevel information creation, seeking, use and processing (Mkansi & Acheampong, 2012). Better still, Rotaru, Churilov, and Flitman (2014) suggest simultaneous application of empirically based theories and critical realism research viewpoints. This is known to yield knowledge on what is empirical, actual and real in the causal relationships between the organizational elements and features of the business processes. In addition to testing proposed model, other models that reveal possible cause and effect relations may surface (Fascia, 2016).

Phenomenologists argue for multiple interpretations of overtime constructed and reconstructed information through experience and qualitative data collecting process in order to create a social reality (Eriksson & Kovalainen, 2008). Positivism and phenomenology appear to be two sides of same coin with the difference centered on the motive of the researcher either applying objective or subjective epistemology. Additionally, the qualitative data is convertible to quantitative data by positivist and vice versa. Phenomenological philosophy is critiqued for its inclination to context, deficiency in priori assumptions and difficulty in reproduction. Phenomenologists argue for multiple interpretations of overtime constructed and reconstructed

information through experience and qualitatively collected data process to create a social reality especially in case studies (Eriksson & Kovalainen, 2008).

This study adopted positivist orientation which views the world as a closed system, observable, perceptible, measurable and quantifiable phenomena capable of being discovered, perceived and explained by humans. In positivism, there are assumptions that permit statistical tests to be performed. In addition, objective, consistent, impartial and valid outcomes as conclusions are yielded based on real facts and neutrality (Saunders et al., 2007). This study was primarily purposed to scientifically test the framework hypothesized based on four fundamental theories, assumptions and empirical evidence gathered through comprehensive literature review. Positivism was adopted as the research philosophy to unveil the nature of the existing relationships between the SCQM practices, organizational factors, competitive advantage and performance of private hospitals in Kenya.

3.3 Research Design

The study adopted descriptive cross-sectional survey research design. Across-sectional survey was preferred since it is known to uncover the relationships among variables at a particular point in time (Saunders et al., 2007). The intent of the study was to establish the link between SCQM practices and organizational performance. Raw data was collected using questionnaires administered to private hospitals spread all over Kenya during a primary data gathering period. This was aligned to cross-sectional census studies that are appropriate where the data must be collected across the entire targeted population of firms at one point in time (Copper & Schindler, 2006; Sedgwick, 2014). Cross-sectional surveys are additionally preferred in research because the process does not permit control and manipulation of variables of study. In

the meantime, facts are generalizable accurately upon detailed study of a unit at specified point in time and testing hypotheses using appropriate statistical tools (Olsen & George, 2004). The design further permits uniform data collection that enhances comparison of information gathered from respondents (Kothari & Garg, 2014). Zikmund (2003) posited that properly conducted cross-sectional surveys produce more accurate data than sampling.

The topic of this nature necessitates a study that seeks to unravel information related width in preference to profundity. The objective is it to collect data across different firms, specifically private hospitals in Kenya. Significant number of studies have successfully applied cross- sectional census survey (Kuei,Madu & Lin, 2008; Lin et al., 2013; Chi et al., 2009; Lee et al., 2011; Magak, 2014; Gómez-Cedeño et al., 2015; Maiga, 2015; ; Nosratpour & Hamid, 2015; Okoth & Ochieng, 2016 ; Zhong et al., 2016; Bastas & Liyanage, 2018)

3.4   Target Population

The study targeted all private hospital under category C according to National Hospital Insurance Fund (NHIF). NHIF categorizes hospitals into three classes namely A, B and C. Category A are government hospitals where NHIF caters for full cost of maternity, medical diseases and surgery upon full payment. Category B constitutes private as well as mission hospitals and benefit from maximum and complete cover but co-pay for surgeries. Category C includes hospitals where all the costs are met by individuals, insurance or sponsors. From the NHIF website there were 158 private hospitals categorized by NHIF as group C across Kenya as at June 2019 (appendix III). This study adopted census survey since the proposed data analysis technique covariance based structural modeling requires a sample size greater

than 100 respondents (Byrne, 2010). The study design catered for non- responses and inappropriate responses.

The study focused on private hospitals because they have upstream, internal and downstream supply chain components. Private hospitals are known to obtain medical supplies through importation, source from distributors, wholesalers or retail pharmacies. The hospitals have stores where the drugs are kept awaiting requests from different departments and/or branches from where they are dispensed to patients based on physicians' prescriptions. Private hospitals commonly pursue both lagging and leading performance objectives as well as compete for clients hence strive for competitive advantage. The complex nature of private hospitals operations makes them fertile ground for research especially in the service sector.

3.5   Data Collection

Primary data was collected using structured questions in form of questionnaire. 124 questionnaires were given out using drop and pick later method while thirty two (32) were emailed to respondents. This was based on accessibility to the healthcare institutions. A five-point Likert-scale ranging from 1 = not at all, 2 = little extent, 3 = some extent, 4 = large extent and 5 = very large extent was used to convert qualitative information into quantitative data. The questionnaire was presented in five parts. Part 1 sought general information on demographic features of respondents and organization. Part 2 to 5 gathered information on SCQM practices, organizational factors, competitive advantage and organizational performance respectively.

The unit of analysis was individual private hospital. One respondent per hospital was selected to fill in the questionnaires. In particular, the supply chain manager tasked with the responsibility of making drug supply chain decisions based on their skills and

knowledge at management level was given preference. Campbell (1955) supports the view that the prime respondent in organizations to complete questionnaires must have in depth knowledge of the subject matter and can voluntarily share the information. Introduction letter that briefly explained the intention, value of the study and directions on the relevant information to input was annexed to the questionnaires.

3.6   Operationalization of Study Variables

Latent variables were measured in terms of their indicators which were derived from literature. From the conceptual framework given in Figure 2.5, the study had four latent constructs namely; SCQM practices, organizational factors, competitive advantage and organizational performance. Each construct was operationalized using multi-item indicators measurable with the aid of a Likert scale as shown on Table 3.1. Likert scale is simple and convenient way of gauging specific opinion which might be confidential, ambiguous due to varying accounting procedures or policies or difficult to gather objectively (Dess & Robinson, 1984).

Private hospitals that constituted the study population have diverse operations procedures. According to Dess and Robinson (1984), there is a significant challenge in allocating performance statistics especially related to sales revenue information, profits or assets to the cohort of the organizations which translates to extreme difficulty in obtaining objective information. Among private hospitals, there is high possibility of encountering a measurement error in an attempt to obtain performance data which is objective. This is due to confidentiality that puts restriction on sharing such information. Also, even if there is access to the statistics, possibility of error associated with variance in accounting principles is near inevitable. A study

conducted by Dess and Robinson (1984) confirmed insignificant difference in between using objective measurements and ordinal scale in measuring performance.

A strong positive relationship exists between obtaining subjective and objective performance statistics (Dess & Robinson, 1984). The authors accordingly advocate for the use of the subjective or even quasi-objective data in circumstances where finding objective data presents a significant challenge. The class of the data that was amassed in the study demonstrates the features which necessitate application of Likert type scale. Barua (2013) alluded to the advantage of simplicity and convenience of Likert type questions in gathering information. Table 3.1 is an illustration of the operationalization, definitions and measurement scale of variables, sub-variables, indicators and supporting literature.

Table 3.1   Operational Definitions and Measurement of the Study Variables

Variable	Sub- variable	Indicators	Supporting Literature	Scale	Question
SCQM practices	Supplier quality management	-Select suppliers -Develop suppliers -Collaborate with suppliers	Abdullah et al. (2017); Farnandes et al. (2014); Quang et al. (2016)	Ordinal scale Ranging from 1 to 5	Part B, Question no.4
	Customer focus	-Manage all customer complains. -Build long term relations with customers. -Provide services based on customer needs	Abdullah et al. (2016); Farnandes et al. (2017); Quang et al. (2016)	Ordinal scale Ranging from 1 to 5	Part B, Question no.4
	Information sharing	-Giving accurate information -Giving credible information -Sharing critical information	Truong et al. (2014); Li et al. (2004)	Ordinal scale Ranging from 1 to 5	Part B, Question no.4
	Postponement	-Flexible to changing customer needs -Differentiate customer needs -Differentiate activities based on information available	Li et al. (2004); Vanichchinchin & Igel (2011)	Ordinal scale Ranging from 1 to 5	Part B, Question no.4
	Process	-Review of processes	Farnandes et al. (2014);	Ordinal scale	Part B,

	management	-Continuously attempt to improve service quality -Formally specify procedures	Quang (2016)	Ranging from 1 to 5	Question 4
	Coordination of supply chain	-Address logistic concerns -Address transportation concerns - Established formal coordination rules and procedures	Nosratpour & Hamid (2015); Robinnson & Malhotra (2005)	Ordinal scale Ranging from 1 to 5	Part B, Question 4
Organizational factors	Leadership commitment	-All-inclusive decision making -Resource allocation -Leadership intervention on supply issues	Li et al. (2004); Vanichchinchin & Igel (2011)	Ordinal scale Ranging from 1 to 5	Part C Question 5
	Human resource management	-Training of employees for knowledge on SCQMPs -Empower employee to make decision -Reward target achievement	Vanichchinchin & Igel (2011)	Ordinal scale Ranging from 1 to 5	Part C Question 5
	ICT	-Computerize facilities to generate information	Chaghooshi et al. (2015);	Ordinal scale Ranging from 1 to	Part C Question 5

		-E- procurement procedures -E- dispensing procedures	Sampaio et al. (2016)	5	
	Trust	-Trust for suppliers -Trust for employees -Trust by customers	Zang & Huo. (2013); Lin et al. (2013); Truong et al. (2014)	Ordinal scale Ranging from 1 to 5	Part C Question 5
	Corporate culture	-Quality service design -Consistently offer quality products -Conform to specifications	Kuei et al. (2001); Vanichchinchin & Igel (2011)	Ordinal scale Ranging from 1 to 5	Part C Question 5
Competitive advantage	Exploitation of market opportunities	- Exploitation of every market opportunities that have been presented to the industry - Full exploitation of the market opportunities that have been presented to the industry; - Exploitation of more market opportunities	Sagalas (2015)	Ordinal scale Ranging from 1 to 5	Part D Question 6

		as compared to competition			
	Neutralize competitor threats	- Neutralize all competitive threats due to low cost - Neutralize all competitive threats due improved quality service - Neutralize all competitive threats due to incentives to customers	Sagalas (2015)	Ordinal scale Ranging from 1 to 5	Part D Question 6
Organizational performance	Finance	-Revenue -Return on investment -Profit	Chaghooshi et al. (2015); Sampaio et al. (2016)	Ordinal scale Ranging from 1 to 5	Part E Question 7
	Market	-Market share growth -Sales volume growth (in units) -Reduction in marketing expenses	Kaplan & Norton (1996)	Ordinal scale Ranging from 1 to 5	Part E Question 7
	Environmental performance	- Green environment - Waste disposal - Compliance to environmental laws	Ferreira et al. (2016)	Ordinal scale Ranging from 1 to 5	Part E Question 7

Societal performance	-Cooperate social responsibility -Tax obligation compliance -Ethics and compliance concerns	Vijande & Gonzalez (2007)	Ordinal scale Ranging from 1 to 5	Part E Question 7
Learning and growth	-Revenue growth -Profitability growth -Productivity growth.	Kaplan & Norton (1996); Vijande & Gonzalez (2007)	Ordinal scale Ranging from 1 to 5	Part E Question 7
Operational performance	-Cost reduction -Delivery dependability -Service quality	Chaghooshi et al. (2015); Sampaio et al. (2016)	Ordinal scale Ranging from 1 to 5	Part E Question 7
Customer satisfaction	-Retained 80% of customers -Increased customer number by 20% -Accuracy and adequacy of medication	Chaghooshi et al. (2015); Sampaio et al. (2016)	Ordinal Ranging from 1 to 5	Part E Question 7

Source: Researcher, 2019

3.7 Reliability and Validity Tests

Reliability denotes the consistency, precision and accuracy of results upon multiple trials (Cooper & Schindler, 2008). The research tool (questionnaire) was tested using Cronbach's Alpha. Zero (0) value communicates no reliability whereas one (1) signifies perfect reliability. Any value above 0.5 confirms adequate reliability of constructs and items but Cronbach's Alpha of 0.7 is considered the best value (Nunnally, 1978). Upon constructs and items testing, all Cronbach's Alpha values were recorded above 0.6 which indicates adequate reliability.

Item-to-total correlation for all indicators in the constructs was used to assess reliability of the measuring scale and the values exceeded the suggested threshold of 0.3 (Byrne, 2010). All indicators had total to item correlation scores of above 0.3. There were no items dropped before further analysis. Composite reliability measures internal consistency of the latent variables in the model and a composite reliability score higher than 0.6 confirms high reliability (Hatcher & Stepanski, 1994). Internal consistency of the model was checked against the average variance extracted (AVE) score. All the scores were above 0.5. A high composite reliability was therefore confirmed based on the scores.

Validity analyses the capacity of a research instrument to evaluate what is purposed to be measured (Gravetter & Forzano, 2008). Content validity was accomplished by developing questionnaires consistent with tools available in literature in consultation with academic experts whose suggestions for modifications were adopted. This ensured development of an instrument which was clear, responsive, specific, readable and adequate. A pilot investigation was also undertaken to improve on the relevance, logic, wording and content of the questionnaire on five (5) experts with practical

experience and knowledge on SCQM practices to assess how respondents would understand the questions. Relevant corrections were done based on the experts' inputs.

Confirmatory factor analysis (CFA) was used to test construct validity with expectation of observing acceptable factor loading above 0.4 (Stevens, 2002). All the factors had factor loading values above the recommended 0.4 which confirmed construct validity. Convergent validity was tested by evaluating each latent variable using AVE score which was above 0.5 (Hair et al., 2014). CFA ascertained significance loadings of items on their respective constructs or other constructs. Discriminant validity was established using three methods: Heavy factor loading of indicators on the constructs, comparing AVE estimates of latent variable with squared inter-construct correlations associated with the construct (Fornell-Larcker criterion). According to Fornell and Larcker (1981), all AVE estimates are expected to be larger than corresponding inter-construct squared loading to ensure discriminant validity.

3.8 Model Diagnostics

Model diagnosis is necessary whenever CB-SEM is applied for universal interpretability of the information, reduction of type 1 or type 2 errors, guidance on choice of data analysis technique and aid in making valid and reliable inferences (Razali & Wah, 2011). Normality, collinearity, homoscedasticity, autocorrelation, factorability and sample adequacy tests were conducted. Normality was confirmed since p-values were greater than 0.05 upon subjecting to Shapiro-Wilk test (Shapiro & Wilk, 1965); Razali & Wah, 2011). Collinearity was confirmed since variance inflation factors (VIFs) values were between 1 and 2 which is less than 10.

Koenker test was done to determine whether the variance of errors from SEM is dependent on the values of independent variables (Koenker & Bassett, 1978). All p-values were greater than 0.05 therefore the null hypothesis of heteroscedasticity was rejected since the p-values were insignificant. Durbin-Watson test was used to check for autocorrelation (Watson & Durbin, 1951). The null hypothesis that the residuals are not linearly auto correlated is confirmed with values ranging between 1.5 and 2.5. In this study, there were values ranging between 1.7 and 2.0 which signified no autocorrelation in data.

Further Bartlett's Test of Sphericity was conducted for all sub variables. As expected, values of chi-square were significant at p < 0.001 (Barlett, 1954). Sampling adequacy was ascertained using Kaiser-Meyer-Olkin (KMO) test (Kaiser, 1974). KMO measure was obtained for all the study sub constructs. For KMO test, all values recorded were above the threshold of 0.6 (Kaiser, 1974). After confirming that all the thresholds pertaining model diagnosis were met, CB- SEM using AMOS was undertaken to determine the model.

3.9   Data Analysis

This study applied CB-SEM using Analysis of Moment Structures (AMOS) application for data analysis. According to Hair et al. (2014), CB-SEM can simultaneously assess direct relationships between SCQM practices and performance, test mediating effects of competitive advantage, moderation by organizational factors and verify the joint effect of SCQMP practices, organizational factors and competitive advantage on performance of private hospitals with significant error minimization.

Le et al. (2011) contended that SEM using AMOS graphics offers flexibility, robust diagrammatic illustrations and easy-to-use interfaces. SEM also maintains parsimony

in the proposed structural equation model, tests the research hypotheses, performs model-to-data fit and parameter estimates using path coefficients (Byrne, 2010). Appendix IV illustrates key to the four models in form AMOS graphics for direct relationship between SCQM practices and organizational performance, moderation of organizational factors on the relationship, mediation and joint effect of SCQM practices, organizational factors and competitive advantage on organizational performance. This technique further defines latent variables, indicators to measure latent variables and error terms in details. The path diagrams guided on rejecting or accepting the hypothesis based on change in beta and effect size in case of mediation or moderation. Table 3.2 is a summary of the analytical models that were tested, corresponding objectives and hypotheses.

Table 3.2   Summary of Objectives, Hypotheses, Analysis and Decision Criteria

Objective	Hypothesis	Data Analysis	Decision Criteria
To determine the relationship between SCQMP and OP of private hospitals in Kenya.	H_1: The direct relationship between SCQMP and the performance of private hospitals is significant	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), RMSEA ≤ 0.08, SRMR ≤ 0.08 and GFI ≥ 0.9. H_1 is not rejected if p-value of the path coefficient is $\leq$ 0.05
To ascertain the influence of organizational factors on the relationship between SCQMP and OP of private hospitals in Kenya.	H_2: The moderating effect of organizational factors on the relationship between SCQMP and OP of private hospitals is significant.	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), RMSEA ≤ 0.08, SRMR ≤ 0.08 and GFI ≥ 0.9. H_2 is not rejected if p-value of the path coefficient is $\leq$ 0.05
	Hypothesis 2a: The moderating effect of leadership commitment on the relationship between SCQMP	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), RMSEA ≤ 0.08, SRMR ≤ 0.08 and GFI ≥ 0.9. H_{2a} is not rejected if p-value of the path coefficient is $\leq$

Objective	Hypothesis	Data Analysis	Decision Criteria
	and OP of private hospitals is significant		0.05
	Hypothesis 2b: The moderating effect of human resources management on SCQM practices and output of private hospitals linkage is significant	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), RMSEA ≤ 0.08, SRMR ≤ 0.08 and GFI ≥ 0.9. H_{2b} is not rejected if p-value of the path coefficient is ≤ 0.05
	The moderating effect of ICT on the relationship between SCQM practices and performance of private hospitals is significant	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), RMSEA ≤ 0.08, SRMR ≤ 0.08 and GFI ≥ 0.9. H_{2c} is not rejected if p-value of the path coefficient is ≤ 0.05
	Hypothesis 2d: The moderating effect of trust on the relationship between SCQMP	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path	Chi square (insignificant at .05), SRMR ≤ 0.08, GFI ≥ 0.9 and RMSEA ≤ 0.08. H_{2d} is not rejected

Objective	Hypothesis	Data Analysis	Decision Criteria
	and OP of private hospitals is significant	coefficient	if p-value of the path coefficient is ≤ 0.05
	Hypothesis 2e: The moderating effect of corporate culture on the relationship between SCQMP and OP of private hospitals is significant	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), SRMR ≤ 0.08, GFI ≥ 0.9 and RMSEA ≤ 0.08. H_{2e} is not rejected if p-value of the path coefficient is ≤ 0.05
To determine the influence of competitive advantage on the relationship between SCQMP and performance of hospitals in Kenya.	H_3: Competitive advantage plays significant mediation role in SCQMPs and OP linkage.	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path coefficient	Chi square (insignificant at .05), SRMR ≤ 0.08, GFI ≥ 0.9 and RMSEA ≤ 0.08. H_3 is not rejected if p-value of the path coefficient is ≤ 0.05
To examine the combined effect of SCQMP, OF and CA on performance of private hospitals	H_4: The joint effect of SCQM, OF, CA is greater than the sum total of individual variables on	CB-SEM analysis – GFI, SRMR, RMSEA and significance of path	Chi square (insignificant at .05), SRMR ≤ 0.08, GFI ≥ 0.9 and RMSEA ≤ 0.08. H_4 is not rejected

Objective	Hypothesis	Data Analysis	Decision Criteria
in Kenya.	performance.	coefficient	if p-value of the path coefficient is ≤ 0.05 and if R^2 value for joint effect is greater than R^2 values for moderation and mediation

Source: Researcher, 2019

CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

The chapter describes the data analyses that were performed to establish the proposed relationships in the conceptual framework as well as reporting other relevant results of the study. The account of the study population, features of the respondents, rate of response and data assessment are outlined. The chapter then presents the descriptive data of the study variables and their indicators. Results are aligned to the objectives of the study. CB-SEM details specifically relating to measurements and estimations with the aid of AMOS graphics thereafter are deliberated. The chapter ends by providing the details of the model fit tests that were performed with the objective of establishing moderation and mediation as well as the joint effect of all variables on performance.

4.2 Background Information

The objective of the research was to establish the correlation between adoption of SCQM practices and performance of private hospitals in Kenya. The research had four specific objectives. First, it sought to determine the direct linkage amid latent variables (SCQM practices and organizational performance). The second objective was to test the influence of organizational factors on between variables. The next objective was to establish the mediating effect of competitive advantage. Finally, the joint effect of SCQM practices, organizational factors and competitive advantage on performance of private hospitals was to be ascertained.

This study focused on private hospitals because such hospitals face challenges in meeting healthcare needs of a population with varied socio-economic status. By conducting the study, information that SCQM practices improves organizational

performance at the same time; reducing cost of healthcare, improving patient clinical outcomes and addressing emergency medical conditions will be unfolded (KNBS, 2014). In past studies, there is also adequate evidence that firms that actively incorporate quality management principles along their supply chain benefit from better performance outcomes than their peers which practice the converse (Kuei, Madu & Lin 2008; Rouse & Putterill, 2003; Li et al., 2004; Lin et al., 2013; Vanichchinchai & Igel, 2011; Talib et al., 2011; Chagooshi et al., 2015; Bastas & Liyanage, 2018). The following subsections discuss the response rate, firm characteristics and descriptive statistics.

4.2.1 Response Rate

The study centered on all private hospitals in Kenya. From the National Hospital Insurance database, a total of 156 private hospitals were identified to operate in Kenya. These are spread across all the forty-seven (47) counties in Kenya. Questionnaires were sent to all the 156 facilities. Out of the total, 121 questionnaires were received back implying that thirty-five (35) hospitals did not respond at all or in time due to a number of reasons. Explanations advanced include: challenges due to geographical distance, complicated policies, administrative procedures and snubbing by the target respondents to fill the provided questionnaire. The response rate was therefore 77.56%.

Upon scrutiny, eleven (11) questionnaires were found to have significant missing data on crucial performance variables. Such questionnaires were purged from initial analysis which left a total of 110 fully filled questionnaires. The effective response rate was therefore adjusted to 70.51%.

4.2.2 Firm's Demographic Characteristics

The study started by seeking demographic data of the private hospitals within the country. Characteristics considered included bed capacity as a measure of the hospitals' size and age of organizations as an indicator of beliefs, feelings, persuasions, experiences and intuitions about quality management. Table 4.1 presents findings on bed capacity.

Table 4.1   Bed Capacity

Bed capacity	Frequency	Percentage	Cumulative Percentage
Below 100	72	65.5	65.5
100 – 250	30	27.3	92.7
Over 250	8	7.3	100
Total	110	100	

Source: Primary Research Data, 2019

Information contained in Table 4.1 illustrates that a significant proportion of the hospitals had bed capacity of less than 100, slightly more than six out of ten of the facilities belonging to this category (65.5%), less than a third (27.3%) had bed capacity ranging between 100 and 250, while the capacity of the remaining facilities which were less than one-tenth (7.3%) had a bed capacity greater than 250. Bed capacity measures the size of the hospitals which can be classified as large, medium and small. Information obtained show that a majority of the hospitals were either small or medium in size. The size of an organization also depicts complexity of operations especially the supply chain and quality strategies due to volumes and variations in material management. Majority of private hospitals being classified as

either small or medium has a bearing as to whether they are able to assemble adequate resources to implement SCQM practices because of their size. Table 4.2 presents findings relating to age of the hospitals.

Table 4.2   Age of the Hospital in Years

Age (Years)	Frequency	Percentage	Cumulative Percentage
Less than 10	28	25.5	25.5
10 – 20	47	42.7	68.2
Over 20	35	31.8	100
Total	110	100	

Source: Primary research data, 2019

Information obtained indicates that about a quarter (25.5%) of the private hospitals have been operating for a period less than 10 years, slightly less than a half of them (42.7%) have been operating for periods between 10-20 years and the remaining a third (31.8%) for more than 20 years. This means that generally, about three quarters of the hospitals (74.5%) indicated to have been operating for more than ten years, a period considered long enough to enable them to have mastered the requisite business dynamics. Age of organizations is an indicator of beliefs, feelings, persuasions, experiences and intuitions about quality management. It can also signal a level of quality management maturity and whether the knowledge is either tacit or explicit. This has influence on whether the private hospitals compete based on managing quality along their supply chains. This stands to benefit organizations and their key stakeholders. The length of operating period serves as a predictor of the

amount of assets and capabilities a firm has accumulated to guarantee improved performance.

4.3 Reliability and Construct Validity

The study main constructs were four (4) in total including SCQM practices, organizational factors, competitive advantage and organizational performance. SCQM practices had six sub constructs; organizational performance had five sub constructs while competitive advantage and organizational performance had two and seven sub constructs respectively. The study therefore had a total of 20 sub constructs.

To evaluate reliability, various tests were conducted to confirm consistency, precision and accuracy of results upon multiple trials. Reliability tests and exploratory factor analyses were used to examine indicators of each sub construct. To perform exploratory factor analysis (EFA), principal component technique with varimax rotation was applied. To ensure sampling adequacy, there was need to use Kaiser-Meyer-Olkin (KMO) as a measure. P-values for Barlett's Test were analyzed to confirm Sphericity which estimated if the items were factorable. The EFA report showed that research variables had KMO values of sampling adequacy greater than the recommendation of 0.6 as the minimum (Kaiser, 1974). For Barlett's test of Sphericity all p-values were found to be less than the significance level of 0.05 (Barlett, 1954). Factor loadings of all items were assessed and those that were found to be above 0.4 were retained for additional analysis.

Item to total correlation scores guided confirmation of reliability and internal consistency of the items representing all constructs. Item to total correlation values were greater than 0.3 for all indicators hence retained for more analysis (Hair et al., 2010). This was done to ascertain the measurement scale for the constructs.

Covariance Based-SEM, confirmatory factor analysis was conducted using AMOS software to estimate the measurement model. This was to verify the magnitude with which the data obtained authenticated and fit the pre-stated theoretically based model. The next subsections give details of how scale cleansing was accomplished for all the constructs and sub constructs.

4.3.1 SCQM Practices

Information on SCQM practices as a construct was obtained through six sub constructs each with numerous practices. The specific sub constructs were supplier relationship management, customer focus, information sharing, postponement, internal process management and coordination of supply chain. The subscales were first subjected to reliability and validity tests prior to CB-SEM analysis.

Supplier quality management was measured using three practices as listed in Table 4.3. The practices were rated on a five-point Likert scale with one (1) denoting "not at all" while five (5) represented "very great extent" as exhibited in Table 4.3.

Table 4.3   Supplier Quality Management

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Select suppliers	3.24	1.108	.712	.594	.548
Develop suppliers	3.22	1.199	.544	.464	.715
Collaborate with suppliers	3.63	1.065	.665	.549	.607

Cronbach's Alpha =.714, Grand Mean = 3.36   Source: Primary research data, 2019

Information in Table 4.3 shows that collaboration with suppliers had the highest mean rating of 3.63 (SD = 1.065, N = 110) followed by selection of suppliers (mean = 3.24, SD = 1.108, N = 110) while developing suppliers was the least rated (mean = 3.22,

SD = 1.199, N = 110). Supplier quality management was rated at 3.36 implying that private hospitals implemented the practice marginally over moderate extent. It was observed that Cronbach's Alpha for the scale used was 0.714 which was high enough to serve the intended purpose. Principal component analysis with Varimax rotation conducted for exploratory factor analysis revealed that all the factor loadings were above the acceptable threshold of 0.4 (the range was between 0.544 and 0.712). Also noted was the fact that item to total correlations scores ranged from 0.464 to 0.594. The implication is that all the items under supplier quality management were kept for additional analysis since reliability and construct validity was established.

Customer focus was also measured using three indicators rated on a five-point Likert scale ranging from one (1) denoting "not at all" to five (5) representing "very great extent." Table 4.4 presents a summary of the results. Results obtained illustrated that the practice of building long term relation with customers and providing services based on customer needs were each ranked higher (mean = 3.65) compared to the practice of managing all customer complains (mean = 3.44, SD = 1.000, N = 110). "Manage all customer complains" as a practice recorded the lowest mean rating of 3.44 and a standard deviation of 1.000 from 110 responses. Both "build long term relations with customers and "provide services based on customer needs" recorded uniform rating of 3.65 and standard deviations of 0. 943 and 0.981 respectively. The grand mean for customer focus was 3.58 implying that private hospitals in Kenya implemented the practice slightly above moderate extent. The factor loadings were 0.574, 0.671 and 0.565 for "Manage all customer complaints," "build long term relations with customers and "provide services based on customer needs" in the same order. Cronbach's Alpha was 0.669. All items in the scale achieved item to total correlations which is above the recommended 0.4 (that is, 0.457, 0.538 and 0.450).

Since all the three items met the required thresholds for reliability and construct validity, they were included in model determination.

Table 4.4   Customer Focus

Indicators	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Manage all customer complains	3.44	1.000	.574	.457	.606
Build long term relations with customers	3.65	.943	.671	.538	.499
Provide services based on customer needs	3.65	.981	.565	.450	.614

Cronbach's Alpha = .669, Grand Mean = 3.58   Source: Primary research data, 2019

Information sharing was measured using the parameters; giving timely information, giving credible information and sharing proprietary information. The practices were rated on a five-point Likert scale with one (1) denoting "not at all" and five (5) representing "very great extent."   Table 4.5 presents a summary of the results obtained.

Table 4.5   Information Sharing

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Giving timely information	3.44	.991	.449	.407	.476
Giving credible information	3.48	.993	.651	.491	.457
Sharing proprietary information	3.47	1.115	.453	.552	.513

Cronbach's Alpha =.755, Grand Mean = 3.46   Source: Primary research data, 2019

Data obtained showed that giving credible information had the highest mean rating of 3.48 (SD = 0.993, N = 110), sharing proprietary information had a mean rating of 3.47 (SD = 0.991, N = 110) while giving timely information had the lowest mean rating of 3.44 (SD = 1.115, N = 110). The grand mean for information sharing was 3.46 implying that private hospitals implemented the practice slightly above moderate extent. The factor loadings ranged from 0.449 for giving timely information to 0.651 for giving credible information. Cronbach's Alpha was 0. 755 while item to total correlations values recorded were between 0.407 and 0.538 which are above the recommended 0.4. Since all the three items met the required thresholds for reliability and construct validity, they were retained for further analysis and for model determination.

