EFFECT OF LEAGILE SUPPLY CHAIN MANAGEMENT ON OPERATIONAL PERFORMANCE OF HOTELS IN MOMBASA COUNTY, KENYA

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DECLARATION

I declare that this project report is my original work and has never been submitted in this or any other university for the award of a degree.

Signature……………………………………………… Date…02/12/2020…………

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D61/11455/2018

This project report has been submitted for examination with my approval as the university supervisor.

Signature…………………………………… Date…02/12/2020………………….

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DEDICATION

This study is dedicated to my family; my dear mom, my beloved husband and my adorable daughter.

ACKNOWLEDGEMENT

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ABBREVIATIONS AND ACRONYMS

AVE   Average Variance Extracted

CI   Continuous improvement

DV   Dependent Variable

EFA   Exploratory Factor Analysis

GOK   Government of Kenya

HRA: Hotel and Restaurant Authority

IV   Independent Variable

JIT: Just in Time

KAHC   Kenya Association of Hotel keepers and Caterers

LASCM: Leagile Supply Chain Management

NGO's: Non-Governmental Organization

OP   Operational Performance

RBV: Resource Based View

SC   Supply Chain

SCM   Supply Chain Management

SPSS: Statistical Product for Social Sciences

TOC: Theory of Constraint

VIF   Variance Inflation Factor

ABSTRACT

Leagile supply chain management (LASCM) that incorporates both leanness and agility to ensure efficiency while maintaining responsiveness. Lean and agile approaches rely on zero waste and stocks safety respectively in an aim to overpower the varieties as well as uncertainties of market trends. The study targeted at assessing the effect of leagile supply chain management and operation performance of hotels in Mombasa County, Kenya. This research study adopted descriptive cross-sectional survey. The targeted population consisted of 56 star-rated hotels operating in Mombasa County. The collected data was cleaned, validated and edited to ensure the level of accuracy, uniformity, consistence and completeness. Statistical product for social scientists (SPSS) eventually was applied in generating inferential and descriptive statistics. The research found that the hotels have implemented LASCM practices including JIT, information flow and accessibility, management of waste and continuous improvement to a moderate extent (M=3.2803, M=3.2121, M=3.038, and M=3.2879 respectively. The findings indicate that 66.4% of variations in LASCM are explained by variations in JIT, information flow, and management of waste and continuous improvement. It was also found that there exists a significant relationship between LASCM and OP at 000 ($p<0.05$). Derived from the research objectives, a deduction was formulated that LASCM impact OP of hotel firms in Mombasa County, Kenya. Centered on the discoveries, the research draws the following exhortations that management of the hotel companies should put in place proper procedures and mechanisms for improving the incorporation and adoption of LASCM since it was found to better OP. The study also proposed that hotels need to prioritize on the capabilities and the potentialities of supply chain management to penetrate the business markets as well as surviving the uncertainties and demand varieties.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Adopting and executing an operative supply chain strategy has been very vital in the twenty-first century in surviving turbulences in today's hypercompetitive global economy. Lean and agile in supply chain management (SCM) are very effective at reducing cost of production and providing quick response respectively (Sharma & Kulkarni, 2016). Since we live in a world in which resources are limited and scarce, it is paramount that we strive to adopt the hybrid leagile since it provides a cost reduction and at the same time it provides responsiveness and flexibility concurrently (Qi, Zhao, & Sheu 2011).

As part of getting clear perception of the connection between leagile supply chain management and operational performance, the study employed Theory of Constraints (TOC) which sticks to scientific methodology in development, assuming that each multiplex procedure constitutes various connected undertakings, one being a limitation to the whole technique (Gupta & Boyd, 2008). The second theory guided the study is the Resource-Based View (RBV), which points out that firms possess unique resources which are key to superior performance to edge competition in the market (Crook, Ketchen, Combs, & Todd, 2008). Finally, is the stakeholder theory, which describes the stakeholders of any organization as the preeminent factor in achieving organizational performance (Fassin, 2008).

Hotels in Mombasa County enjoys the privilege and an opportunity of operating along the coastal strip which favorably attract both local and international tourists because of her marine ecosystem which include sandy beaches, mangrove forest, rocky cliffs and estuaries. Her nature, climatic conditions and wildlife game parks are the prime factors contributing highly to tourist attraction hence promoting the suitability and development of hotels and restaurants (Kubo, 2004). Within the current decennium, some of the hotels in Mombasa exhibit features leading to

stagnation stage. Presently, hotels in Mombasa are experiencing huddles of costing, supplier relationship, qualified personals, unforeseen delays and fast changing markets. Leagile as a supply chain management practice is vital in fine-tuning supply chain related issues that hotels are currently facing. Clients are regularly exposed to up-to-date trends in hotel products/ services. This results in hotel clients demanding innovative offers (Marsh, Guy, & Oliver, 2015).

1.1.1. Leagile Supply Chain Management

Leagile supply chain management (LASCM) that incorporates both leanness and agility to ensure efficiency while maintaining responsiveness (Backhouse & Burns, 1999). Hock, Harrison, and Christopher (2001) defines leagile as a situation that exists when the two paradigms of lean and agile are combined and used as supply chain strategy where it satisfactorily responds to market demands. Leanness and agility (leagile) are synergetic and almost inseparable if effective and improved performance is to be achieved optimally (Barnerjee & Ganjeizadeh, 2017). The hybrid leagile is described in terms of various practices including JIT, supplier management, variety reduction, equipment management, decision support system, total preventive, maintenance and human resource training and involvement. Activities associated with agile include customer linkages, information sharing, JIT, worker empowerment, continuous improvement, communications, TQM, supplier alliances, motivation, modular facilities and concurrent teams (Hasson & Sheriff, 2015). Additionally, LASCM can be explained by, a sense of responsiveness, pressure to cut cost of production, volatile environment and oriented service level (Stefanelli, Giulianelli, & De Santis 2019). This study centered on JIT, information flow and accessibility, management of waste, and continuous improvement.

The lean system consists operational techniques focusing on resource productivity, and agility focuses on the unpredictability of market environment (Sanchez & Nagi, 2001). Lean is a collection of tools and applications aiming at cutting cost with an effort to improve quality whilst agility is the capability to accommodate uncertainties prevailing in the external environment (Banerjee, Sakar, & Mukhopadhyay, 2012). In order to achieve a competitive edge, agility explores volatility while lean ensures that customers are provided with quality goods at the lowest cost as a results of inventories elimination (Rigby, Day, Forrester, & Burnett, 2000), (Maskell, 2001). In the supply chain SC, leanness is used upstream while agility is used downstream (Mason, Naylor, & Towill, 2000).

1.1.2 Operational Performance

Operational performance (OP) pertains how an organization manages to attain competitive advantage as a result of ensuring speed, quality, flexibility and cost (Ketchen, Rebarick, Hult, & Meyer, 2008). It is explained as quantifiable elements of firm's processes results such as inventory turns, reliability and production cycle time (Betru, 2010). It is proposed that the key operational performance metrics considered as the aspects to measure the effectiveness of operations in any enterprise include; degree of responsiveness, quality, efficiency and flexibility (Munywoki, 2018). The topmost operations of leagile SCM highly depend on cost, service, quality and lead-time (Naylor, Naim, & Berry, 1999). Performance indicators within the SC is exhibited by key actions needed in the market and get orders within the SC, includes cost leadership, quality identification, quick response time and service level (Christopher & Towill, 2001). This ensures organizations are able to get the required orders within a given supply chain by effectively responding to the real demand. The study will focus on quality, flexibility and cost as measures of operational performance in service context.

Quality dimensions based on servqual model included tangibles employed in offering a product, reliability of service attendants, and assurance of employee performance, responsiveness of human resource, (Atilgan, Akinci, & Aksoy (2003), use of service quality questionnaires, customer return ability and complaints. Flexibility was evaluated through delivery-time flexibility, volume flexibility, and new product flexibility (Suarez, Cusumano, & Fine, 1996). Maani, Putterill and Sluti (1994) assert minimizing inventory levels and optimal capacity utilization facilitates cost reduction.

1.1.3 Leagile Supply Chain Management and Operational Performance

Lean and agile approaches rely on zero waste and stocks safety respectively in an aim to overpower the varieties as well as uncertainties of market trends (Golgeci & Gligor, 2017). According to Bruce, Daly, and Towers (2004), lean ensures elimination of all forms of waste including inventory waste, unused capacity, obsolete items and poor quality.

The role played by LASCM cannot be gainsaid in influencing the organization's operational excellence. The importance of LASCM is key as it incorporates both the attributes of leanness and agility in that it excludes non-productive time for the former while it lowers value added time through advancement of production technology (Kant, Pandey & Patanaik 2015) . Banerjee and Mukhopadhyay (2016) opine that various ways have been employed in improving the performance of the SC such as decoupling points strategy, collaboration among supplier and customer, logistic optimization, collaborative planning forecasting and replenishments, production efficiency, procurement process improvements and adoption of IT and e-business. The combination of both lean and agile strategy leads to reduction of the total cost and service

improvement resulting to increased information, responsiveness, management of waste and flexibility (Kumar, Garg, & Agarwal, 2019).

1.1.4 Hotel Industry in Mombasa

Hotel operates under service industry offering job opportunities, promoting earnings from foreign exchange, providing base for tax revenue and contributes to country's economic stability (Vukosav & Curcic, 2013). As a result of the Arab traders arrival and the construction of railway line , the industry of hotel in Kenya commenced within the coastal region of Kenya. The hotel industry in Kenya contributes to a significant 509,000 jobs (World Travel and Tourism Council, 2009**).** Lenihan, Andr, and Hart (2010) assert that growth strategy is paramount since over 300,000 tourists pay a visit to the coast region yearly.

It has been argued that the credible positive drift recognized in tourism sector has been highly contributed by hotel business turning to a pool of foreign exchange (Mbithi, Muiruri, & Kingi, 2015). Mombasa residents greatly depend on the survival and sustainability of hotels preferably operating within Mombasa County. Apart from benefiting from tourist and travel packages, they offer job opportunities. Most residents enjoy the employment benefit from hotels within Mombasa and its environs directly or indirectly. They also contribute to wealth creation as many operate as tourism enterprises collaborating with tour firms and travel agencies (Kubo, 2004).

 Hotels also act as linkages with many other economic sectors such as construction industry, manufacturing, agriculture, woodwork and handcraft (Akama & Kieti, 2007). Mombasa county inhabitants benefit from supplies of food locally produced, curio sales and building and construction. Consequently, hotels have been very pivotal in promoting development of infrastructure within the region.

