LEAN OPERATIONS STRATEGY AND PERFORMANCE OF MANUFACTURING FIRMS IN MOMBASA COUNTY, KENYA

MELAB NZIWA TIRRA

A RESEARCH PROJECT SUBMITTED TO THE FACULTY OF BUSINESS AND MANAGEMENT SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

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DECLARATION

I hereby declare that this research study is my original work, and it has not in part or whole been submitted for a diploma or degree in any institution of higher learning for examination reasons.

Signature: … 

Date: ….26/11/2023…….

This research study has been submitted for examination with my approval as the University supervisor.

Signature: …… 

Date……**26/11/2023…….**

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DEDICATION

I dedicate this project to the Almighty God for constant support, my family for encouragement, Dr. Magutu as the university supervisor for guidance, and friends for unwavering support. May this research bring positive change in our field.

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ACRONYMS/ABBREVIATIONS

GDP: Gross Domestic Product

JIT: Just In Time

KAM: Kenya Association of Manufacturers

SMEs: Small Medium Enterprises

TPS: Toyota Production System

TQM: Total Quality Management

R&D: Research and Development

DEFINITION OF OPERATIONAL TERMS

Continuous Improvement: entails the consistent identification and elimination of waste, inefficiencies, and bottlenecks through the application of problem-solving strategies (Khan & Muhammad, 2022).

Kaizen Operational Strategy: It is a philosophy and operational strategy focused on making small, incremental improvements in processes, products, services, or systems over time (Jadhav & Ekbote, 2021).

Lean Operation Strategy: is an approach that aims to minimize waste and maximize efficiency in production processes (Ciliberto, et al., 2021).

Organizational Performance: refers to the ability of an organization to achieve its strategic goals and objectives effectively and efficiently over time (Taouab & Issor, 2019).

CHAPTER ONE: INTRODUCTION OF THE STUDY

1.1 Background of the Study

Lean operation strategies encompass a collection of ideas and techniques that are designed to enhance efficiency, eradicate wastefulness, and optimize operations within an organizational setting (Sommer & Blumenthal, 2019). The notion of lean initially emerged within the manufacturing sector, but has subsequently been embraced by a diverse range of industries, encompassing services, healthcare, and software development. The use of lean strategies has been found to have a substantial effect on organizational performance through the optimization of operations, improvement of productivity, and facilitation of sustainable growth (Sommer & Blumenthal, 2019; Florescu & Barabas, 2022). Fundamentally, lean thinking centres on the concept of delivering value to customers while simultaneously reducing waste. The focal point lies in the reduction of activities that do not contribute value, such as excessive production, surplus inventory, faults, idle time, superfluous transportation, and unnecessary movement (Balocco, et al., 2019).

The correlation between lean tactics and organizational performance can be elucidated through the lens of total quality management theory (TQM) and the idea of constraints. Manufacturing organizations can foster a culture of continuous improvement, enhance customer happiness, empower employees, improve operational efficiency, and develop robust supplier relationships by adopting the concepts of TQM. The theory of constraints originated by Goldratt (1984), asserts that any complex system—be it a manufacturing plant, a business, or even an individual's daily routine—is limited by a few crucial constraints.

The potential benefit of implementing lean operation principles in the industrial sector of Kenya on organizational performance is substantial. The manufacturing industry in Kenya has a wide range of industries, encompassing food processing, textiles, automotive, pharmaceuticals, and building materials. The application of lean concepts has the potential to promote efficiency, minimize waste, and enhance overall performance in several industries (Balocco, et al., 2019). It is vital to acknowledge that the effective execution of lean operation strategies within the manufacturing sector of Kenya necessitates meticulous examination of the indigenous circumstances. Moreover, it is imperative for businesses to customize lean concepts according to their particular industry, scale, and operational attributes in order to optimize advantages and

enhance organizational performance within the manufacturing sector of Kenya (Sommer & Blumenthal, 2019).

1.1.1 Lean Operation Strategy

Lean operation strategy, is a methodology designed to reduce waste and enhance efficiency within production processes (Ciliberto, et al., 2021). The concept in question finds its roots in the Toyota Production System (TPS) and has subsequently been embraced by a multitude of companies spanning several industries. The fundamental principle of lean operation strategy centres on the generation of customer value through the elimination of non-value-adding activities and processes in the production of goods or provision of services. Organizations can achieve enhanced productivity, improved quality, and reduced costs by using waste reduction strategies, hence resulting in increased customer satisfaction (Khan & Muhammad, 2022; Aadithya et al., 2022).