Three indicators that were used to measure postponement included "flexible to changing customer needs", "differentiate customer needs" and "differ activities based on information available". The practices were rated on a five-point Likert scale with one (1) denoting "not at all" and five (5) representing "very great extent." Table 4.6 presents a summary of the findings.

Table 4.6   Postponement

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Flexible to changing customer needs	3.42	1.026	.643	.584	.603
Differentiate customer needs	3.66	1.007	.541	.503	.554
Defer activities based on information available	3.18	1.024	.490	.500	.529

Cronbach's Alpha = .671, Grand Mean = 3.42   Source: Primary research data, 2019

Information in table 4.6 shows that mean rating for items for the sub construct ranged between 3.18 (SD = 1.024, N = 110) for "differ activities based on information available" through 3.42 (SD = 1.026, N = 110) for "flexible to changing customer needs" to 3.66 (SD = 1.007, N = 110) implying that according to the respondents, adoption of elements of postponement ranged from moderate to great extent. The grand mean for the sub construct was 3.42 implying that private hospitals implemented the practice slightly above moderate extent. The factor loadings ranged between 0.490 for "differ activities based on information available" and 0.643 for "flexible to changing customer needs", all items attaining factor loadings above the recommended 0.3 threshold. Cronbach's Alpha was 0.671, items in the scale achieving item to total correlations values of 0.500, 0.503 and 0.584 which are all above the recommended 0.4. All the three items met the required thresholds for reliability and construct validity hence were included for further analysis and model determination.

Indicators "review processes", "continuously attempt to improve service quality" and "formally specify procedures" were used to measure the sub construct process management. The indicators of the practice were rated on a five-point Likert scale where one (1) denoted "not at all" and five (5) represented "very great extent." Table 4.7 presents a summary of the results obtained.

Table 4.7   Process Management

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Review processes	3.11	1.038	.689	.578	.575
Continuously attempt to Improve service quality	3.54	1.072	.665	.554	.603
Formally specify procedures	3.41	1.078	.563	.477	.698

Cronbach's Alpha=.716, Grand Mean=3.35   Source: Primary research data, 2019

Information tabulated above indicate that the highest mean was recorded for "continuously attempt to improve service quality" at 3.54 (SD =1.072, N = 110) followed by "formally specify procedures" at 3.41 (SD = 1.078, N = 110) and lastly 3.11 (SD = 1.038, N = 110) for "review processes". This informs that the respondents practiced process management from a moderate to great extent. The grand mean for process management was 3.35 implying that private hospitals implemented the practice slightly above moderate extent. Factor loadings for the indicators ranged between 0.563 for formally specify procedures and 0.689 for review processes indicating that all the items attained more than the required 0.3. Cronbach's Alpha was 0.716 while item to total correlations for the indicators were 0.477, 0.554 and

0.578, all being above the 0.4 recommended values for all items in the scale. Since all the three items met the required thresholds for reliability and construct validity, they were all included in model determination.

Coordination of supply chain activities as a sub construct was measured using three indicators namely 'address logistic concerns", "address transportation concerns" and "establish formal coordination rules and procedures". These particular indicators were rated on a five-point Likert scale with one (1) representing "not at all" and five (5) represented "very great extent." Study findings are summarized in Table 4.8.

Table 4.8   Coordination of Supply Chain Activities

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Address logistic concerns	3.27	1.066	.642	.495	.474
Address transportation concerns	3.55	.905	.567	.438	.559
Establish formal coordination rules and procedures	3.58	1.008	.537	.420	.581

Cronbach's Alpha = .639, Grand Mean = 3.47   Source: Primary research data, 2019

The least rated indicator of coordination of supply chain activities was addressing logistic concerns with an average score of 3.27 (SD = 1.096, N = 110) followed by addressing transport concerns was ranked at 3.55 (SD = 0.905, N = 110) and the highest ranked was establishment of formal coordination rules and procedures with an average of 3.58 (SD =1.008, N = 110). This indicates that managers of private

hospitals should monitor movement of materials in and out of the institutions. The grand mean was 3.47 indicating that level of adoption of the sub construct was slightly above moderate extent. Factor loadings were 0.642, 0.567 and 0.537 implying all the three items had factor loadings above the recommended of 0.4. Cronbach's Alpha was adequate at 0.815 while item-total correlation values ranged between 0.420 and 0.495. All the items therefore adequately satisfied the basic criteria and requirements for reliability and validity and therefore were subjected to further statistical analysis.

4.3.2 Organizational Factors

Information on organization factors as a construct was obtained through five sub constructs each with a number of practices. Specific factors included leadership commitment, human resource management, information and communication technology, trust and corporate culture. The sub variables were first subjected to reliability and validity tests prior to CB-SEM analysis.

Leadership commitment was measured using three indicators. They included; all-inclusive decision making, resource allocation and leadership intervention on supply issues. The factors were rated on a five-point Likert scale with one (1) denoting "not at all" while five (5) represented "very great extent." Table 4.9 is an illustration of the results.

Table 4.9   Leadership Commitment

	Mean	SD	Factor	Item-total	Alpha if item

			loading	correlation	deleted
All-inclusive decision making	3.15	1.068	.634	.519	.592
Resource allocation	3.42	.990	.644	.530	5.81
Leadership intervention on supply issues	3.53	1.029	.588	.484	.636

Cronbach's Alpha = .695, Grand Mean = 3.37   Source: Primary research data, 2019

Data obtained show that leadership intervention on supply issues had the highest mean rating of 3.53 (SD = 1.029, N = 110) followed by resource allocation at 3.42 (SD = 0.990, N = 110) while all-inclusive decision making recorded the least rating at 3.15 (SD =1.068, N = 110) implying the lowest extent of adoption. Generally, leadership commitment was rated at 3.37 implying slightly above moderate extent of adoption by private hospitals. The factor loadings were between 0.588 and 0.644, implying that all factors were greater than the minimum required loading of 0.4. Cronbach's Alpha was high at 0.695. Additionally, the values recorded for item to total correlations were between 0.484 and 0.530 which are above the threshold of 0.3. Since all the three items met the required thresholds for reliability and construct validity, they were included in model determination.

Human resource management as a factor was measured using three indicators. They included; training of employees on the subject SCQM practices, empowering employees to make decisions and rewarding target achievement. The items were rated on a five-point Likert scale where one (1) denoted "not at all" while five (5) represented "very great extent." Table 4.10 presents the results.

Table 4.10   Human Resource Management

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Training of employees on subject SCQM practices	3.44	1.009	.442	.435	.611
Empower employee to make decision	3.44	1.054	.702	.525	.422
Reward target achievement	3.46	.983	.535	.485	.541

Cronbach's Alpha = .603, Grand Mean = 3.45   Source: Primary research data, 2019

It was observed that reward for target achievement was ranked highest at 3.46 (SD = 0.983, N = 110) implying that it was the most appreciated HRM factor while training of employees on knowledge on SCQM practices and empowering employees to make decisions had a mean of 3.44 each (SD = 1.009 and SD=1.054 respectively; N = 110). Human resource management as a sub construct was rated at 3.45 implying that according to the respondents, adoption of the factor by private hospitals was slightly above moderate extent. Factor loadings for the elements ranged between 0.442 and 0.702, Cronbach's Alpha was 0.603 while item to total correlation ranged between 0.435 and 0.525 which were above the 0.3 threshold. Since all the three items met the required thresholds for reliability and construct validity, they were included in model determination.

Information and communication technology as a sub construct was measured using three indicators. They included computerizing facilities to generate information, E-procurement procedures and E-dispensing procedures. The practices were rated on a

five-point Likert scale with one (1) denoting "not at all" while five (5) representing "very great extent." Findings were as illustrated in Table 4.11.

Table 4.11   Information and Communication Technology

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Computerize facilities to generate information	3.30	1.054	.578	.482	.678
E-procurement procedures	3.16	1.169	.717	.604	.525
E-dispensing procedures	3.16	1.223	.611	.512	.647

Cronbach's Alpha = .711, Grand Mean = 3.21   Source: Primary research data, 2019

Data obtained show that computerizing facilities to generate information was ranked highest with a mean of 3.30 (SD = 1.054, N = 110) while E-procurement procedures and E-dispensing procedures were given a mean rating of 3.16 each (SD = 1.169 and SD = 1.223 respectively; N=110). The overall mean for information and communication technology was 3.21 meaning that private hospitals implemented the practice marginally over moderate extent. Factor loadings for the items ranged from 0.578 to 0.717. Cronbach's Alpha was high at 0.711 while item to total correlation ranged from 0.482 to 0.604 which is above threshold of 0.3. All the three items met the required thresholds for reliability and construct validity; therefore, they were included in model determination.

Extent of adoption of trust as a construct was measured using three practices; trust for suppliers, trust for employees and trust for customers. The practices were rated on a

five-point Likert scale with one (1) denoting "not at all" and five (5) represented "very great extent" as shown in Table 4.12.

Table 4.12   Trust

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Trust for suppliers	3.29	1.061	.750	.667	.625
Trust for employees	3.53	.974	.634	.559	.745
Trust by customers	3.42	1.087	.681	.601	.702

Cronbach's Alpha = .773, Grand Mean = 3.41   Source: Primary research data, 2019

From Table 4.12, the observed is that trust for employees attained the highest mean rating at 3.53 (SD = 0.974, N = 110) followed by trust for customers at 3.42 (SD = 1.087, N = 110) while trust for suppliers was ranked the least at 3.29 (SD =1.061, N = 110) implying the level of adoption of the elements ranged between moderate to great extent. The overall mean for trust was 3.41 implying that private hospitals implemented the practice marginally over moderate extent. Factor loadings scores were within the range of 0.634 to 0.750. Cronbach's Alpha was high at 0.773 while items in the scale achieved item to total correlations of values 0.667, 0.559 and 0.601 which are all above threshold of 0.3. Since all the three items met the required thresholds for reliability and construct validity, they were included in model determination.

Corporate culture was measured using three practices; quality service design, offer consistently quality products and conform to specifications. The elements were rated on a five-point Likert scale ranging from one (1) denoting "not at all" to five (5) representing "very great extent" as synopsized in Table 4.13.

Table 4.13   Corporate Culture

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Quality service design	3.34	1.007	.459	.437	.563
Offer consistently quality products	3.55	1.028	.536	.482	.499
Conform to specifications	3.71	1.087	.644	.464	.468

Cronbach's Alpha=.684, Grand Mean=3.53. Source: Primary research data, 2019

Conforming to specifications was ranked highest at 3.71 (SD = 1.087, N = 110) followed by offering consistently quality products at 3.55 (SD = 1.028, N = 110) while quality service design was ranked lowest at 3.34 (SD = 1.007, N = 110). On the whole, corporate culture was mean rated at 3.53 implying that private hospitals implemented the practice to a great extent. Factor loadings for the elements ranged from 0.459 to 0.644. Cronbach's Alpha was 0.684 while item to total correlation ranged from 0.437 to 0.482, a higher value than the threshold of 0.3. The three items met the required thresholds for reliability and construct validity to allow model determination.

4.3.3   Competitive Advantage

Information on competitive advantage as a construct was obtained through two sub constructs each with numerous practices. Specific factors included exploiting market opportunities and counteracting competitor threats from competitors. The subscales were first subjected to reliability and validity tests prior to CB-SEM analysis. The findings for each of the factors are examined as below.

Exploitation of market opportunities was measured using three practices including utilizing all market prospects that have been presented to the industry, extent of full utilization of the market chances that has been presented to the industry and exploitation of more market opportunities than competitors. The elements were rated on a five-point Likert scale ranging from one (1) denoting "not at all" to five (5) representing "very great extent". The findings are exhibited in Table 4.14.

Table 4.14   Exploitation of Market Opportunities

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Are the hospitals able to exploit all market opportunities that have been presented to your industry	3.21	.899	.689	.496	.408
Do they fully exploit the market opportunities that have been presented to your industry;	3.26	.964	.561	.475	.485
Are the private hospitals able to exploit more market opportunities than competition	3.26	1.011	.484	.494	.614

Cronbach's Alpha = .674, Grand Mean = 3.25   Source: Primary research data, 2019

From Table 4.14, "fully exploit all market opportunities available in the industry" and "exploitation of more market chances than competitors" were observed to have

the greatest individual mean ranking, each at 3.26 (SD = 0.924 and SD = 1.011, N = 110) while exploiting all market prospects that have been presented to the industry was rated lowest at 3.21 (SD = 0.899, N = 110). Exploitation of market openings had an overall mean of 3.25 indicating that generally, private hospitals implemented the practice slightly above moderate extent. Factor loadings ranged from 0.484 to 0.689, Cronbach's Alpha was 0.674 while item to total correlation ranged between 0.475 and 0.496. Since all the three items met the required thresholds for reliability and construct validity, they were retained for model determination.

Neutralization of competitor threats was measured using three elements; Neutralize all competitive threats due to low cost, neutralize all competitive threats due improved quality service and neutralize all competitive threats due to incentives to customers. The activities were rated on a five-point Likert scale in which one (1) denoted "not at all" while five (5) represented "very great extent." Table 4.15 summarizes the research findings.

Table 4.15   Neutralization of Competitor Threats

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Neutralize all competitive threats due to low cost	3.40	.931	.662	.477	434
Neutralize all competitive threats due improved quality service	3.45	1.054	.483	.436	.537
Neutralize all competitive threats due to incentives to customers	3.50	1.064	.486	.438	.535

Cronbach's Alpha = .670, Grand Mean = 3.45   Source: Primary research data, 2019

Neutralizing all competitive threats due to incentives to customers was ranked highest at 3.50 (SD = 1.064, N = 110) followed by neutralize all competitive threats due improved quality service at 3.45 (SD = 1.054, N = 110) and neutralize all competitive threats due to low cost was ranked lowest at 3.40 (SD = 0.931, N = 110). The overall mean for neutralization of competitor threats was 3.45 implying that private hospitals implemented the practice slightly above moderate extent. The factor loadings ranged between 0.483 and 0.662 while Cronbach's Alpha was 0.670 and item to total correlation ranged between 0.436 and 0.477 which is above threshold of 0.3. Since all the three items met the required thresholds for reliability and construct validity, they were retained for model determination

4.3.4 Organizational Performance

Information on organizational performance as a construct was obtained through seven sub constructs each with multiple practices. Specific factors included financial performance, market performance, environmental performance and societal performance. Others included; growth and learning, operational performance and performance in the perspective of customer. The subscales were first subjected to reliability and validity tests prior to CB-SEM analysis. The findings from each of the factors are stated as follows.

Financial performance as a sub construct was measured using revenue, return on investment and profits, the items being rated on a five-point Likert scale in which one (1) denoted "not at all" while five (5) represented "very great extent." Information obtained was as summarized in Table 4.16.

Table 4.16   Financial Performance

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Revenue	3.26	1.064	.762	.658	.533
Return on investment	3.31	.955	.659	.560	.659
Profits	3.40	.988	.554	.483	.744

Cronbach's Alpha = .739, Grand Mean = 3.32   Source: Primary research data, 2019

Profits were the highest ranked financial performance attribute at 3.40 (SD = 0.988, N = 110) followed by return on investments at 3.31 (SD = 0.955, N = 110) and lastly revenue at 3.26 (SD = 1.064, N = 110). The overall mean for financial performance was 3.32 implying that private hospitals reported the outcome slightly above moderate extent. The factor loadings were all above the 0.4 threshold (0. 554, 0.659 and 0.762).

Cronbach's Alpha was high at 0.739 while item to total correlations ranged between 0.483 and 0.658 which is above threshold of 0.3. The three items were within the recommended range for both reliability and construct validity. They were included in model determination.

Market performance was measured using three elements which were rated on a five-point Likert scale; one (1) denoting "not at all" while five (5) represented "very great extent." The elements included market share growth, sales volume growth and reduction in marketing expenses. Table 4.17 presents the findings.

Table 4.17   Market Performance

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Market share growth	3.25	1.079	.620	.463	.483
Sales volume growth (in units)	3.50	.993	.624	.471	.481
Reduction in marketing expenses	3.36	1.123	.481	.475	.615

Cronbach's Alpha = 0.625, Grand Mean = 3.37   Source: Primary research data, 2019

Sales volume growth as an indicator of market performance which was ranked highest with a mean of 3.50 (SD = 0.993, N = 110) followed by reduced market expenses at 3.36 (SD = 1.123. N = 110) and lastly market share growth at 3.25 (SD = 1.079, N = 110). This implies that the respondents noted market performance from a moderate to great extent. The overall mean for market performance was 3.37 implying that private hospitals achieved the result marginally over moderate extent. Factor loadings were higher than the 0.3 threshold being in the range of 0.481 to 0.624. A moderate

Cronbach's Alpha of 0.625 was reported. At the same time, item to total correlation ranged between 0.463 and 0.475 which is higher than the threshold of 0.3. Notably, all the three items fell within accepted range for reliability and construct validity and were therefore included in model solution.

Environmental performance was measured using green environment, waste disposal and compliance to environmental laws. The indicators were rated on a five-point Likert scale in which one (1) represented "not at all" while five (5) represented "very great extent". Table 4.18 presents a summary of the findings.

Table 4.18   Environmental Performance

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Green environment	3.35	1.105	.693	.581	.587
Waste disposal	3.72	1.059	.693	.583	.588
Compliance to environmental laws	3.61	1.101	.549	.471	.721

Cronbach's Alpha = .723, Grand Mean = 3.56   Source: Primary research data, 2019

From Table 4.18, it can be pointed out that, waste disposal was the highest ranked element with a mean rating of 3.72 (SD = 1.059, N = 110) followed by compliance to environmental laws at 3.61 (SD = 1.101, N = 110) and lastly green environment at 3.35 (SD = 1.105, N = 110). This means that individually, environmental performance attained moderate to great extent scores. The overall mean for environmental performance was 3.56 implying that private hospitals attained the performance attribute generally at a great extent. Factor loadings of the elements which were generally high ranging between 0.549 and 0.693. Cronbach's Alpha was high at 0.723

and item to total correlations ranged between 0.471 and 0.583 all of them being above threshold of 0.3. All the elements were thus retained for further analysis since they met the required thresholds for reliability and construct validity.

Societal performance was measured based on corporate social responsibility, tax obligation compliance and ethics and compliance concerns, the elements being rated on a five-point Likert scale in which one (1) denoted "not at all" while five (5) represented "very great extent". The outcome was as presented in Table 4.19. Findings illustrated that ethics and compliance concerns attained the highest mean rating of 3.63 (SD = 1.132, N = 110) followed by tax obligation compliance at 3.56 (SD = 1.080, N = 110) while corporate social responsibility had the lowest mean rating at 3.38 (SD = 0.986, N = 110). The overall mean for societal performance was 3.52 implying that private hospitals attained societal performance at great extent.

Table 4.19   Societal Performance

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Cooperate social responsibility	3.38	.986	.409	.414	.635
Tax obligation compliance	3.56	1.080	.698	.524	.434
Ethics and compliance concerns	3.63	1.132	.577	.416	.505

Cronbach's Alpha = .605, Grand Mean = 3.52   Source: Primary research data, 2019

Factor loadings ranged between 0.409 and 0.698. Cronbach's Alpha was moderate at 0.605 and item to total correlation ranged between 0.414 and 0.524 which is above

threshold of 0.3. All the three items were therefore retained for further analysis since they met the required thresholds for reliability and construct validity.

Learning and growth as a sub construct was measured using three parameters; revenue growth, profitability growth and productivity growth. The parameters were rated on a five-point Likert scale ranging from one (1) denoting "not at all" to five (5) representing "very great extent." Table 4.20 presents a summary of the findings.

Table 4.20   Learning and Growth

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Revenue growth	3.47	.955	.478	.483	.653
Profitability growth	3.45	1.046	.628	.487	.518
Productivity growth	3.67	1.015	.663	.519	.473

Cronbach's Alpha = .651, Grand Mean = 3.53   Source: Primary research data, 2019

Data obtained show that productivity growth had the highest mean rating of 3.67 (SD = 1.015, N = 110) implying that it registered the highest performance index amongst learning and growth attributes. Revenue growth was mean rated averagely at 3.47 (SD = 0.955, N = 110) while profitability growth merited the lowest mean rating at 3.45 (SD = 1.046, N = 110). Generally, the mean rating of learning and growth was 3.53, implying that private hospitals achieved the performance attribute to a great extent. Factor loading ranged from 0.478 to 0.663. Cronbach's Alpha stood at 0.651 while item to total correlation was within the range of 0.483 and 0.519 which is above threshold of 0.3. Since all the three items met the required thresholds for reliability and construct validity, they were adopted for further model determination.

Operational performance was measured using three practices; cost reduction, delivery dependability and service efficiency. Each was rated on a five-point Likert scale in which one (1) denoted "not at all" while five (5) represented "very great extent." Table 4.21 provides research finding.

Table 4.21   Operational Performance

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Cost reduction	3.44	1.000	.488	.468	.547
Delivery dependability	3.45	.973	.657	.442	.467
Service efficiency	3.60	1.024	.515	.428	.454

Cronbach's Alpha = .630, Grand Mean = 3.50   Source: Primary research data, 2019

Service efficiency was rated highest with a mean of 3.60 (SD = 1.024, N = 110) signifying that amongst the elements of operational performance, it merited the best performance. However, cost reduction was the least rated at 3.44 (SD = 1.000, N = 110). Overall, operational performance was mean rated at 3.50 implying that according respondents, private hospitals attained this performance attribute generally to a great extent. Factor loadings were relatively high and ranged between 0.488 and 0.657; Cronbach's Alpha was moderate at 0.630 and item to total correlation ranged between 0.428 and 0.468 which is above threshold of 0.3. Since all the items met the required thresholds for reliability and construct validity, they were included in model determination.

Customer perspective was measured using three items rated on a five-point Likert scale with one (1) denoting "not at all" while five (5) representing "very great extent." Table 4.22 presents a summary of the results obtained.

Table 4.22   Customer Perspective

	Mean	SD	Factor loading	Item-total correlation	Alpha if item deleted
Retained more than 80% of customer	3.51	.843	.638	.401	.493
Increase customer numbers by 20%	3.69	.926	.610	.468	.434
Accuracy and adequacy of medication	3.81	.953	495	.421	.585

Cronbach's Alpha=.610, Grand Mean=3.67. Source: Primary research data, 2019

Accuracy and adequacy of medication was rated highest with a mean of 3.81 (SD = 0.953, N = 110) followed by increased customer numbers by 20% (Mean = 3.61, SD = 0.953, N = 110) and lastly retained more than 80% of customers (Mean = 3.51, SD = 0.953, N = 110). The overall mean for customer perspective was 3.67 implying that private hospitals achieved the practice to a great extent. Factor loadings were high and ranged from 0.495 to 0.638. Cronbach's Alpha was moderate at 0.610 and item to total correlation ranged between 0.401 and 0.468 which is above threshold of 0.3. Since all the items met the required thresholds for reliability and construct validity, they were included in model determination. There were no items dropped from further analysis.

4.4 KMO and Bartlett's Test

To ascertain factorability of the items in the latent constructs, there was need to perform both Bartlett's and Kaiser-Meyer-Olkin (KMO) tests (Kaiser, 1974). KMO measure of sampling adequacy was obtained for all the study sub constructs. For

KMO test, all values recorded were above the threshold of 0.6 (Kaiser, 1974). Further Bartlett's Test of Sphericity indicated that all sub variables had values of chi-square which were significant at p < 0.001 (Barlett, 1954). The tests confirmed that items representing the sub constructs could be subjected to factor analysis. Similar evidence is recapped in Table 4.23.

Table 4.23   Kaiser-Meyer-Olkin and Bartlett's Tests

Sub construct	KMO measure	Approx. Chi-Square	df	Sig.
SCQM	.655	66.199	3	.000
Customer focus	.648	49.240	3	.000
Information sharing	.632	18.660	3	.000
Postponement	.627	20.055	3	.000
Process management	.665	64.047	3	.000
Coordination of supply chain activities	.642	41.383	3	.000
Leadership commitment	.669	55.164	3	.000
HRM	.676	39.140	3	.000
ICT	.653	63.433	3	.000
Trust	.683	88.308	3	.000
Corporate Culture	.606	31.818	3	.000
Exploitation of market opportunities	.674	35.460	3	.000
Neutralization of competitor threats	.692	32.037	3	.000
Financial performance	.640	77.873	3	.000
Market share	.633	39.920	3	.000
Environmental performance	.661	67.890	3	.000
Societal performance	.681	39.643	3	.000
Learning and growth	.631	45.948	3	.000
Operational performance	.668	26.379	3	.000
Customer perspective	.665	25.748	3	.000

4.5 Diagnostic Tests

Prior to analysis, data obtained was tested for normality, multi-collinearity, heteroscedasticity and autocorrelation. This section presents findings of each test. Normality test was based on Shapiro-Wilk test and Kolmogorov-Smirnov[a]. Table 4.27 presents findings as were obtained.

Table 4. 24   Normality Tests

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Supply Chain Quality Management Practice	.098	110	.011	.986	110	.311
Organizational Factors	.059	110	.200[*]	.991	110	.671
Competitive Advantage	.110	110	.002	.979	110	.080
Organizational Performance	.079	110	.085	.982	110	.132

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Statistics for Shapiro-Wilk's test ranged from 0.979 (p = 0.080) for competitive advantage to 0.991 (p = 0.671) for organizational factors. According to Tabachnick and Fidell (2001), if Shapiro-Wilk statistic test shows an insignificant output (Sig value of higher than .05), then the data is normally distributed. In this regard, data on all the variables were normally distributed.

Collinearity test for the various models was based on Variance Inflation Factors (VIF). Table 4.25 depicts a synopsis of the findings.

Table 4. 25   Variance Inflation Factors

Model	Variables	Collinearity Test	
		Tolerance	VIF
SCQMP & Organizational Performance	SCQMP, Org Perf	1.000	1.000
SCQMP, Organizational factors & Organizational Performance	SCQMP, OF, Org Perf	.614	1.629
		.614	1.629
SCQMP, Competitive advantage & Organizational Performance	SCQMP, CA, Org Perf	.826	1.711
		.826	1.711
SCQMP, Organizational factors, Competitive advantage & Organizational Performance	SCQMP, OF, CA, Org Perf	.611	1.636
		.470	2.128
		.632	1.581

Source: Primary research data, 2019

Findings show that the variables had VIF values ranging between 1.581 and 2.128. The tolerance values ranged between 0.470 and 0.826. These values imply that there was no threat of multicollinearity according to Razani and Wah (2011) who advocate for VIF value of 1.5 and 10 to indicate absence of multicollinearity. At the same time, According to Feherty (2007), a tolerance value above 0.4 is indicative of lack of multicollinearity. Therefore, the independent variables did not contain to a great

extent identical information which would otherwise generate unstable estimates which tend to increase the variances of the coefficients.

Autocorrelation was assessed based on Durbin-Watson test. The Durbin Watson statistics and their corresponding d_L and d_U for the models were recorded as presented in Table 4.29. Durbin-Watson (d) value for the relationship between SCQM practices is 1.834 which is greater than the d_U value of 1.715 confirming that there was no autocorrelation. In the case of SCQM practices, organizational factors and organizational performance model, the d value is 2.092 with a lower d_U value of 1.604 indicating no first order correlation. The third model, SCQM practices, competitive advantage and organizational performance has a d value of 1.708 and lower d_U value of 1.604 implying no first order autocorrelation existed. Finally, the d value for joint effect of SCQM practices, organizational factors, competitive advantage and organizational performance is 2.004. This value is higher than the d_U value of 1.625 for the model meaning that there is no first order autocorrelation. Therefore, it can be concluded that there is no first order linear autocorrelation between successive observations in the data.

Table 4. 26   Durbin-Watson Test

Model	Variables	Durbin Watson Test	d_L	d_U
SCQMP & Organizational Performance	SCQMP, Org Perf	1.834	1.634	1.715
SCQMP, Organizational factors & Organizational Performance	SCQMP, OF, Org Perf	2.092	1.482	1.604
SCQMP, Competitive advantage & Organizational Performance	SCQMP, CA, Org Perf	1.708	1.482	1.604
SCQMP, Organizational factors, Competitive advantage & Organizational Performance	SCQMP, OF, CA, Org Perf	2.004	1.461	1.625

Source: Primary research data, 2019

Heteroscedasticity test of the models was based on the Koenker test. Results were as presented in Table 4.30.

Table 4. 27   Koenker Test for Heteroscedasticity

Model	Variables	Koenker Test	
		LM	Sig
SCQMP & Organizational Performance	SCQMP, Org Perf	.232	.630
SCQMP, Organizational factors & Organizational Performance	SCQMP, OF, Org Perf	.052	.975
SCQMP, Competitive advantage & Organizational Performance	SCQMP, CA, Org Perf	1.656	.437
SCQMP, Organizational factors, Competitive advantage & Organizational Performance	SCQMP, OF, CA, Org Perf	3.326	.344

Source: Primary data, 2019

Findings demonstrate that when models for all the constructs were tested for heteroscedasticity, p values for the Lagrange Multiplier (LM) test ranged from 0.344 for joint effect model to 0.975 for mediation model. This means that $p > 0.05$ for all the model constructs thus negating possibility of occurrence of heteroscedasticity (Jose, 2013). In general, diagnostic tests performed established that data obtained met the threshold as regards normality, collinearity, autocorrelation and homoscedasticity and therefore all the variables in the models could be used for further analysis.

4.6 Measurement Model Estimation

CB-SEM data analysis using AMOS software application was applied to assess the connection between the latent constructs in order to determine the predictive potential of the conceptual model for the private hospitals in Kenya. Four CB-SEM models were estimated each for objectives one, two, three and four. This analysis was found relevant for the research because the size of sample size which was 110 is deemed sufficient for covariance-based SEM analysis (Hair et al., 2014; Lee et al., 2011).

To proceed with statistical analysis, a two-stage approach was embraced. First, outer or measurement model estimated. This was aimed at determining the connection amid the observable variables and the hypothetical constructs they denote. Next, was to specify the structural model at the same time evaluate the proposed linkages and test the hypothesis (Kline, 1998; Bryne, 2010). There were twenty (20) measurement items for the four constructs. These were subjected to confirmatory factor analysis which is part of AMOS outer model assessment. All the correlations between the observed variables and their respective factors were postulated in the measurement model. This model outlines how each group of indicators are aligned to their corresponding latent variables. The study used multiple items to measure the constructs. Complete information relating to categories of constructs is provided in Table 4.28.

Table 4. 28   Key Latent Constructs

Variables	Type of Construct	Number of observed variables
Supply chain quality management practices	Reflective	Six items

Organizational factors	Reflective	Five items
Competitive advantage	Reflective	Two items
Organizational performance	Reflective	Seven items

Observed variables of a latent construct which are highly correlated and interchangeable are said to be reflective and should be scrutinized for reliability and validity (Wong, 2013; Hair et al., 2014). For this study, all the latent constructs were found to manifest this characteristic hence making them all to be reflective. The latent variable SCQM practices were comprised of six (6) observed indicators with an average of three items per indicator. They were; supplier quality management (SQM), customer focus (CF), information sharing (IS), postponement (P), process management (PM) and coordination of supply chain (CSCA).