Hotels in Mombasa County, Kenya in the previous years have been surviving amid turbulences facing heterogeneous pressures resulting from high competition from neighboring nations along the coastal region; lack of responsiveness, and inflexibilities, demand fluctuations and uncertainties, high cost of operation, customer's demand variety, waste management, lack of modern technology, lack of proper human resource training and inability to mitigate risk (Sausmarez, 2013), (Chebeti, 2017, and (Kiboko, 2017). Failing to amicably resolve these setbacks jeopardizing the hotel may lead to some hotels turning to a virtual standstill.

There are quite a number of LASCM factors that drive organizations to successful OP such as efficiency, continuous improvement, flexibility, and management of waste, accessibility of information, responsiveness and sharing information in supply chain. LASCM remains the topmost viable option hotels in Mombasa need to implement effectively, to counteract challenges confronting them in today's era and replenish the begging situation for satisfactory result.

1.2 Research Problem

Firms are at constant pressures to ensure they satisfy the customers' needs by employing mechanisms that facilitate reduction of production cost, lead time and inventory levels and concurrently accomplishing profit (Lambert & Pagh, 2012). Optimal effectiveness and cost minimization of supply chains are becoming progressively quite vital in running of firms to achieve substantial outcome. The current frontier on competition among organizations has moved from company orientation to SC orientation (Zhang, Vonderembse, & Lim, 2006). Adopting leanness in operation amass profit by minimizing costs while agile maximizes profit by accurately responding and meeting the untimely customers' needs and wants (Banihashemi & Heydarnia, 2018). Unequivocally, any business enterprise opt making plans and decisions

relating to optimizing performance in consideration of quality, cost, customer and responsiveness synergistically.

Hotels in Kenya are inefficient especially those operating in Mombasa (GOK, 2008). The hotel industry needs to focus on how to offer products and services while keeping costs low. Hotel managers should make practical changes oriented towards operational excellence, quality and technological advancements (Karmarkar, 2004). Competition, political upheavals, issuing of travel advisory by foreign governments and ever increasing number of established hotels are among major challenges affecting hotels in Kenya (Cyton, 2017). (Ngandu, 2014) expands the list, Customers' demands for better professional services, demand for skilled manpower and increased untimely customer needs and tastes. These challenges urge organizations to emphasis on adopting a responsive matching system like SCM practices to counter some of hitches contributed (Moenga, 2016). Ngandu (2014) emphasis, challenges provide insights for managers to strategize above their operational limits to invent better SCM practices that may facilitate them withstand stiff competition in business markets. Gitobu (2014) asserts most hotels in Mombasa are affected by competition and demand fluctuations.

In relation to LASCM, a numerous research has been established. Paul and Eleni (2015) established that it is possible to use leagile supply chain strategy to positively reposition economies of scale on production such as mass customizations, lower volume production and postponement. Shahin and Rezaei (2018), a study on an amalgamated system for emphasizing lean and agile production elements regarding costs of quality, asserts employing leagile in production can facilitate decision making, reducing costs, responding to customers rapidly and increasing customer satisfaction. Banihashemi and Heydarnia (2018) posit organizations should

practice lean and agile simultaneously in order to reap the benefits of both approaches and establish an efficient SC.

Locally, Kuria, (2014) did a research on SC leagility and performance of humanitarian organizations in Kenya. It was observed that leagility strategy is implemented to some extent by humanitarian organizations in Kenya, albeit with a number of challenges. The study concluded that SC leagility has been there in that and exist a direct link between SC leagility and performance of humanitarian organizations in Kenya. Ogema (2017) undertook a study to demonstrate lean and agile procurement activities employed by East African Breweries and their outcome on company's performance. The study found out that waste management practices to great extent relate to the performance at the company. Secondly, demand management approaches then behavioral practices while standardization implementation, had the minimum results on the company's performance. While Saleh (2019) undertook a descriptive cross-sectional survey on "leagile manufacturing practices and SC performance of food and beverage manufacturing companies in Kenya." The research proved that it exist a notable relationship between leagile manufacturing practices and SC performance. Mogire (2011) who studied the SCM practices in five star hotels in Kenya found out that inability to properly understand the concept of SCM and the turbulent nature prevailing in the hotel industry impacts effective implementation of SCM.

From the above analysis, it is evident that LASCM and more so in the hotel industry is of key of significance. Therefore, there is need for more research on the hotel supply chain and most specifically on the correlation between LASCM and OP of hotels in Kenya. This research therefore sought to bridge the gap by establishing the following; what is the extent of

implementation of leagile supply chains by hotels in Kenya? What is the relationship between LASCM and OP of hotels in Kenya?

1.3 Research Objectives

This study was built on the following objectives:

i.   To establish the extent to which LASCM is implemented by hotels in Mombasa Kenya.

ii. To determine the relationship between LASCM and OP of hotels in Mombasa county, Kenya.

1.4 Value of the Study

The study will be beneficial to the management of hotel sector. It will give new novel insight into dealing with unpredictability in the economy market and fluctuations of demand by adopting better and more adaptable leagile supply chain strategy. This will be possible since the study will depict the effect of LASCM on OP highlighting the relationship between LASCM and OP. Supply chain executives will be enlightened in fine-tuning leanness and agility magnitudes into a better design to improve performance. Similarly, to all other service firms and those offering hospitality services, SC is an integral aspect in value addition and remains the vital element to outsmart hype-competitive economy. It will be helpful in designing effective supply chain strategies and aligning them to those the study recommends hence harnessing the hefty benefits of LASCM.

To all other stakeholders as well as policy makers, the study findings will be useful as will enable them make SC policies purposing at ensuring effective supply chain procedures. Efficient SC procedures will facilitate delivery of goods and services effectively and also processes are streamlined to optimize firm's OP. The findings of the research would be a source of guiding tool for the authority to identify the lapses in the existing laws and regulations hence formulate

better practices on SCM. It is the mandate of the governing body to be able to align the production of goods and services within its territory either foreign or local production within sustainable practices. The study will enlighten the government in strategizing in responsive SC practices that autonomously add value while reducing cost.

The study and its findings will contribute to additional of knowledge in the discipline of SCM. Academicians on the other hand would get relevant information regarding the importance of adopting the LASCM in the hotels in Kenya Mombasa. This would also add to the body of experimental literature on adoption of effective SCM practices that fit any volatile environment. The study will add an essential reference material in the field aforementioned in the study. Lastly, it will recognize the knowledge gaps that may garner attention and provide more room in future studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical foundation of the study, leagile supply chain components and empirical literature on the relationship between LASCM and performance. The section concludes by summarizing the empirical studies undertaken in relation to the study topic and highlighting knowledge gaps. Eventually, the conceptual framework guiding the study is given.

2.2 Theoretical Foundation of the Study

The study was anchored on three theories; theory of constraints, resource-based view and stakeholder theory.

2.2.1 Theory of Constraints

The Theory of Constraints (TOC) identifies constraints and obstacles that hinder attainment of organizations goals by systematically working to transform the challenge to a positive element and coming up with solutions after assessing the systems (Goldratt, 1990). The procedures that TOC follows are scientific in that it accepts that every system that is complex has multiple activities that are linked, in which, one is an obstacle to the entire system. As a way of attaining goals of the system, TOC comes up with a methodology of identifying these constraints then removing them. TOC assumes that logistics network is interconnected system of components that works together in order to transform inputs to output response to the system goal.

In order to eliminate waste, leagile approach can be used in providing advantage to an organization in cost reduction, lead time shortening, capacity increment, flexibility improvement, and responsiveness. The operational performance of organization is thus improved by ensuring that resources are used optimally, and targets on time and expenditure realized. Helou and Caddy (2006) argue that the critical aspects that determine SC success involves technology and people.

In this context, TOC is crucial as it will facilitate evaluating every factor that act as a constraint and cripples OP. Therefore, adoption and proper implementation of LASCM can effectively iron them out. LASCM benefits the firms by surpassing OP through minimizing cost of underutilized machines and equipment, harnessing employee potentialities and capabilities, managing time wastage, eliminating instances of employee idleness and employing modern technologies.

2.2.2 Resource-Based View

Barney (1991) developed Resource-Based View as a response to limitations of competitive advantage environmental models. RBV theorizes that organizations that retain superiority are those that have internal capabilities that are unique. According to Crook, Ketchen, Combs, and Todd (2008) these internal capabilities ensure that organizations are able to achieve greater performance level since in terms of competition they possess unique resources. Implementation of activities by use of these special unmatched resources lead to value maximization (Sirmon, Hitt, & Ireland, 2007).

In employing RBV, managing supply chain networks effectively is viewed as an essential resource due to its ability to procure strategic resources and in that it includes linkages which enhance organizations to achieve superior operational performance results hence attaining a sustainable competitive edge. According to Carter, Kosmol, and Kaufmann (2017), these linkages of supply chain provides avenues for obtaining new capabilities and resources, sharing of knowledge development of product. Miller and Ross (2003) posit that if carefully managed, organizations' resources including physical, human and financial are capable of giving the organization an upper hand, eventually ensuring the successful performance of the supply chain.

2.2.3 Stakeholder Theory

Any entity that affects or can be affected by the firm in any way is known as a stakeholder (Freeman, 2010). Stakeholder theory contends that all stakeholders whether individuals or groups participate in organization's activities so as to benefit (Donaldson & Preston, 1995). In order to improve organizational performance, stakeholders' needs and wants must be met (Friedman & Miles, 2006). Organizations are therefore composed of stakeholders' interrelationship who impact on the organization both internally and externally. Stakeholders play a vital role within the organization since they influence the organization's performance in a big way through day-to-day interaction (Fassin, 2008).

This theory is relevant to study as it highlights the synergic relationship of all stakeholders in value addition processes. Stakeholder salience may influence effective implementation of LASCM to meet the set objective on costs reduction and customer satisfaction. For hotels to achieve effective implementation of LASCM, the management should acknowledge bilateral relationship between the hotel management and all its stakeholders in regard to interconnectivity of major processes. Stakeholder theory will be essential in decision making since the voice and thought of each group is critical. Consequently, the decision concerning buy-make decision or forming stakeholder alliances will incorporate stakeholder theory.

2.3 Indicators of Leagile Supply Chain Management

Perera,Wickramarachchi, Abeysekara, and Aidanagamachchi (2020), adduce that it is significantly more vital in the manner an organization adapts to its business environment as well as SC practices based on its micro-economic environment with an effort to better performance of SC to attain a competitive edge. The implementation of LASCM allows the organization to benefit from its several attributes such as responsiveness, flexibility, continuous improvement,

information accessibility, information sharing and waste management (Christopher & Towill, 2000). LASCM practices includes JIT, information flow, human resource training and involvement (Soltan & Mostafa, 2015).