Continuous improvement is a fundamental principle of lean operation strategy. It entails the consistent identification and elimination of waste, inefficiencies, and bottlenecks through the application of problem-solving strategies, such as the implementation of Kaizen events. The continuous endeavour for enhancement guarantees that firms maintain their agility and responsiveness to evolving market demands (Khan & Muhammad, 2022). Value stream mapping is a crucial component of lean operations. This technique is employed to examine and depict the comprehensive flow of materials and information necessary for the production of a product or the provision of a service. Through the process of value stream mapping, companies have the ability to discover and analyse areas within their operations that are characterized by inefficiencies and wasteful practices. This comprehensive assessment allows for the identification of potential areas for improvement, ultimately leading to the optimization of processes and the reduction of lead times. The core principle behind lean operations is the concept of just-in-time (JIT) production. JIT methodology strives to achieve the efficient production and timely delivery of products or services, perfectly aligning with the demand. This approach tries to minimize inventory levels and decrease lead times, hence enhancing operational efficiency. According to Aadithya et al. (2022), this methodology aids in the reduction of waste related to surplus inventory and storage expenses, hence enabling enterprises to enhance their operational efficiency.

Continuous improvement and Kaizen operational strategies are essential for operationalizing lean operations by promoting waste elimination, cost reduction, enhanced productivity, improved

quality, adaptability, and employee engagement in manufacturing firms (Pawlik, et al., 2021). According to Pawlik et al. (2021), it is advocated that employees are urged to actively engage in the generation of ideas for enhancement, actively participate in problem-solving endeavours, and assume responsibility for their work processes. The implementation of a collaborative approach fosters a workforce that is highly motivated and cultivates an environment that encourages ongoing learning. In lean operations, a preference is given to the implementation of a pull system rather than a push system. The pull system is characterized by the initiation of production solely upon the receipt of a client order, thereby ensuring that production is aligned with the prevailing demand. This practice aids in mitigating overproduction and guarantees the optimal utilization of resources in accordance with consumer demands. In order to attain a seamless and ongoing progression of resources and data, lean operations aim to establish a state of continuous flow. The arrangement of workstations and operations is designed to optimize efficiency by decreasing both wait periods and cycle times. According to Jadhav and Ekbote (2021), enhancing the flow inside businesses can lead to enhanced levels of efficiency and responsiveness.

1.1.2 Organisational Performance

Organizational performance refers to the ability of an organization to achieve its strategic goals and objectives effectively and efficiently over time (Taouab & Issor, 2019). It is a dynamic and ongoing process that requires constant monitoring, evaluation, and improvement. Continuous organizational performance involves the consistent pursuit of excellence and the continuous improvement of various aspects of the organization, including its operational processes, financial performance, customer satisfaction, employee engagement, innovation, and adaptability to changing market conditions. To achieve continuous organizational performance, organizations often employ performance management systems and practices. These include setting clear and measurable goals, regularly monitoring performance against those goals, providing feedback and coaching to employees, and implementing strategies to address any performance gaps or opportunities for improvement (Inegbedion, et al., 2020).

Manufacturing organizations' performance is a critical aspect that demands constant attention and evaluation. The success and efficiency of these organizations are essential for their growth and competitiveness in the industry (Baah, et al., 2022). One key determinant of a manufacturing organization's performance is its ability to optimize operational processes. This involves streamlining production procedures, eliminating bottlenecks, and maximizing the utilization of

resources. Quality control plays a crucial role in measuring and maintaining performance standards within manufacturing organizations. Implementing robust quality control measures ensures that products meet or exceed customer expectations. Effective supply chain management is another vital component of manufacturing organizations' performance (Taouab & Issor, 2019). Productivity, quality control, and profitability are interrelated and complementary metrics that provide a holistic view of a manufacturing firm's performance (Taouab & Issor, 2019). These metrices were used to measure performance of the manufacturing firms, in this study.

1.1.3 Manufacturing firms in Mombasa County

The manufacturing firms in Mombasa County encompass a diverse range of industries, catering to both domestic and international markets. From textiles and garments to food processing, chemicals, and construction materials, these firms contribute significantly to the local economy and provide numerous employment opportunities for the region's residents (Mohammed, & Rugami, 2019). One of the key advantages of operating manufacturing firms in Mombasa County is its strategic location, offering convenient access to global markets through the well-connected Mombasa Port. This deep-water port serves as a vital gateway for international trade, facilitating the import and export of raw materials, components, and finished goods. The proximity to the port not only streamlines supply chains but also enables manufacturers to leverage efficient logistics networks for seamless distribution (Kimathi, 2022).