Organizational factors as a reflective construct comprised of five sub constructs each consisting of three indicators. They include leadership commitment (LC), human resource management (HRM), information and communication technology (ICT), trust (T) and corporate culture (CC). Competitive advantage (CA) which is also reflective had two indicators; exploiting market opportunities (EMO) and neutralizing competitor threats (NCT), each indicator had three items. Further, the performance of the private hospitals (organizational performance) comprised of seven indicators; financial performance (FP), market performance (MP) and environmental performance (EP). Other indicators of the construct include societal performance (SP), learning and growth (LG), operational performance (OP) and customer perspective (CP). Each indicator was made up of three items. Since all these variables are reflective, they were thoroughly checked for reliability, validity and uni-

dimensionality by conducting confirmatory factor analysis (CFA) using AMOS software. Table 4.29 illustrates the descriptive statistics for all the latent constructs in the outer model. The results show that data for all the variables are fairly normal because all the values for kurtosis and skewness fall within the range of -1 and +1, with the exception of kurtosis of financial performance. All variables were treated as composite. According to Jacobs, Smith & Goddard (2004), healthcare performance measurement needs to be as comprehensive as possible to give a holistic view. The authors elaborate that healthcare systems exhibit multidimensional, therefore necessitating combination of several dimensions of hospital output.

Table 4. 29   Descriptive Statistics for Measurement Scales

Latent constructs	Indicator items	Code	No. of items	Mean	Std. Deviation	Skewness	Kurtosis
Supply Chain Quality	Supplier quality management	SQM	3	3.3606	.89754	-.034	-623
Management practices	Customer focus	CF	3	3.5818	.75613	.106	-.479
	Information sharing	IS	3	3.4636	.71548	-.227	.322
	Postponement	P	3	3.4212	.71060	.184	-.164
	Process management	PM	3	3.3545	.84867	-.120	-.886
	Coordination of supply chain activities	CSCA	3	3.4667	.75851	.146	.326
Organizational factors	Leadership and commitment	LC	3	3.3667	.81142	-.317	-.076
	Human resource management	HRM	3	3.4455	.75861	.297	.114
	Information & communication technology	ICT	3	3.2091	.91634	-.095	-.463
	Trust	T	3	3.4121	.86373	.494	-.286
	Corporate culture	CC	3	3.5333	.76918	.320	-.257
Competitive advantage	Exploitation of market opportunities	EMO	3	3.2455	.70484	-.618	.798
	Neutralization of competitor threats	NCT	3	3.4485	.74664	.099	-.327
Organizational performance	Financial performance	FP	3	3.3242	.81332	.040	-1.107
	Market performance	MP	3	3.3727	.80611	-.002	-.697

Environmental performance	EP	3	3.5606	.87313	.325	.764	
Societal performance	SP	3	3.5242	.79814	.347	-.409	
Learning and growth	LG	3	3.5303	.77195	.029	-.612	
Operational performance	OP	3	3.4970	.71783	-.159	.310	
Customer perspective	CP	3	3.6697	.64569	.211	-.171	

Source: Primary research data, 2019

To establish the individual relationship among the variables contained in the model, a correlation analysis was performed. Findings indicated that the variables have a statistically significant individual relationship with the performance of the private hospitals, Pearson's correlation for the variables ranging between 0.624 for supply chain quality management practices and 0.737 for organizational factors. The correlation matrix obtained is shown in Table 4.30.

Table 4. 30   Correlation Matrix (Pearson's correlation)

Variables	SCQMP	OF	CA	OP
SCQMP	1			
OF	.621[**]	1		
CA	.417[**]	.604[**]	1	
OP	.624[**]	.737[**]	.652[**]	1

[**] p < .01. Source: Research data, 2019

4.7 Construct Unidimensionality

According to Hagell (2014), unidimensional item is one with the systematic dissimilarities within the item variance occasioned by just one variance source, specifically, single latent variable. On the basis of this particular principle, an array of items is viewed as unidimensional due to absence of correlated residuals between the items once the variance due to the latent construct is completely restricted. Fischer and Seliger (1997) contend that as long as all items measure the same processes to the same extent, then they can still be deemed unidimensional. The primary concern is the guarantee that all the identified latent variable indicators adequately measure the construct.

Three approaches can be employed to measure construct unidimensionality. First is to obtain item to total coefficients for all the indicators representing a construct. Kidder (1981) suggests that as a guide, the item to total score of an indicator should be greater than 0.3. An indicator should have an item to total score of at least 0.3. The other two ways are confirmatory and exploratory factor analyses based on the factor loadings. This study adopted a two-step methodology. First step was to verify the unidimensionality of the indicators of the first level constructs by ascertaining the validity and reliability of the constructs. The output values showed that all the indicators had factor loadings greater than 0.4 and item to total correlation scores greater than 0.3. Consequently, indicators were then subjected to CB-SEM analysis using AMOS 21.0.

At level two, item to total tallies were taken for the indicators denoting each latent construct in the model. Table 4.31 shows that the corrected item-to-total correlation scores for all the indicators representing the latent constructs are above the threshold of 0.3. These values ranged from 0.480 for trust to 0.682 for learning and growth. Further, confirmatory factor analysis (CFA) results inform that the indicator items heavily loaded on the relevant latent constructs.

Table 4. 31   Item to Total Correlation Coefficients

Latent constructs	Indicator items	Correlation coefficient
Supply chain quality management practices	Supplier quality management	.636
	Customer focus	.652
	Information sharing	.553
	Postponement	.488

	Process management	.673
	Coordination of supply chain activities	.630
Organizational factors	Leadership and commitment	.515
	Human resource management	.626
	Information & communication technology	.499
	Trust	.480
	Corporate culture	.603
Competitive advantage	Exploitation of market opportunities	.570
	Neutralization of competitor threats	.570
Organizational performance	Finance performance	.518
	Market performance	.647
	Environmental performance	.639
	Societal performance	.559
	Learning and growth	.682
	Operational performance	.557
	Customer perspective	.559

Source: Primary research data, 2019

4.8 Supply Chain Quality Management Practices and Performance of Private Hospitals in Kenya

The first objective sought to establish the direct linkage of SCQM practices and performance of private hospitals in Kenya. To meet the expectations of the objective, CB-SEM analysis using AMOS was used. Prior to interpretation of findings, reliability and validity tests were rigorously done. The following subsection presents the reliability and validity of the models.

To begin with, an evaluation of the indicators of each of the two latent constructs in the SEM model was undertaken. Table 4.32 presents a summary of the results of the evaluation.

Table 4. 32   Summary of Results for Reflective Outer Models for the Direct Effect

Latent variable	Indicators	Loadings	Reliability of indicator	T statistics	p values
Supply Chain Quality	SQM	.760	.714	12.193	.000
Management Practices	CF	.762	.669	12.293	.000
	IS	.685	.755	9.816	.000
	P	.638	.671	8.639	.000
	PM	.799	.716	13.872	.000
	CSCA	.733	.639	11.235	.000
Organizational	FP	.663	.739	9.238	.000
Performance	MP	.759	.625	12.182	.000
	EP	.762	.723	12.283	.000
	SP	.692	.605	10.010	.000
	LG	.781	.651	13.061	.000
	OP	.677	.630	9.616	.000
	CP	.668	.610	9.371	.000

Source: Primary research data, 2019

Results in Table 4.32 show that the reliability of all the indicators of the two latent variables are larger than the minimum level of 0.4 and a considerable number are above the preferred level of 0.7 as stipulated by Wong (2013). All the outer model loadings are highly significant thus permitting further analysis (Mustafa, 2018).

Composite reliability scores of the latent constructs obtained from the SEM output was assessed to confirm internal consistency reliability. Table 4.33 presents the findings.

Table 4. 33   Composite Reliability, Cronbach's Alpha and AVE of Latent Constructs

Latent Variable	Composite Reliability	Cronbach's Alpha	AVE	Square root of AVE/Discriminant Value
SCQM practices	0.612	0.832	0.624	0.790
Organizational performance	0.980	0.840	0.663	0.814

Findings indicate that composite reliability scores for all the latent variables are greater than the 0.6 threshold (Bagozzi, 2010). The Cronbach's Alpha values for the constructs are above the 0.7 threshold (Hair Jr. et al., 2014). Therefore, a high level of internal consistency among the two latent variables was ascertained.

Construct validity for the measurement model in the structural equation model was assessed using convergent and discriminant types of validity. Convergent validity was established on the basis of average variance extracted (AVE) values for each latent variable. Findings illustrated that the AVE estimates for the two latent variables are well above the acceptable 0.5 threshold thus validating convergent validity (Hair et al., 2014). Additionally, the validity was verified by extracting the factor and cross loadings of all items to their respective latent constructs. The items as observed had higher loadings on their corresponding latent variable compared to other latent

variables as demonstrated by the values exhibited on Table 4.34. The values confirm the theory that the items applied to evaluate a construct should be as close to each other as possible.

In the case of discriminant validity, the measurement was aimed at validating that the constructs SCQM practices and organizational performance were not related to each other. Discriminant validity was authenticated by comparing the square root of the average variance extracted (AVE) or discriminant value (DV) of each of latent variable with the correlation value of SCQM practices the latent variable from AMOS output. The AVE of SCQM practices is 0.624 from Table 4.33 and the square root is 0.790. This square root is therefore greater than the correlation value of SCQM practices and organizational performance (0.624). Based on recommendation by Fornell and Larcker (1981), the discriminant validity was confirmed.

Table 4. 34   Confirmatory Factor Analysis Results

Indicators	SCQM Practices	Organizational performance	p-values
SQM	**.760**	.338	.000
CF	**.762**	.237	.000
IS	**.685**	.269	.000
P	**.638**	.297	.000
PM	**.799**	.258	.000
CSCA	**.733**	.264	.000
FP	.368	**.663**	.000
MP	.273	**.759**	.000
EP	.317	**.762**	.000
SP	.329	**.692**	.000

LG	.230	**.781**	.000
OP	.276	**.677**	.000
CP	.229	**.668**	.000

Data obtained indicate that the constructs items loadings and cross loadings for each of the individual item and their p-values which are highly significant confirm convergent validity.

Then the next task was to evaluate measurement model fitness. In this study, involving CB-SEM, Chi Square test of goodness fit (χ^2), Standard Root Mean Square Residual (SRMR) and Goodness-of-fit statistic (GFI) were used to assess the model fitness. These indices are commonly referred to as Absolute fit indices since they determine how well priori models fit the sample data (McDonald & Ho, 2002). Similarly, the indices demonstrate that proposed model has the most superior fit. Indeed, the measures provide the most fundamental indication of how best the proposed theory fits the data.

Researchers have seldom agreed on indices to report and the thresholds for various indices due to conflicting information available in literature. According to Bagozzi, (2010), use of $\chi2$ is appropriate for sample sizes between 100 and 200, with the $\chi2$ significance test becoming less reliable outside this range. This is echoed by Hu and Bentler (1999), who describe chi-square value as the conventional gauge for assessing complete model fit and measuring the extent of disparity between the sample and fitted covariance matrices. As a general guide for chi-square fit test, good model fit would provide an insignificant result at 0.05 level of significance threshold (Barrett, 2007).

In addition to χ2, two or more other fit tests should be conducted. The test that were included in this study were: SRMR ranging from 0 (no fit) to 1 (perfect fit) where Value ≤.05 is indicative of good model fit (Byrne, 2010); GFI that should have values within 0 (no fit) to 1 (perfect fit) as value > 0.9 implies good fit (Diamantopoulos & Siguaw, 2000). A lower or higher value around 0.90 is acceptable given its sensitivity to factor loadings and sample sizes making this measure less popular. GFI denotes the proportion of observed covariance explained in relation to the covariance predicted in the model and deals exclusively with error in replicating the variance-covariance matrix (Byrne, 2010). Table 4.35 provides a summary of the model fit statistics.

Table 4. 35   Model Fit Statistics for Direct Relationship

Model	χ^2	Df	SRMR	GFI
Default model	5.209	91	0.042	.793

Results contained in Table 4.35 showed that χ^2 was insignificant with a value of 5.209 at 91 degrees of freedom; SRMR for the data had a score of 0.042 while GFI was equivalent to 0.793. Barret (2007) advocated for an insignificant chi-square for a good model fit at a 0.05 threshold. At the same time, Hu and Bentler (1999) advocated for SRMR values lower than 0.05. GFI is within the range of 0-1 although slightly lower than 0.9. Hooper, Coughlan, and Mullen (2008) argued that GFI is scaled measure with higher values indicating better model fit. Sharma and Mogdil (2020) stated that a model with GFI values of 0.81 and 0.88 was a good fit. This study ascertains that the model meets the threshold for good fitness.

After evaluating model fitness, next step was to interpret the regression coefficient for the path diagrams and average value explained. Figure 4.1 presents the standardized

estimates for the existing relationship between the variables in the path diagram while Table 4.36 shows the standardized regression weights for the existing relationship. Findings show that the SCQM practices explain 39% of the variation in performance of private hospitals in Kenya. There is also a positive significant relationship between adoption of SCQM practices and performance of the private hospitals ($\beta = 0.624$, t = 8.34, p < 0.001) at 0.05 level of significance.

Table 4. 36   Standardized Regression Weights for Direct Relationship

			R^2	β	SE	T	P
Organizational performance	<---	SCQMP	.390	.624	.073	8.343	.000

Source: Primary research data, 2019
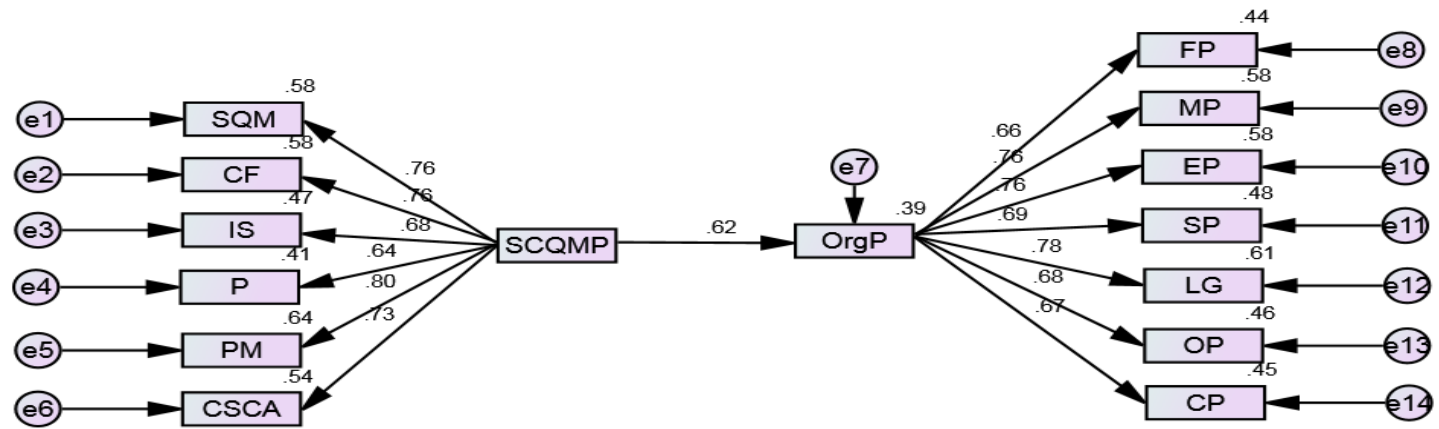
Figure 4.1   Structural Equation Modelling Path Diagram for the Direct Relationship

4.9 Supply Chain Quality Management Practices, Organizational Factors and Performance of Private Hospitals in Kenya

The second objective sought to establish the moderating effect of organizational factors. To achieve the expectations of the objective, CB-SEM analysis using AMOS was undertaken. According to Xiaojing, Ying and Ahmad Khan (2009) moderation test using AMOS can be undertaken easily through a number of steps. First, the standardized independent, the proposed moderator and the dependent variables are created. Then a standardized interaction term is created using the standardized independent variable and the standardized proposed interaction term. Then, the four new variables created are used to test for moderation in AMOS in a graphical model as shown in Figure 4.2. To achieve this objective, reliability and validity as well as the fit of measurement model and estimation of SEM model were conducted as discussed below.

Interpretation of the SEM began with an evaluation of the indicators of each of the three latent constructs; SCQM practices, organizational factors (OF) and the performance of private hospitals. Table 4.37 exhibits an outline of the evaluation. Results obtained show that the individual reliability values of all the three constructs in the model are greater than the 0.4 threshold and a good number are more than the preferred 0.7 (Mustafa & Potter 2009; Wong, 2013). It is clear from the evidence presented that all the outer model loadings are adequately significant.

Table 4. 37   Summary of Results for Reflective Outer Models for the Moderating

Effect

Latent Variable	Indicators	Loadings	Indicator Reliability	T statistics	p-values
Supply Chain Quality Management Practices	SQM	.682	.714	12.193	.000
	CF	.576	.669	12.293	.000
	IS	.490	.755	9.816	.000
	P	.453	.671	8.639	.000
	PM	.678	.716	13.872	.000
	CSCA	.556	.639	11.235	.000
Organizational Factors	LC	.569	.695	10.265	.000
	HRM	.583	.603	12.528	.000
	ICT	.653	.711	10.594	.000
	T	.594	.773	9.880	.000
	CC	.580	.684	12.002	.000
Organizational Performance	FP	.539	.739	9.238	.000
	MP	.612	.625	12.182	.000
	EP	.665	.723	12.283	.000
	SP	.552	.605	10.010	.000
	LG	.603	.651	13.061	.000
	OP	.486	.630	9.616	.000
	CP	.431	.610	9.371	.000

Source: Primary research data, 2019

Composite reliability scores of the latent constructs obtained from the SEM output was assessed to ascertain internal consistency reliability. Table 4.38 presents the findings.

Table 4. 38   Composite Reliability, Cronbach's Alpha and AVE of Latent Constructs

Latent Variable	Composite Reliability	Cronbach's Alpha	AVE	Square root of AVE or DV
SCQM practices	.991	.832	.592	0.770
Organizational factors	.991	.769	.610	0.781
Organizational performance	.886	.840	.577	0.759

Source: Primary research data, 2019

Findings show that the composite reliability scores for all the latent variables were greater than the 0.6 threshold as suggested by Bagozzi and Yi (1988). At the same time, all the Cronbach's Alpha values for the constructs are above the 0.7 threshold (Hair Jr. et al., 2014). Therefore, a high level of internal consistency among the three latent variables was ascertained.

Next, both convergent validity and discriminant validity were investigated. The first was confirmed based on Average Variance Extracted (AVE) of each latent variable. Findings illustrated that the AVE values for the three latent variables are greater than the acceptable 0.5 threshold as shown in Table 4.38 which confirmed convergent validity (Hair Jr. et al., 2014). Additionally, Convergent validity was verified by extracting the factor and cross loadings of all items to their respective latent constructs as shown in Table 4.40. Data presented shows that the constructs items

loadings and cross loadings for each of the individual item on their respective latent variables were higher and their p-values which are highly significant. This confirms convergent validity.

Discriminant validity was also established. This aimed at validating that the constructs SQMP practices, organizational factors and organizational performance are significantly different from each other. This was achieved by comparing the square root of the average variance extracted (AVE) or discriminant value (DV) of each of the latent variables with the correlation values between the latent variables from AMOS output (Fornell & Larcker, 1981). Table 4.39 shows Fornell-Larcker test for discriminant validity.

Table 4. 39   Fornell-Larcker Discriminant Validity Test for the Relationship between SCQM practices, organizational Factors and Organizational Performance

Variable	DV	Discriminant Validity Matrix		
		SCQM practices	Organizational factors	Organizational performance
SCQM practices	0.770	**0.770**		
Organizational factors	0.781	0.621	**0.781**	
Organizational performance	0.759	0.624	0.737	**0.759**

Source: Primary research data, 2019

Discriminant value (DV) for SCQM practices of 0.770 is greater than correlation value for organizational factors (0.621) and organizational performance (0.624). Again, the square root of the AVE for organizational factors observed to be 0.781 is greater correlation value for organizational performance (0.737) and for SCQM practices (0.621). Similarly, the DV for organizational performance (0.759) is greater

than the correlation value with SCQM practices (0.624) and organizational factors (0.737). These measurements confirm that discriminant validity condition was met.

Table 4. 40   Confirmatory Factor Analysis Results

Indicators	SCQM Practices	Organizational Factors	Organizational Performance	p-values
SQM	**.760**	.682	.404	.000
CF	**.762**	.576	.368	.000
IS	**.685**	.490	.273	.000
P	**.638**	.453	.317	.000
PM	**.799**	.678	.329	.000
CSCA	**.733**	.556	.230	.000
LC	.569	**.701**	.276	.000
HRM	.583	**.768**	.229	.000
ICT	.608	**.712**	.338	.000
T	.594	**.687**	.237	.000
CC	.580	**.754**	.269	.000
FP	.539	.297	**.663**	.000
MP	.612	.258	**.759**	.000
EP	.615	.264	**.762**	.000
SP	.552	.332	**.692**	.000
LG	.603	.234	**.781**	.000
OP	.486	.410	**.677**	.000
CP	.431	.390	**.668**	.000

Source: Primary research data, 2019

Measurement of model fitness was assessed using Chi Square (χ^2) test with an insignificant result at a 0.05 threshold, Standard Root Mean Square Residual (SRMR) with a range of between 0.0 to 1.0 and values of a well-fitting models being below 0.05, Goodness of Fit Indicator (GFI) of values ranging from 0 to 1 with a higher value of 0.0 being preferred and Root Mean Square Error of Approximation (RMSEA) with values ranging between 0.0 and 0.08 in line with the recommendations of Barret (2007). Table 4.41 is a summary of the findings.

Table 4. 41   Model Fit Statistics for Moderation Relationship

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	4.533	46	0.042	0.0432	.745

Source: Primary research data, 2019

The tabulated results show that χ^2 was insignificant and equivalent to 4.533 at 207 degree of freedom, SRMR for the data was equivalent to 0.042, GFI was equivalent to 0.745 which aligns to the category of good model fit (Hooper et al., 2008; Sharma & Mogdil, 2020). GFI value ranges from < 0.5 poor fit, > 0.5 marginal fit, > 0.6 good fit to > 0.9 perfect fit (Hair et al 2014; Byrne, 2010). Past studies have also reported GFI values lower than 0.9 indices including; 0.530 by Singh and Khamba (2016), 0.816 by Garg and Chauhan (2015) and 0.774 by Motawa and Oladokun (2015) among others. Lower GFI values are attributed to small sample sizes which are below 200. RMSEA was significant at 0.0432 implying that the model met the threshold for model fitness (Barret, 2007; Hu & Bentler, 1999).

The next step was to interpret the regression coefficients of the path diagram after successful establishment of the model fitness. The path diagram is presented in Figure 4.2 with standardized estimates for the existing relationship between the variables.
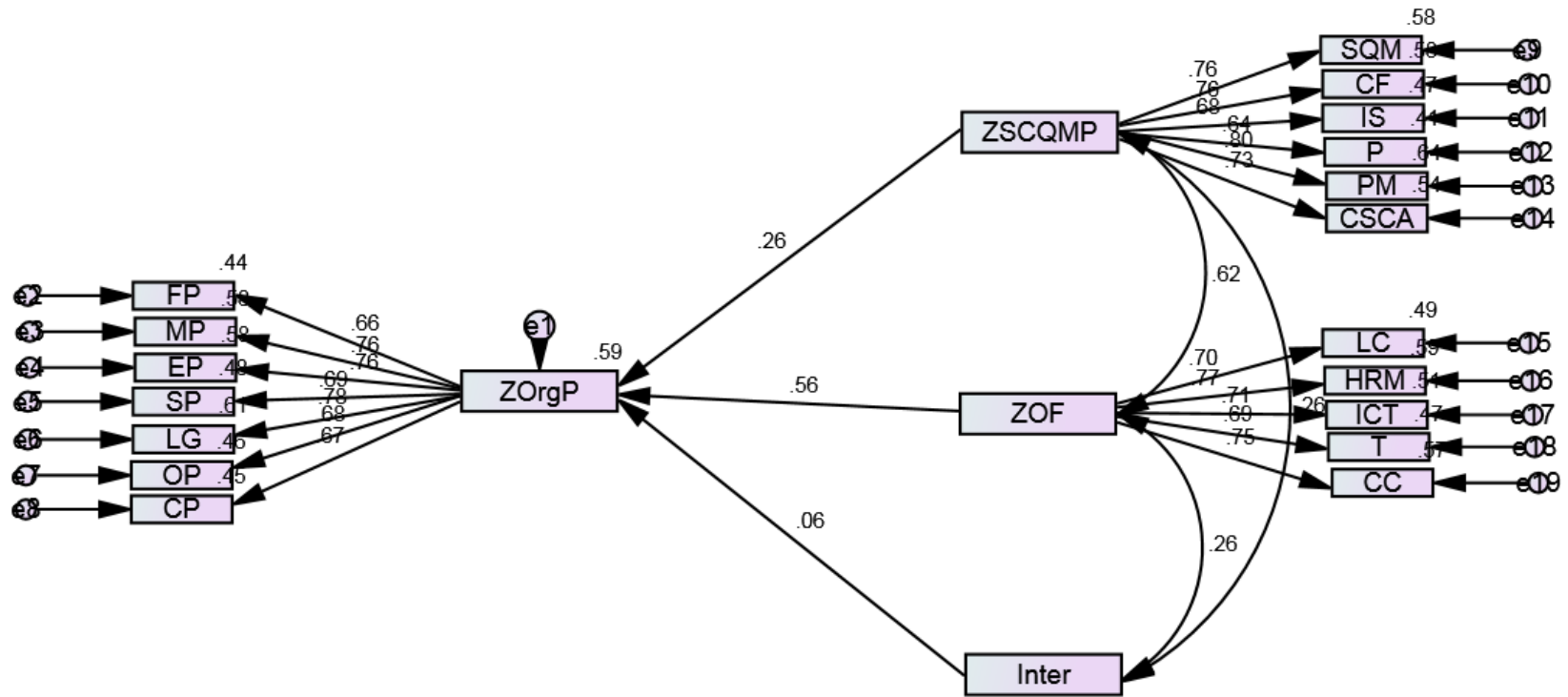
Figure 4.2   Structural Equation Modelling Path Diagram for the Moderating Effect of Organizational Factors on the Relationship between SCQM Practices and Organizational Performance.

Table 4.42 shows the standardized regression weights for the existing relationship between the variables.

Table 4. 42   Standardized Regression Weights for Moderation

			β	SE	t	P
Organizational Performance	<---	OF	.559	.079	7.101	.000
Organizational Performance	<---	SCQMP	.261	.079	3.307	.000
Organizational Performance	<---	Inter	.067	.068	.986	.324

Source: Primary research data, 2019

Findings indicate that independent exogenous variable, SCQM practices, significantly affects performance of private hospitals ($\beta = 0.559$, t = 7.101, $p < 0.001$). The effect of organizational factors on the performance of private hospitals is also positive and significant ($\beta = 0.261$, t = 3.307, $p < 0.001$). The coefficient of interaction term on the performance of private hospital even though is positive, is insignificant ($\beta = 0.067$, t = 0.986, p = 0.324). β coefficient explains the amount of unique variance a predictor variable accounts for. If it is insignificant as is the case, then it means that in this model contribution of organizational factors towards predicting organizational performance is not sufficient.   This implies that organizational factors taken in combination failed to moderate the relationship between SCQM practices and performance of private hospitals in Kenya. However, proportion of organizational performance is explained by organizational factors and SCQM practices (R^2) is 0.59 which is above the recommended threshold of 0.5 and is also higher than the variance explained SCQM practices on its own. This observation prompted further analysis.

The study thus proceeded to establish which of the sub-constructs of organizational factors could moderate SCQM practices and the performance of private hospitals

correlation in Kenya. To achieve this, each of the sub-constructs was treated as a proposed moderator and was standardized, then an interaction term for each created using the standardized independent variable. Finally, the standardized independent variable, the standardized sub-construct and its interaction term were independently entered into an AMOS model and tested for moderation against the standardized dependent variable. The following subsections details the moderating effect of each of the organizational factors.

4.9.1 Supply Chain Quality Management Practices, Leadership Commitment and Organizational Performance

Four model fitness measures were used. These included; Chi Square (χ^2) test with an insignificant result at a 0.05 threshold, Standard Root Mean Square Residual (SRMR) to be below 0.05, Goodness of Fit Indicator (GFI) expected to be more than 0.9 being preferred and Root Mean Square Error of Approximation (RMSEA) with values ranging between 0.0 and 0.08 in line with the recommendations of Barret (2007). Table 4.43 is a summary of the output. First, the chi square was 4.283 which is insignificant at 0.05 level of significance. SRMR was 0.039 and GFI was 0.797 which were within the recommended range. The low value of GFI can be linked to small sample size of 110 respondents in the study (Randhawa & Ahuja, 2017). RMSEA value was 0.0445 also satisfied the criteria to confirm model fitness. The value of chi square was also lower than degrees of freedom as expected. Since most of the values were within the prescribed model fitness criteria, the model fitness was confirmed.

Table 4. 43   Model Fit Statistics for Moderation effect of Leadership Commitment

Model	χ^2	df	SRMR	RMSEA	GFI

Default model	4.283	117	0.039	.0445	.797

The other task was to establish the moderating effect of leadership commitment as an organizational factor. To achieve this, leadership commitment as sub-construct construct was treated as a proposed moderator and was standardized then its interaction term was created using the standardized independent variable. Thereafter, the standardized independent variable, the standardized sub-construct and its interaction term were entered into an AMOS model. Leadership commitment was tested for moderation against the standardized dependent variable. Path diagram for the sub-construct was obtained as illustrated in Figure 4.3

Figure 4.3   Structural Equation Modelling Path Diagram for the Moderating Effect of Leadership Commitment on the Relationship between SCQM Practices and Organizational Performance

Findings show that both leadership commitment and SCQM practices explain 18% of variation in organizational performance. Table 4.44 summarizes the contribution of SCQM practice (32%), leadership commitment (65%) and interaction term (22%) in explaining the variance. The β coefficient values from the same table indicate that only SCQM practices had a value greater than the recommended 0.5 (0.518) while leadership commitment and interaction term were low of 0.125 and 0.098 respectively. Also, t-value of 1.145 for the interaction term is insignificant at 95% confidence level (p-value = 0.252). Based on the findings, it was concluded that leadership commitment has an insignificant but positive moderation effect on the SCQM practices and organizational performance linkage at 5% significance level. Therefore, leadership commitment does not moderate the relationship between SCQM practices even though has a positive effect on the relationship.

Table 4. 44   Moderating Effect of Leadership Commitment on the Relationship between SCQM Practices and Organizational Performance

		β	SE	T	P
Organizational Performance	<--- SCQMP	.518	.082	6.315	.000
Organizational Performance	<--- LC	.125	.057	2.180	.029
Organizational Performance	<--- Inter	.098	.086	1.145	.252

Source: Primary research data, 2019

4.9.2 SCQM Practices, Human Resources Management and Organizational Performance

Chi Square (χ^2) output of 4.920 was recorded. This value is insignificant at 0.05 level of significance and is also less than degree of freedom which is 117. Standard Root Mean Square Residual (SRMR) was found to be 0.039 which less than 0.05. Goodness of Fit Indicator (GFI) was 0.794 close to the threshold of 0.9. The

observations confirmed fitness of the model to the proposed theoretical one. However, Root Mean Square Error of Approximation (RMSEA) also confirmed model fitness since the value of 0.0437 is greater than 0.05.