2.3.1 Just-in-Time

Service industry enjoys handful benefits of just-in-time (JIT) application in their operations by adopting material requirement planning as well as other inventory control approaches same case as in manufacturing (Khumawala, Hizon, & Law, 1986). When JIT is employed in service setting, the emphasis is mostly put-on time taken for service delivery (Stevenson, 1999). Hotels can successfully apply JIT techniques and their effectiveness can exponentially improve service operation measures and processes if effectively executed. This may counter the dull moments experienced as a result of inventory losses and shortages, service delivery, process crushing and time waste. Vonderembse and White (1991) opine that service sector can implement JIT techniques by improving quality of service provided, minimizing supplies inventories and simplifying all production processes.

Offering training to service employees in time, impacts knowledge and skills to scrutinize any problem just in the right time and resolve before amount to loss or cripple the efficiency and effectiveness of the company (Billesbach & Schniederjans, 1989). Trained employees are also flexible and can adapt and cope with any challenge resulting from unpredictable market trend or seasonality. Advanced technology is very vital and may enhance the ability to failsafe any minor error or mistake resulting from service delivery process before it ruin the whole service encounter. Managing service delivery process effectively could be very helpful in ensuring short lead-time expected to deliver the service or product as it speeds up order processing time

2.3.2 Information flow and Accessibility

The information flow that is real-time and accurate is paramount just like flow of material within the organization (Stevenson & Spring, 2009). Sharing of information is an important attribute that shows the cooperation within the chain of supply (Li, Yan, Wang, & Xia, (2005). Sharing of information allows partners' the ability to view private data, thus monitoring progress in subsequent process of SC (Simatupang & Sridharan, 2002).

The flow of information is critical in understanding fluctuations of demand (Chan, Kumar, & Tiwari, 2009). Proper management of information by ensuring its accuracy and that it integrates with goods on movement or other related information elements enhances customer satisfaction. Information flow is needful in facilitating responsiveness and effectiveness in the manner firms respond to client demand along the supply chain (Singh, 1996. The flow and distribution of actual, accurate and reliable information within the SC entities not only streamlines operations but also eliminates predicament of bull whip effect within SC.

2.3.3 Management of Waste

According to Licker (2004), as part of increasing operational performance, organizations should focus on doing away with all activities that are considered wasteful and add no value to the organization. Some of the waste that organizations should strive to remove includes stock waste, improper handling, over production, unnecessary movement, transport waste, product defects and waiting time waste (Philip, 2002).

Organizations implementing lean concept always seek to eradicate worthless activities and waste through their process of business (Chandra & Grabis, 2007). According to Lyons, Vidamour, Jain, and Sutherland (2013) decision making in organizations is stimulated and enhanced by disposal of waste practices. Management of waste practices comprises utilization of the six

sigma in preventing failure in structure process reduction and visual control implementation (Haque & James, 2004)

2.3.4 Continuous Improvement

For an organization to continue improving and achieve its ultimate performance, it should plan and organize a mechanism of sustaining and adopting new approaches (Jørgensen, Boer, &Gertsen, 2003). Most companies that implement continuous improvement (CI) are those that are proactive in regularly seeking to identify and solve problems (Chen, Li, & Shady, 2010). Green (2005) posits that an organization focus should therefore be on improvement strategy that assists it leverage on its external environment.

CI can be both emergent as underscored in minor circuits and data driven; or intentional when the motivation is to attain certain goals, strategies and objectives (Koksa, Batmaz, & Testik, 2011). Lee, Swink, and Pandejpong (2011) argue that the core of today's process of business improvement is for the organization to focus more on continuous improvement

2.4 Empirical Studies

Empirical literature reviewed shows that there is considerable amount of research has been undertaken on leagile SC practices. Paul and Eleni (2015) established the possibility of using leagile SC in radically shifting the economic scale of production like lowering production volume, customization and postponement. The study on lean and agile approaches, employing qualitative aspect discovered the hybrid leagile effected the company to avoid practicing production in excesses and would promote efficient use of resources to sustain its operations. The limitation was that agile aspect was not fully incorporated to emphasize the concept of leagile effectively.

A study by Raj, Jayakirishna, and Vimal (2018) focusing on the relationship of leaness and agility on supply chains network basically on criteria to assess SC performance posit a necessity to employ leagile SC to improve performance. This study adopted Models and network to link and investigate the measures of the leagile SC. The study presented both conceptual and contextual gaps in that it did not present relationship between LASCM and OP and focused on Japan. The current study focused on LASCM and OP of hotels in Mombasa, Kenya.

Nakandala and Lau (2019) study on innovative adoption of hybrid SC strategies in urban local fresh food SC, found that retailers with strong upstream and downstream alliances employ combined strategies to improve efficiency and product variety. The study employed multiple case studies but it was limited since all the case firms were small with very few number of employees hence unable to diversify all the sources of interviewed data.

Locally, Kuria (2014) did a study by comparing performance of organisations and leagility in supply chain for humanitarian organizations. The study concluded that leagile supply chain has always been there within the humanitarian organizations and a closer connection between leagile SC and performance exists. The study adopted descriptive research survey and suggested a study on supply chains in man-made disaster environment and supply chains of corporations. The gap in this study is that it focused on nonprofit making organization unlike the current study.

Ogema (2017) undertook a study in finding out agile and lean procurement initiatives implemented by the East African Breweries Company and whether it had some effect on the firm's performance. The study found out that management of waste is highly linked to organizational performance of the brewing company, closely followed by management of demand, behavior and standardization. The study adopted descriptive cross-sectional survey recommended similar study that would feature other organizations in Kenya, a comparative

study with another country and a study on lean and agile procurement strategies and performance in other industries. The study presents a conceptual gap since concentrated on manufacturing sector, specifically on procurement approaches and firm's performance.

Saleh (2019) used a descriptive cross-sectional survey design assess the effects of leagile manufacturing approaches on performance of SC within the food and beverage companies. This research study ascertained a remarkable interrelation between performance of SC and implementation of leagile techniques within the manufacturing firm. The researcher employed descriptive cross-sectional survey on a population of 38 team leaders. The study recommended the need to exploit SCM measures in order to remain competitive to attain superior firm performance. Limitations encountered were lack of cooperation from respondent and receiving of response from single person from each firm. The study presents a contextual gap since it looked at leagile in manufacturing not on service industry especially in hotel sector

Koori (2017) undertook a research study on leagile practices and the performance of the SC in Non-governmental organizations operating in the health sector in Nairobi, Kenya. The study adopted descriptive cross-sectional design. A survey of 98 NGOs in health registered by NGO' coordination board was done. The study established that leagile SC techniques have a positive significant sequel on the SC performance and that the organizations' management needs to build a strong link between the leagile SC approaches and SC performance to be competitive in their SC activities. The study present both conceptual and contextual in that focused on organizational performance in health sector and contextually in Nairobi.

2.5 Knowledge Gap

From the review of the empirical studies above it is noted that the studies examined LASCM and OP variables partially and in isolation. In addition, the studies were confined to different sectors

such as food and beverage manufacturing companies, humanitarian organizations, NGOs, higher education, breweries firms and government ministries but failed to focus on hotel industry and more so in the context of Mombasa County. Moreover, it was noted that some of the studies adopted different research methodologies such as Raj, Jayakirishna (2018) adopting models & networks Nakanda and Lau (2019) research designs, instruments of collecting data, sample size, and data analysis methods that varied and resulted to inconsistencies in research findings. In conclusion, the researchers have hardly emphasized on the impact of LASCM practices on OP in hotels. The current study focused to address these exigencies by focusing on the effect of LASCM on OP of hotels in Mombasa County, Kenya.

2.6 Conceptual Framework

In this study, the independent variables are the conceptualized leagile supply chain management practices. Leagile supply chain management factors that influence hotel performance are very many. However, some factors are more vital in influencing operational performance than others because when applied they have been proved to steer organizations to greater profitability

This section deals with a review of the conceptualized leagile supply chain factors of operational hotel performance in the Mombasa County. The indicators of leagile supply chain management include JIT, information flow and accessibility, waste management, continuous improvement and HR training. The dependent variable is hotel operational performance and the operationalization of the variables is shown in figure 2.1.

Figure 2. 1 Conceptual Framework

Independent Variable   **Dependent variable**

Independent Variable	Dependent variable
• Just In Time(JIT) • Information flow and accessibility • of waste • Continuous improvement (CI)	• Cost • Flexibility • Quality
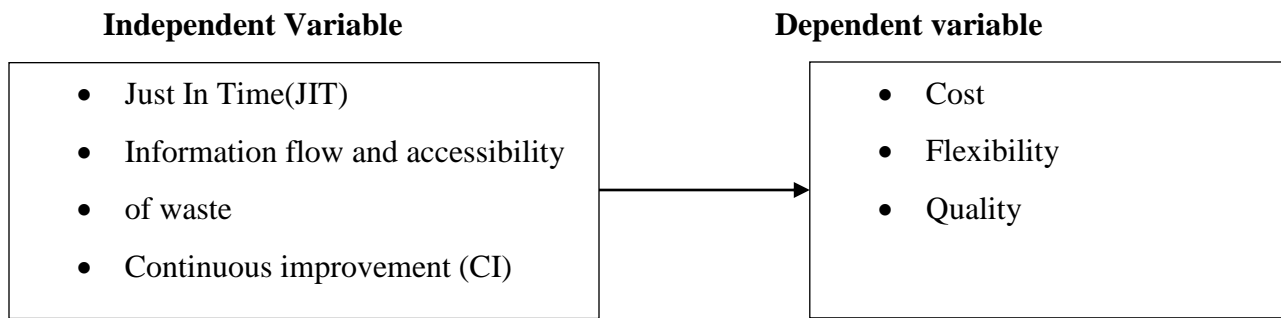
(Author, 2020)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section presents the outline of the approach that was employed in this research. It specifically discusses the design, population of study, data collection, and operationalization of study variables and how data to achieve the research objectives was analyzed.

3.2 Research Design

The study adopted descriptive cross-sectional survey for a period of months. Descriptive survey entails collecting data for verification of hypothesized relationship so as to generate answers to study questions implicating current situation of conditions prevailing the research (Mugenda & Mugenda, 2003). Descriptive research facilitates collecting data from the target population through observing, describing, recording with analyzing and reporting of the situation operating at that time, while cross-sectional studies involves collecting data across various firms at a given time (Copper & Schindler, 2006). This approach is the most appropriate since it will clearly evaluate the interconnectedness between variables and data which was collected from a number of targeted hotels in Mombasa.