The manufacturing firms in Mombasa County boast modern infrastructure and state-of-the-art facilities, enabling them to produce high-quality goods that meet international standards. These firms have invested in advanced machinery, equipment, and technologies to enhance productivity, improve efficiency, and ensure optimal utilization of resources. By adopting best practices in manufacturing processes, they strive to deliver products that are competitive both in terms of quality and cost. Moreover, these firms place a strong emphasis on innovation and research and development (R&D). They understand the importance of staying ahead in a rapidly evolving global market, and thus invest in developing new products, improving existing ones, and exploring innovative manufacturing techniques. By fostering a culture of innovation, the manufacturing firms in Mombasa County continuously adapt to changing consumer demands and market trends, ensuring their sustained growth and competitiveness (Mohammed, & Rugami, 2019).

1.2 Statement of the Problem

The scholarly discourse and empirical investigation have focused on examining the correlation between lean operation strategy and the performance of manufacturing firms (Iranmanesh et al., 2019; Sancha et al., 2020). One perspective in the ongoing discourse posits that the implementation of lean operation principles yields favourable outcomes in terms of performance. It is argued by proponents that the use of lean methods, which involve waste reduction, process flow improvement, and quality enhancement, can result in cost savings, heightened production, and reduced lead times. These enhancements, in turn, have the potential to augment consumer happiness and competitiveness, so resulting in enhanced financial performance and overall success (Iranmanesh, et al., 2019; Sancha, et al., 2020). On the contrary, detractors contend that the correlation between lean operation strategy and firm performance is not characterized by a linear cause-and-effect relationship. The authors of the study emphasize a number of obstacles and constraints that are closely linked to the application of lean methodologies. For example, the implementation of lean principles necessitates substantial organizational transformation and may face opposition from personnel who are accustomed to conventional methodologies. Critics contend that the implementation of lean tactics may engender an undue emphasis on immediate cost reduction, so potentially jeopardizing long-term innovation and strategic adaptability. Moreover, it has been argued by Ali et al. (2020) and Hardcopf et al. (2021) that the applicability of lean approaches in manufacturing may not be generally valid and is contingent upon industry-specific characteristics.

The manufacturing sector in Kenya, specifically in Mombasa County, is confronted with formidable competition from international participants, resulting in a decline in productivity and diminished profitability. The industry has seen challenges in maintaining competitiveness due to the influx of inexpensive imports from nations with lower labour expenses and more sophisticated technologies. The manufacturing sector's contribution to the country's GDP has experienced a reduction due to heightened competition, resulting in negative consequences such as job losses and diminished economic growth. The manufacturing sector's contribution to the nation's Gross Domestic Product (GDP) experienced a drop, decreasing from 10.3% in 2010 to 7.7% in 2020. The aforementioned downturn has been concomitant with a reduction in the workforce within the sector, with employment figures dropping from 304,900 individuals in 2010 to 276,600 individuals in 2020. In addition, it is worth noting that the yearly growth rate of the industry has consistently

fallen short of the government's desired aim of 10%, with an average rate of 4.2% recorded between the years 2016 and 2020, as reported by the Kenya National Bureau of Statistics (KNBS, 2022). Energy expenses constitute a significant portion, specifically 40%, of the overall production costs within the industrial sector, which is notably higher in comparison to other nations where it ranges between 15% and 25%. The competitive advantage of manufacturers in Kenya is hindered by the high production costs, which pose a challenge when compared to the affordability of imports from countries like China, benefiting from reduced energy costs (Kenya Association of Manufacturers, [KAM], 2022).

The existing body of literature has demonstrated that there is a favourable correlation between the implementation of lean operation strategies and operational performance. However, there is still a gap in knowledge that needs to be addressed. In a recent study conducted by Terdpaopong et al. (2021), an association was established between the implementation of lean methodologies and enhanced performance outcomes within the manufacturing sector of Thailand, using structural equation modelling. According to the research conducted by Mitaire and Emudainahwo (2020), a noteworthy correlation has been identified between the use of lean manufacturing practices and the overall performance of organizations, particularly in respect to product quality. According to Bagshaw (2018), there exists a robust positive correlation between the efficiency of manufacturing enterprises and the adoption of lean manufacturing practices within the context of Nigeria. This study used Pearson Correlation to examine the association between the study variables. The existing studies have not placed emphasis on lean operation strategies, and they have been carried out exclusively in Nigeria and Thailand, creating a geographical gap (contextual gap) and they also used different statistical methods thus creating methodological research gap. Consequently, this has resulted in a study deficit both in terms of conceptual understanding and contextual application.