Table 4. 45   Model Fit Statistics for Moderation Effect Human Resource Management

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	4.920	117	0.039	.0437	.794

Source: Primary research data, 2019

The analysis of HRM as a moderating factor on the relation amid SCQMPs and organizational performance also followed a three-step process. In the first step, SCQM practices latent variable was entered into AMOS. Next, the human resources management was introduced. Lastly, the interaction term of SCQM practices and human resources was entered. Figure 4.4 shows the resultant path diagram.
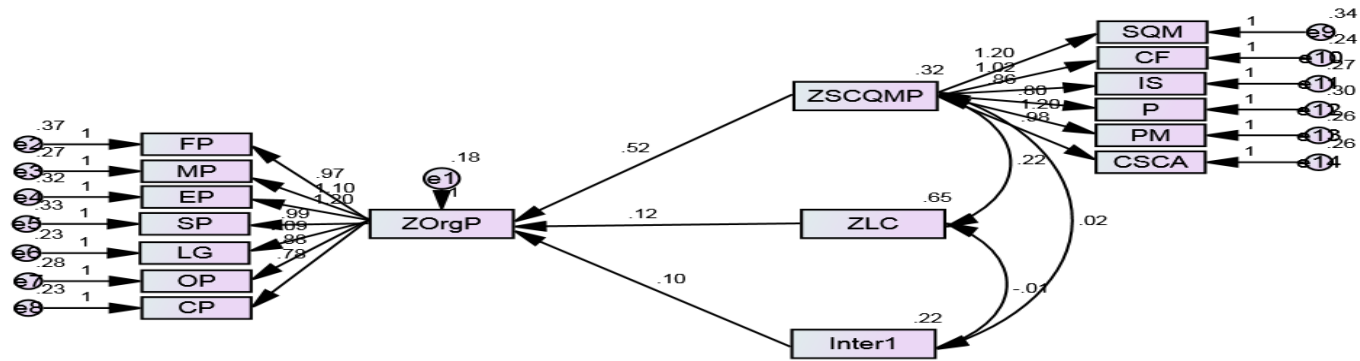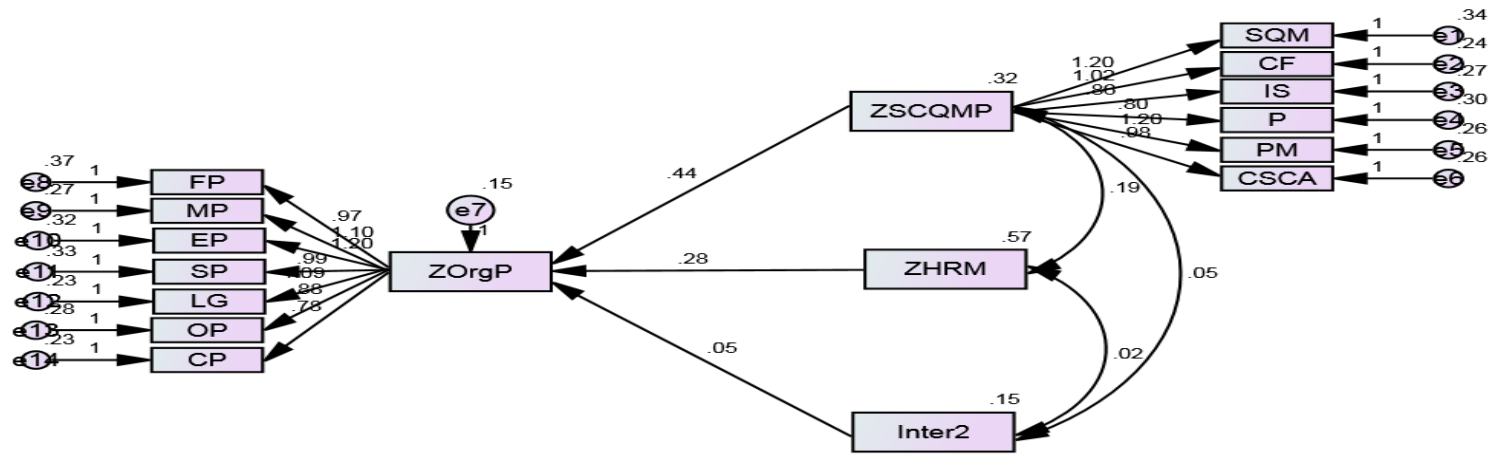
Figure 4.4   Structural Equation Modelling Path Diagram for the Moderating Effect of Human resources Management on the

relationship between SCQM Practices and Organizational Performance

Figure 4.4 indicate that human resources management, SCQM practices and interaction term explain 15% of variation in organizational performance. The R^2 values are 32%, 57% and 15% for SCQM practice, human resources management and interaction term respectively. The percentages explain the impact of each of the variables in clarifying the difference in organizational performance. Table 4.46 shows beta coefficient values as; SCQM practices, is 0.44, human resources management is 0.28 and interaction term is 0.05. Interaction term has t-value of 0.493 which **is** insignificant at 95% confidence level (p-value = 0.622). All the β values are below 0.5. For moderation to be confirmed, the t value of the interaction term must be statistically significant. From the findings, human resources management has an insignificant positive moderation effect at 5% significance level. Therefore, human resources management does not significantly moderate the link.

Table 4. 46   Moderating Effect of Human Resources Management on the correlation amid SCQM Practices and Organizational Performance

			β	SE	T	P
Organizational Performance	<---	SCQMP	.442	.076	5.848	.000
Organizational Performance	<---	HRM	.275	.055	4.995	.000
Organizational Performance	<---	Inter	.049	.099	0.493	.622

Source: Primary research data, 2019

4.9.3 SCQM Practices, Information and Communication Technology and Organizational Performance

A similar analytical process was done for the information and communication technology as was with the case with leadership commitment and human resource management factors. Measurement of model fitness was assessed using Chi Square

(χ^2) which returned a value of 3.971 which is insignificant at a 0.05 level of significance and also less than degree of freedom value of 117. The Standard Root Mean Square Residual (SRMR) was found to be 0.039 and this is less than 0.05 threshold. Goodness of Fit Indicator (GFI) value was 0.799 which is slightly less than 0.9. Root Mean Square Error of Approximation (RMSEA) was established as 0.0447 and is within ≤ 0.05 as recommended by Barret (2007). The tests confirmed model fitness. Table 4.47 presents a summary of the findings.

Table 4. 47   Model Fit Statistics for Moderation effect of Information and Communication Technology

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	3.971	117	0.039	.0447	.799

Source: Primary research data, 2019
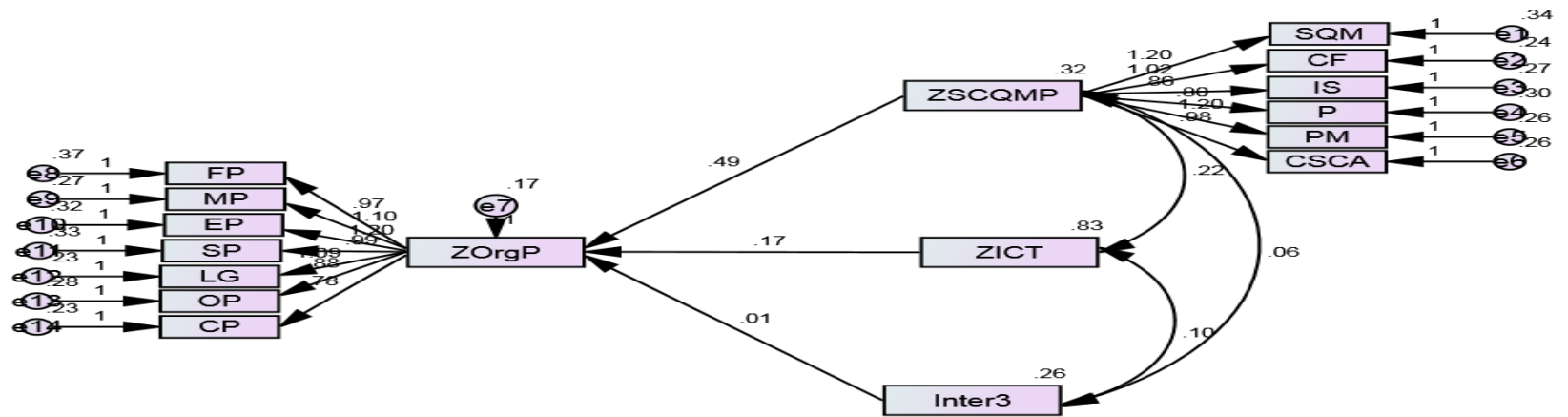
Figure 4.5   Structural Equation Modelling Path Diagram for the Moderating Effect of Information and Communication Technology

on the relationship between SCQM Practices and Organizational Performance

Figure 4.5 indicates that R^2 value of 17% explain the change in organizational performance as influenced by the combined effect of ICT, SCQM practices and interaction term. The effects of the same individual parameters as shown in Table 4.47 were; 0.83, 0.32 and 0.26 for ICT, SCQM practices and interaction term respectively. The t-values for step 1 and 2 two were 3.632 and 6.313 being statistically significant at 5% level of significance with p-value of .000 in each case. However, similar statistic was insignificant with p-value of 0.901 at 95% confidence level in the case of the interaction term. The variance in organizational performance accounted for was not significant when interaction term was added. None of the regression coefficient was above the 0.5 threshold as indicated in Table 4.48. The information above implies that data did not confirm the theoretical model. To a certain extent, ICT has positive moderating effect except that this effect is not statistically significant at 95% confidence level.

Table 4. 48   Moderating Effect of Information and Communication Technology on the relationship between SCQM Practices and Organizational Performance

			β	SE	T	P
Organizational Performance	<---	SCQMP	.488	.077	6.313	.000
Organizational Performance	<---	ICT	.174	.048	3.632	.000
Organizational Performance	<---	Inter	.010	.079	.124	.901

Source: Primary research data, 2019

4.9.4 SCQM Practices, Trust and Organizational Performance

Results in Table 4.49 show that χ^2 value was insignificant and equivalent to 3.553 which was less than 117 degrees of freedom at 0.05 level of significance; SRMR for

the data was equivalent to 0.039, RMSEA was 0.0422 while GFI was equivalent to 0.764 implying that the model met the threshold for model fitness (Barret, 2007; Hu & Bentler, 1999).

Table 4. 49   Model Fit Statistics for Moderation effect of Trust

Model	χ^2	df	SRMR	RMSEA	GFI
Default model	3.553	117	.039	.0422	.764

Source: Primary research data, 2019

Trust was treated as moderating variable to ascertain its moderating effect following the procedure outlined in the previous section. Findings were reported on path diagram presented on Figure 4.6. The figure shows the beta coefficient outputs for the model.

Figure 4.6   Structural Equation Modelling Path Diagram for the Moderating Effect of Trust on the relationship between SCQM

Practices and Organizational Performance

The analysis is presented in Table 4.50. From the table, the coefficient of variation (R^2) was 14% which explains the change in organization performance as a result of SCQM practices, trust and the interaction term. Individually SCQM practices accounted for 32%, trust accounted for 74% and interaction term explained 21% of the variance. β values were 0.40, 0.25 and 0.23 for SCQM practices, trust and interaction term in the same order. The t-statistic for all the relationships were significant confirming that sub variable trust moderates the relationship between SCQM practices and organizational performance with p values of 0.000, 0.000 and 0.005 at 5% level of significance. The data therefore confirms that even though organizational factors as a group do not moderate the linkage, trust as a sub variable moderates the same relationship if treated as a moderator variable.

Table 4. 50   Moderating Effect of Trust on the relationship between SCQM Practices and Organizational Performance

			β	SE	t	P
Organizational Performance	<---	SCQMP	.40	.039	7.284	.000
Organizational Performance	<---	Trust	.25	.046	5.356	.000
Organizational Performance	<---	Inter	.23	.083	2.826	.005

Source: Primary research data, 2019

4.9.5 SCQM Practices, Corporate Culture and Organizational Performance

Chi-Square (χ^2) fit test, Standard Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA) were used to assess the model fitness before interpretation of the findings. Chi square test that is recommended for sample range between 100 and 200 as was the case in this study had a value of 3.869, the degrees of freedom was 117. The Chi-Square was insignificant at

0.05 level of significance and lower than the degree of freedom. This confirms model fitness. SRMR (0.039) and GFI (0.787) were within the prescribed limits of ≤ 0.05 and ≥ 0.9 respectively. RMSEA value is 0.0429 and the expected value is ≤ 0.05. Apart from GFI, other observed values confirmed that the condition of model fitness was met to permit further analysis and interpretation. Motawa and Oladokun (2015) found a value of 0.774 but proceeded with analysis since the value is affected by small sample size.

Table 4. 51   Model Fit Statistics for Moderation Effect Corporate Culture

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	3.869	117	0.039	0.0429	.787

Source: Primary research data, 2019

Corporate culture was subjected to analysis as a moderating variable. The independent variable, SCQM practices was entered into AMOS followed by corporate culture and then the interaction term of SCQM practices and corporate culture. AMOS graphic with path coefficients was developed and presented as shown in figure 4.7.
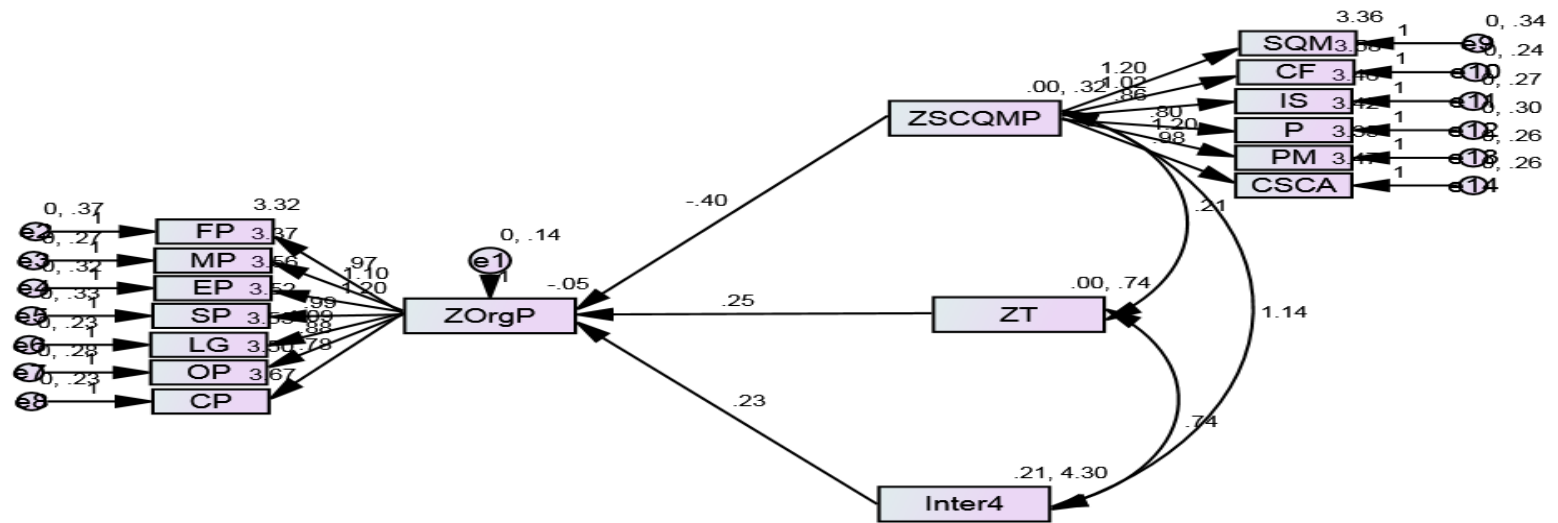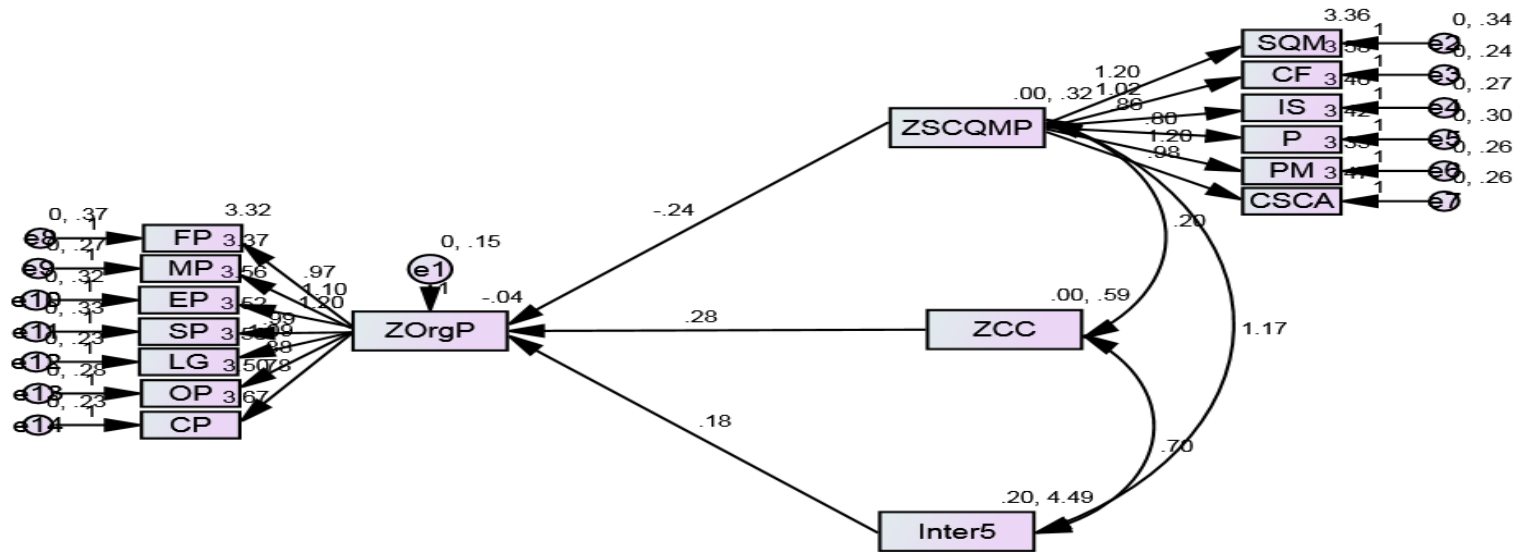
Figure 4.7   Structural Equation Modelling Path Diagram for the Moderating Effect of Corporate Culture on the relationship between

SCQM Practices and Organizational Performance

From Figure 4.7 the three variables accounted for 15% of the change in organizational performance collectively. The contribution of the individual variables is presented in Table 4.52. SCQM practices explained 32%, the highest contributor was corporate culture with 59% contribution while interaction term contributed 20% to the variance. The findings also indicate that the effect of the interaction term of corporate culture treated as a moderating variable is positive and significant. The statistics for the first step showed a significant relationship (β = -0.24, t = 4.367, p-value = 0.000). Similarly, the second step's statistics also depicted a significant relationship (β = 0.28, t = 5.056, p-value = 0.000). Finally, the third step also showed a significant positive relationship (β = 0.18, t = 2.015, p-value = 0.044) at 5% level of significance. These results therefore confirm that corporate culture has a positive moderating effect.

Table 4. 52   Moderating Effect of Corporate Culture

			β	SE	T	P
Organizational Performance	<---	SCQMP	-0.24	.067	4.367	.000
Organizational Performance	<---	CC	0.28	.055	5.056	.000
Organizational Performance	<---	Inter	0.18	.091	2.015	.044

Source: Primary research data, 2019

In summary, findings therefore established that trust and corporate culture as sub-constructs of organizational factors moderate the relationship between SCQM practices and performance of private hospitals in Kenya. Moderation effect of HRM,

ICT and leadership are positive but not significant in the relationship for private hospitals in Kenya.

4.10 Supply Chain Quality Management Practices, Competitive Advantage and Performance of Private Hospitals in Kenya

Third objective sought to establish the mediating effect of competitive advantage. The expectations of the objective were met by undertaking a CB-SEM analysis using AMOS. Prior to interpretation of findings, reliability and validity as well as tests of model fitness were done.

Interpretation of the SEM began with an evaluation of the indicators of each of the three latent constructs; SCQM practices, competitive advantage and the performance of private hospitals. Table 4.53 presents a summary of the results of the evaluation.

Table 4. 53   SCQM Practices, Competitive Advantage and Performance Findings

Latent Variable	Indicators	Loadings	Indicator Reliability	T Statistics	p-values
Supply Chain Quality Management Practices	SQM	.997	.714	11.564	.000
	CF	1.016	.669	12.293	.000
	IS	.864	.755	9.816	.000
	P	.799	.671	8.639	.000
	PM	1.195	.716	13.872	.000
	CSCA	.980	.639	11.235	.000
Competitive Advantage	EMO	.963	.674	19.224	.000
	NCT	1.037	.670	20.688	.000
Organizational	FP	.970	.739	9.238	.000

Performance	MP	1.102	.625	12.182	.000
	EP	1.197	.723	12.283	.000
	SP	.994	.605	10.010	.000
	LG	1.085	.651	13.061	.000
	OP	.875	.630	9.616	.000
	CP	.776	.610	9.371	.000

Source: Primary research data, 2019

From Table 4.53, it can be observed that the results obtained confirm that the individual reliability values of all the three constructs in the model are greater than the 0.4 threshold. It is also clear that a good number of the values are greater than the recommended 0.7 (Mustaffa & Potter, 2009; Wong, 2013). With the favourable outcomes, it is in order to ascertain that all the outer model loadings are sufficiently significant.

To establish internal consistency reliability, composite reliability scores of the latent constructs obtained from the SEM output was assessed. Table 4.54 presents the findings.

Table 4. 54   Composite Reliability, Cronbach's Alpha and AVE of Latent Constructs

Latent Variable	Composite Reliability	Cronbach's Alpha	AVE	Square root of AVE/DV
SCQM practices	.763	.832	.417	0.646
Competitive Advantage	.758	.725	.427	0.653

| Organizational performance | .781 | .840 | .474 | 0.688 |

From Table 4.54, the composite reliability scores for all the latent variables were greater than the recommended minimum value of 0.6 (Bagozzi, 2010). Evidently, all the Cronbach's Alpha values for the constructs were above the 0.7 threshold (Hair Jr, Matthews, Matthews, & Sarstedt, 2017). This is an indication of a high level of internal consistency among all the three latent variables.

Construct validity was checked by testing convergent validity and discriminant validity based on Average Variance Extracted (AVE) of each latent variable. Findings illustrated that the AVE values for the three latent variables are less than the acceptable 0.5 threshold (Hair et al., 2017). Due to this observation, convergent validity was again verified by extracting the factor and cross loadings of all items to their particular latent constructs where the significance of the p-values was analysed. Table 4.55 presents a summary of confirmatory factor analysis results.

Table 4. 55   Confirmatory Factor Analysis Results

Indicators	SCQM Practices	Competitive Advantage	Organizational Performance	p-values
SQM	**.755**	457	.319	.000
CF	**.762**	.581	.338	.000
IS	**.685**	.469	.130	.000
P	**.638**	.406	.112	.000
PM	**.799**	.638	.112	.000
CSCA	**.733**	.537	.368	.000
EMO	.772	**.879**	.273	.000
NCT	.797	**.893**	.317	.000
FP	.439	.276	**.663**	.000
MP	.577	.229	**.759**	.000
EP	.581	.798	**.762**	.000
SP	.479	.237	**.692**	.000
LG	.610	.269	**.781**	.000
OP	.459	.297	**.677**	.000
CP	.446	.258	**.668**	.000

Source: Primary research data, 2019

Data obtained show that the constructs items loadings and cross loadings for each of the individual item and their p-values which are statistically significant hence confirm convergent validity.

Table 4. 56 Fornell-Larcker Criterion for Testing Discriminant validity between SCQM practice, Competitive Advantage and Organizational Performance

| | | Discriminant Validity Matrix | | |
Variable	DV	SCQM practices	Competitive Advantage	Organizational performance
SCQM practices	0.646	**0.646**		
Competitive advantage	0.653	0.417	**0.653**	
Organizational performance	0.688	0.624	0.652	**0.688**

Source: Primary research data, 2019

Discriminant validity was also checked by comparing discriminant value with the inter construct correlation. This was precisely conducted to ascertain that the latent constructs SCQM practices, competitive advantage and organizational performance have no significant relationship. The validation is accomplished by comparing the square root of the average variance extracted (AVE) or discriminant value (DV) of each of latent variable with the the inter-construct correlations from AMOS output (Byrne, 2010). Discriminant value for SCQM practices is 0.646. This value is larger than inter construct correlation value between the variable and competitive advantage (0.417); and that of organizational performance (0.624). The discriminant value for competitive advantage was found to be 0.653. The value is larger than the inter construct correlation value between competitive advantage and SCQM practices (0.624). It is also greater than inter construct correlation value between the same variable and organizational performance (0.652). Similarly, the DV of organizational performance (0.688) is greater than the inter construct correlation value between the variable and SCQM practices (0.624); and between the variable and competitive advantage (0.652). This confirms discriminant validity.

Measurement model fitness was evaluated based on Chi Square test of goodness fit (χ^2) insignificant at 0.05, Goodness of Fit Index (GFI) ranging between 0 and 1 and best value being 0.90, Root Mean Square Error of Approximation (RMSEA) with values ranging between 0.0 and .08 in line with the recommendations of Barret (2007) and Standard Root Mean Square Residual (SRMR) which should range between 0.0 and 1.0. However, values of a well-fitting model should be below 0.05 (Diamantopoulos & Siguaw, 2000). Results in Table 4.57 show that; χ^2 was insignificant and equivalent to 3.485 at 189 degrees of freedom, SRMR for the data was equivalent to 0.044 and RMSEA was significant at 0.0413. All the three model fitness indices confirmed that the model had acceptable fits. GFI value of 0.740 was lower than the recommended model fitness parameters (Barret, 2007; Hu & Bentler, 1999). The lower GFI figure is due to sample size of 110 respondents. To obtain better values, it is recommended that sample size should be closer to 200 (Randhawa & Ahuja, 2017).

Table 4. 57   Model Fit Statistics for Mediating Effect of Competitive Advantage on the correlation amid SCQM Practices and Organizational Performance

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	3.485	189	0.044	0.0413	0.740

Source: Primary research data, 2019

After evaluating model fitness, the next step was to interpret the regression coefficient for the path diagrams. Figure 4.8 presents the standardized estimates for the existing relationship between the variables in the path diagram. From Table 4.58, the standardized regression weights for the existing relationship between the variables can be viewed.

Table 4. 58   Effect of Competitive Advantage on SCQMP and OP of Private
Hospitals in Kenya

			β	SE	T	P
Competitive Advantage	<---	SCQMP	.417	.099	4.791	.000
Organizational Performance	<---	SCQMP	.427	.067	6.211	.000
Organizational Performance	<---	Competitive Advantage	.474	.059	6.894	.000
Indirect			.319	.043	7.482	.000

From Figure 4.8 SCQM practices, competitive advantage and the interaction term accounted for 58% of the change in organizational performance. Competitive advantage explained 17% of the variation. Table 4.56 shows that the effect of SCQMPs on performance is positive and significant ($\beta = 0.427$, t = 6.211, p < 0.001). Similarly, it was established that competitive advantage has a positive and significant effect on the performance of private hospitals in Kenya ($\beta = 0.474$, t = 6.894, p < 0.001). Competitive advantage was positively and significantly related to SCQM practices ($\beta = 0.417$, t = 4.791, p < 0.001). The indirect effect of SCQM practices on the performance of private hospitals was also positive and significant ($\beta = 0.319$, t = 7.482, p < 0.001). Findings therefore established that competitive advantage mediates the relationship between SCQM practices and performance of private hospitals in Kenya. However, since the direct effect is also significant ($\beta = 0.427$, t = 6.211, p < 0.001), the mediation is partial.
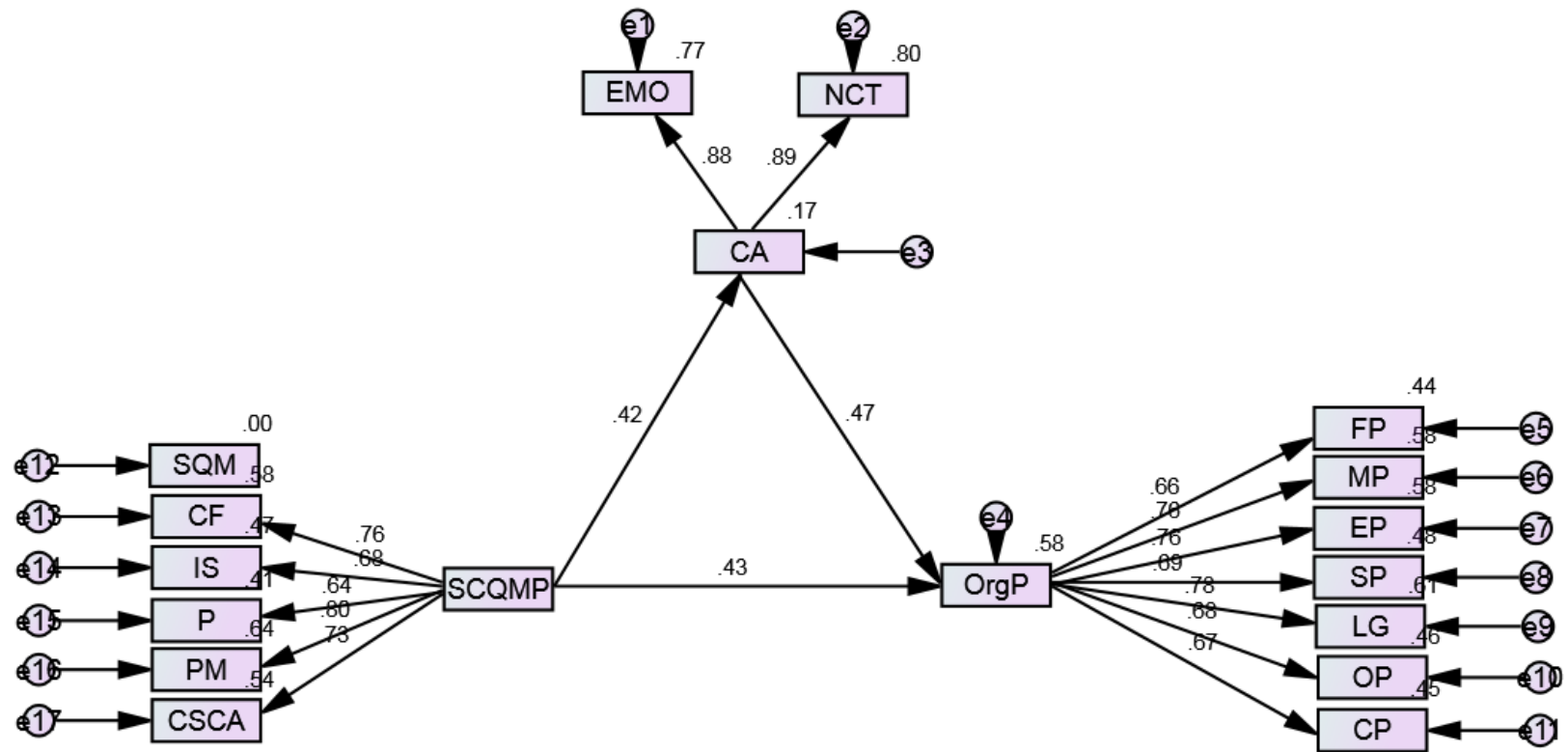
Figure 4.8   Structural Equation Modelling Path Diagram for the Mediating Effect of Competitive Advantage on the relationship between SCQM Practices and Organizational Performance

4.11 Supply Chain Quality Management Practices, Organizational Factors, Competitive Advantage and Performance of Private Hospitals in Kenya

Fourth and last objective sought to establish if the joint effect of SCQM practices, organizational factors, competitive advantage and performance of private hospitals in Kenya is greater than the impact of SCQM practices, competitive advantage and organizational factors and statistically significant when tested separately. Again, CB-SEM analysis using AMOS was undertaken to realize the objective. Hitherto to interpretation of research findings, three tests were conducted. The tests were reliability, validity and tests of model fitness.