3.3 Population of Study

The target population comprised of all star-rated hotels operating in Mombasa County. According to Hotel and Restaurant Authority (HRA), Kenya Association of Hotel keepers and Caterers (KAHC) and Tourism Ministry database there are 56 star-rated hotels in Mombasa County. The study considered 2star, 3star, 4star and 5star hotels as shown in appendix 2.

3.4 Data Collection

The study utilized primary data which generated by use of a semi-structured questionnaire consisting of three parts. The first part involves data in relation to the firm; the second part comprises of matters relating to LASCM and the last part covered issues to do with OP. The questionnaires were administered through drop and pick later method to the operation managers of the hotels since they may have vast knowledge on adoption of LASCM approach in their hotels. One respondent per hotel was targeted.

3.5 Operationalization of Study Variables

This process facilitates minimizing chances of variables abstractness. The constructs are operationalized as presented in Table 3.1.

3. 1: Operationalization of Study Variables

Variable	Sub-variable	Indicators	Measurement Scale	Source
Leagile supply chain management (independent variable)	JIT	1. Continuous improvement of the processes 2. Total visibility of all elements of the process 3. Synchronization and balance of information and workflow 4. Holistic approach to eradication of all wastes	Ordinal scale-5	Canel, Rosen and Anderson (2000), Duclos, Siha and Lummus (1995)
	Information flow	1. Involvement of stakeholders at critical levels 2. Modern technology on information flow 3. Platforms of integrated information linking relevant stakeholders 4. Sharing of data	Ordinal scale-5	Fawcett,Wallin, Allred and Magnan (2009)

		information		
	Management of waste	1. Quality inspection from the start 2. Recycling of waste 3. Maintaining optmal inventory levels 4. Reduction of waste from the source	Ordinal scale-5	Haque & James 2004
	Continuous improvement	1. Existence of quality checklist in every production line 2. Existence of feedback loop 3. Quality circles employed in each section. 4. Existence of production startchecklists.	Point likert scale-5	Chen, Li, & Shady (2010)
Operational performance (Dependent variable)	Quality	1. Reliability of service providers 2. Efficiency of tangibles 3. Assurance of performance 4. Customer complaints 5. Service quality questionnaires	Ordinal scale-5	Atilgan, Akinci, & Aksoy (2003), Kethen et al. (2008)
	Flexibility	1. Varying production to meet demand uncertainties 2. Introduction of new product upon demand 3. Varying delivery time based on demand 4. Innovating product varieties	Ordinal scale-5	Suarez, Cusumano, & Fine (1996)
	Cost	1. Optimal capacity utilization 2. Surplus budgets	Ordinal scale-5	Maani, Putterill & Sluti (1994)

3.6 Reliability and validity

Reliability and validity ensure that study findings are credible. Reliability assessment ensures that the consistency, repeatability as well as precision of the indicator is established (Kline, 1998). Validity explains the degree to which research tools can really measure what it ought to measure ((Forzano & Gravetter, 2009).

3.6.1   Reliability Test

The study adopted Cronbach's Alpha to evaluate reliability of every construct and item employed in the study. SPSS version 21 was used to ensure reliability of the measurement scale for item total correlation for each indicator in the constructs. The acceptable item-total correlation should not be less than 0.30 (Cristobal, Flavian, & Guinaliu, 2007). Internal consistency of all latent constructs in the model was evaluated using composite reliability. High reliability is achieved when composite reliability attains more than 0.6 (Hatcher, 1994). The model based internal consistency was determined by obtaining AVE values from Smart PLS output.

3.6.2   Validity Test

Content validity was achieved by developing measurement instruments in two phases: from literatures by consulting knowledgeable academic specialists concerning specificity, clarity, representativeness, readability, content as well as face validity (Zacharia, Nix, & Lusch, 2009), and by carrying out a pretest on group of five experts with vast knowledge and experience on operating LASCM practices and finally they were requested to fill in the questionnaires.

3.7 Diagnostic Tests

Testing the normal distribution by use of Shapiro-Wilk test, accepting value above 0.05 was examined. Multicollinearity was evaluated by use of VIF recommending maximum value accepted to be values of 10. For heteroscedasticity, the study adopted Koenker test and accepts value from above 0.05. To test for autocorrelation, this study used Durbin-Watson statistic of round 2. Linearity test was used to find out if relationship between constructs is linear with values greater than 0.05 being the accepted value.

3.8 Data Analysis

The collected data was cleaned, validated and edited to ensure accuracy, uniformity, consistence and completeness. Statistical product for social scientists (SPSS) eventually was applied in generating inferential and descriptive statistics. Descriptive statistics was used to provide respondents' details. In establishing the interconnection between LASCM and OP, regression analysis was adopted. To ascertain the significance of the variable under the study, the t-test and p values was applied. Suitability of regression analyses was examined by employing F-test and p-values. In computing the Pearson's correlation coefficient, p-values, R^2 and Beta coefficient was computed.

3. 2: Analytical Model of Data

Objectives	Hypotheses	Analytical Model	Explanation
To establish the effect of leagile supply chain management on operational performance of hotels in Mombasa County, Kenya.	H_1: Leagile supply Chain management has positie significant effect on Operational performance.	Multiple Linear Regression Analysis: $Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mathcal{E}$ **Where:** Y = Operational Performance a = Constant β = Coefficient of Independent Variables X_1 = Just-in-time(JIT)	Hypothesis is accepted provided that the P-value of the beta coefficient is below 0.05; indicating a positive change of significance in Operational Performance resulting from the impact of Leagile Supply Chain Management

		$X_2 =$ Information Flow and accessibility $X_3 =$ management of waste $X_4 =$ Continuous Improvement $\varepsilon =$ Error term	affirming the interrelation. The fitness the model is substantiated when the F-ratio is significant ($P < 0.05$); the significance of the relationship among variables is significant only when t-statistics is of statistical significance

Source: Researcher (2020)

CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND FINDINGS

4.1 Introduction

The chapter presents a description on data analysis, the results and interpretations of the findings. The analysis structure begins with various tests; normality test to examine the suitability of all the data gathered regarding bio data and constructs used. The study had targeted fifty-six (56) respondents out of which 33 questionnaires were received. This representing a percentage of 58.9%

4.2 Demographic Characteristics of the Respondents

This incorporated the extent of continuous service, the employees' population, the hotels' portfolio classification and the level of educational achievement of the respondents.

4.2.1 Length of Continuous Service in the Company

The informants involved were solicited to specify the length of time which they had continually provided their services to the company. The results are displayed in Table 4.1.

Table 4. 1   Length of Continuous Service in the Company

Years of service	Frequency	Percent
Below 5 years	5	15.2
5 - 10 years	11	33.3
10 - 15 years	10	30.3
Above 15 years	7	21.2
Total	**33**	**100.0**

Source: Research   Data (2020)

From Table 4.1, it can be inferred that over 84 of the informants have served for at least five years implying that they had vast experience and knowledge regarding the history of the company and hence were best placed to provide reliable information on the variables of study.

4.2.2   Number of Employees

The researcher requested the respondents to specify the number of employees in their hotels. The outcomes are displayed in Table 4.2.

Table 4. 2   Number of Employees

Employees population	Frequency	Percent
Below 100 employees	7	21.2
101 - 500 employees	25	75.8
Over 500 employees	1	3.0
Total	**33**	**100.0**

Source: Research   Data (2020)

As observed in Table 4.2, a bigger percentage of participants represented big hotels accommodating more than 100 employees. This implies that the hotels have the capability to implement the LASCM effectively.

4.2.3 Hotel's Portfolio Classification

The results in regard to the hotels rating were analyzed. The findings revealed that 9.1 % of the hotels were 2-star hotels, 39.4% were 3-star hotels, 36.4% were 4-star hotels and 15.2% were 5-star hotels.   This ascertains the validity of results since all the hotels based on portfolio classification were well represented.

Table 4. 3   Hotel's Portfolio Classification

Rating	Frequency	Percent
2-star	3	9.1
3-star	13	39.4
4-star	12	36.4
5-star	5	15.2
Total	**33**	**100.0**

Source: Research   Data (2020)

4.2.4 Period of Operation of Hotel

Table 4.4 shows that 15.2% of hotels have been in operation for at most 5years, 42.4% have been operating for 5-10 years, 30.3% of the hotels had operated for a period of 11-15 years and 12.1% being in operation for more than 15 years.

Table: 4. 4   Period of Operation of Hotel

Period of Operation of Hotel	Frequency	Percent
Below 5 years	5	15.2
5-10 years	14	42.4
11-15 years	10	30.3
More than 15 years	4	12.1
Total	**33**	**100.0**

Source: Research   Data (2020)

Based on Table 4.4, the implication depicted is that more than 80% of hotels have been operating for a period not less than five years. The long span of operation would have facilitated the capabilities of employing and effectively executing LASCM in their hotels.

4.2.5 Academic Qualification

The professional level of the respondents was assessed and the outcomes shows that 12.1% of the participants have achieved college level qualification, 45.5% of participants are at undergraduate level, 30.3% of respondents have achieved master's degree and 12.1% have PhD qualification.

Table 4. 5   Academic Qualification

Academic Qualification	Frequency	Percent
College level	4	12.1
Undergraduate level	15	45.5
Masters degree	10	30.3
PhD	4	12.1
Total	**33**	**100.0**

Source: Research   Data (2020)

Based on the Table 4.5, it is inferred that most of participants had the relevant knowledge to understand the concepts employed in the study and the extent of their applicability.

4.3 Extent of Adoption of Leagile Supply Chain Management

The study evaluated the degree of LASCM practices' adoption in all targeted hotels in Mombasa County. The LASCM variable included four practices which were measured on a 5-point Likert scale. The following subsections discuss the results.

4.3.1 Just in Time

According to the data analyzed in table 4.6, companies   moderately implemented JIT with mean of 3.2803(SD=.87669. The implication drawn is that a number of hotels implemented JIT to a moderate extent as a measure to realize LASCM results with a mean of 3.2803.

Table 4. 6 Just in Time

Just-In-Time	N	Mean	Std. Deviation	Rank
Instilling continuous improvement in all hotel's processes	33	3.12	.893	4
Ensuring components of all processes employed to produce a good or service are visible to those participating in the process	33	3.21	.960	3
Establishing and maintaining synchronization on balance of information and work flow	33	3.42	.936	1
Putting in place holistic approach to elimination of waste	33	3.36	1.194	2
Average	**33**	**3.2803**	**.87669**	

Source: Research   Data (2020)

Based on Table 4.6, it is observed that the most practiced activity to achieve JIT was establishing and maintaining synchronization on information and work flow balance, realizing a mean of 3.42 (SD=.936), closely followed by putting in place holistic approach to eradication of all wastes with a mean of 3.36 (SD=1.194), this was followed by practice, ensuring elements of all processes employed in production of good or service are visible to all participants in the process with a mean of 3.21 (SD=.960) and lastly by instilling continuous improvement in all hotel's processes with a mean of 3.12(SD=.893).