1.3 Objective of the Study

The main objective of this study will be to examine the effect of lean operation strategy on organisational performance of manufacturing firms in Mombasa County.

1.4 Value of the Study

The comprehension of the correlation between lean operation strategy and organisational performance can yield numerous advantages. First and foremost, this facilitates manufacturing

enterprises in Mombasa County to discern regions necessitating enhancement and proficiently execute lean methodologies. By using lean principles such as just-in-time production, continuous improvement, and waste reduction, these organizations have the ability to optimize their operational processes, improve overall productivity, and achieve cost reduction. This, consequently, can lead to enhanced competitiveness and profitability. Furthermore, this research contributes to the establishment of benchmarks and identification of best practices for the implementation of lean principles specifically within the manufacturing sector located in Mombasa County. Through the examination of the correlation between lean operation strategy and organisational performance, scholars are able to discern exemplary instances and offer suggestions derived from their discoveries. This resource can be considered highly beneficial for manufacturing organizations aiming to improve their operational efficiency and attain elevated levels of performance.

Moreover, this study makes a valuable contribution to the academic and theoretical understanding of lean operations and its impact on organizational performance. Through a comprehensive analysis of the unique circumstances within Mombasa County, scholars have the opportunity to discern many elements that could potentially impact the efficacy of lean tactics in this particular locality. These considerations encompass cultural nuances, constraints in infrastructure, as well as issues pertaining to the supply chain. This has the potential to enhance the current knowledge base and offer valuable insights into the practicality of lean principles across various geographical and industrial contexts. Moreover, the results of this study may have significant ramifications for policymakers and industry leaders under the jurisdiction of Mombasa County. The comprehension of the correlation between lean operation strategy and organisational performance can provide valuable insights for the formulation of policies and initiatives that facilitate the adoption and implementation of lean practices. Additionally, it has the potential to provide valuable insights for decision-making processes pertaining to the allocation of resources, implementation of training programs, and identification of collaboration opportunities. These measures aim to improve the overall performance of the manufacturing sector in Mombasa County.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter entails theoretical review, empirical review as per the two specific objectives, summary of literature and conceptual framework.

2.2 Theoretical Review

Theoretical review involves a comprehensive assessment of the theoretical underpinnings, assumptions, and principles that form the foundation of continuous improvement strategy and Kaizen operational strategy in relation to organisational performance. This study will utilize the following theories to underpin the study findings.

2.2.1 Total Quality Management Theory

Total Quality Management (TQM) is a management framework that prioritizes the ongoing enhancement of organizational processes, the fulfilment of customer needs and expectations, and the active engagement of all individuals within the organization. Although TQM lacks a one originator, its ideas have undergone gradual development via the efforts of numerous individuals and organizations. W. Edwards Deming is considered a significant figure in the advancement of TQM. William Edwards Deming, an esteemed American statistician, engineer, and management consultant, is widely recognized as a prominent figure in the field of quality control, earning him the honorary title of the "father of quality control." The individual in question has gained recognition for his contributions in post-World War II Japan, whereby he established statistical quality control techniques and placed significant emphasis on the significance of quality management in enhancing business operations (Mukhopadhyay, 2020).

Although TQM's principles can be traced back to earlier management theories and practices, Deming's teachings had a significant impact on its development. He emphasized the importance of statistical analysis, employee involvement, and a focus on long-term results rather than short-term gains. It's worth noting that TQM has evolved through the contributions of many other scholars and practitioners. Other notable figures associated with TQM include Joseph Juran, Philip Crosby, and Kaoru Ishikawa, who further developed the principles and practices of TQM. As for the year, TQM started to gain significant attention and implementation in the 1980s and 1990s,

although its roots can be traced back to earlier management philosophies and quality control practices (Osoko, & Muda, 2021).