Analysis of the model began with an evaluation of the indicators of each of the four latent constructs. Table 4.59 is a summary of the recorded observations and their evaluation. Results obtained show that the individual reliability values of all the four constructs in the model are greater than the 0.4 threshold and more than the preferred 0.7 (Wong, 2013). This implies that the results were good enough to confirm that all the outer model loadings met the anticipated level of significance.

Table 4. 59   Summary of Results for Reflective Outer Models for the Joint Effect

Latent Variable	Indicators	Loadings	Indicator Reliability	T statistics	p-values
Supply Chain Quality Management Practices	SQM	1.202	.714	12.193	.000
	CF	1.016	.669	12.293	.000
	IS	.685	.755	9.816	.000
	P	.799	.671	8.639	.000
	PM	1.195	.716	13.872	.000
	CSCA	.980	.639	11.235	.000
Organizational Factors	LC	.955	.695	10.265	.000
	HRM	.978	.603	12.528	.000
	ICT	1.096	.711	10.954	.000
	T	.997	.773	9.880	.000
	CC	.974	.684	12.002	.000
Competitive Advantage	EMO	.963	.674	19.224	.000
	NCT	1.037	.670	20.688	.000
Organizational Performance	FP	.970	.739	8.840	.000
	MP	1.102	.625	11.658	.000
	EP	1.197	.723	11.755	.000
	SP	.994	.605	9.580	.000
	LG	1.085	.651	12.500	.000
	OP	.875	.630	9.202	.000
	CP	.776	.610	8.968	.000

Source: Primary research data, 2019

Composite reliability scores of the latent constructs obtained from the SEM output was assessed to ascertain internal consistency reliability. Table 4.60 presents the findings.

Table 4. 60   Composite Reliability, Cronbach's Alpha and AVE of Latent Constructs

Latent Variable	Composite Reliability	Cronbach's Alpha	AVE	Square Root of AVE or DV
SCQM practices	.616	.832	.519	0.720
Organizational factors	.621	.769	.552	0.743
Competitive advantage	.864	.725	.538	0.733
Organizational performance	.687	.840	.568	0.753

Source: Primary research data, 2019

Findings show that the composite reliability scores for all the latent variables were greater than the 0.6 threshold (Bagozzi, 2010). At the same time, all the Cronbach's Alpha values for the constructs are above the 0.7 threshold (Hair Jr. et al., 2017). Therefore, a high level of internal consistency among all the four latent variables was ascertained.

Convergent validity was established on the underpinning of AVE of each latent variable. Findings in Table 4.60 illustrated that the AVE values for the four latent variables are greater than acceptable 0.5 threshold confirming convergent validity (Hair et al., 2010). In concurrence with Fornell and Larcker (1981), high value of AVE (greater than 0.5) is acceptable and composite reliability higher than 0.6 inform

the adequacy of construct validity. A second approach to check for the validity was to extract the factor and cross loadings of all items to their respective latent constructs. The findings were tabulated and presented as in Table 4.61.

Table 4. 61   Confirmatory Factor Analysis Results

Indicators	SCQMP	Organization factors	Competitive advantage	Organizational performance	p-values
SQM	**.760**	.514	.332	.469	.000
CF	**.762**	.469	.234	.425	.000
IS	**.685**	.555	.410	.437	.000
P	**.638**	.571	.390	.589	.000
PM	**.799**	.516	.253	.555	.000
CSCA	**.733**	.639	.368	.569	.000
LC	.501	**.701**	.273	.472	.000
HRM	.568	**.768**	.317	.507	.000
ICT	.512	**.712**	.329	.492	.000
T	.497	**.687**	.230	.590	.000
CC	.474	**.754**	.276	.472	.000
EMO	.563	.624	**.879**	.597	.000
NCT	.456	.610	**.893**	.537	.000
FP	.570	.539	.112	**.646**	.000
MP	.512	.525	.264	**.745**	.000
EP	.601	.623	.258	**.748**	.000
SP	.494	.605	.297	**.676**	.000
LG	.457	.651	.269	**.767**	.000

OP	.475	.630	.237	**.661**	.000
CP	.576	.610	.338	**.652**	.000

Data obtained show that the constructs items loadings and cross loadings for each of the individual item on their respective latent variables were higher compared to the unrelated variables. On the same note, their p-values are highly significant confirming convergent validity.

The second type of construct validity, discriminant validity was verified. This was done to confirm that the latent constructs SCQM practices, organizational factors, competitive advantage and organizational performance are not related by comparing the square root of AVE values of each of latent variable with the correlation between the four variables from AMOS output as shown in Table 4.62.

Table 4. 62   Fornell-Larcker Criterion for testing Discriminant validity between SCQM practices, organizational factors, competitive advantage and organizational performance

Variable	DV	Discriminant Validity Matrix			
		SCQM	**OFs**	**CA**	**OP**
SCQM practices (SCQM)	0.720	**0.720**			
Organizational factors (OFs)	0.743	0.596	**0.743**		
Competitive advantage (CA)	0.733	0.067	0.604	**0.733**	
Organizational performance (OP)	0.754	0.564	0.609	0.366	**0.754**

From Table 4.62, discriminant values recorded were; 0.720, 0.743, 0.733, 0.754 for SCQM practices, organizational factors, competitive advantage and organizational performance respectively. Using Fornell-Larcker criterion (1981), discriminant value (DV) for all the variables must be greater than the inter construct correlation. In this case the DV for SCQM practices (0.720) is greater than all the values in its column (0.596, 0.067 and 0.564). The DV for organizational factors (0.743) is greater than all the values in its column (0.604 and 0.609) and the value in its row (0.596). Similarly, the DV for competitive advantage (0.733) is greater than the value in its column (0.366) and all the values in its row (0.067 and 0.604). Finally, the DV for organizational performance (0.754) is greater than all the values in its row (0.564, 0.609 and 0.366). Based on these results, discriminant validity was confirmed.

Prior to interpretation of the findings, measurement model fitness was assessed. Chi-Square (χ^2) fit test, SRMR, GFI and RMSEA were applied to test the model fitness in line with the recommendations of Barret (2007). For Chi-Square fit test, good model fit would provide an insignificant result at a 0.05 threshold (Barrett, 2007). SRMR should range between 0.0 to 1.0 with best fitting models' values expected to be lower 0.05 (Diamantopoulos & Siguaw, 2000). GFI figure should be within the range of 0 and 1 with value of 0.90 being recommended. RMSEA recommended figures range between 0.0 and 0.08. Table 4.63 presents the findings.

Table 4. 63   Model Fit Statistics for Joint Effect of SCQMP, OF, CA on OP

Model	χ^2	Df	SRMR	RMSEA	GFI
Default model	3.761	189	0.057	0.0453	.677

Source: Primary research data, 2019

Results show that χ^2 was insignificant with value of 3.761, SRMR as per the data was equivalent to 0.057, GFI was equivalent to 0.677 while RMSEA was significant at 0.0453. Three fitness indices met the threshold save for GFI which is affected by small sample size. It is in order to confirm model fitness if some or majority of the fitness indices are met. As clearly stated by Bagozzi (2010), model fitness tests in SEM are characterized by several ambiguities that necessitate genuine humility and shear caution. In this regard, the model met the threshold for model fitness (Barret, 2007; Hu & Bentler, 1999).

After evaluating model fitness, next step was to interpret the regression coefficient for the path diagrams. Figure 4.9 presents the standardized estimates for the existing relationship between the variables in the path diagram while Table 4.64 shows the standardized regression coefficients for the existing relationship between the variables.

Table 4. 64 Joint Effect of Supply Chain Quality Management Practices, Organizational Factors, Competitive Advantage on Organizational Performance

			β	SE	T	P
CA	<---	SCQMP	.473	.099	4.791	.000
OrgP	<---	SCQMP	.245	.075	3.242	.001
OrgP	<---	OF	.369	.068	5.460	.000
OrgP	<---	CA	.267	.054	4.939	.000

Source: Primary research data, 2019

From Table 4.64, SCQM practices, organizational factors and competitive advantage accounted for 62% of the change in performance of private hospitals in Kenya.

Findings exhibit positive significant effect of SCQM practices have a positive on the performance of private hospitals (β = 0.245, t = 3.242, p < 0.01) and positive and significant effect on competitive advantage (β = 0.473, t = 4.791, p < 0.001). The effect of organizational factors on the performance of private hospitals is also positive and significant (β = 0.369, t = 5.460, p < 0.001). Similarly, the effect of competitive advantage on the performance of private hospitals was positive and significant (β = 0.267, t = 4.939, p < 0.001). In the case of direct relationship between SCQM practices and organizational performance, SCQMP explained 39% of the change in organizational performance.

The variance in organizational performance organizational factors was positive but insignificant. However, there was change in R^2 when both SCQM practices and organizational factor were included in the analysis to 59%. This change is attributed to two of the five sub variables of organizational factors; trust and corporate culture, which on further analysis were confirmed to moderate the relationship between the SCQM practices and organizational performance. The variance explained on organizational performance when competitive advantage was considered as a mediating variable was 58%. First, based on change in R^2 as outlined and significance of the correlation coefficients, the higher value of R^2 in the case of joint effect compared to the R^2 of individual variables confirm the theoretical model. Second, all correlation coefficients are statistically significant at 95% level of confidence. According to Byrne (2010), hypothesis is supported if R^2 is greater than 0.5 and all the beta coefficients are significant. Therefore, the hypothesis 4 is supported.
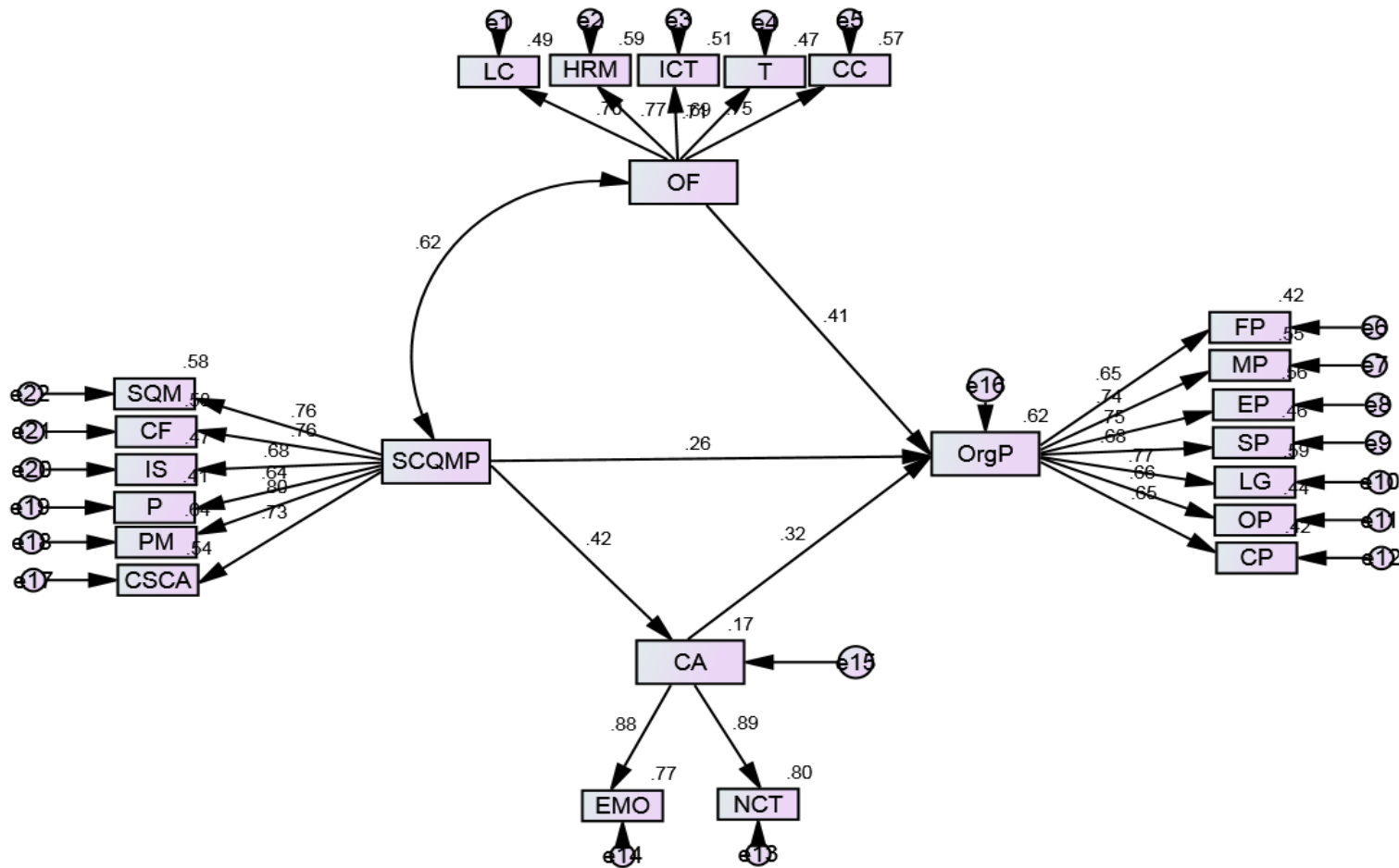
Figure 4.9   Structural Equation Modelling Path Diagram for the Joint Effect

4.11 Chapter Summary

The chapter discussed in details among others; the results of statistical analysis, response rate, demographic characteristics of respondent firms and descriptive statistics. A report on exploratory factor analysis and reliability analysis then followed purposefully to examine construct validity together with reliability. Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were performed. KMO measured sampling adequacy and was obtained for all the study sub constructs. Upon satisfactorily discussing the necessary tests, output of data analysis using CB-SEM was then presented in form of tables and AMOS graphics for all the four objectives. Finally, model fit and estimation was presented. The indices included Chi-Square fit test, Standard Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA).

CHAPTER FIVE: HYPOTHESES TESTING, INTERPRETATIONS AND DISCUSSION

5.1 Introduction

The main purpose of the research was to determine the correlation between SCQM practices and performance of private hospitals in Kenya. To satisfactorily accomplish the task answering the research questions, the first task was the development of a theoretical model and four hypotheses. The conceptual model amalgamated four latent constructs including SCQM practices, organizational factors, competitive advantage and organizational performance. These constructs were operationalized from literature.

Prior to analysis of the data obtained to ascertain the existing relationship between the constructs, reliability and validity of each of the latent variables were confirmed through exploratory factor analysis. All the indicators of the constructs had factor loadings and item to total correlation above the prescribed thresholds and therefore were retained for further analysis. Then, descriptive statistics performed to illustrate the extent of adoption of SCQM practices. Subsequently, Covariance-Based Structural Equation Modeling (CB-SEM) with aid of AMOS software was used for analysis data to ascertain the four study primary end points.

This chapter therefore builds on the research results presented in the preceding sections to interrogate the results of the test hypotheses and analyses as well as the interpretation of the relationships among the five latent constructs in the conceptual framework in four major sections: SCQM practices and the performance of private hospitals; SCQM practices, organizational factors and the performance of private

hospitals; SCQM practices, competitive advantage and the performance of private hospitals and SCQM practices, organizational factors, competitive advantage and the performance of private hospitals in Kenya.

5.2 Supply Chain Quality Management Practices and the Performance of Private Hospitals in Kenya

The first objective sought to establish if SCQM practices have significant direct effect on performance of private hospitals in Kenya. In order to respond to the research question, a structural model as well as a corresponding hypothesis were composed. The model comprised of an exogenous latent construct, SCQM practices and an endogenous latent construct, organizational performance. The resulting structural model is exhibited in Figure 4.1. Hypothesis one which represents the path between the constructs stated as follows:

H$_1$: There is direct significant association amid SCQM practices and performance of private hospitals in Kenya.

This hypothesis predicted existence of significant positive connection amid the variables (SCQM practices and the performance) among private hospitals. A CB-SEM analysis using AMOS 21.0 was employed to test this hypothesis. The process entailed first confirming reliability and validity of the outer and inner models. Findings illustrated that all the outer model loadings were significant, the reliability of all the indicators being greater that the minimum threshold of 0.4 (Wong, 2013).

Model fit statistics used confirmed model fitness. They included Chi Square test of goodness fit (χ^2), SRMR and GFI. χ^2 was insignificant and equivalent to 5.209 at 91 degree of freedom; SRMR was significant and equivalent to 0.042 while GFI was

equivalent to 0.793. It was expected that Chi-Square fit test, good model fit would give an insignificant result at a 0.05 threshold (Barrett, 2007). Also, values for the SRMR would fall within the range of 0.0 and 1.0. However, Diamantopoulos and Siguaw (2000) recommend that well-fitting model should have values below 0.05. Finally, GFI statistic varying from 0 to 1 was applied. A value of 0.90 is generally recommended. Findings implied that the model met the threshold for measurement of model fit (Barret, 2007; Hu & Bentler, 1999).

Model estimation findings confirmed that a significant positive relationship exists between SCQM practices and the performance of private hospitals, data analysis further established that SCQM practices explain 39% of the variance in performance of private hospitals in Kenya. There is also a positive significant relationship between adoption of SCQM practices and performance of the private hospitals ($\beta = 0.624$, t = 8.34, p < 0.001) at 0.05 level of significance. Therefore, hypothesis one (H_1) is supported. This finding which directly link SCQM practices with the performance of private hospitals in Kenya generally contributes to the body of knowledge and is consistent with previous studies including Sharma and Modgil (2015) who associated quality management impact to employee involvement and SCM to cost reduction, Kashwaha and Barman (2010) who found that pursuing both SCM and quality management in tandem bring about synergy that improves organizational performance and competitive advantage as well as Flynn et al. (2010).

In particular, the results support findings by Ombwayo and Atambo (2017) as well as Han et al. (2007) who besides directly linking the practices to organizational performance noted that the relationship is positive in nature. Farnandes et al. (2014) as well as Sampaio et al. (2016) attributed the positive link to enhanced organizational

competitiveness in the market due to implementation of SCQM practices which minimizes cost of production and distribution, improved value of products or the image of the organization in the market. This observation is also supported by Vanichchinchaia and Igel (2011) as well as Zhong et al. (2016). Confirmation of the direct relationship in the context of private hospitals through empirical research constitutes the new knowledge added on this subject.

5.3 Supply Chain Quality Management Practices, Organizational Factors and Performance of Private Hospitals in Kenya

The second objective pursued was to confirm whether there exists a moderating effect of organizational factors. To provide answer to the research question, a structural model and a hypothesis were suggested. The model comprised of standardized independent exogenous term, SCQM practices; the proposed moderator, organizational factors; a standardized interaction term created using the standardized independent term and the standardized proposed moderator and an endogenous latent construct, organization performance. The structural model is presented in Figure 4.2. Hypothesis two which represents the path between the constructs states as follows:

H2: The moderating effect of organizational factors on the SCQM practices and performance of private hospitals link is significant

This hypothesis predicted a significant moderating effect of organizational factors. A CB-SEM analysis using AMOS 21.0 was used to test this hypothesis. The process entailed first confirming reliability and validity of the outer and inner models. Findings illustrated that all the outer model loadings were significant, the reliability of

all the indicators being higher than the recommended threshold value of 0.4 as supported by Wong (2013).

Model fit statistics used confirmed model fitness. They included Chi Square test of goodness of fit (χ^2), GFI, RMSEA and SRMR. χ^2 was insignificant and equivalent to 1.007 at 207 degree of freedom, SRMR for the data was equivalent to 0.042 which was lower than 0.05 as expected, GFI was equivalent to 0.745 hence was within the range of 0 and 1 while RMSEA was significant at 0.0432. Findings implied that the model satisfied the condition specified for measurement of model fit (Barret, 2007; Hu & Bentler, 1999).

The results show that the impact of SCQM practices on organizational performance was significant at 0.001. 59% of organizational performance was confirmed to be explained by organizational factors and SCQM practices. Therefore, SCQM practices have a significant effect on the performance of private hospitals ($\beta = 0.559$, $t = 7.101$, $p < 0.001$). The effect of organizational factors on the performance of private hospitals is also positive and significant ($\beta = 0.261$, $t = 3.307$, $p < 0.001$). The coefficient of interaction term on the performance of private hospital even though is positive, is insignificant ($\beta = 0.067$, $t = 0.986$, $p = 0.324$). The results imply that organizational factors in combination fail to moderate the link between independent and dependent variables. The implication is that data obtained failed to support hypothesis 2 which predicted a significant positive moderating effect of the five organizational factors. The finding contravenes report by Kuei et al. (2002), Chang (2009), Zhang and Huo (2013), Mellat- Parasat (2013), Fernandes et al. (2014), Sampaio et al. (2016) and Okoth and Ochieng (2018) among others. This can be attributed to heterogeneity in nomenclature of study variables, contextual differences

and methodological variance. For example, the study results by Sampaio et al. (2016) and Okoth and Ochieng (2018) was based on literature review. Fernandes et al. (2017) suggested that the relationship between SCQM practices implementation and firm performance should be confirmed through analyzing empirical data in different contexts. In depth further data analysis was necessitated on the basis result of this nature.

The study proceeded to establish which of the sub-constructs of organizational factor could moderate the correlation individually. Each sub-construct of organizational factor was treated as a proposed moderator, standardized and an interaction term created using the standardized independent variable. Finally, the standardized independent variable, the standardized sub-construct and its interaction term were independently entered into an AMOS model and tested for moderation against the standardized dependent variable.

Data obtained confirmed that SCQM practices had a significant effect on the performance of private hospitals in all the models of the sub-constructs. Findings also illustrated a positive and significant effect of all the sub-constructs on the performance of private hospitals. 14% of change in organization performance was explained by SCQM practices, trust and interaction term. Individually, SCQM practices accounted for 32%, trust accounted for 74% and interaction term explained 21% of the variance. β values were 0.40, 0.25 and 0.23 for SCQM practices, trust and interaction term in the same order.

The t statistic for all the relationships were significant confirming that sub variable trust moderates the linkage between SCQM practices and organizational performance with p values of 0.000, 0.000 and 0.005 at 5% level of significance. 15% of the

change in organizational performance was explained by SCQM practices, corporate culture and the interaction term. Out of the overall contribution, SCQM practices explained 32%, corporate culture 59% and interaction term 20%. The statistics for the first step indicated a significant relationship (β = -0.24, t = 4.367, p-value = 0.000). The second step's statistics also depicted a significant relationship (β = 0.28, t = 5.056, p-value = 0.000). The third step also showed a significant positive relationship (β = 0.18, t = 2.015, p-value = 0.044) at 5% level of significance.

The analysis for sub variables leadership commitment, human resources management and information and communication technology yielded positive but insignificant output. This therefore imply that amongst the sub-constructs of organizational factors, only trust and corporate culture as sub-constructs of organizational factors have substantial moderating effect in the SCQM practices and performance of private hospitals relationships in Kenya. Lin et al. (2013) posited that success or failure of SCQM practices to yield improved performance depends on intra organizational factors that determine the level of success in the implementation and sustainability.

The finding that leadership commitment does not significantly moderate the relationship is inconsistent with those of Truong et al. (2014). The authors posited that leaders who are committed to improving performance of organizations through implementation of SCQM practices allocate resources and provide a conducive environment for such initiatives. Zhang and Huo (2013) associate top management support to motivation for and allocation of adequate resources for effective implementation of customer focus, supplier quality management, process management and information sharing which may render the relationship stronger, weaker, positive or negative. Even though these could be the logical truth, there are

disparities in assessments of leadership by subordinates (Lipman-Blumen, 2005). One might paint a leader as toxic while the other may brand the person as a hero. If the respondents are asked whether their leaders engage them in decision making, allocate adequate resources and intervene in supply and quality issues, the response will depend on whether their leaders are categorized as visionary and transactional (Dess & Robinson, 1984). As pointed out by Avery (2004), definition of leadership or even whether it exists is far from conclusion. This is likely to contribute to this unexpected finding. It is important to verify the role in different contexts in order to shed more light on this subject.

The moderation impact of ICT on the relationship between SCQM practices came out to be positive but insignificant. It was predicted that ICT would integrate firms to their customers and suppliers and enable information sharing through quality data generation and exchange which aids decision making and timely problem solving (Sampaio et al., 2016). The authors assert that firms with direct computer-to-computer links are expected to utilize ICT-enabled transaction processing and shipments to expedite efficient information sharing across supply networks. However, Berry, Towill and Wadsley (1994) on the contrary advised that ICT infrastructure should limit information shared to necessary information and not divulge their unique informational assets to the advantage of the competition. This restriction may inform the positive insignificant finding of this study especially in health sector that limit the information shared. The unique nature of health service operations as well as dimensions of quality distinguishes results of industrial sector or manufacturing from healthcare (Law, 2016). Moreover, SCQM has both social and technical dimensions (Kang et al., 2018). This study was more aligned to the social dimension than

technical dimension based on the anchoring theories applied. ICT is more of technically orientated than social.

It was expected that human resources would moderate the relationship between SCQM practices and organizational performance. This was grounded on justification by Maiga (2015) who found out that SCQM practices implementation was enhanced by human resource management. This had earlier been stated by Choi and Eboch (1998) anchored on the premise that HRM provides a good environment for employees to implement organizational assignments. However, these theoretical statements were not supported by data in the case of private hospitals in Kenya. Other authors have established that, it is the characteristics of human resource such as attitude, experience, skills, knowledge, employee empowerment, motivation and innovation that moderate the relationship (Lee, Lee & Schniederjans, 2011; Lee & Yu, 2013; Mellat-Parasat, 2013; Che, 2018; Abdallah et al., 2017). Lin et al. (2013) advised firms to instill motivation into supply chain quality system and make it more of voluntary effort by employees. Knowledge, innovation, experience and motivation are key human traits that must be aligned with the SCQM practices to capacitate involvement of supply network members, normalize the practices which consequently ensure better holistic business outcomes.

Healthcare systems vary from manufacturing other service organizations. Specifically, there is clear evidence of shortages in workforce, skill mix imbalances, geographical misdistribution and difficulty inter-professional collaboration. Patients are increasingly health literate and, as consumers, expect high-quality healthcare. This demands for dynamic and innovative leadership to cope with complexities related to managing multiple stakeholder collaborations among private hospitals. At the same

time, medical services require personalized interactions especially dispensing where the there is need to explain dosage, expiry dates and other related instructions by healthcare providers which limits digitalization of the medical supply chain. As such, ICT may not play key role in performance of organization. This may explain the contradictory finding that HRM, ICT and leadership commitment insignificantly play a crucial moderating role in the relationship between SCQM practices and performance of private hospitals.

Adoption of SCQM practices links business partners with divergent interest exposing them to possible conflicts and uncertainties that can be minimized if trust is incorporated in the daily undertakings (Fanandes et al., 2017). In the process, the effect of SCQM practices on organizational performance is improved. This theoretical explanation was validated using data collected from private hospitals in Kenya. Statistical analysis confirmed that trust has positive and significant moderating effect. He et al. (2017) apportions the largest proportion of SCQM practices success to trust. Based on stakeholder theory, all parties are conversant with their interests and contribution to any business undertaking (Freeman, 2010). Trust therefore remains the most significant pillar in the success of SCQM practices. It can match the description of strength of weak ties postulated by Granovetter (1983).

The study also found that corporate culture significantly moderates link between the study variables. This finding supports evidence in literature (Meirovich, 2010; Prajogo & Mcdermott, 2011; Maiga, 2015; Lin et al., 2013). A firm that has culture of motivation, knowledge and good attitude to implement SCQM practices benefit from competitive advantage and high level of performance. This is even better if this culture is shared among trading partners, customers and implied stakeholders (Lee &

Yu, 2013). Mello and Stank (2005) confirmed that corporate culture and orientation directly contributes to SCQM practices success. The authors concluded that an organization must ensure effective cultural change that is aligned to SCQM practices for it not to become an artifact of corporate fad. Given the inter-organizational nature of SCQM practices, it is posited that, partners must have cultural similarities to realize any meaningful gains (Meirovich, 2010). The wider the cultural gaps are between partners, the more the dismal performance outcome as a result failed SCQM practice (Cadden et al., 2010).

5.4 Supply Chain Quality Management Practices, Competitive Advantage and Performance of Private Hospitals in Kenya

Objective three sought to verify whether competitive advantage has significant mediating effect amid variables SCQM practices and performance among private hospitals in Kenya. To achieve this objective, a structural model and a hypothesis were first developed. The model comprised of latent exogenous term, SCQM practices; a latent proposed mediator, competitive advantage and an endogenous latent construct, organization performance. The structural model is presented in Figure 4.3. Hypothesis three which represents the path between the constructs stated as follows:

H₃: Competitive advantage has a significant mediating effect on the relationship between SCQM practices and the performance of private hospitals in Kenya.

This hypothesis predicted a significant mediating outcome of competitive advantage on the relationship between SCQM practices and performance of private hospitals. CB-SEM analysis using AMOS and analysis via hierarchical regression were used to

test this hypothesis. The process entailed first confirming reliability and validity of the outer and inner models. Findings illustrated that all the outer model loadings were significant, the reliability of all the indicators being greater that the minimum threshold of 0.4 (Wong, 2013).

Model fit statistics were used to confirm fitness. They included Chi Square test of goodness fit (χ^2), GFI and SRMR. Results in Table 4.55 show that χ^2 was insignificant and equivalent to 3.485 at 189 degree of freedom against expected insignificance at 0.05; SRMR for the data was equivalent to 0.044 against expected value below 0.05, RMSEA was significant at 0.0413 against the threshold of 0.0 to 0.08 while GFI was equivalent to 0.740 which was within the range of between 0 and 1. The values therefore confirm that the model meets the threshold for measurement of model fitness (Barret, 2007; Hu & Bentler, 1999).