4.3.2 Information Flow and Accessibility
Findings in Table 4.7 indicate the hotels practiced information flow and accessibility moderately (M = 3.2121, SD =.89731). the implication depicted is that hotels managed to employ information flow and accessibility as an activity in their operations to achieve LASCM.

Table 4. 7   Information Flow and Accessibility

Information Flow and accessibility	N	Mean	Std. Deviation	Rank
Emphasizing involvement of all stakeholders at every critical level	33	3.18	.917	2
Putting in place well established modern technology on information flow	33	3.42	1.119	1
Establishment and maintenance of platforms of integrated information linking relevant stakeholders	33	3.09	.947	4
Availing and sharing of information data	33	3.15	1.149	3
Average	**33**	**3.2121**	**.89731**	

Source: Research   Data (2020)

Based on results from Table 4.7, the hotels adopts putting in place well established modern technology on information flow as mechanism with a mean score of 3.42 (SD=.947), similarly followed by emphasizing involvement of all stakeholders at every critical levels with a mean of 3.18 (SD=.917). The least adopted information flow and accessibility practice was availing and sharing of information data with a mean of 3.15 (SD=1.149).

4.3.3 Management of Waste

Based on responses of informants as observed in the Table 4.8, hotels   have moderately put some effort to ensure waste is managed. This is indicated with a mean of 3.038 (SD = 0.80312). The inference is that the hotels observe measures geared towards managing waste averagely.

Table 4. 8   Management of Waste

Management of Waste	N	Mean	Std. Deviation	Rank
Putting in place systems to always ensure quality inspection from the start.	33	3	1.031	2
Establishing and maintaining procedures and mechanisms on recycling of waste	33	2.79	0.857	4
Maintaining optimal inventory levels	33	3.39	0.864	1
Employing error proofing systems and equipment to detect errors at initial stages	33	2.97	1.075	3
Average	**33**	**3.038**	**0.80312**	

Source: Research   Data (2020)

Gleaned from Table 4.8, the hotels emphasize on maintaining optimal inventory levels as a practice to achieve waste management with a mean of 3.39 (SD = 0.864). This was closely followed by putting in place systems to always ensure quality inspection from the start is maintained with a mean of 3 (SD=1.031), employing error proofing systems and equipment to detect errors at initial stages had a mean of 2.97 (SD = 1.075) and establishing and maintaining procedures and mechanisms on recycling of waste at a small extent achieving mean of 2.79 (SD=0.857).

4.3.4 Continuous Improvement

On average continuous improvement is adopted to a moderate extent attaining a mean score of 3.2879 (SD = .86178) as depicted in Table 4.9. The implication drawn is that hotels have managed to implement continuous improvement at average level.

Table 4. 9   Continuous Improvement

Continuous Improvement	N	Mean	Std. Deviation	Rank
Ensuring existence of quality checklist in every production line	33	3.12	0.927	4
Use of feedback loop to evaluate hotel's performance on quality.	33	3.42	1.001	1
Employing quality cycles in every section to monitor quality	33	3.39	1.029	2
Use of production start check list to affirm quality	33	3.21	1.053	3
Average	**33**	**3.2879**	**0.86178**	

Source: Research   Data (2020)

As indicated in Table 4.9, the most practiced activity to achieve continuous improvement was the use of feedback loop to evaluate hotel's performance on quality with the highest mean score of 3.42 (SD = 1.001). This was very closely followed by employment of quality cycles in every section to monitor quality attaining mean of 3.39 (SD = 1.029). Next was the use of production start check list to attest quality achieving a mean score of 3.21 (SD = 1.053). The least practiced as elicited from the Table 4.9 was ensuring existence of quality checklist in every production line with achieving a mean score of 3.12 (SD = .927).

4.4 Operational Performance
The informants were solicited to specify the degree to which selected operational performance indicators had been realized by their hotels. The findings were as depicted in Table 4.10.

Table 4. 10   Operational Performance

Operational Performance	N	Mean	Std. Deviation	Rank
Operational Quality	32	3.3000	.85911	1
Operational Flexibility	33	3.2197	.91164	2
Operational Cost	33	3.1667	.94097	3
Average	**32**	**3.2146**	**.82016**	

Source: Research   Data (2020)

From Table 4.10, operational quality was the highest rated with a mean score of 3.3000 (SD = .85911). The second highest rated was operational flexibility attaining a mean score of 3.2197 (SD = .91164) and the least rated was operational cost with a mean of 3.1667 (SD = .94097).

4.5 Leagile Supply Chain Management and Operational Performance

Table 4.14 presents the summary of the independent (LASCM components) and the dependent (operational performance) variables used in conducting the study. The LASCM components consisted of JIT, information flow and accessibility, management of waste and continuous improvement.

Table 4. 11   Summary of LASCM Components and OP Variables

Hotel	JIT	IF	MW	CI	OP
1	2.75	2.25	3.00	3.75	3.30
2	4.25	4.50	4.00	4.00	3.80
3	4.50	4.50	4.25	4.25	4.42
4	3.00	2.75	3.00	3.00	4.63
5	3.50	3.75	2.75	3.75	3.90
6	3.50	3.25	3.75	3.25	3.00
7	3.75	2.25	2.50	3.50	3.02
8	2.25	2.50	2.75	2.50	2.57
9	3.25	3.25	2.75	2.50	2.75
10	2.00	2.00	1.75	1.75	2.00
11	4.00	4.00	3.75	4.00	3.77
12	4.75	3.75	4.00	4.00	3.63
13	2.75	3.00	3.00	3.00	2.52
14	4.25	3.75	3.75	4.50	3.37
15	1.75	2.00	3.00	3.50	4.05
16	3.50	3.75	2.75	3.25	3.43
17	4.00	3.50	3.25	3.75	3.48
18	3.00	2.75	2.75	3.00	3.32
19	3.75	4.50	2.50	3.25	3.10
20	3.00	2.50	2.25	3.00	2.53
21	2.00	2.00	1.25	1.50	2.10
22	4.75	5.00	5.00	5.00	5.00
23	4.00	3.75	3.25	4.50	4.12
24	3.00	3.00	2.75	4.25	3.21
25	3.00	3.25	3.00	3.25	3.38
26	4.50	4.75	3.50	2.75	3.15

27	2.00	2.00	2.00	2.00	2.00
28	3.00	3.00	2.75	3.00	2.35
29	2.75	2.75	2.75	3.00	2.22
30	2.75	2.50	2.50	2.50	2.32
31	3.00	3.75	3.00	3.75	3.33
32	4.25	4.00	4.75	4.00	4.33
33	1.75	1.75	2.25	1.50	1.98

Source: Research   Data (2020)

4.5.1 Diagnostic Tests

To ensure the data collected does not contravene significant assumptions of regression analysis, diagnostic tests were carried out before running multiple linear regression analysis. Diagnostic tests involved performing analysis for autocorrelation, normality, multicollinearity and heteroscedasticity.

The Shapiro-Wilk statistic relates variable observations and normal distribution in that the p-value is used to gauge whether there exist statistically difference variability between variables observation and normal distribution.

Table 4. 12   Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Leagile supply chain management and operational performance	.101	33	.200[*]	.907	33	.010

Source: Research   Data (2020)

As observed in Table 4.15, the error terms did not exhibit a normal distribution with Shapiro Wilk value below 0.05. The study considered values of Shapiro Wilk to possess superior computational capability than Kolmogrov-Smirnov so as to evaluate the normal distribution since the sample of 33 is considered small. The Shapiro-Wilk's test is done as follows.

Procedure 1: Stating the hypotheses

H_o: The residuals follow a "Guassian curve" having a mean score of zero.

H_1: The residuals do not a "Guassian curve" having a mean score of zero.

Procedure 2: Level of significant

The Alpha (α) value is 0.05

 Procedure 3: Decision Criteria

Null hypothesis is repudiated if the p-value is below alpha value of 0.05

Procedure 4: Test statistics

Shapiro-Wilk's statistic = 0.907; p-value=0 .010

Procedure 5: Conclusion

Null hypothesis is repudiated since p-value (0.010) is below 0.05 hence it is concluded that the residual are not normally distributed.

Considering the small size of respondents in this study, the study adopted Koenker test in evaluating whether heteroscedasticity exists. The results of this test revealed Koenker statistics of 4.532 whose p-value was 0.173. This infers that the null hypothesis failed the rejection criteria and as such data was homoscedastic and fit for regression.

Step one: Stating the hypotheses

H_0: Non-appearance of heteroscedasticity in the gathered data (homoscedastic data)

H_1: Appearance of heteroscedasticity in the collected data.

Step two: Significance level

α=0.05

Step three: Decision criteria

Null hypothesis to be rejected if p value <0.05

Step Four: test statistics

Based on SPSS output, Koenker Statistic = 4.532 with p-value 0.173

Step five: Conclusion

Since p-value (0.173) is greater than 0.05, the null hypothesis is embraced. This implies that the data is homoscedastic.

Autocorrelation refers to a situation where the idiosyncratic regression error is not random and this reduces the efficacy of the estimation model. This study adopted the Durbin-Watson test in testing for autocorrelation. Table 4.16 has these results.

Step one: Presenting the hypotheses

H_0: p = 0 (No autocorrelation)

H_1: p > 0 (Autocorrelation exists)

Step Two: Level of significant

The Alpha (α) value is 0.05

Step Three: Decision criteria

Predictor variables number, k = 3; observation numbers, n = 33.

Derived from tables of Durbin-Watson, d_l = 1.193, d_u =1.730

Step four: Testing of statistics

Table 4.16   Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.841[a]	.707	.664	.47564	1.316

a. Predictors: (Constant), Continuous Improvement, Information Flow, Management of Waste, Just-In-Time

b. Dependent Variable: Operational Performance

Step five: Conclusion

Since d (1.316) falls between d_l (1.193) and d_u (1.730), the test is inconclusive.

The researcher adopted Variance Inflation factor (VIF) in testing for multicollinearity. The

outcomes were as indicated on Table 4.17

Table 4. 13   Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
Just-In-Time	.172	5.823
Information Flow	.220	4.547
Continuous Improvement	.289	3.463
Management of Waste	.266	3.763

Source: Research   Data (2020)

a. Dependent Variable: Operational Performance

All cases, VIF were less than 10 and tolerance statistics were more than 0.1 indicating that multicollinearity is not a major problem in this regression model. This meant that all predictors were fit for use in the model. As long as the VIF are not more than 10, multicollinearity is not severe and all predictor variables can be used in the same equation

The study adopted linearity test to establish if existed linear relationship between IV and DV is or not. As indicated, linearity depicted that all values were higher than 0.05

Linearity indicates the extent to which data set exhibits linear relationship more so between explanatory variables and the regressor factor. The results for linearity assessment were obtained as shown in Table 4.18.

Table 4. 14   Linearity Test

Variable	Deviation from Linearity
Just-in-Time	0.733
Information Flow	0.487
Management of Waste	0.780
Continuous Improvement	0.962

Source: Research   Data (2020)

Table 4.18, p>0.05 thus exists linearity.

Pegging on results in Table 4.18, where the p-values for all variables were more than 0.05, it was concluded that there exists a linear relationship between the predictor variables (Just-In-Time, information flow, management of waste and continuous improvement) and the dependent variable (operational performance).

4.5.2 Coefficient of Pearson Correlation

Pearson bivariate correlation was determined to deduce the manner in which the variables correspond. The effect was as observed in Table 4.19.

Table 4. 15   Correlation Matrix

		Just-In-Time	Information Flow	Management of Waste	Continuous Improvement	Operational Performance
Just-In-Time	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	33				
Information Flow	Pearson Correlation	.878**	1			
	Sig. (2-tailed)	.000				
	N	33	33			
Management of Waste	Pearson Correlation	.789**	.750**	1		
	Sig. (2-tailed)	.000	.000			
	N	33	33	33		
Continuous Improvement	Pearson Correlation	.748**	.674**	.782**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	33	33	33	33	
Operational Performance	Pearson Correlation	.653**	.640**	.767**	.816**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	33	33	33	33	33

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

As presented, JIT and OP exhibit high positive correlation and statistically significant(r = .653, p = .000), while information flow and OP equally have positive correlation and significant (r = .640, p = .000). Management of waste and OP strongly correlate and also statistically significant (r = .767, p = .000). Lastly continuous improvement and OP have a higher positive correlation as well as being significant (r = .816, p =.000).   The implication drawn accordingly is that, all variables under the study strongly and significantly correlate with OP deducing that an increase in the stated variable prompt higher OP.

4.5.3 Summary of Model

The table 4.20 displays the findings for the correlation between outcomes and predictor variables.

R^2 represents correlation coefficient.

Table 4. 16   Summary of the Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.841[a]	.707	.664	.47564	1.316

a. Predictors: (Constant), Continuous Improvement, Information Flow, Management of Waste, Just-In-Time

b. Dependent Variable: Operational Performance

Based on table 4.20, the model summary indicates, r=0.841. This draws the implication that LASCM and OP studied have a positive correlation.   Assessing for the statistical significance of r was run based on the procedure below:

Step 1:   Hypothesis stated

H0: r= 0(insignificant correlation between LASCM and OP.)

H_1: r ≠ 0((the association connecting LASCM and OP is significant.

Step 2: Level of significant

The Alpha (α) value is 0.05

Step 3: Decision criteria

Degrees of freedom=n-2-33-2=31; Therefore, $t_{0.05, 31}$=2.0395

Null hypothesis is repudiated since computed t falls outside the region: $2.0395 \leq t \leq 2.0395$

Ste 4: Testing statistics

The computed T

$$T = r\sqrt{\frac{n-2}{1-r^2}}$$

$$T = r\sqrt{\frac{33-2}{1-.707}}$$

$$= 8.651$$

Step 5: Conclusion

Given that the computed t (8.651) reposes in the section of rejection, null hypothesis is jected.

This implies that there exists a remarkable connection between LASCM and OP.

The adjusted R^2 of .664 indicates that 66.4% of variation in LASCM is explained by variation in JIT, information flow, management of waste as well as continuous improvement. This shows an attestation of a model with significant explanatory power. The significance of this model is tested in the following subsection.

4.5.4 Variance Analysis
Table 4.21 exhibit the results of variance analysis.

Table 4. 17   variance analysis

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	14.744	4	3.686	16.293	.000[b]
1	Residual	6.108	27	.226		
	Total	20.853	31			

a. Predicted Variable: Operational Performance

b. Predictor Variables: (Constant), Continuous Improvement, Information Flow, Management of Waste, Just-In-Time

The results observed in Table 4.21 shows that the F statistic is 16.293 indicating the significance of the model since p-value (0.000) is below 0.05. The implication revealed is that the model significantly predicts the relationship between JIT, information flow, management of waste, continuous improvement and OP of hotels in Mombasa County, Kenya.

4.5.5 Regression Coefficients
Table 4.22 specifies the individual parameters of the model, their standard error, t-statistics and their sp-values

Table 4. 18   Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.515	.357		1.444	.160		
Just-In-Time	-.208	.232	-.225	-.897	.378	.172	5.823
Information Flow	.157	.200	.175	.787	.438	.220	4.547
Management of Waste	.316	.203	.314	1.554	.132	.266	3.763
Continuous Improvement	.587	.185	.614	3.169	.004	.289	3.463

a. Dependent Variable: Operational Performance

From Table 4.22 it can be deduced that information flow, management of waste and continuous improvement have positive effect on OP as indicated by their values, that is, scale β =.157, β = .316, β = .587 respectively. JIT however has a negative coefficient inferring that improved JIT negatively affect OP with similar scale of (-.208). These results are as well confirmed by the results of positive as well as negative t values. The findings also verify that only continuous improvement has a significant positive effect on OP (t = 3.169, p = 0.004).

The regression model explaining this relationship is therefore given as follows:

$Y = 0.515 - 0.208X_1 + 0.157X_2 + 0.316X_3 + 0.587X_4$

Y=Operational Performance

X_1= Just In Time

X_2= Information flow

X_3= Management of waste

X_4=Continuous improvement

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section reveals all discoveries from the research making references of previous chapters to provide a recapitulation and propositions of significance, pointing out major constraints experienced together with gaps and insights for further advanced researches in future.

5.2 Summary of Findings

The general purpose of this study was to demonstrate the effect of LASCM on OP of hotels in Mombasa County, Kenya. In particular the researcher targeted to assess the extent to which LASCM has been employed by the hotel companies and to establish the relationship between LASCM and OP of the same. The study summarized all the demographics adopted under the study to achieve the generalized effect on adoption of LASCM.

5.2.1 Extent of Implementation of Leagile Supply Chain Management

The purpose intended was to assess the degree to which LASCM was implemented by hotels in Mombasa County, Kenya. The results depicted that they implemented JIT, information flow and accessibility, management of waste and continuous improvement moderately; M = 3.2803 (SD = .87669), M = 3.2121 (SD = .89731), M = 3.038 (SD = .80312), M = 3.2879 (SD = 86178) respectively.

The implication from the findings shows that the hotels have averagely implemented LASCM. The results are accordant with Raj, Jayakirishna, and Vimal (2018) who assert that firms employ leagile approaches to amass more production.

5.2.2 Leagile Supply Chain Management and Operational Performance

The second objective was to ascertain the connection betwixt LASCM and OP of hotels in Mombasa County, Kenya. The research discovered that JIT and OP exhibit high positive correlation and statistically significant (r = .653, p = .000), while information flow and OP equally have a significant positive correlation (r = .640, p = .000). Management of waste and OP strongly correlate and were as well observed to be of significant effect (r =.767, p = .000). Lastly, continuous improvement and OP have a higher positive correlation as well as being significant (r = .816, p = .000). The implication drawn accordingly is that, all variables under the study strongly correlate with OP deducing that an increase in the stated variable prompt higher OP.

The results established a significant positive correlation between LASCM and operational performance (r = 0.841, p = .000). 66.4% of the disparities in OP was explained by variations in JIT, information flow, and management of waste and continuous improvement. The results link to the study by Raj, Jayakirishna, and Vimal (2018). Information flow, management of waste and continuous improvement were found to have positive regression coefficients indicating that if information flow, management of waste and continuous improvement are increased then they may induce an improvement of OP by 0.157, 0.316 and 0.587 respectively. However, JIT had a negative coefficient denoting that improved JIT has a negative effect on operational performance by a scale of 0.208. In addition, continuous improvement was found to have a significant regression coefficient. All the other LASCM practices had insignificant regression coefficients. However, the overall model was found to be significant (F = 16.293, p = .000). This implies that there LASCM approaches have a higher effect on OP when executed jointly as opposed to each being implemented in isolation.

5.3 Conclusions of the Study

This study deduces that hotels have implemented LASCM practices including JIT, information flow and accessibility, management of waste and continuous improvement moderately. additionally, reseacher establishes that LASCM possess a notable positive results on OP when they are implemented in combination. This finding concurs with the study done by Raj, Jayakirishna, and Vimal (2018) who opine that firms employ leagile approaches to amass higher performance. The conclusion also supports the findings of Nakandala and Lau (2019) which established that hybrid supply chain strategies improve production efficiency and product varieties. In addition, the discoveries are also congruous with the results of Saleh (2019) who determined that leagile manufacturing practices contribute to improved supply chain performance.

5.4 Recommendations of the Study

Based on the findings, the researcher draws the following recommendations: the management of the hotel companies should put in place proper procedures and mechanisms for improving the incorporation and adoption of LASCM since it was found to better operational performance. The management should put emphasis on the shortcomings that may hinder the commencement of the approaches and instill well established mechanisms in place to ascertain their effectiveness and sustainability.

The study also recommends that hotels need to prioritize on the capabilities together with potentialities of SCM to penetrate the business markets as while surviving the uncertainties and demand varieties. This is anchored by the interpretation that indicators particularly quality, flexibility and cost were perceived by the hotel companies and in that they suggested better operational performance. Lastly, the study recommends that LASCM practices of JIT,

information flow and accessibility, management of waste and continuous improvement should be implemented in combination since the practices provide synergy to each other.

5.5 Limitations of the Study

The researcher tolerated hurdle-related challenges.   The study experienced limited cooperation from the informants as they considered the sensitivity of the requested data and unavailability of time to respond to the questionnaire. This was handled by presenting the introduction letter   and persuading them on the main motive of the study and reassuring them of the total confidentiality of all the information they rendered.

Receiving a response from a single respondent as per each hotel was a challenge since data cannot be easily diversified. This was assured by focusing mainly on person(s) with relevant information within operation department.

5.6 Suggestions for Future Study

The current research was built on the service context, hotel sector. The researcher recommends studies in relation to other sectors in the service context especially in hospitality sector to examine generalizability of the results of the study.