The model with SCQM practices and competitive advantage as the mediating variable term accounted for 58% of the change in organizational performance of which competitive advantage explained 17% of the variation. From the findings, it was established that the effect of SCQM practices on organizational performance is positive and significant ($\beta = 0.427$, $t = 6.211$, $p < 0.001$). Similarly, it was established that SCQM practices was positively and significantly related to competitive advantage ($\beta = 0.417$, $t = 4.791$, $p < 0.001$). Competitive advantage was proved to be positively and significantly affect performance of private hospitals in Kenya ($\beta = 0.474$, $t = 6.894$, $p < 0.001$). The indirect impact of SCQM practices on the performance of private hospitals was also positive and significant ($\beta = 0.319$, $t = 7.482$, $p < 0.001$). The inner model suggests that the hypothesized path relationship among the latent constructs in the model produced the findings in Table 5.1.

Table 5.1   Significance of Path Coefficients in the Model

Hypothesized path relationship			Path coefficient	p-values
SCQM Practices	->	Organizational Performance	.427	.000
SCQM Practices	->	Competitive Advantage	.417	.000
Competitive Advantage	->	Organizational Performance	.474	.000
Indirect Effect			.319	.000

Source: Primary research data, 2019.

Findings therefore established that since the effect of SCQM practices on organizational performance remain significant when competitive advantage is added, it thus can be concluded that competitive advantage exhibits partial mediation effect. Therefore, hypothesis 3 is supported by data collected from private hospitals in Kenya.

Past studies have demonstrated that creation of competitive advantage upon simultaneously pursuing TQM and SCM (Li et al., 2004; Chagooshi et al., 2015 Ibrahim et al., 2016; Sharma & Modgil, 2020). Similarly, relational view posits that networking and collaborations with customers, suppliers and other prime stakeholders through SCQM practices craft competitive advantage which explains the variances in performance among organizations (Dyer & Singh, 1998; Kaynak & Hartley, 2008). Sagalas (2015) explain that the networks formed by partner firms aid in the neutralization of competitor activities and exploitation of unique market opportunities hence define competitiveness, competitive advantage and higher firm performance.

As much as the SCQM practices may lead to competitive advantage, the ultimate objective of a firm is to reap higher performance benefits to all key stakeholders

(Rouse & Putterill, 2003; Chagooshi et al., 2015). Any management practices like SCQM practices should target all parties that contribute to their success based on stakeholder theory (Freeman, 2010). For organizations to sustainably succeed in the unforeseen future, they must involve the society as the provider of labor, infrastructure, security and customers to them making the society an all-time critical stakeholder (Davis et al., 2018).

5.5 Supply Chain Quality Management Practices, Organizational Factors, Competitive Advantage and the Performance of Private Hospitals in Kenya

The last objective, sought to establish whether there exists a joint effect of SCQM practices, organizational factors and competitive advantage on performance of private hospitals in Kenya that is greater than contribution of the variables in isolation. The research question was answered by first developing a structural model and a hypothesis. This model comprised of an independent exogenous term, SCQM practices; a latent moderator construct, organizational factors; a latent mediator construct, competitive advantage and an endogenous latent construct, organization performance. The structural model is presented in Figure 4.9. Hypothesis four which represents the path between the constructs stated as follows:

H4: The joint effect of SCQM practices, organizational factors and competitive advantage is significantly greater than the individual effects of each of the variables on the performance of private hospitals.

The specific hypothesis predicted that a joint effect of SCQM practices, organizational factors and competitive advantage would be significantly superior to the effect of individual constructs on the performance of private hospitals. CB-SEM

analysis using AMOS was used to test this hypothesis. The process entailed first confirming reliability and validity of the outer and inner models. Findings illustrated that all the outer model loadings were significant, the reliability of all the indicators being greater than the minimum threshold of 0.4 (Wong, 2013).

To address the key issue of model fitness, the following statistics were used. They included Chi Square test (χ^2), GFI, RMSEA and SRMR. χ^2 was insignificant at 3.761, SRMR for the data was equivalent to 0.057 slightly above the recommended 0.05, GFI was equivalent to 0.677 which fall within the range of between 0 and 1 while RMSEA was significant at 0.0453 and was within the range of between 0 and 0.08. Findings imply that the model meets the threshold for measurement of model fit (Barret, 2007; Hu & Bentler, 1999).

Results from model estimation show that effect of SCQM practices on the performance of private hospitals is positive and significant (β = 0.245, t = 3.242, p < 0.001). Organizational factors also affected performance of private hospitals positively and significantly (β = 0.369, t = 5.460, p < 0.001). Jointly, SCQM practices, organizational factors and competitive advantage explain 62% of the total variance in the performance of private hospitals in Kenya. Compared to 39% of the total variance attributed to SCQM practices, 59% on addition of organizational factors variable to SCQM practices and 58% SCQM practices and competitive advantage were tested, this is an improvement in the variance explained. This means that the joint effect of SCQM practices, organizational factors and competitive advantage on organizational performance of private hospitals is significantly greater than the effect of individual variable. Therefore, hypothesis 4 which predicted that the joint effect of SCQM practices, organizational factors and competitive advantage would be

significantly greater than the effect of individual constructs on the performance of private hospitals is supported.

Organizational factors such as committed leadership, advanced ICT, knowledgeable and motivated human resource, trust and positive culture enable firms to effectively adopt SCQM practices to gain competitive advantage that enables them to perform better than the other firms (Fernandes et al., 2014; Sampaio et al., 2016; Zhong et al., 2016). The proposition is supported by social network theory, stakeholders' theory, relational view and general contingency theory. Based on social network theory, organized and systemic interactions among firms through SCQM practices supported by conducive environment availed by organizational factors leads to competitive advantage that leads to improved performance for all stakeholders (Cheng, 2017). Organizations that have a holistic view of the four variables and pursue them in tandem benefit from synergy with better results than when each variable is pursued in isolation (Kuei, Madu & Lin, 2008). As earlier been explained by Miles (2017), a wider view of stakeholders includes networks, actors, human or non-human like the environment among others. This implies that all factors within and outside organizations contribute significantly to performance improvement and therefore should entirely be included during research to avoid inconsistent and mixed findings.

Additionally, system-based approach is necessary for practice (Forster, 2008). According to Lin et al. (2013), SCQM practices create competitive advantage that sustainably improves performance. Isolated studies have documented the role of trust, employees, organizational culture, top leadership commitment and ICT on implementation of the SCQM practices to generate competitive advantage and improve multiple dimensions of performance (Baird et al., 2011; Vanichchinchai &

Igel, 2011; Lin et al., 2013; Quang 2016; Farnandes et al., 2016 Abdallah et al., 2017).

Table 5.2   Summary of Results of the Tests of Hypotheses

Objective	Hypothesis	Results	Interpretation and remarks
Objective 1: Determine the relationship between SCQM practices and performance of private hospitals in Kenya.	H_1: The direct relationship between SCQM practices and the performance of private hospitals is significant	$\chi^2 = 5.209$, p > 0.05; SRMR = 0.042, p < 0.05; GFI = 0.793. $\beta = 0.624$, t = 8.343, p < 0.001; Path coefficient is significant at 0.05 level of significance. $R^2 = 0.390$	Hypothesis 1 is supported. This implies a significant positive.
Objective 2: Ascertain the influence of organizational factors on the relationship between SCQM practices and performance of private hospitals in Kenya.	H_2: The moderating effect of organizational factors on the relationship between SCQM practices and the performance of private hospitals is significant.	$\chi^2 = 4.533$, p > 0.05; SRMR = 0.042, p < 0.05; GFI = 0.745; RMSEA = 0.0432, p<0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals ($\beta = 0.261$, t = 3.307, p < 0.001). The effect of organizational factors on the performance of private	Hypothesis 2 is not supported. This implies an insignificant moderating effect.

Objective	Hypothesis	Results	Interpretation and remarks
		hospitals is also positive and significant (β = 0.559, t = 7.101, p < 0.001). The effect of the interaction term on the performance of private hospital though positive is insignificant (β = 0.067, t = 0.986, p = 324). R^2 = 0.59	
	Hypothesis 2a: The moderating effect of leadership commitment on the relationship between SCQM practices and performance of private hospitals is significant	χ^2 = 4.283, p > 0.05; SRMR = 0.039, p < 0.05; GFI = 0.797; RMSEA = 0.0432, p < 0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals (β = 0.518, t = 6.315, p < 0.001). The effect of leadership	Hypothesis 2a is not supported. This implies an insignificant moderating effect of leadership commitment.

Objective	Hypothesis	Results	Interpretation and remarks
		commitment on the performance of private hospitals is also positive and significant ($\beta = 0.125$, t = 2.180, p < 0.05). The effect of the interaction term on the performance of private hospital though positive is insignificant ($\beta = 0.098$, t = 1.145, p = 252). $R^2 = 0.420$	
	Hypothesis 2b: The moderating effect of human resources management on the relationship between SCQM practices and performance of private	$\chi^2 = 4.920$, p > 0.05; SRMR = 0.039, p < 0.05; GFI = 0.794; RMSEA = 0.0437, p < 0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals ($\beta = 0.442$, t = 5.848, p < 0.001). The effect of HRM on the	Hypothesis 2b is not supported. This implies an insignificant moderating effect of human resource management on the relationship between SCQM practices and the performance

Objective	Hypothesis	Results	Interpretation and remarks
	hospitals is significant	performance of private hospitals is also positive and significant ($\beta = 0.275$, t = 4.995, p < 0.001). The effect of the interaction term on the performance of private hospital though positive is insignificant ($\beta = 0.049$, t = 0.493, p = 622). $R^2 = 0.504$	of private hospitals
	The moderating effect of ICT on the relationship between SCQM practices and performance of private hospitals is significant	$\chi^2 = 3.971$, p > 0.05; SRMR = 0.039, p < 0.05; GFI = 0.799; RMSEA = 0.0447, p < 0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals ($\beta = 0.488$, t = 6.313, p < 0.001). The effect of ICT on the	Hypothesis 2c is not supported. This implies an insignificant moderating effect of ICT on the relationship between SCQM practices and the performance of private hospitals

Objective	Hypothesis	Results	Interpretation and remarks
		performance of private hospitals is also positive and significant ($\beta = 0.174$, t = 3.632, p < 0.001). The effect of the interaction term on the performance of private hospital though positive is insignificant (r = 0.010, t = 0.124, p = 901). $R^2 = 0.458$	
	Hypothesis 2d: The moderating effect of trust on the relationship between SCQM practices and performance of private hospitals is significant	$\chi^2 = 3.553$, p > 0.05; SRMR = 0.039, p < 0.05; GFI = 0.764; RMSEA = 0.0422, p < 0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals ($\beta = 0.395$, t = 7.284, p < 0.001). The effect of trust on the	Hypothesis 2d is supported. This implies a significant moderating effect of trust on the relationship between SCQM practices and the performance of private hospitals

Objective	Hypothesis	Results	Interpretation and remarks
		performance of private hospitals is also positive and significant (r = 0.249, t = 5.356, p < 0.001). The effect of the interaction term on the performance of private hospital is also positive and insignificant (β = 0.235, t = 2.826, p = 005). R^2 = 0.539	
	Hypothesis 2e: The moderating effect of corporate culture on the relationship between SCQM practices and the performance of private hospitals is significant	χ^2 = 3.869, p > 0.05; SRMR = 0.039, p < 0.05; GFI = 0.787; RMSEA = 0.0429, p < 0.05. Results showed that SCQM practices have a significant positive effect on the performance of private hospitals (β = 0.236, t = 4.367, p < 0.001). The effect of corporate culture	Hypothesis 2e is supported. This implies significant moderating effect of corporate culture on the relationship between SCQM practices and the performance of private hospitals

Objective	Hypothesis	Results	Interpretation and remarks
		on the performance of private hospitals is also positive and significant (β = 0.276, t = 5.056, p < 0.001). The effect of the interaction term on the performance of private hospital is also positive and insignificant (r = 0.184, t = 2.015, p = 044). R^2 = 0.514	
Objective 3: Determine the influence of competitive advantage on the relationship between SCQM practices and performance of hospitals in Kenya.	H_3: Mediating effect of competitive advantage on the relationship between SCQM practices and organizational performance is significant.	X^2 = 3.485, p > 0.05; SRMR = 0.044, RMSEA = 0.0413, p < 0.05; GFI = 0.740. Effect of SCQM practices on organizational performance is positive and significant (β = 0.427, t = 6.211, p < 0.001); Effect of competitive advantage on performance of private hospitals is	Hypothesis 3 is supported. This implies a significant mediating effect of competitive advantage in the relationship between SCQM practices and organizational performance. However, the

Objective	Hypothesis	Results	Interpretation and remarks
		positive and significant ($\beta = 0.474$, t = 6.894, p < 0.001); Effect of SCQM practices on competitive advantage is positive and significant ($\beta = 0.417$, t = 4.791, p < 0.001); The indirect effect of SCQM practices on the performance of private hospitals was also positive and significant ($\beta = 0.319$, t = 7.482, p < 0.001). $R^2 = 0.58$	mediation is partial.
Objective 4: Examine the combined effect of SCQM practices, organizational factors and competitive advantage on performance	H_4: The joint effect of SCQM, organizational factor, competitive advantage is greater than the sum total of individual	$\chi^2 = 3.761$, p > 0.05; SRMR = 0.057; GFI = 0.677; RMSEA = 0.0453, p < 0.05. Jointly, SCQM practices, organizational factors and competitive advantage explain 62% as compared to	Hypothesis 4 is supported. This implies that the joint effect of SCQM practices, organizational factors and competitive advantage on

Objective	Hypothesis	Results	Interpretation and remarks
of private hospitals in Kenya.	variables on performance.	39% for SCQM practices alone; 59% for SCQM practices and organizational factors and; 58% for SCQM practices and competitive advantage of performance of private hospitals in Kenya, the observation being significant at 0.05 level of significance. $R^2 = 0.62$	organizational performance of private hospitals is significantly greater than the effect of individual variables

Source: Primary research data, 2019

CHAPTER SIX: SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

The chapter first outlines a synopsis of research outcomes. It then proceeds to narrate conclusions and recommendations of the study. Also included in the chapter are the study implications. Finally, limitations as well as suggestions for more research on the topic are discussed. The main target of the study was to understand the effect of SCQM practices on the performance of private hospitals in Kenya. To achieve this intent, a cross sectional census survey research design was adopted. Information was collected from 110 category C private hospitals within the country. CB-SEM utilizing AMOS application was applied for data analysis (with the aid of SPSS version 23 computer software.

6.2 Summary of Findings

The first objective sought to confirm the direct correlation between SCQM practices and the performance of private hospitals in Kenya. To meet the expectations of the objective, CB-SEM analysis using AMOS was undertaken. The model was based on two latent constructs; SCQM practices and organization performance. Findings showed a significant positive effect of SCQM practices on performance of private hospitals. SCQM practices construct explained 39% of the variance in the performance of private hospitals.

Objective two (2) sought to establish if organizational factors significantly moderate relationship between SCQM practices and the performance of private hospitals in Kenya. In order to meet the expectations of the objective, a CB-SEM analysis using

AMOS and a moderated regression analysis was undertaken. The model was based on 4 latent constructs; standardized SCQM, standardized proposed moderator, interaction term created and organizational performance as prescribed by Ying and Ahmad (2009). Findings illustrated that the path between SCQM practices and organizational performance was positive and significant. At the same time, the path between organizational factors and organizational performance was also positive and significant. However, the path between the interaction term and organizational performance was positive but insignificant. This implied that organizational factors combined do not have a moderating effect.

An attempt was made to establish whether any of the sub-constructs of organizational factors could moderate the relationship between SCQM practices and performance of private hospitals produced a positive significant path between SCQM practice and organizational performance, a positive and significant path between the moderator variable and organizational performance and a positive and significant path between the interaction term and organizational performance for trust and corporate culture as sub-constructs of organizational factors. This means that trust and corporate culture individually have moderating effects on the key study variables. Corporate culture denotes long term commitment by the organizations to quality along the supply chain.

The third objective sought to establish whether competitive advantage has a mediating effect on the relationship between SCQM practices and the performance of private hospitals in Kenya. To address this concern, a structural model as well as relevant hypothesis were designed. The model comprised of latent exogenous term, SCQM practices; a latent proposed mediator, competitive advantage and an endogenous latent construct, organization performance. Findings showed that the path between

SCQM practices and organizational performance was positive and significant, the path between SCQM practices and competitive advantage was positive and significant and the path amid competitive advantage and organizational performance was also positive and significant.

The indirect path was also significant and positive. The interpretation is that a positive and significant relationship exists between SCQM practices and organizational performance. Also, a positive significant was confirmed between SCQM practices and competitive advantage. At the same time, there is a significant positive effect of competitive advantage on organizational performance. The relationship between SCQM practices and organizational performance with competitive advantage added as a mediating variable is also positive and significant. The implication is that competitive advantage is a mediating variable in the amid study variables.

The fourth and the last objective sought to establish whether there exists a greater joint effect of SCQM practices, organizational factors and competitive advantage on performance of private hospitals in Kenya compared to effect individual constructs on the dependent variable. To meet expectations of the objective, a structural model and a hypothesis were developed. The model comprised of 4 constructs, SCQM practices, organizational factors, competitive advantage and organization performance. A CB-SEM analysis using AMOS and hierarchical regression analysis were used. Findings showed that jointly, SCQM practises, organizational factors and competitive advantage account for a significant 62% of the total difference in the performance of private hospitals in Kenya, an improvement from the 39.0% of the total variance attributed to SCQM practices alone; 59% attributed to SCQM practices and organizational factors; 58% attributed to SCQM practices and competitive advantage.

Findings illustrated that the joint effect of SCQM practices, organizational factors and competitive advantage on the performance of private hospitals is significantly greater than the distinctive influence of each variable.

6.3 Conclusions of the Study

The main conclusion of the study is that successful adoption of SCQM practices leads to both financial as well as non-financial benefits to organizations (Kuei et al., 2010; Haque & Islam, 2013). SCQM practices contribute proportionately to various dimensions of organizational performance. SCQM practices are meant to give long term benefits to organizations. According to Chagooshi et al. (2015), strategically oriented firms should refrain from concentrating on financial performance and instead pursue holistic, balanced performance metrics that address the plight of all stakeholders. The topic on which performance aspects of firms should be assessed is widely and globally debated with numerous models suggested and critiqued in the same measure (Elkington, 1994; Kaplan & Norton, 1996; Rouse & Putterill, 2003; Wilcox & Bourne, 2003; Vijande & Gonzalez, 2007; Chagooshi et al., 2015). This study concludes that adoption of SCQM practices contributes towards enhanced environmental performance, societal performance, learning and growth as well as improved customer perspective. Integrated performance measurement framework model serves the interest of major stakeholders in addition to reporting history and predicting the future.

In order to realise the improved performance as the ultimate organizational goal, the study concludes that firms must build sustainable competitive advantage (Li et al., 2004; O'Shannassy, 2008; Karim & Rafiee, 2014; Maiga, 2015; Ibrahim et al., 2016). This is achievable if they continuously exploit unique market opportunities and

having stringent containment measures for competitor activities (Newbert, 2008; Sigalas & Pekka-Economou, 2013; Sagalas et al., 2013; Sigalas, 2015). Cost reduction, delivery dependability, service quality should be restricted to measuring operational performance (Kaplan & Norton, 1996; Fernandes et al., 2014; Sampaio et al., 2016).

The study tested if organizational factors; leadership commitment, information and communication, HRM, trust and corporate culture moderate the relationship between SCQM practices and organization performance. This was based on literature review conducted by past researchers (Fernandes et al., 2014; Sampaio et al., 2016; Okoth & Ochieng, 2018). Empirical data collected among private hospitals in Kenya found that some of the factors moderate the relationship, even though the moderation was not significant. It was therefore concluded that organizations must have right corporate culture and build trust both internally and externally in order to implement SCQM practices to bring about improved performance (Meirovich, 2010; Kushwaha & Barman, 2010; Lee et al., 2013; Lin et al., 2013). Based on social network theory relationships flourish when on trust and corporate culture are inculcated in organizations and beyond their boundaries (He et al., 2018).

Finally, the study concludes that SCQM practices, organizational factors and competitive advantage pursued jointly by private hospitals have greater impact on organizational performance compared to when adopted in isolation. Organizational factors have no moderation collectively except corporate culture and trust when treated as variables. It is also confirmed that competitive advantage has partial mediation effect on the relationship between SCQM practices and organizational performance complete with both lagging and lead indicators.

6.4 Implications of the Study

As much as it is important to review the outcome of the study with reference to past studies, it is convincingly vital to assess the implications with the intention to create the foundation for methodical improvement in practice and future empirical work. The following subsections therefore look at the inputs that the study adds to knowledge, theory, policy and practice.

6.4.1 Contributions to Knowledge

This study has made significant contribution to knowledge by ascertaining based on robust theoretical argument and empirical data that SCQM practices positively and directly impact on organizational performance to a significant extent. In effect, there is a significant knowledge added in literature confirming the positive relationship between adoption of SCQM practices and organizational performance in Kenyan private hospitals' context. The finding clears doubts on the effect of adopting SCQM practices on organizational performance.

The study improved the measurement model of SCQM model already developed by previous research by incorporating all practices along the entire supply chain. The model addresses separate quality management practices that link supply chain stakeholders, processes and activities from material acquisition, service design, distribution of goods, end of life disposal and impact on the customers and society at large using different indicator variables as suggested in literature by a significant number of researchers (Foster & Ganguly, 2007; Sampaio et al., 2016; Mathur et al., 2018; Truong et al., 2014; Bagchi & Gaur, 2018; Mamabolo & Myres, 2020).

This study based on the strength of the value of β on the path diagrams explains the differential contribution of the practices on performance of private hospitals. In particular, postponement contributes more to performance whereas information sharing contributes the least. The posted result is in line with the study finding of (Okoth & Ochieng, 2016). In practice, postponement is known to reduce uncertainty, costs of transport, unnecessary inventory and costs of production which are key drivers in addressing interests of the stakeholders (Bagchi & Gaur, 2018). On the lower end, information sharing is the least contributor to organizational performance. As advised by Berry et al. (1994), firms need to share as little unique information as possible with other firms. This research therefore improves the weaknesses of past studies by giving priority index on which practices firms should emphasize.

To the pool of knowledge, this study clarified the roadmap to achieving multifaceted performance outcome that addresses the plight of all stakeholders. Through incorporating mediation and moderation effect of competitive advantage and organizational factors in that order, it becomes clear the paths that enhance organizational performance on implementation of SCQM practices. The findings confirm that firms which implement SCQM practices and relevant organizational factors will have boosted financial and non-financial performance through competitive advantage pathway. Furthermore, the research illustrates that the market performance is achieved more compared to other indices of performance. However, the study confirms the need to holistically measure performance as advised by past researchers (Elkington, 1994; Kaplan & Norton, 1996; Rouse & Putterill, 2003; Vijande & Gonzalez, 2007; Freeman, 2010; Chagooshi et al., 2015).

There were past studies on mediating role of competitive advantage that were limited to TQM (Pereira-Moliner et al., 2016; Chagooshi et al., 2015). On the same note, Abdallah et al. (2017) conducted a study that confirmed that trust as an organizational factor moderates the supplier integration process. This study serves as the first to test for mediation and moderation using multifaceted indicators approach in a single model as recommended by Ramish and Aslam (2016) and Sampaio et al. (2016).

Sampaio et al. (2016) supported the necessity to gather first hand evidence on the role of moderating and mediating variables that can dig deeper into the nature of the link between SCQM practices and organizational performance since their study was limited to literature review. The study provided empirical evidence that competitive advantage partially mediates the relationship between SCQM practices and organizational performance and only certain organizational factors namely trust and corporate culture moderate the same relationship. Organizational factors inadequately play the hypothesized mediating role in the linkage amid SCQM practices and organizational performance when grouped. This outcome opens up a fertile ground for further research to avail suitable explanations and explore more in other contexts.

This research widens knowledge on how to measure organizational performance. This is by considering impact of SCQM practices on financial, market, operational, societal, environmental, customer, learning and growth perspectives. This addresses the argument of Chagooshi et al. (2015) on financial metric as narrow, short term, historical and lacking universal applicability and strategic orientation. Interestingly, a similar concern was echoed by Freeman (2010) who asserted that ignoring non-financial aspects of organizational performance falls short of addressing societal, environmental impact and economic concerns. The findings of the study contribute to

the debate on the need to adequately measure performance which takes care of the interest of all stakeholders as advised by Kaplan and Norton (1996), Rouse and Putterill (2003) and Vijande and Gonzalez (2007).

Lastly, the study adds to knowledge by providing the evidence on conceptualization and measurement of competitive advantage as an intervening variable as stipulated by Sigalas and Pekka Economou (2013). This study measured competitive advantage using the sub variables of extent to which the organization exploits market opportunities and neutralizes competitor threats as prescribed in literature. The study established that two sub variables of competitiveness and competitive advantage explain the mechanism through which SCQM practices impact on organizational performance as hinted by past researchers (Dyer & Singh, 1998; Li et al., 2004; Chagooshi et al., 2015; Ibrahim et al., 2016).

6.4.2 Contribution to Theory

This study was anchored on five major theories. They were social networks theory, stakeholder theory, network theory, theory of dynamic capabilities and general contingency theory. The key theory, social network, posited that forming networks through SCQM practices results in homogeneity creation and better performance outcomes for network members via competitive advantage through support of organizational factors. This study argued that adoption of SCQM framework comprising of customer focus, supplier relationship management, information sharing, postponement, process management and coordination of supply chain support formation of networks that can address interests of stakeholders such as customers, suppliers, employees, society and environment is predetermined pathway to achieving

improved performance. The reconfigured interactions between organizations and key stakeholders also shape firm's competitive advantage.

The study also posited that in order to form such networks, these firms need to align their internal environment by putting in place favorable organizational factors. The factors are expected to harmonize activities across functions, departments and the organizational boundaries. This arrangement can be instrumental in crafting competitive advantage that is restricted to network members. The empirical evidence gathered through this study confirmed that SCQM practices results to improved organizational performance as a result of building competitive advantage as predicted by social network theory in a conducive internal environment (Soares et al., 2017).

The second theory that was subjected to empirical test was stakeholders' theory. The findings of the study are consistent with this theory. The theory contends that firms that embrace management philosophies such as SCQM practices that address plight of all stakeholders are better placed to achieve and sustain higher performance than their counterparts that myopically pursue interests of stakeholders. This rests on normative argument that stakeholders have intrinsic moral values and rights since they equally contribute to the success of businesses. Therefore, their interest must form integral part of organizations' strategy and focus. It is argued that businesses thrive well upon creating valuable activities and relationships among interconnected stakeholders. The stakeholders include; customers, suppliers, employees, investors, communities, environment and managers. The interconnectedness and interactions of the stakeholders through implementation of SCQM practices brings about competitive advantage and improves organizational performance as organizational factors provide

a conducive internal environment for implementation (Lahouel et al., 2014). This prediction was confirmed using data gathered from this study.

The study confirmed that networks formed through inter-organizational linkages are sources of relational rents and competitive advantage as postulated using relational view (Eloranta & Turunen, 2015). This theory supports the formation of networked business as a source of social capital. The theory further predicts achievement of competitive advantage through inter-firm resources and processes. The resources are unique to the relations and effected through effective management, sharing and complementary capabilities. The relational view proposes that competitive advantage in the lens of networks of businesses and interdependence of stakeholders. The study collected data to verify if integrated networks synergistically marshal joint competitive advantage among firms when market opportunities are fully utilized and competitor threats thwarted (Sagalas, 2015). Apparently, relational view failed to predict and explain the moderation effect of organizational factors on the relationship between managing interfirm relationships and performance except for corporate culture and trust thus inconsistent with findings of Crick (2019).

The fourth theory to be tested was dynamic capabilities theory which states that firms that are able to adapt, integrate, develop and reconfigure operational competencies and assets that are aligned to dynamic environments gain competitive advantage that is superior to counterparts that are not able to (Teece et al., 1997). The study undertook to demonstrate whether organizational factors add value in securing a match between intrafirm process and the external stakeholders through commercial alliances. Zang and Huo (2015) postulated that SCQM practices execution is facilitated by organizational factors which fit them in the network to improve

performance upon gaining competitive advantage. The findings contributed to theory by demonstrating the relevance of the dynamic capabilities theory in understanding the effect of some organizational factors in successful adoption of SCQM practices for gaining competitive advantage for improved performance.

While HRM, leadership commitment and ICT insignificantly moderated the relationship between SCQM practices and performance of private hospitals, organizational culture sufficiently moderated the relationship. Organizational culture represents the shared ways of thinking, feeling and behaving in healthcare organizations. Private hospital operations appear to be standardized therefore demonstrate minimal cultural incongruence. This may be viewed as the key driving force for change or may undermine quality improvement initiatives in private hospitals supply chain. Significant body of evidence link cultures and quality which has been adequately supported by the study findings.

As reported by White (2017), trust is declining across the globe in all sectors. However, within the healthcare setting the author reported steady state. Trust has an important role in relationships especially in circumstances of uncertainty which characterizes by healthcare systems. Healthcare generally exhibit personal emotions which have a direct correlation on trust, especially where illness, vulnerability and uncertainty can increase or decrease customer's (patient's) inclination to trust. Since patients are the main source of revenue to private hospitals, trust for products, service providers and other participants by customers is key to performance and competitive advantage.

6.4.3 Contribution to Managerial Practice and Policy

The study contributed to practice and policy. The management practitioners' benefit from enhanced knowledge on how to improve business performance through SCQM practices adoption. The study established that some organizational factors fail to play moderation role when grouped together from data collected among private hospitals in Kenya. However, practitioners need to emphasize the need for enhancing trust between network partners for better integration in order to successfully implement SCQM practices for higher organizational performance gains as had hitherto been advised by Abdallah et al. (2017). Trust treated as a moderating variable was also identified to play a crucial role in information sharing among business partners in healthcare (Ghosh & Fedorowicz, 2008). This study demonstrated that trust a key determinant in exchange of information in supply networks. Corporate culture is also important in achieving quality among supply chain practitioners' and policy makers. Findings of this study informed that the right corporate culture adds value in SCQM practices implementation which improves firms' competitive advantage and performance as advised by Ramish and Aslam (2016).

The study contributes to interpretation of supply chain quality management practices from healthcare viewpoint. The integration of quality as a concept into the supply chains through focusing on key practices that influence the performance of firms in supply chain relationships is adequately documented. The findings of this study help managers to focus on SCQM practices and organizational factors which were found critical in generating competitive advantage and improving the performance of their institutions.

By establishing the differential contribution of certain practices to specific facets of performance, managers are guided to pay more attention to what satisfies a specified cohort of stakeholders. The study provides a perspective that SCQM practices could address the performance issues in healthcare systems and should be adopted much more widely in the industry. The empirical results presented provide evidence that is potentially important in improving the management of supply networks in the Kenyan economy. The results show that SCQM practices is not a quick-fix solution to problems in the healthcare industry but rather long-term sustainable remedy as implied by their impacts on both lagging and leading performance indicators. The outcomes could provide a valuable guide in the practice of SCQM even in public sector.