The study also advocates for another study to be carried out to emphasize on factors that determine implementation of LASCM, to facilitate in examining possible shortcomings and challenges associated with proper implementation of LASCM. This would offer sufficient insights on how effectively the approaches can be fully employed.

REFERENCES

Akama, J. S., & Kieti, D. (2007). Tourism and socio-economic development in developing countries: A case study of Mombasa Resort in Kenya. *Journal of sustainable tourism*, *15*(6), 735-748.

Atilgan, E., Akinci, S., & Aksoy, S. (2003). Mapping service quality in the tourism industry. *Managing Service Quality: An International Journal*, 13(5).

Backhouse, C.J., & Burns, D.N. (1999). Agile supply chains for manufacturing: Implications for performance measures: *International Journal of Agile Management Systems*, 1(2), 76-82.

Banerjee, A., Sarkar, B. & Mukhopadhyay, S.K. (2012). Multiple decoupling point paradigms in a global supply chain syndrome: a relational analysis*", International Journal of Production Research,* 50(11), pp. 3051-3065.

Banihashemi, S., & Heydarnia, Z. (2018). A Hybrid Model for Evaluating Leagile Supply Chain Performance in Industry. *Journal of Industrial Strategic Management*, 3(1), 43-54.

Barney, J.B. (1995). Looking Inside for Competitive Advantage. Academy of Management.

Betru, Z. (2010). *Determinants of Saving and Credit Cooperatives (SACCOs) Operational performance in Gondar Town, Ethiopia.Unpublished Thesis*. MekelleUniversity, Ethiopia.

Billesbach, T.J., & Schniederjans, M.J. (1989). Applicability of Just-in-time techniques in Admnistration. *Production And Inventory Management Journal*, 3rd quarter, 40-4.

Bruce, M., Daly, L., & Towers, N. (2004). Lean or Agile: a solution for supply chain management in the textiles and clothing industry. *International Journal of Operations &Production Management,* 24(2), 151-170.

Canel, C., Rosen, D., & Anderson, E.A. (2000). Just-in-time is not just for manufacturing: a service perspective. *Industrial. Management. Data System., 100*, 51-60.

Carter, C. R., Kosmol, T., & Kaufmann, L. (2017). Toward a supply chain practice view. *Journal of Supply Chain Management*, *53*(1), 114-122.

Chan, F.T., Kumar, V., & Tiwari, M.K. (2009). The relevance of outsourcing and leagile strategies in performance optimization of an integrated process planning and scheduling model. *International Journal of Production Research*, 47(1), 119-142.

Chandra, C., & Grabis, J. (2007). Reconfigurable supply chains: an integrated framework. *Supply Chain Configuration: Concepts, Solutions, and Applications*, 81-99.

Chebet, E. (2017). *Factors affecting procurement performance ofstar rated hotels in hospitality industry, mombasa county, kenya. (*unpublished Msc). Technichal University of Mombasa, Mombasa, Kenya.

Chen, J. C., Li, Y., & Shady, B. D. (2010). From value stream mapping toward a lean/sigma continuous improvement process: an industrial case study. *International Journal of Production Research*, *48*(4), 1069-1086.

Christopher, M., & Towill, D.R. (2000). Supply chain migration from lean and functional to agile and Customised. Supply Chain Management: *An International Journal of logistics management*, 5(4). 206-213.

Copper, D.R., & Schindler, P.S. (2006). *Business Research Methods,* 9th ed. New Delhi, India: Published by Tata McGraw Hill Education Private Limited.

Cristobal, E., Flavian, C., & Guinaliu, M. (2007). Perceived e- service quality (PeSQ). *Managing*

service quality: An international journal, 17(3).

Crook, T.R., Kitchen, D.J., Combs, J.G., & Toddy, S. Y. (2008). Strategic resources and performance: A meta-analysis. *Strategic Management Journal,* 29(11), 1141-1154.

Cyton Real Estate. (2017). Nairobi's hospitality sector report "Towards resilient growth." Retrieved from https://www.cytonn.com/uploads/downloads/hospitality-report-vf, pdf.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and Implications. *Academy of management Review*, *20*(1), 65-91
.
 Duclos, K.L., Siha M. S, & Lummus, R. R. (1995) JIT in Services: a review of current practices and future directions for research. *International Journal of Service Industry Management,* 6(5), 36-52.

Fassin, Y. (2008). Imperfections and shortcomings of the stakeholder model's graphical representation. *Journal of business ethics*, *80*(4), 879-888.

Forzano, L. A. B., & Gravetter, F. J. (2009). *Research methods for the behavioral sciences.* Belmont, CA: Wadsworth.

Freeman, R. E. (2010). Managing for stakeholders: Trade-offs or value creation. *Journal of business ethics*, *96*(1), 7-9.

Friedman, A., & Miles, S. (2006). *Stakeholders: Theory and practice*. Oxford: Oxford University Press.

Gitobu,J.K. (2014). *Adorption of green marketing practices by hotels in Mombasa county Kenya.* (unpblished MBA Project), University of Nairobi, Nairobi, Kenya.

Goldratt, E.M. (1990). *What is this Thing called Theory of Constraints,* North River Press,

Croton on Hudson, NY.

Golgeci, I., & Gligor, D.M. (2017). The interplay between key marketing and supply chain management capabilities: the role of integrative mechanisms. *Journal of Business and Industrial Marketing,* 32(3), 472-483.

G.O.K (2008). Economic Survey, Kenya National Bureau of Statistics, *Government Printer*, Nairobi.

Gupta, M. C., & Boyd, L. H. (2008). Theory of constraints: a theory for operations management. *International Journal of Operations & Production Management*. 28(10), 991-1012.

Haque, B., & James-Moore, M. (2004). Applying lean thinking to new product introduction. *Journal of Engineering design*, *15*(1), 1-31.

Hair Jr., J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective.* (7th ed.). Upper Saddle River, New Jersey, USA: Pearson Education, Inc.

Hasson S., & Sherif Mostafa (2015). Lean and agile performance framework for manufacturing Enterprises. *2nd International Materials, Industrial, and Manufacturing Engineering Conference,* MIMEC2015, 4-6 February 2015, Bali Indonesia.

Hatcher, L. (1994). *A step-by-step approach to using the SAS(R) system for factor analysis and structural equation modeling*. Cary, NC: SAS Institute.

Helou, M. M., & Caddy, I. N. (2006). Definition problems and a general systems theory perspective in supply chain management. *Problems and Perspectives in Management*, 4 (4), 77-83.

Hock R., Harrison A., & Chirstopher M. (2001) Measuring agile capabilities in the Supply Chain. *International Journal of Operations and Production Management*, 21(7), 126-147.

Jørgensen, F., Boer, H., & Gertsen, F. (2003). Jump- starting continuous improvement through self- assessment. *International Journal of Operations & Production Management*, 23(10), 1260-1278.

Kant, R., Pandey, V., & Pattanaik, L.N. (2015). Lean, agile & leagile supply chain: a comparative study. ELK Asia *Pacific Journals*, 8(5), 978-81.

Karmarkar, U. (2004). Will you survive the service revolution? Harvard Business Review, 82(6), 100-8.

Ketchen Jr, D. J., Rebarick, W., Hult, G. T. M., & Meyer, D. (2008). Best value supply chains: A key competitive weapon for the 21st century. *Business Horizons*, 51(3), 235-243.

Khumawala, B.M., Hixon, C. and Law, J.S (1986), "MRP II in the Service Industries*", Production and Inventory Management Journal,* 3rd Quarter*, 57-63.*

Kline, R. B. (1998). *Principles and practice of structural equation modeling*, New York: Guiford Press.

Koori, C. (2017). *Leagile supply chain practices and supply chain performance of non-governmental health organizations in Nairobi, Kenya.* (Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Koksa, G. , Batmaz , I. , & Testik , M. C. (2011). A review of data mining applications for quality improvement in manufacturing industry , *Expert Syst. Appl.* , 38 , 13448 – 13467 .

Kubo, A. (2004). *The Sustainability of Coastal Tourism*. (International Tourism Management & Consultancy Degree Program), Breda, Netherlands.

Kumar, M., Garg, D., & Agarwal, A. (2019). Cause and Effect Analysis of Inventory Management in Leagile Supply Chain. *Journal of Management Information and Decision Sciences*, *22*(2), 67-100.

Kuria, S. (2014). *Supply chain leagility and performance of humanitarian organizations in Kenya. (*Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Lambert, D.M., & Pagh, J. (2012). Suppy Chain Management: More Than a New a Name of Logistics. *The International Journal of Logistics Management,* 8(1), 1-14.

Lee, J. Y., Swink, M., & Pandejpong, T. (2011). The roles of worker expertise, information sharing quality, and psychological safety in manufacturing process innovation: An intellectual capital perspective. *Production and Operations Management*, *20*(4), 556-570.

Lenihan, H., Andr, B., & Hart, M. (Eds.). (2010). *SMEs in a globalised world: Survival and growth strategies on Europe's geographical periphery*. Edward Elgar Publishing.

Lyons, A. C., Vidamour, K., Jain, R., & Sutherland, M. (2013). Developing an understanding of lean thinking in process industries. *Production Planning & Control*, *24*(6), 475-494.

Maani, K. E., Putterill, M. S., & Sluti, D. G. (1994). Empirical analysis of quality improvement in manufacturing. *International Journal of Quality & Reliability Management,* 11(7), 19-37.

Marsh, M., Guy, C., & Oliver, W. (2015). A comprehensive study on innovation in the automotive industry

Maskell, B. (2001). The age of agile manufacturing. *Supply Chain Management*. 6 (1), 5-11.

Mason-Jones, R., Naylor, B. & Towill, D.R. (2000). Engineering the leagile supply chain. International Journal of Agile Management Systems, 2(1), 54-61.

Mbithi, S., Muiruri, J. & Kingi, W. (2015). Effects of Working Capital Management Practices on the Financial Performance of Tourist Hotels in Mombasa County, Kenya. *International Journal of Management and Commerce Innovations,* (3)1, 488-494.

Miller, S. R., & Ross, A. D. (2003). An exploratory analysis of resource utilization across organizational units. *International Journal of Operations & Production Management*, 23(9).

Moenga, K. (2016). Supply chain management practices and challenges for the SMEs in Kenya, A case Study of the SMEs in the tea industry in Kenya. *Science Journal of Business and Management,* 4(3). 82.

Mogire, E. (2011). *Supply chain management practices in five star hotels in Kenya* (Doctoral dissertation, University of Nairobi, Kenya).Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches.* Nairobi: African Centre for Technology Studies.