6.5 Recommendations of the Study

First, this study has confirmed that adoption SCQM practices results in improved organizational performance. As such private hospitals should understand the SCQM practices and adopt them in their day to day operations to manage their entire supply chain. One of the least understood practices, postponement was found to contribute better to performance compared to other practices. However, private hospitals should consider all practices since they all significantly contribute to both financial and non-financial performance parameters. To successfully implement SCQM practices that can contribute towards universal healthcare in the public sector, Government of Kenya should educate, introduce and promote SCQM practices to institutions mandated to provide healthcare services. The practices have the potential to contribute to government efforts to achieve the goal of providing universal healthcare. These efforts should also be extended to other sectors beyond healthcare.

Second, study also established that some organizational factors are key in effecting SCQM practices. Therefore, it is important for private hospitals to establish both infrastructural and behavioral internal environment that is conducive to adoption of SCQM. The success in adoption is instrumental in achieving competitive advantage and improved performance. Even though ICT, leadership commitment and human resources management and organizational factors in general failed to significantly moderate the relationship, they still remain key to SCQM practices implementation since their impact is positive.

The study findings identify trust as a key moderator of SCQM practices and organizational performance relationship. Mellat–Parast (2013) defined trust as personal sureness in the goodwill of others members in a particular cohort and confidence that others will strive to achieve outcomes consistent with the communal goal. Since trust plays a key role in facilitating cooperation and as an important ingredient of quality management, this study recommends that firms embrace it in their operational strategy in managing supply chain relationships, inter-organizational relationship and performance. Studies reveal its significant impact on activities within and among organizations such as information sharing, reputation and performance. Similarly, organizational culture defined as configurations of morals and philosophies that are demonstrated in practices, behaviors and artefacts that are communal in organizations should be aligned to facilitate SCQM practices implementation.

To achieve improved and sustain performance, this study found that firms need to measure competitive advantage validly and reliably as suggested by Sigalas and Pekka Economou (2013). This is achieved when firms determine competitiveness by measuring the extent to which the organization exploits market opportunities and

neutralize competitor threats. Again, being a dynamic variable, this process should be continuous in organizations. The study recommends that firms should always seek to gain competitive advantage. This is supported by empirical evidence that competitive advantage partially but significantly and positively mediates the relationship amid suggested key study variables.

According to stakeholders' theory, all parties internal and external contribute to their performance. As informed by Freeman (2010), stakeholders influence or are influenced by the goals of an organization. They include employees, partners, community, environment and owners. These parties provide input for production and service processes in terms of labor, capital and material as well as markets, infrastructure and security hence deserve attention. Accordingly, this study recommends adoption of an integrated performance measurement framework (IPMF) which measures the impact of SCQM practices on financial, market, operational, societal, environmental, customer, learning and growth perspectives of performance since all these elements are known to interact (Kaplan & Norton 1996; Rouse & Putterill 2003; Wilcox & Bourne, 2003; Vijande & Gonzalez, 2007; Chagooshi et al., 2015). The study provided the evidence that all these metrics are relevant if the firms are seeking to sustain high performance in the market place for unforeseen future.

6.6 Limitations of the Study

There were notable drawbacks that are worth highlighting that may constitute area of future research. One such limitation is that the study only focused on private hospitals in Kenya as per National hospital Insurance Fund classification. This excluded public hospitals and not for profit organizations which tend to serve majority of the Kenyan population and therefore could give much more information on the subject matter

given the variation in their operations. In addition, the study was restricted to Kenya and therefore is prone to lack of external validity. It would therefore be necessary to include data from other countries in the region or across the globe so as to increase generalizability of the research findings.

The second limitation was the concentration on internal organizational factors. The study therefore ignored external organizational factors such as turbulence of markets, technology, competition and politics. The effect of such variables could potentially alter the performance of the organizations. Improved financial, market, operational, societal, environmental, customer, learning and growth could come from other sources apart from the ones included in the conceptual framework adopted by the study. In a nutshell the study made no efforts to control for other sources of improved performance. Further, the study failed to assess the influence of firm characteristics such as organizational structure, supply chain structure and ownership on the study variables.

The study also relied on a single respondent from each of the institution. The data gathered were mainly dependent on perception, inclination and opinion of the respondent. This may influence the level of objectivity in filling the questionnaires. The respondents expressed time constraints and restrictions by authorities to give information as private hospital emphasize confidentiality. Future studies should consider interviewing the entire department for a longer period of time as this would give more reliable information.

The target population was private hospitals in Kenya that are widely distributed in a vast geographical area. This posed a great challenge in the course of data collection to the extent that the response rate was adversely affected. The researcher had to resort

to using emails and phone calls to address the problem. The low response rate affects the sample size which determines some model fit indices. For example, GFI value tends to be lower in models where sample sizes are small as is the evidence in the study (Hooper, Coughlan, & Mullen, 2008). According to Kenny and McCoach (2003), in cases where small samples are used for determining the model fit, the Chi-Square statistic lacks adequate power to differentiate between good fitting models and poor fitting models. This compels the use of multiple fit indices to ascertain the model fitness.

6.7 Suggestions for Future Research

In this study cross-sectional census survey was adopted. Given the dynamic nature of variables such as organizational performance and competitive advantage, the findings have the potential to change with time. Also, the business environment also varies with time, customer demands, technology evolution and context. Quality is also known to take evolutionary pathway; as such implementation of SCQM practices is most likely to follow the same trend. In this regard, future studies need to the option of longitudinal research to assess the alterations in the SCQM practices implementation and its relationship with competitive advantage and organizational performance in the course of time. Additionally, the method may reveal changing patterns of tool adoption.

The basic limitation of this study is the confinement to private hospital in Kenya as per National Hospital Insurance Fund definition. Future studies should extend beyond the Kenyan borders, cover other industries and involve greater geographical areas. Further, the studies should include mission, public and not for profit hospitals to allow for comparisons. This is also likely to provide a larger sample size that permits better

use of covariance SEM. Quality has cultural dimensions. The cultural dissimilarities are likely to be revealed in SCQM practices. In future, research orientation needs to lean towards investigating quality approaches and methods across cultures. Such a research is likely to reveal global information that can be used as a foundation for international comparative studies on SCQM practices.

Past studies found that leadership commitment, trust, corporate culture, ICT and HRM as organizational factors positively and significantly moderate the relationship between SCQM practices and organizational performance (Vanichchinchai & Igel, 2011; Talib et al., 2011; Zhang & Huo, 2013). This study found positive but insignificant moderating effect of combined organizational factors. However, upon isolation of the factors, this study found corporate culture and trust to play a significant and positive moderating role in the relationship. Future studies should aim at unraveling reasons for this inconsistency in findings. Sampaio et al. (2016) explain that ICT integrate firms to their customers and suppliers and enable information sharing. Maiga (2015) relates effective SCQM practices implementation to motivation, knowledge and attitude of firm employees whereas Zhang and Huo (2013) associate top management support to motivation for and allocation of adequate resources for effective implementation of SCQM practices. The differences may emanate from contexts of study, methodology, respondent perception while filling the questionnaires or sample size.

This study was a quantitative one with positivist philosophical orientation aimed at verifying conceptual framework developed from theory and literature review. To overcome the shortcoming of testing the known, future studies should adopt critical realism which tolerates conducting a qualitative study which would enable

identification of other dimensions of SCQM practices, organizational factors, competitive advantage and organizational performance which may not be adequately captured through a quantitative survey alone. The same can also provide opportunity for unveiling other models.

6.8 Summary

The chapter discussed the study summary, concluding statements and provided meaning of the findings of the study. At the beginning a summary of the findings was presented and then immediately followed by conclusions. Thereafter, this particular chapter deliberated on the contributions of the study to knowledge, theory, policy and practice. It was concluded by underlining the constraints of the study plus postulating submissions for future research. This study observed that even though organizational factors may not wholesomely influence the performance of private hospitals in Kenya, specific attributes of the factor such as trust and corporate culture play an important part towards the performance of private hospitals within the country

The study also concludes that competitive advantage explains the mechanism through which SCQM practices influences organization performance. This is resonating with the fact that findings established the partial moderating effect of competitive advantage on the correlation amid SCQM practices and the performance of private hospitals in Kenya.

Lastly, it was proved that the joint effect of SCQM practices, organizational factors and competitive advantage on organizational performance is significantly greater than the individual effect of each construct on organizational performance. It can therefore

be concluded that adoption of SCQM practices along with combined effect of the variables on organizational performance is a superior approach.

REFERENCES

Abeysekara, N., Wang, H., & Kuruppuarachchi, D. (2019). Effect of supply-chain resilience on firm performance and competitive advantage. *Business Process Management Journal,* 25 (7), 1673-1695

Abdallah, A. B., Abdallah, A. B., Abdullah, M. I., Abdullah, M. I., Mahmoud Saleh, F. I., & Mahmoud Saleh, F. I. (2017). The effect of trust with suppliers on hospital supply chain performance: The mediating role of supplier integration. *Benchmarking: An International Journal*, *24*(3), 694-715

Ansoff, H. I. (1975). Managing strategic surprise by response to weak signals. *California management review*, *18*(2), 21-30

Alakwe, K. O. (2017). Positivism and knowledge inquiry: From scientific method to media and communication research. *Science Arena Publications Specialty Journal of Humanities and Cultural Science, 2*(3), 38-46.

Alharahsheh, H. H., & Pius, A. (2020). A Review of key paradigms: positivism VS interpretivism. *Global Academy Journal Humanities and Social Sciences*, *2*, 39-43.

Al-Dhaafri, H. S., Yusoff, R. Z. B., & Al-Swidi, A. K. (2013). The effect of total quality management, enterprise resource planning and the entrepreneurial orientation on the organizational performance: The mediating role of the organizational excellence---A proposed research framework. *International Journal of Business Administration*, *4*(1), 66

Alizadeh, M., Makui, A., & Paydar, M. M. (2020). Forward and reverse supply chain network design for consumer medical supplies considering biological risk. *Computers & Industrial Engineering*, *140*, 106229.

Arend, R.J. (2003), Revisiting the logical and research considerations of competitive advantage. *Strategic Management Journal,* 24(3), 279-284.

Athreya, K. B., & Lahiri, S. N. (2006). *Measure theory and probability theory*. Springer Science & Business Media.

Avery, G. C. (2004). *Understanding leadership: Paradigms and cases*. Sage.

Awuor, O.E., & Kinuthia, D.M.W (2013). Total Quality Management Practices in Selected Private Hospitals in Nairobi, Kenya. *European Journal of Business and Management. 5*(13), 32-44.

Azar, A., Kahnali, R. A., & Taghavi, A. (2010). Relationship between supply chain quality management practices and their effects on Organizational performance. *Singapore Management Review*, *32*(1), 45-69.

Azizi, R., Maleki, M., Moradi-Moghadam M. & Cruz-Machado, V. (2016). The impact of knowledge management practices on supply chain quality management and competitive advantages. *Management and Production Engineering Review*. 7 (1) 4–12.

Bagchi, S. S, & Gaur, J (2018). Optimization of postponement process for a two stage modular manufacturer. *Journal of Global Operations and Strategic Sourcing*, *11*(1), 39-54.

Bagozzi, R.P. (2010). Structural equation models are modelling tools with many ambiguities: comments acknowledging the need for caution and humility in their use. *Journal of Consumer Psychology*, 20(2), 208-214.

Baird, K., Hu, K.J. & Reeve, R (2011). The relationships between organizational culture, total quality management practices and operational performance. *International Journal of Operations & Production Management*, 31(7),789-814.

Bagozzi, R.P. (2010). Structural equation models are modelling tools with many ambiguities: comments acknowledging the need for caution and humility in their use. *Journal of Consumer Psychology*, 20(2), 208-214.

Barlett, M. S. (1954) 'A note on the multiplying factors for various chi square approximations. *Journal of the Royal Statistical Society, 16,* 296–8.

Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual differences*, *42*(5), 815-824.

Barua, A. (2013). Methods for decision-making in survey questionnaires based on Likert scale. *Journal of Asian Scientific Research*, *3*(1), 35-38.

Basheer, M., Siam, M., Awn, A., & Hassan, S. (2019). Exploring the role of TQM and supply chain practices for firm supply performance in the presence of information technology capabilities and supply chain technology adoption: A case of textile firms in Pakistan. *Uncertain Supply Chain Management*, *7*(2), 275-288.

Bastas, A., & Liyanage, K. (2018). Sustainable supply chain quality management: A systematic review. *Journal of cleaner production*, *181*, 726-744.

Benjamin, G.C., Rothschild, J.M., Genest, R. and Bates, D.W. (2003). What do we know about medication errors in inpatient psychiatry? *Journal on Quality and Patient Safety*, *29*(8), 391-400.

Berry, D. R. Towill and N. Wadsley.(1994)."*Supply Chain Management the Electronics Products Industry*, 20-32.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd. Ed) New York: Routledge.

Cadden, T., Humphreys, P. & McHugh, M. (2010). The influence of organizational culture on strategic supply chain relationship success. *Journal of General Management,* 36 (2) 37-61.

Campbell, D. T. (1955). The informant in quantitative research. *American Journal of sociology*, *60*(4), 339-342.

Canevari-Luzardo, L. M., Berkhout, F., & Pelling, M. (2020). A relational view of climate adaptation in the private sector: How do value chain interactions shape business perceptions of climate risk and adaptive behaviours?. *Business Strategy and the Environment*, *29*(2), 432-444.

Chaghooshi, A. J., Soltani-Neshan, M., & Moradi-Moghadam, M. (2015). Canonical Correlation Analysis between Supply Chain Quality Management and Competitive Advantages. *Foundations of Management*, *7*(1), 83-92.

Che, Y., Li, Y., Fam, K. & Bai, X (2018). Buyer–seller relationship, sales effectiveness and sales revenue: a social network perspective. *Nankai Business Review International,* 9(4), 414-436

Cheng, H. (2017). The antecedents of creative article diffusion on blogs: Integrating innovation diffusion theory and social network theory. *Online Information Review,* 41(1), 70-84,

Chi, T., Kilduff, P. D., Gargeya, V. B., & Dyer, C. L. (2009). Business environment characteristics, competitive priorities, supply chain structures, and business performance: An empirical study of the US technical textile industry. *International Journal of Intercultural Information Management*, 1(4), 407-432.

Choi, T. Y., & Eboch, K. (1998). The TQM paradox: relations among TQM practices, plant performance, and customer satisfaction. *Journal of Operations Management*, *17*(1), 59-75.

Cooper, R.D. & Schindler, S.P. (2008). *Business Research methods* (8th ed). Boston: Irwin McGraw-Hill.

Crick, J.M (2019). Moderators affecting the relationship between coopetition and company performance. *Journal of Business & Industrial Marketing*, 34 (2)518-531.

Czakon, W., & Czernek, K. (2016). The role of trust-building mechanisms in entering into network coopetition: The case of tourism networks in Poland. *Industrial Marketing Management*, *57*, 64-74.

Davis, E.C, Arana, E.T, Creel, J.S, Ibarra, J.C, Lechuga, J, Norman, R.A, Parks, H.R, Qasim, A. Watkins, D.Y., Kash, B.A (2018). The role of community engagement in building sustainable health-care delivery interventions for Kenya. *European Journal of Training and Development*, 42 (1/2), 35-47.

Danermark, B., Ekström, M., & Karlsson, J. C. (2019). *Explaining society: Critical realism in the social sciences*. Routledge.

Deshpande´, R. & Farley, J.U. (2013). Organizational culture, market orientation, innovativeness, and firm performance: an international research odyssey. *International Journal of Research in Marketing*, 21 (1), 53-73.

Dess, G. G., & Robinson, R. B. (1984). Measuring organizational performance in the absence of objective measures: the case of the privately-held firm and conglomerate business unit. *Strategic Management Journal*, *5*(3), 265-273.

Di Maddaloni, F., & Davis, K. (2018). Project manager's perception of the local communities' stakeholder in megaprojects. An empirical investigation in the UK. *International journal of project management*, *36*(3), 542-565.

Diamantopoulos, A., Siguaw, J. A., & Siguaw, J. A. (2000). *Introducing LISREL: A guide for the uninitiated*. Sage.

Drupsteen, J., Vaart,T.& Donk, D.P , (2016). Operational antecedents of integrated patient planning in hospitals. *International Journal of Operations & ProductionManagement*, *36* (8), 879-900

Drazin, R & Van de Ven A.H (1985). *Administrative Science Quarterly*.*30*(4), 514-539.

Dyer, J. H., & Singh, H. (1998). The relational view: cooperative strategy and sources of Inter- organizational competitive advantage. *Academy of Management Review*, *23*(4), 660-679.

Elshaer, I. A., & Augustyn, M. M. (2016). Direct effects of quality management on competitive advantage. *International Journal of Quality & Reliability Management, 33*(9)

Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review,* 36 (2), 90–100.

Eloranta V. & Turunen, T. (2015). Seeking competitive advantage with service infusion: a systematic literature review.*Journal of Service Management*, 26 (3)394-42.

Eriksson, P & Kovalainen, A. (2008). *Qualitative methods in business research*. London: Sage Publications ltd.

Fascia, M. (2016) Discussions in philosophy and knowledge.*European business review*, *22*(2), 153-174.

Fawcett, S.E., Magnan, G.M. & McCarter, M.W. (2008). Benefits, barriers, and bridges to effective supply chain management. *Supply Chain Management: An International Journal,* 13(1), 35-48.

Ferguson, B.R. (2000). Implementing Supply Chain Management. *Production & Inventory Management Journal*, 41(2), 64.

Faherty, V. E. (2007). *Compassionate statistics: Applied quantitative analysis for social services (with exercises and instructions in SPSS).* Sage Publications.

Fernandes, A. C., Sampaio, P., & Carvalho, M. S. (2014). Quality management and supply chain management integration: a conceptual model. *IEOM*, 773-780.

Ferreira, L. M. D., Silva, C., & Azevedo, S. G. (2016). An environmental balanced scorecard for supply chain performance measurement. *Benchmarking: An International Journal*, *23*(6), 1398-1422.

Fischer, G. H., & Seliger, E. (1997). Multidimensional linear logistic models for change. In *Handbook of modern item response theory* (323-346). Springer, New York, NY.

Fletcher, A. J. (2017). Applying critical realism in qualitative research: methodology meets method. *International journal of social research methodology*, *20*(2), 181-194.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge university press.

Freeman, R. E., Dmytriyev, S., & Strand, R. G. (2017). Managing for stakeholders in the digital age. In *Corporate Social Responsibility* (pp. 136-153). Cambridge University Press.

Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder theory perspective on business models: Value creation for sustainability. *Journal of Business Ethics*, *166*(1), 3-18.

Flynn*, B. B., & Flynn, E. J. (2005). Synergies between supply chain management and quality management: emerging implications. *International Journal of Production Research*, *43*(16), 3421-3436.

Flynn, B.B., Huo, B., Zhao, X., 2010. The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management,* 28, 58-71

Fornell, C., & Larcker, D.F (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*. 18(1), 39-50.

Foster, S. T. (2008). Towards an understanding of supply chain quality management. *Journal of Operations Management*, *26*(4), 461-467.

Foster, S. T., & Ganguly, K. K. (2007). *Managing Quality: Integrating the Supply Chain* 256-266). Pearson Prentice Hall.

Foster Jr, S. T., Wallin, C., & Ogden, J. (2011). Towards a better understanding of supply chain quality management practices. *International Journal of Production Research*, *49* (8), 2285-2300.

Forker, L.B., Mendez, D. and Hershauer, J.C. (1997). Total quality management in supply chain: what is its impact on performance. *International Journal of Production Research,* 35(6), 1681-701.

Fotopoulos, C.B. and Psomas, E.L. (2009). The impact of soft and hard TQM elements on quality management results. *International Journal of Quality & Reliability Management,* 26 (2), 150-63.

Gardner, J. W., Linderman, K. W., & McFadden, K. L. (2018). Managing quality crossroads in healthcare: An integrative supply chain perspective. *Quality Management Journal*, *25*(1), 2-17.

Garg, P., & Chauhan, A. (2015). Factors affecting the ERP implementation in Indian retail sector. *Benchmarking: an International Journal*.

Gawankar, S.A Gunasekaran, A. & Kamble, S. (2020). A study on investments in a big data driven supply chain measures, performance measures and organizational performance in India. *International Journal of Production Research* 58(5), 1574-1593

Ghobadian, A. and Gallear, D. (2001), "TQM implementation: an empirical examination andproposed generic model", Omega, Vol. 29 No. 4, pp. 343-59.

Gunasekaran, A. and McGaughey, R.E. (2003). *TQM in supply chain management*", The TQM Magazine, 15(6), 361-3.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge University Press.

Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological theory*, 201-233.

Gravetter FJ & Forzano L-AB (2008) Research methods for the behavioral sciences. Gardners Books

Grahovac, J. & Miller, D.J. (2009). Competitive advantage and performance: the impact ofvalue creation and costliness of imitation. *Strategic Management Journal,* 30(11),1192-1212.

Gómez-Cedeño, M., Castán-Farrero, J. M., Guitart-Tarrés, L., & Matute-Vallejo, J. (2015). Impact of human resources on supply chain management and performance. *Industrial Management & Data Systems*, *115*(1), 129-157.

Ghosh, A., & Fedorowicz, J. (2008). The role of trust in supply chain governance. *Business Process Management Journal*, *14*(4), 453-470.

Ibrahim A., Marcjanna E. & Augustyn, M. (2016). Direct effects of quality management on competitive advantage. *International Journal of Quality & Reliability Management,* 33 (9), 1286 – 1310.

Jose, P. E. (2013). *Doing statistical mediation and moderation*. Guilford Press.

Haenlein, M., & Kaplan, A. M. (2004). A beginner's guide to partial least squares analysis. *Understanding statistics*, *3*(4), 283-297.

Hagell, P. (2014). Testing rating scale unidimensionality using the principal component analysis (PCA)/ t-test protocol with the Rasch model: the primacy of theory over statistics. *Open Journal of Statistics*, *4*(6), 456-465.

Halldórsson, A., Hsuan, J. &Kotzab, H. (2015). Complementary theories to supply chain management revisited –from borrowing theories to theorizing. *Supply Chain Management: An International Journal,* 20 (6), 574-586,

Haque, M., & Islam, R. (2013). Effects of supply chain management practices on customer satisfaction: Evidence from pharmaceutical industry of Bangladesh. *Global Business and Management Research*, *5*(2/3), 120.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage.

Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107-123.

Han, J., Omta, S. W. F., & Trienekens, J. H. (2007). The joint impact of Supply Chain Integration and Qualilty Management on the performance of Pork processing firms in China. *International Food and Agribusiness Management Review*, *10*(2), 67-98.

Hatcher, L., & Stepanski, E. J. (1994). Assessing scale reliability with coefficient alpha. *A step-by step approach to using the SAS® system for univariate and multivariate statistics*.

He, Y., Sun, H., Ni, W., & Ng, S.C.H (2017). Re-examining the effects of supplier integration on operations performance: a relational view. *International Journal of Operations & Production Management*, 37 (12), 1702-1721.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53-60.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, *6*(1), 1-55.

Hyväri, I. (2016). Roles of top management and organizational project management in the effective company strategy implementation. *Procedia-Social and behavioral sciences*, *226*, 108-115.

Jacobs, R., Smith, P. C., & Goddard, M. K. (2004). *Measuring performance: an examination of composite performance indicators: a report for the Department of Health*. Centre of Health Economics, University of York.

Kamble, S. S., Gunasekaran, A., Ghadge, A., & Raut, R. (2020). A performance measurement system for industry 4.0 enabled smart manufacturing system in

SMMEs-A review and empirical investigation. *International journal of production economics*, *229*, 107853.

Kang, J., Asare, A.K, Brashear-Alejandro, T., EGranot, E. & Li, P. (2018). Interorganizational drivers of channel performance: a meta-analytic structural model. *Journal of Business & Industrial Marketing*, 33 (2)183-195.

Kaiser, M. O. (1974). Kaiser-Meyer-Olkin measure for identity correlation matrix. *Journal of the Royal Statistical Society*, *52*, 296-298.

Kaplan, R, S., & Norton, D.P. (1992). The Balanced Scorecard-Measures that drive Performance. *Harvard Business Review, 70* (1), 71-79.

Kaplan, R. S., & Norton, D. P. (1996). Linking the balanced scorecard to strategy. *California management review*, *39*(1), 53-79.

Karim, E.& Rafiee, M. Analyzing the Impact of Supply Chain Management Practices on Organizational Performance through Competitive Priorities.*International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4 (1), 1–15.

Kaur, M., Singh, K., & Singh, D. (2020). Justification of synergistic implementation of TQM-SCM using fuzzy-based simulation model. *World Journal of Science, Technology and Sustainable Development*.

Kaynak, H., & Hartley, J. L. (2008). A replication and extension of quality management into the supply chain. *Journal of Operations Management*,*26*(4), 468-489.

Kazi, J. A., and Noman, A.N.K. (2013). Determinants of Demand for Health Care in Bangladesh: An Econometric Analysis. *World Journal of Social Sciences,*3(6),153 – 163.

Kidder, L. H. (1981). Qualitative research and quasi-experimental frameworks. *Scientific inquiry and the social sciences*, 226-256.

Kenya National Bureau of Statistics (KNBS) and ICF Macro. 2016. Kenya Demographic and Health Survey 2019. Calverton, MD: KNBS and ICF Macro.

Kim, H., Hoskisson, R. E., & Lee, S.-H. (2015). Why strategic factor markets matter: "New" multinationals' geographic diversification and firm profitability. *Strategic Management Journal,* 36, 518-536.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Koenker, R., & Bassett Jr, G. (1978). Regression quantiles. *Econometrica: journal of the Econometric Society*, 33-50.

Kothari, C., & Garg, G. (2014). Research Methodology: Methods and Strategy. *New age international*.

Kuei, C. H., Madu, C. N., & Lin, C. (2001). The relationship between supply chain quality management practices and organizational performance. *International Journal of Quality & Reliability Management*, *18*(8), 864-872.

Kuei, C. H., Madu, C. N., & Lin, C. (2008). Implementing supply chain quality management. *Total Quality Management*, *19*(11), 1127-1141.

Kumar, A., Singh, R. K., & Modgil, S. (2020). Exploring the relationship between ICT, SCM practices and organizational performance in agri-food supply chain. *Benchmarking: An International Journal*.

Kumar, A., Singh, R. K., & Modgil, S. (2020). Influence of data-driven supply chain quality management on organizational performance: evidences from retail industry. *The TQM Journal.*

Kushwaha, G. S., & Barman, D. (2010). Development of a theoretical framework of supply chain quality management. *Serbian Journal of Management*, *5*(1), 127-142.

Lachman, R. (1985) Public and private sector differences: CEO's perceptions of their role environments. *Academy of Management Journal,* 28, 671-679.

Lahouel, B.B, Peretti,J. & Autissier, D. (2014). Stakeholder power and corporate social performance: the ownership effect. *Corporate Governance*, 14 (3), 363-381.

Laplume, A. O., Sonpar, K., & Litz, R. A. (2008). Stakeholder theory: Reviewing a theory that moves us. *Journal of management*, *34*(6), 1152-1189.

Law, K. M. (2016). How schedule issues affect drug logistics operations: an empirical study in hospitals in China. *Industrial Management & Data Systems*, *116*(3), 369-387.

Lee, S.K.J. & Yu, K. (2013). Corporate culture and organizational performance. *Journal of Managerial Psychology*, 19 (4), 340.

Lee, S. M., Lee, D., & Schniederjans, M. J. (2011). Supply chain innovation and organizational performance in the healthcare industry. *International Journal of Operations & Production Management*, *31*(11), 1193-1214.

Li, S., Ragu-Nathan, B., Ragu-Nathan, T.S., Rao, S.S. (2004). The impact of supply chain management practices on competitive advantage and organizational performance. *OMEGA*, *34* (2),107-124.

Liapis, N., Theodorou, D., & Zannikos, F. (2013). Absence of TQM across the fuel supply chain: quality failure-associated costs. *Total Quality Management & Business Excellence*, *24*(3-4), 452-461.

Lin, C., Kuei, C. H., & Chai, K. W. (2013). Identifying critical enablers and pathways to high performance supply chain quality management. *International Journal of Operations & Production Management*, *33*(3), 347-370.

Lipman-Blumen, J. (2005). Toxic leadership: When grand illusions masquerade as noble visions. *Leader to Leader*, *2005*(36), 29.

Maiga, A. S. (2015). Organizational Learning and Firm Profitability: The Role of Competitive Advantage. *Advances in Accounting Behavioral Research*, 179-211.

Magak, A. A. (2014). Effects of Management of Supply Chain on Performance of Public Health Institutions in Migori County in Kenya. *Interdisciplinary journal of contemporary research in business*, *5*(11), 82.

Mamabolo, A., & Myres, K. (2020). Performance measurement in emerging market social enterprises using a balanced scorecard. *Journal of Social Entrepreneurship*, *11*(1), 65-87.

Mathur, B, Gupta, S, M.L. Meena M.L & Dangayach G.S. (2018). Impact of Supply Chain Practices on Organizational Performance with Moderating Effect of Supply Chain Performance in Indian Health Care Industry. *International journal of supply chain management* 7(4), 30-41.

Martinez-Lorente, A. R., Dewhurst, F. W., & Gallego-Rodriguez, A. (2000). Relating TQM, marketing and business performance: an exploratory study. *International Journal of Production Research*, *38*(14), 3227-3246.

Mehra, S., Joyal, A. D., & Rhee, M. (2011). On adopting quality orientation as an operations philosophy to improve business performance in banking services. *International Journal of Quality & Reliability Management*.

Meijboom, B, Schmidt-Bakx, S & Westert, G (2011). Supply chain management practices for improving patient-oriented care. *Supply Chain Management: An International Journal*, 16 (3), 166-175.

Meirovich, G. (2010). The impact of cultural similarities and differences on performance in strategic partnerships: an integrative perspective. *Journal of Management and Organization*, 6, 127-39.

Mellat-Parast, M. (2013). Supply chain quality management: An inter-organizational learning perspective. *International Journal of Quality & Reliability Management*, *30*(5), 511-529.

Miles, S. (2017). *Stakeholder theory classification, definitions and essential contestability*. Emerald Publishing Limited.

Mello, J.E. & Stank, T.P. (2005). Linking firm culture and orientation to supply chain success. *International Journal of Physical Distribution and Logistics Management*, 35 (7/8), 542-54.

Mkansi, M., & Acheampong, E. A. (2012). Research philosophy debates and classifications: students' dilemma. *Electronic Journal of Business Research Methods*, *10*(2), 132-140.

Mohajan, H. K. (2014). Improvement of Health Sector in Kenya. *American Journal of Public Health Research,* 2(4), 159-169

Motawa, I., & Oladokun, M. (2015). A model for the complexity of household energy consumption. *Energy and Buildings*, *87*, 313-323.

Mustaffa, N.H and Potter, A. (2009). Healthcare supply chain management in Malaysia: a case study. *Supply Chain Management: An International Journal*, 14(3), 234 – 243.

Nandurkar, K. N., Wakchaure, V. D., & Kallurkar, S. P. (2014). The Simulation-Based Comparison of Joint Implementation of JIT, TQM, TPM and SCM Methods. *Proceedings of NAMRI/SME*, *42*.