Munywoki, J. (2018*). Just-In-Time Adoption and Operational Performance of Cement Companies in Kenya.* (Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Nakandala, D., & Lau, H.C.W. (2019). Innovative adoption of hybrid supply chain strategies in urban local fresh food supply chain: supply chain management. *International Journal*, 24(2), 241-255.

Naylor, J.B., Naim, M.M., & Berry, D. (1999). Leagility: integrating the lean and agile

manufacturing paradigms in the total supply chain. *International Journal of Production Economics,* 62(1), 107-118.

Ngandu, H.M. (2014). *Influence of competitive strategies on performance of hotels*: a case of Thika town, Kenya, 77.

Kiboko, B.B. (2017). *Inventory management practices and operational performance of hotels in Mombasa Kenya.* (Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Ogema, F.K. (2017). *Lean and agile procurement strategies and performance at East Africa Breweries Limited.* (Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Paul, N., & Eleni, K. (2015). More sustainable automotive production through understanding decoupling points in leagile manufacturing. Journal of Cleaner Production. 47(10) 1016.

Perera, D., Wickramarachchi, R., Abeysekara, N., & Vidanagamachchi, K. (2020). Moving from Lean to Leagile: A Framework to Improve Supply Chain Performance of Fashion Garment Manufacturing. *International Conference on Industrial Engineering and Operations Management Dubai, UAE,* March 10-12, 2020.

Philips, E. (2002), "*Pros and cons of lean manufacturing*", *Forming and Fabricating*, October, pp. 1- 5.

Qi, X., Zhao, & Sheu, C. (2011). The impact of competitive strategy and supply chain strategy on business performance: The role of environmental uncertainty. *Decision Science Journal,* 42(2) 371-389.

Raj, S. A., Jayakrishna, K., & Vimal, K. E. K. (2018). Modelling the metrics of leagile supply chain and leagility evaluation. *International Journal of Agile Systems and Management*, *11*(2), 179-202.

Rigby, C., Day, M., Forrester, P., & Burnett, J. (2000). Agile supply: rethinking systems thinking, systems practice. *International Journal of Agile Management Systems*, 2(3).

Saleh, F. (2019). *Leagile manucturing practices and supply chain performance of food and beverage manufacturing companies in kenya*. (Unpublished MBA Thesis). University of Nairobi, Nairobi, Kenya.

Sanchez, L., & Nagi, R. (2001). A review of agile manufacturing systems. I*nternational Journal of Production Research*, 39, 3561-3600.

Sausmarez, N. (2013). Challenges to Kenyan tourism since 2008: crisis management from the Kenyan tour operator perspective, *Current Issues in Tourism*, 16:7-8, 792-809.

Shahin, A., & Rezaei, M. (2018). An integrated approach for prioritizing lean and agile production.factors based on costs of quality with a case study in the home appliance industry. *Benchmarking: An International Journal*

Sharma,P. & Kulkarni, M.S. (2016), "Framework for a dynamic and responsive: time separated–lean-agile spare parts replenishment system in army*", International Journal of Productivity and Performance Management,* 65(2), 207-222.

Sirmon, D. G., Hitt, M. A., & Ireland, R. D. (2007). Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, **32**, 273– 292.

Soltan, H., & Mostafa, S. (2015). Lean and agile performance framework for manufacturing enterprises. *Procedia Manufacturing*, *2*, 476-484.

Stefanelli, F., Giulianelli, D., & De Sanctis, I. (2019). A comparison between the main drivers and effects of dynamic supply chain concepts. *Journal of Supply Chain Management Systems*, *8*(2).

Stevenson, M., & Spring, M. (2009). 'Supply chain flexibility: An inter-firm empirical study *International Journal of Operations & Production Management* 29(9), 946–971.

Stevenson, W,J,. (1999). Production and Operations Management, Irwin/McGraw-Hill, New York, NY.

Suarez, F. F., Cusumano, M. A., & Fine, C. H. (1996). An empirical study of manufacturing flexibility in printed circuit board assembly. *Operations Research*, 44(1), 223-240.

Vonderembse, M.A. & White, G.P. (1991). *Operations Management* , West, St Paul, MN.

Vukosav, S., & Curcic, N. (2013). The role of the hotel industry in the Economic and Regional Development of Vojvodina, *Geographica Timisiensis*. Xxii (2), 65-73.

World Travel and Tourism Council (2009). *Travel and Tourism Economic Impact.*

Zacharia, Z. G., Nix, N. W., & Lusch, R. F. (2009). An analysis of supply chain collaborations and their effect on performance outcomes. *Journal of Business Logistics,* 30(2), 101-123.

Zhang, Q., Vonderembse, M. A., & Lim, J. S. (2006). Spanning flexibility: supply chain information dissemination drives strategy development and customer satisfaction. *Supply Chain Management: An International Journal*. 11(5), 390-399.

APPENDIX I: STUDY QUESTIONNAIRE

Dear sir/Madam

You are kindly requested to respond to the enclosed questionnaire by providing relevant information for the following questions. All the data gathered using this questionnaire is specifically for academic purpose and confidentiality will be adhered to. Your sincere participation will be highly appreciated.

Section A: Bio Data

Instructions. Kindly tick in the spaces provided

1. What is the length of your continuous service in the company?
1) [ ] Below 5 years
2) [ ] 5- 10 years
3) [ ] 10- 15 years
4) [ ] above 15 years

2. How many employees do you have?
1) [ ] Below 100 employees
2) [ ] 101-500 employees
3) [ ] Over 500 employees

3. What is the hotel's portfolio classification?
1) [ ] 2- stars
2) [ ] 3-stars
3) [ ] 4-stars
4) [ ] 5-stars

4. What is the period of operation of the hotel in the industry
1) [ ] below 5 years
2) [ ] 5-10 years
3) [ ] 10-15 years

4) [ ] Above 15 year

5. Please indicate your academic qualification

1) [ ] Secondary school level
2) [ ] College level
3) [ ] Undergraduate level
4) [ ] Masters degree
5) [ ] PhD

Section B: Leagile supply chain management

Please tick as appropriate to indicate the level at which these practices are implemented.

[1] Not at all   [2] Small extent   [3] Moderate extent   [4] Great extent   [5] Very great extent

	Statement	1	2	3	4	5
A	**Just-in-time**					
JIT1	Instilling continuous improvement in all hotel's processes.					
JIT2	Ensuring elements of all processes employed in production of a good or service are visible to all participants in the process					
JIT3	Establishing and maintaining synchronization on information and work flow balance					
JIT4	Putting in place holistic approach to eradication of all wastes					
B	**Information flow**	1	2	3	4	5
IF1	Emphasizing involvement of all stakeholders at every critical levels					

		1	2	3	4	5
IF2	Putting in place well established modern technology on information flow					
IF3	Establishment and maintenance of platforms of integrated information linking relevant stakeholders					
IF4	Availing and sharing of information data					
C	**Management of waste**	1	2	3	4	5
MW1	Putting in place systems to always ensure quality inspection from the start.					
MW2	Establishing and maintaining procedures and mechanisms on recycling of waste					
MW3	Maintaining optimal inventory levels					
MW4	Employing error proofing systems and equipment to detect errors at initial stages					
E	**Continuous improvement**	1	2	3	4	5
CI1	Ensuring existence of quality checklist in every production line					
CI2	Use of feedback loop to evaluate hotel's performance on quality.					
CI3	Employing quality cycles in every section to monitor quality					
CI4	Use of production start check list to affirm quality					

Section C: Operational Performance

Kindly indicate the degree of realization of performance using a **TICK**

1= very small extent, 2 = small extent, 3 = moderate extent, 4 = large extent, 5= to a very large extent

	Statement	1	2	3	4	5
A	QUALITY					
OQ1	Services received at the time promised					
OQ2	Availability of up to date facilities, appealing physical environment and modern equipment within the premises					
OQ3	Availability of mechanisms and system for seamless performance.					
OQ4	Number of Complaints from customers during and after receiving products have reduced.					
OQ5	Accessibility of service quality questionnaires to all customers at any point of service.					
B	FLEXIBILITY	1	2	3	4	5
OF1	Ability of the hotel to vary production to meet demand uncertainties					
OF2	Ability of the hotel to introduce new product upon demand					
OF3	Ability of the hotel to vary delivery time based on demand					
0F4	Ability of the hotel to innovate product varieties to suit customers' needs and tastes					
C	COST	1	2	3	4	5
OC1	Ability to maintain optimal capacity utilization					
OC2	surplus budgets from actual set budgets					

APPENDIX 2: LIST OF HOTELS IN MOMBASA COUNTY

2stars	3stars	4stars	5star
1. Cool breeze hotel	1. Sunset paradise holiday homes	1. Wells villa beach hotel	1.Serena Beach Resort & Spa
2. Ocean view nyali boutique hotel	2. Kenya bay beach hotel	2.Mombasa beach hotel	2.Eden Beach Resort & Spa
3. Cingaki hotel	3. Coastage hotel	3.Sentrim castle royal hotel	3. Cowrie Shell Beach Apartments
	4. The shaza	4.Ocean crown hotel	4.Pangoni Beach Resort Mombasa
	5. Sanana conference center and holiday resort	5.Hotel radiance	5. Sarova Whitesands Beach Resort & Spa
	6. Sun Africa beach resort	6.Voyager beach resort and spa	6. Hotel English point
	7. Reef hotel	7.Coast gate hotel	
	8. Nightingale apartments	8.Pride inn hotel	
	9. Lido hotel	9.Best western plus creekside hotel	
	10. Dolphin beach hotel	10.Park view hotel	
	11. Nyali international beach hotel and spa	11.Hotel sisters and spa	
	12. Kahama hotel	12.Pride inn paradise beach hotel	

	13. Milele beach hotel	13.Sereven sea lodge	
	14. Savanna cottages		
	15. Neptune beach hotel	15.Travelers beach hotel	
	16. Bamburi beach hotel	16.Flamingo beach resort and spa	
	17. Continental hotel	17.White Rhino Hotel Mombasa	
	18. Bahari beach hotel	18.Stars villas Nyali	
	19. Baobab holiday resort	19.Tamarind village Hotel apartments	
	20. Nyali Beach Holiday Resort	20.Royal court hotel	
	21. Pride Inn Nyali	21.Wawa sultan palace Mombasa north coast beach	
	22. Rembo hotel Mombasa		
	23. Wells villa Beach Hotel		
	24. Prideinn Mombasa city		
	25. Prideinn express nyali		
	26. Nyali sun Africa beach hotel and spa		

Source: Hotel and Restaurant Authority (HRA), Kenya Association of Hotel keepers and Caterers (KAHC) and Tourism Ministry database.