Nazar, N., Jahan, S., Amoozegar, A., Anjum, T., & Raju, V. (2020). The effects of total quality management practices on corporate social responsibility using supply chain model: A review of Malaysian hotel industry. *International Journal of Supply Chain Management*, *9*(5), 294-304.

Nguyen, N. T. D. (2019). Experiences in Supply Chain Quality Management Practices in Vietnam: Studying on Steel Manufacturing Company A and Packaging Manufacturing Company B. *International Journal of Business and Management*, *14*(7).

Newbert, S.L. (2008), Value, rareness, competitive advantage, and performance: a conceptual level empirical investigation of the resource-based view of the firm. *Strategic Management Journal*,*29*(7), 745-768.

Nosratpour, M., & Hamid, A. B. A. (2015). The Impact of SCQM Practices on Organizational Performance. *International Journal of Enhanced Research in Management & Computer Applications*, 4(5), 5-15.

Nunnally, J.C (1978). *Psychometric Theory*. 2nd Ed. New York. McGraw-Hill

Ombwayo, I.O.K., & Atambo, W.N. (2017). Effects of Supply Chain Quality Management Practices on Performance of SACCOs in Nakuru County, Kenya. *Imperial journal of Interdisciplinary research,* 3(3), 959-983.

Okoth, O. T., & Ochieng, O. S. (2016). Supply Chain Quality Management Practices and Performance of Pharmaceutical Distributors and Wholesalers in Mombasa, Kenya. *International Journal of Managerial Studies and Research*, *4*(8), 94-102.

Okoth, O. T., & Ochieng, O. S. (2018). Supply Chain Quality Management Practices, Complementary Firm Assets, Competitive Advantage and Firm Performance. *International Journal of Managerial Studies and Research*, *6*(2), 18-28.

Olsen, C., & St George, D. M. M. (2004). Cross-sectional study design and data analysis. *College entrance examination board*, *26*(03), 2006.

O'Shannassy, T. (2008). Sustainable competitive advantage or temporary competitive advantage: improving understanding of an important strategy construct. *Journal of Strategy and Management,* 1(2),168-180.

Otieno, S. O. & Macharia, D. (2014) Factors Influencing Utilization of Health Services in Kenya: The Case of Homa Bay County. *International Journal of Public Health Science*, 3, (4), 213-223

Pagell, M. and Shevchenko, A. (2014), Why research in sustainable supply chain management should have no future. *Journal of Supply Chain Management*, 50(1), 44-55.

Pan, Z. X., & Pokharel, S. (2007). Logistics in hospitals: a case study of some Singapore hospitals. *Leadership in Health Services*, *20*(3), 195-207.

Parlakturk, A.K (2012). The value of product variety when selling to strategic consumers. *Manufacturing and Service Operations Management*, 14(3), 371–385.

Peng, X., Prybutok, V., & Xie, H. (2020). Integration of supply chain management and quality management within a quality focused organizational framework. *International Journal of Production Research*, *58*(2), 448-466.

Pereira-Moliner, J., Pertusa-Ortega, E.M., Tarí, J.J., López-Gamero, M.D., Jose F. Molina-Azorín, J.F., (2016). Organizational design, quality management and competitive advantage in hotels. *International Journal of Contemporary Hospitality Management,* 28 (4), 762-784.

Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. *MIS quarterly*, 623-656.

Popper, K.R. (1959), *The Logic of Scientific Discovery*, Hutchinson, London.

Porter, M.E. (1985), Competitive Advantage: Creating and Sustaining Superior Performance, The Free Press, New York, NY.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic management journal*, *12*(S2), 95-117.

Pullman, M.E & Dillard, J. (2010). Values based supply chain management and emergent organizational structures. *International Journal of Operations & Production Management*, 30 (7), 744-771.

Prajogo, D.I. & McDermott, C. (2011). The relationship between multidimensional organizational culture and performance. *International Journal Operations and Production Management,* 31(7), 712-35.

Rajagopal, P., Zailani, S. and Sulaiman, M. (2009). Assessing the effectiveness of supply chain partners with scalable partners as a moderator. *International Journal of Physical Distribution & Logistics Management*, 39 (8) 649-68.

Ramish, A., & Aslam, H. (2016). Measuring supply chain knowledge management (SCKM) performance based on double/triple loop learning principle. *International Journal of Productivity and Performance Management*.

Randhawa, J. S., & Ahuja, I. S. (2017). An assessment of contributions of 5S initiatives in the Indian manufacturing industry. *International Journal of Technology, Policy and Management*, *17*(4), 297-336.

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and anderson-darling tests. *Journal of statistical modeling and analytics*, *2*(1), 21-33.

Ritala, P & Ellonen, H. (2010). Competitive advantage in interfirm cooperation: old and new explanations. *Competitiveness Review: An International Business Journal*, 20, (5) 367-383.

Robinson, C. J., & Malhotra, M. K. (2005). Defining the concept of supply chain quality management and its relevance to academic and industrial practice. *International Journal of Production Economics*, *96*(3), 315-337.

Rotaru, K., Churilov, L. Flitman, A. (2014) Can critical realism enable a journey from description to understanding in operations and supply chain management. *Supply Chain Management: An International Journal*, 19 (2), (117-125).

Ross, D. F. (1998), *Competing Through Supply Chain Management,* New York, Chapman & Hall.

Rouse, P & Putterill, M. (2003). An integral framework for performance measurement *Management Decision*, *41*(8), 791-805

Sabella, A. R., Kashou, R., & Omran, O. (2015). Assessing quality of management practices in Palestinian hospitals. *International Journal of Organizational Analysis*, *23*(2), 213-232.

Sampaio, P., Carvalho, M. S., Fernandes, A. C., Quang, H. T., An, D. T. B., & Vilhenac, E. (2016). An extensive structural model of supply chain quality management and firm performance. *International Journal of Quality & Reliability Management*, 33 (4), 444-464

Samson, D., & Terziovski, M., (1999). The relationship between total quality management practices and operational performance. Journal of Operations Management 17, 393-409.

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, *52*(3/4), 591-611.

Sarrico, C. S & Rosa, M. J (2016). Supply chain quality management in education.*International Journal of Quality & Reliability Management*, 33(4), 499-517.

Saunders, M., Lewis, P. & Thornhill, A. (2007) Research Methods for Business Students (3)54-95.

Schoenherr, T., Narasimhan, R. & Bandyopadhyay, P. (2015). The assurance of food safety in supply chains via relational networking: A social network perspective. *International Journal of Operations & Production Management*, 35 (12),1662-1687.

Scott, W. R., & Davis, G. F. (2007). *Organizations and organizing: Rational, natural, and open system perspectives*. Upper Saddle River, NJ: Pearson Prentice Hall.

Sedgwick, P. (2014). Cross sectional studies: advantages and disadvantages. *Bmj*, *348*.

Sigalas, C. (2015). Competitive advantage: the known unknown concept. *Management Decision*, *53*(9), 2004-2016.

Sigalas, C.& Pekka-Economou, V. (2013). Revisiting the concept of competitive advantage: problems and fallacies arising from its conceptualization. *Journal of Strategy and Management*, 6(1) 61-80.

Sigalas, C., Pekka-Economou, V.& Georgopoulos, N.B. (2013). Developing a measure ofcompetitive advantage.*Journal of Strategy and Management,* 6(4), 320-342.

Singh, C. D., & Khamba, J. S. (2016). Structural equation modelling for manufacturing competency and strategic success factors. In *International Journal of Engineering Research in Africa*, 19, 138-155.

Sharma, S., & Modgil, S. (2015). Supply chain and total quality management framework design for business performance-case study evidence. *Journal of Enterprise Information Management*, *28*(6), 905-930.

Sharma, S., & Modgil, S. (2020). TQM, SCM and operational performance: an empirical study of Indian pharmaceutical industry. *Business Process Management Journal.* 26(1), 331-370

Singh, R., Sandhu, H. S., Metri, B. A., & Kaur, R. (2018). Supply chain management practices, competitive advantage and organizational performance: a confirmatory factor model. In *Operations and Service Management: Concepts, Methodologies, Tools, and Applications* (pp. 1181-1207). IGI Global.

Soares, A, Soltani, E and Liao, Y (2017). The influence of supply chain quality management practices on quality performance: an empirical investigation, *Supply Chain Management: An International Journal,* 22 (2), 122-144.

Srivastava, M., Franklin, A., & Martinette, L. (2013). Building a sustainable competitive advantage. *Journal of technology management & innovation*, 8(2), 47-60.

Stevens, J. P. (2002). Applied multivariate statistics for the social sciences (4th ed.). Hillsdale, NS: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2001). Principal components and factor analysis. *Using multivariate statistics*, 4(1), 582-633.

Talib, F., Rahman, Z., & Qureshi, M.N. (2011). A study of total quality management and supply chain management practices. *International Journal of Productivity and Performance Management,* 60(3), 268-288.

Turkyilmaz, A., Bulak, M. E., & Zaim, S. (2015). Assessment of TQM Practices as a part of supply chain management in healthcare institutions. *International Journal of Supply Chain Management*, 4(4), 1-9.

Teece, D.J., Pisano, G. & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal,* 18 (7), 509-533.

Tuai, C. K. (2015) A Structural Contingency Theory Model of Library and Technology Partnerships within an Academic Library Information Commons. *In Advances in Library Administration and Organization,* 1-87.

Truong, H., Sampaio, P., Carvalho, M. S., Fernandes, A. C., & An, D. T. B. (2014). An extensive structural model for supply chain quality management and firm performance. In *ICQEM Proceedings of the 1 st International Conference on Quality Engineering and Management, 2014,* 115-131.

Tse, T. (2011). Shareholder and stakeholder theory: after the financial crisis. *Qualitative Research in Financial Markets*, 3(1), 51 - 63

UNIDO Pharmaceutical Sector profile Kenya: Global UNIDO Project (2016): Retrieved from: *http://www.unido.org on 1-8-2013*

Vanichchinchai, A., & Igel, B. (2011). The impact of total quality management on supply chain management and firm's supply performance. *International Journal of Production Research*, *49*(11), 3405-342.

Vanichchinchai, A. (2014). Supply chain management, supply performance and total quality management. *International Journal of Organizational Analysis*.

Van Walraven, C., Bennett, C., Jennings, A., Austin, P. C., & Forster, A. J. (2011). Proportion of hospital readmissions deemed avoidable: a systematic review. *Cmaj*, *183*(7), E391-E402.

Vijande, M.L.S. & Gonzalez, L.I.A. (2007). TQM and firm's performance: An EFQM excellence model research-based survey. *International Journal of Business Science and Applied Management,* 2(2)

Vries, J., & Huijsman, R. (2011). Supply chain management in health services: an overview. *Supply Chain Management: An International Journal*, *16*(3), 159-165.

Wadongo, B. & Abdel-Kader, M. (2014). Contingency theory, performance management and organizational effectiveness in the third sector: A theoretical framework. *International Journal of Productivity and Performance Management,* 63(6), 680-703.

Watson, JD, & Durbin, J. (1951). Testing for serial correlation in least-squares regression. *Biometrika*, *38* (1-2), 159-177.

World Health Organization (2015). World Health series technical report. Geneva. Retrieved from: *www.who.int/medicinedocs/documents/* 1/8/13

Wilcox, M & Bourne, M (2003). Predicting performance. *Management Decision*,41(8), 806 816.

Wilson, J. P., & Campbell, L. (2020). ISO 9001: 2015: the evolution and convergence of quality management and knowledge management for competitive advantage. *Total Quality Management & Business Excellence*, *31*(7-8), 761-776.

Wong, K. K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, *24*(1), 1-32.

Xiaojing, J., Ying, W., & ahmad Khan, I. (2009). Clinical analysis of 322 cases of placenta previa. *Journal of Medical Colleges of PLA*, *24*(6), 366-369.

Yamin, M. & Kurt, Y. (2018). Revisiting the Uppsala internationalization model: Social network theory and overcoming the liability of outsidership. *International Marketing Review,* 35(1), 2-17,

Yang, F.& Zhang, X. (2017). The impact of sustainable supplier management practices on buyer-supplier performance: An empirical study in China. *Review of International Business and Strategy,* 27(1),112-132.

Yanya, M., & Mahamat, N. (2020). The impact of supply chain management practices on competitive advantages: moderation role of total quality management. *Polish Journal of Management Studies*, *21*.

Zeng, J., Phan, C.A. & Matsui, Y. (2013). Supply chain quality management practices and performance: An empirical study. *Operations management research* 6(2), 19–31

Zhang, M. & Huo, B. (2013). The impact of dependence and trust on supply chain integration. *International Journal of Physical Distribution & Logistics Management*, *43*(7) 544 – 563

Zhang, M., Hu, H., & Zhao, X. (2020). Developing product recall capability through supply chain quality management. *International Journal of Production Economics*, *229*, 107795.

Zhong, J., Ma, Y., Tu, Y., & Li, X. (2016). Supply chain quality management: an empirical study. *International Journal of Contemporary Hospitality Management*, *28*(11).

Ziaul Huq, (2005). Managing change: a barrier to TQM implementation in service industries.*Managing Service Quality: An International Journal*, 15 I (5) 452-469)

Ziegler, M., & Hagemann, D. (2015). Testing the unidimensionality of items

Zikmund, W.G. (2003) *Business Research Methods*. 7th Edition, Thomson South Western, Ohio.

APPENDICES

Appendix I: Questionnaire

Kindly tick {√} in the space provided the correct answer or supply the required information where required.

Part A: Respondents Information

1. Name of the hospital……………………………………………. (Optional)

2. Bed capacity; Below 100 (   ) 100-250 (   ) over 250 (   )

3. Age of the organization in years; Less than 10 (   ) 10 to 20 (   ) Over 20 (   )

   Part B: Supply Chain Quality Management Practices (SCQMP) adoption

4. Tick the extent to which your organization has adopted the following aspects of SCQM practice in the last 3 years. Where 1. Not at all 2. Small extent 3. Moderate extent 4. Great extent 5. Very great extent

Supply Chain Quality Management Practices	1	2	3	4	5
Supplier quality management					
Select suppliers					
Develop suppliers					
Collaborate with suppliers					
Customer focus					
Manage all customer complains					

Build long term relations with customers					
Provide services based on customer needs					
Information Sharing					
Giving timely information					
Giving credible information					
Sharing proprietary information					
Postponement					
Flexible to changing customer needs					
Differentiate customer needs					
Differ activities based on information available					
Process management					
Review processes					
Continuously attempt to improve service quality					
Formally specify procedures					
Coordination of supply chain activities					
Address logistic concerns					
Address transportation concerns					

Establish formal coordination rules and procedures					

Part C: Organizational Factors

5. Please indicate the extent to which your organization has implemented the following?

   Where 1. Not at all 2. Small extent 3. Moderate extent 4. Great extent 5. Very great

   extent

Organizational Factors	1	2	3	4	5
Leadership commitment					
All-inclusive decision making					
Allocation adequate resources					
Leadership intervention on supply issues					
Human resource management					
Training of employees for knowledge on supply chain quality management practices					
Empower employee to make decision					
Reward target achievement					
Information and communication technology					
Computerized information generation					

E- procurement procedures					
E-dispensing procedures					
Trust					
Trust for suppliers					
Trust for employees					
Trust by customers					
Corporate culture					
Quality service design					
Offer consistently quality products					
Conform to specifications					

Part D: Competitive Advantage

6. On Five-point Likert scale ranging from Not at all to Very great extent tick the extent to which your firm has been able to:

1. Not at all, 2. Small extent 3. Moderate extent 4. Great extent 5. Very great extent

Competitiveness	1	2	3	4	5
Exploitation of market opportunities					

Exploit all market opportunities that have been presented to your industry					
Fully exploit the market opportunities that have been presented to your industry;					
Exploit of more market opportunities than competitors					
Neutralization of competitor threats					
Neutralize all competitive threats due to low cost					
Neutralize all competitive threats due improved quality service					
Neutralize all competitive threats due to incentives to customers					

Part E: Organizational Performance

7. Indicate how you evaluate your firm's performance over the past three years on a five-point equal intervals scale ranging from not at all to very great extent where 1=Not at all, 2=Small extent, 3=Moderate extent, 4=Great extent and 5=Very great extent in terms of;

Organizational Performance	1	2	3	4	5
Finance					
Revenue					
Return on investment					

Profits					
Market					
Market share growth					
Sales volume growth (in units)					
Reduction in marketing expenses					
Environmental performance					
Maintaining a green environment					
Waste disposal					
Compliance to environmental laws					
Societal performance					
Cooperate social responsibility					
Tax obligation compliance					
Ethics					
Learning and growth					
Revenue growth					
Profitability growth					
Productivity growth					

Operational performance					
Cost reduction					
Delivery dependability					
Service quality					
Customer perspective					
Retained more than 80% of customer					
Increase customer numbers by 20%					
Accuracy and adequacy of medication					

Appendix II: Authority Letter from National Commission for Science, Technology and Innovation

THIS IS TO CERTIFY THAT:
MR. TOBIAS OKOTH ONDIEK
of **UNIVERSITY OF NAIROBI, 1199-80100**
Mombasa,has been permitted to
conduct research in *All Counties*

on the topic: *SUPPLY CHAIN QUALITY MANAGEMENT PRACTICES AND PERFORMANCE OF PRIVATE HOSPITALS IN KENYA*

for the period ending:
23rd July,2020

Permit No : NACOSTI/P/19/33971/31998
Date Of Issue : 24th July,2019
Fee Recieved :Ksh 2000

....
Applicant's Signature

Director General
National Commission for Science,
Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights thereunder are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The License does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and innovation
P.O. Box 30623 - 00100, Nairobi, Kenya
TEL: 020 400 7000, 0713 788787, 0735 404245
Email: dg@nacosti.go.ke, registry@nacosti.go.ke
Website: www.nacosti.go.ke

REPUBLIC OF KENYA

NACOSTI

National Commission for Science, Technology and Innovation

RESEARCH LICENSE

Serial No.A 25931

CONDITIONS: see back page

Appendix III: University of Nairobi Letter of Authorization to Conduct

Research.

UNIVERSITY OF NAIROBI
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF BUSINESS
DEPARTMENT OF MANAGEMENT SCIENCE

Telephone: 4184160/1-5 Ext. 220 Email: commerce@uonbi.ca.ke	P.O. Box 30197 Nairobi, Kenya

25th October, 2018

TO WHOM IT MAY CONCERN

RE: INTRODUCTION LETTER

This is to certify that **OKOTH TOBIAS ONDIEK (REG. NO. D80/97610/2015)** is a bona fide student of the University of Nairobi, pursuing a PhD in Business Administration.

As part of the fulfillment of the requirement of the course, he is undertaking a study titled *"SUPPLY CHAIN QUALITY MANAGEMENT PRACTICES AND PERFORMANCE OF PRIVATE HOSPITALS IN KENYA."*

You have been selected as one of the respondents in the study. The purpose of this letter therefore, is to kindly request you to assist and facilitate in carrying out the study in your organization by answering the questions in the attached questionnaire.

Data and information obtained through this exercise is purely for academic purpose and will be treated with utmost confidentiality. In case of any questions or clarifications, he can be reached on 0723747660 or ondiek.to@gmail.com.

Your assistance and cooperation will be highly appreciated. Thank you very much in advance.

Yours Faithfully,

Dr. Stephen Odock,
Coordinator, School of Business, Mombasa Campus

UNIVERSITY OF NAIROBI
CO-ORDINATOR
2 5 OCT 2018
SCHOOL OF BUSINESS

Appendix IV: Key to Amos Graphics

Supply Chain Quality Management Practices (SCQMPs) = Exogenous latent construct (SCQMPs)

Supplier Management (SM), Customer Focus (FC), Information Sharing (IS), Postponement (P), Process management (PM) and Coordination of Supply Chain (CSC) are a set of six items to measure SCQMPs.

e11 to e16 = Error in measurement for items of SCQMPs

Organizational performance (ORP) = Endogenous latent construct (OP)

Financial Performance (FP), Market (MS), Societal Impact (SI), Operational Performance, Learning and Growth (LG) and Environmental Impact (EI) are set of seven items to measure Organizational Performance

e21 to e27 = Error in measurement for items Organizational Performance

Organizational factors = Moderating variable

Leadership support (LS), Human Resource management (HRM), information and communication technology (ICT), corporate culture (CC) and trust (T) areset of five items to measure Organizational Factors.

e31 to e35 = Error in measurement for CFA items

Competitive Advantage (CA) = Mediating variable.

Counteracting competitor threat (CCT) and Utilization of market opportunities (UMO) are two items to measure Competitive Advantage

e41 and e42 = Error in measurement for competitive advantage items

e17, e28, e36 and e43 are residuals for SCQMPs, ORP, OF and CA respectively

Appendix V: List of private hospitals in Kenya

1. ABRAR HEALTH SERVICES LTD

2. ANDALUS NURSING HOME

3. AIC – CURE INTERNATIONAL HOSPITAL

4. ALFAROOQ HOSPITAL

5. AFYA HEALTH SYSTEMS ORGANIZATION- HOMABAY

6. ALLIANCE MEDICAL CENTRE-GARISSA

7. ALEXANDRIA CANCER CENTRE & PALLIATIVE CARE HOSPITAL-ELDORET

8. BARAKA MATERNITY NURSING HOME-NAKURU

9. BAKARANI MATERNITY & NURSING HOME -MOMBASA

10. BLUE LIGHT NURSING HOME- MANDERA

11. BOMU MEDICAL HOSPITAL – MOMBASA

12. BARATON JEREMIC COMMUNITY MEDICAL CENTRE-KAPSABET

13. BOYA RURAL NURSING HOME- KISUMU

14. BUNA NURSING HOME- WAJIR

15. BUKAYA MEDICAL CENTRE- MUMIAS

16. CARE HOSPITAL - NAIROBI

17. CHIROMO LANE MEDICAL CENTRE

18. CHERANGANY NURSING HOME- KITALE

19. COPTIC HOSPITAL – NAIROBI.

20. DIANI BEACH HOSPITAL – KWALE

21. DORKCARE HOSPITAL – NAIROBI

22. EBENEZA MATERNITY HOSPITAL – NYERI

23. EDELVALE TRUST JANA MISSION HOSPITAL- NAIROBI

24. ELGON VIEW HOSPITAL - UASIN GISHU

25. EMARAT HOSPITAL- NAIROBI

26. EMMAUS INNERCORE NURSING HOME- NAIROBI

27. EMBU CHILDREN HOSPITAL – EMBU

28. ENKITOK JOY NURSING HOME-RONGAI

29. FAMILY HEALTH OPTIONS – NAIROBI

30. FAMILY HEALTHCARE MEDICAL CENTRE- ELDORET

31. FATIMA MATERNITY HOSPITAL- RONGAI

32. FOUNTAIN HEALTHCARE- ELDORET

33. GARISSA NURSING HOME- GARISA

34. GERTRUDES GARDEN CHILDRENS HOSPITAL- NBI

35. GOOD HOPE MEDICAL CENTRE- NYAHURURU

36. IBNUSINA NURSING HOME

37. JACARANDA MATERNITY HOSPITAL- NAIROBI

38. JAMII HOSPITAL- NYERI

39. JKUAT HOSPITAL – KIAMBU

40. JOCHAM HOSPITAL – MOMBASA

41. JORDAN HOSPITAL – KITUI

42. KARI(TRC)ALUPE HOSPITAL-BUSIA- MUMIAS

43. KAYOLE HOSPITAL – KIAMBU

44. KENYATTA NATIONAL HOSPITAL (AMENITY WING) - NAIROBI

45. KIMKAN HOSPITAL- MURANGA

46. KITALE NURSING HOME- KITALE

47. KOMAROCK MODERN HOSPITAL- NAIROBI

48. LADNAN HOSPITAL – NAIROBI

49. LANGATA HOSPITAL-ONGATA RONGAI

50. LION'S EYESIGHT HOSPITAL – NAIROBI

51. LANGONI NURSING HOM- LAMU

52. MAASAI NURSING HOME- NAROK

53. MEDINA HOSPITAL – NAIROBI

54. MAGADI SODA COMPANY HOSPITAL- MAGADI

55. MAINLAND HEALTH CENTRE- MOMBASA

56. MARIA EMMACULATE HOSPITAL – NAIROBI

57. MARIAKANI COTTAGE HOSPITAL – NAIROBI

58. MARIAKANI COTTAGE HOSPITAL – KAJIADO

59. MARIAKANI COTTAGE HOSPITAL – MACHAKOS

60. MARIE STOPES HOSPITAL – MOMBASA

61. MARIE STOPES HOSPITAL – MURANGA

62. MARIE STOPES HOSPITAL – NAIROBI

63. MATER MISERICORDIAE HOSPITAL – NAIROBI

64. MATASIA HEALTH CLINIC- ONGATA RONGAI

65. MEDINA DIAGNOSTIC LIMITED – HOLA

66. MEDINA DIAGNOSTIC LIMITED- GARISA

67. MEDIHEAL HOSPITAL – UASIN GISHU

68. MEDIHEAL HOSPITAL – NAKURU

69. MELCHIZEDEK HOSPITAL – NAIROBI

70. METROPOLITAN HOSPITAL – NAIROBI

71. MEWA HOSPITAL – MOMBASA

72. MLA LEO HEALTH CENTRE- MOMBASA

73. MILIMANI MATERNITY HOSPITAL – KISUMU

74. MOI TEACHING & REFERRAL HOSPITAL AMTY- ELDORET

75. MOMBASA HOSPITAL – MOMBASA

76. MOTHER & CHILD HOSPITAL – NAIROBI

77. MOYALE NURSING HOME

78. MOUNT OLIVE SINAI HOSPITAL LIMITED – ONGATA RONGAI

79. MWINGI NURSING HOM

80. NAIDU HOSPITAL – KIAMBU

81. NAIROBI ADVENTIST HOSPITAL – NAIROBI

82. NAIROBI EAST HOSPITAL – NAIROBI

83. NAIROBI EQUATOR HOSPITAL- NAIROBI

84. NAIROBI HOMES NURSING HOME- MOMBASA

85. NAIROBI HOSPITAL- NAIROBI

86. NAIROBI SOUTH MEDICAL CENTRE- NAIROBI

87. NAIROBI WEST HOSPITAL – NAIROBI

88. NAIROBI WOMENS   HOSPITAL – NAKURU

89. NAKURU NURSING AND MATERNITY HOME LTD.

90. NAKURU WAR MEMORIAL HOSPITAL –NAKURU

91. NYAHURURU PRIVATE HOSPITAL-NYAHURURU

92. NANYUKI COTTAGE HOSPITAL – LAIKIPIA

93. NANYUKI MATERNITY AND NURSING HOME- NANYUKI

94. NAROK COTTAGE HOSPITAL – NAROK

95. NAZARETH HOSPITAL – KIAMBU

96. NEEMA HOSPITAL – NAIROBI

97. NEEMA HOSPITAL – KITUI

98. NEW BUSIA MATERNITY AND NURSING HOME- BUSIA

99. NGUMBA CENTER AND LABORATORY SERVICES

100.   NYAMBENE CLINICAL SERVICES & NURSING- MAUA

101.   OASIS DOCTORS PLAZA- KISUMU

102.   OASIS SPECIALIST HOSPITAL- KISSI

103.   OUR LADYS HOSPICE- LIMURU

104.   OUTSPAN HOSPITAL- NYERI

105.   PALM BEACH HOSPITAL – KWALE

106.   PANDYA MEMORIAL HOSPITAL – MOMBASA

107.   PARKROAD NURSING HOME (NAIROBI)

108.   PCEA KIKUYU HOSPITAL – KIAMBU

109.   PWANI MATERNITY AND NURSING HOME- KILIFI

110.   RADIAT GROUP OF HOSPITALS – NAIROBI

111.   RADIAT GROUP OF HOSPITALS – KIAMBU

112.   REALE MEDICAL CENTRE- ELDORET

113.   RACHAR SUGAR BELT NURSING HOME- KISUMU

114.   RIFLOT MEDICAL CENTER-VOI

115.   RAM MEMORIAL HOSPITAL- KISII

116.   RUBY MEDICAL CENTRE- LIMURU

117.   S.S. LEAGUE M.P SHAH HOSPITAL NAIROBI

118.   SABATIA EYE   HOSPITAL – VIHIGA

119.   SAMARITAN MEDICAL SERVICES

120.   SAYIDA FATMA HOSPITAL – MOMBASA

121.   SEVENTH DAY ADVENTIST HEALTH - NAIROBI

122.   SINAI   HOSPITAL RONGAI – KAJIADO

123.   SOUTH B HOSPITAL - NAIROBI

124.   SOUTH C HOSPITAL   – NAIROBI

125.   ST. ANNE HOSPITAL DUM – MERU

126.   ST.ANN MEDICAL CENTRE- LIMURU

127.   ST ELIZABETH MEDICAL CENTRE- NAKURU

128.   ST. FRANCIS COMMUNITY HOSPITAL – NAIROBI

129.   ST. JOHN'S HOSPITAL – NAIROBI

130.   ST. JOSEPH SHELTER OF HOPE HEALTH CENTRE- VOI

131.   ST. JUDE NURSING HOME- RUIRU

132.   ST. LUKES MEDICAL CENTRE- KISUMU

133.   ST. LUCIES HOSPITAL- THARAKA NITHI

134.   ST. MICHAEL MATERNITY & NURSING HOME - MACHAKOS

135.   MILIMANI MATERNITY & NURSING HOME- MERU

136.   STAR HOSPITAL – KILIFI

137.   TAWFIQ HOSPITAL – KILIFI

138.   TEXAS CANCER CENTRE - NAIROBI

139.   THE AGAKHAN   HOSPITAL – KISUMU

140.   THE AGAKHAN   HOSPITAL – MOMBASA

141.   THE AGAKHAN   HOSPITAL – NAIROBI

142.   THE KAREN   HOSPITAL – NAIROBI

143.   THE KAREN   HOSPITAL – NAKURU

144.   THE LIGHT NAIVASHA DOCTORS PLAZA- NAIVASHA

145.   THE KITUI MATERNITY & NURSING HOME- KITUI

146.   THE NAIROBI HOSPITAL – NAIROBI

147.   THE NAIROBI WOMENS HOSPITAL KITENGELA

148.   THE NAIROBI WOMENS HOSPITAL – NAIROBI

149.   THE NAIROBI WOMENS HOSPITAL-NAKURU

150.   TRINITY CARE CENTRE LIMITED- O. RONGAI

151.   TUDOR HEALTHCARE- MOMBASA

152.   TWAHEED COMMUNITY NURSING HOME- GARISSA

153.   UKUNDA MEDICAL CENTRE- UKUNDA

154.   UMOJA HOSPITAL – NAIROBI

155.   VINE YARD HOSPITAL – KIAMBU

156.   WASO MEDICAL SERVICES & NURSING HOME- ISIOLO

157.   WEMA MATERNITY AND NURSING HOME- NAIROBI

158.   WOODLANDS HOSPITAL – MERU

SOURCE: NATIONAL   HOSPITAL   INSURANCE   FUND,   2019