Total quality management theory has undoubtedly contributed to significant improvements in many organizations, it is not without its critics. The heavy reliance on quantifiable metrics, resource-intensive implementation, potential stifling of creativity and individual autonomy, narrow focus on customer satisfaction, and limitations in addressing dynamic market conditions are all valid points of criticism. Organizations must carefully evaluate the applicability of TQM principles to their specific context and consider complementary approaches to foster a culture of innovation and adaptability (Mukhopadhyay, 2020; Osoko, & Muda, 2021).

TQM theory is closely linked to the continuous improvement strategy as one of the strategies of lean operations and organizational performance of manufacturing firms. By embracing the principles of TQM, manufacturing firms in Mombasa County can cultivate a culture of continuous improvement, enhance customer satisfaction, empower employees, improve operational efficiency, and establish strong supplier relationships. These factors collectively contribute to improved organizational performance, enabling manufacturing firms to stay competitive, deliver high-quality products, and achieve sustainable growth in the ever-evolving business landscape.

2.2.2 Theory of Constraints

Theory of constraints was originated by Goldratt (1984). The theory asserts that any complex system—be it a manufacturing plant, a business, or even an individual's daily routine—is limited by a few crucial constraints. These constraints act as bottlenecks, restricting the system's overall output and preventing it from reaching its full potential. To uncover these constraints, one must embark on a journey of exploration, meticulously dissecting the inner workings of the system. Through this process, the Theory of Constraints encourages an analytical mindset, urging individuals to identify the factors that impede progress and unravel the intricate web of cause and effect (Ribeiro, et al., 2018).

Once the constraints are unveiled, the next step is to devise a strategy to circumvent their detrimental impact. This involves the strategic allocation of resources and the development of innovative solutions that directly address the constraints. By doing so, the system can achieve remarkable breakthroughs and propel itself towards higher levels of performance. Moreover, the Theory of Constraints emphasizes the importance of a holistic perspective. It emphasizes that

while it is crucial to focus on resolving the identified constraints, it is equally vital to consider the ripple effects of any changes implemented. A change in one area of the system may have unintended consequences in another, and therefore, a comprehensive understanding of the interconnectedness of the system is essential (Mishra, 2020).

In the pursuit of continuous improvement, the theory of constraints also advocates for ongoing measurement and evaluation. By establishing key performance indicators and monitoring the impact of implemented changes, organizations can gauge their progress and make necessary adjustments along the way. This adaptive approach ensures that the system remains aligned with its overarching goals and objectives. Ultimately, the theory of constraints serves as a beacon of enlightenment in the realm of efficiency optimization. It empowers individuals and organizations to challenge the status quo, to question ingrained assumptions, and to unlock hidden potential. By embracing this theory, we can navigate the intricate maze of constraints that surround us, forging a path towards enhanced productivity, streamlined processes, and unparalleled success (Mishra, 2020; Ribeiro, et al., 2018).

In relation to this study, Kaizen operational strategy and organisation performance of manufacturing firms can be linked, to achieve significant performance enhancements. Kaizen operational strategy as one of the strategies of lean operation will ensure that constraints are identified, systematically addressed, and continuously improved upon, leading to enhanced efficiency, optimized processes, and ultimately, improved organizational performance.

2.3 Indicators of Lean Operation Strategy

The pursuit of efficiency and effectiveness in organizational processes has led to the evolution of various operational strategies, and among them, Lean operation strategy stands out as a beacon of streamlined productivity. In understanding this strategy, one must delve into the nuanced world of indicators that serve as guiding lights towards a leaner and more responsive operational framework (Ciliberto, et al., 2021). At the core of lean operation strategy lies the principle of minimizing waste, and a key indicator reflecting the success of this endeavour is the reduction in lead times. Lean organizations meticulously scrutinize their processes, aiming to trim down the time it takes for a product or service to move from concept to delivery. This reduction not only enhances customer satisfaction by ensuring timely responses but also slashes unnecessary waiting periods, ultimately saving resources and costs (Aadithya et al., 2022).

Another pivotal indicator is the continuous improvement mindset embedded within the organizational culture. Lean operations thrive on the commitment to Kaizen, a Japanese term signifying continuous improvement. This involves fostering an environment where every employee is encouraged to contribute ideas for process enhancement, and where small, incremental changes are valued as much as large-scale innovations. The incessant pursuit of perfection becomes a driving force, with the realization that improvement is a perpetual journey rather than a final destination (Pawlik, et al., 2021). Efficient resource utilization stands as a beacon illuminating the success of lean operation strategy. Lean organizations meticulously allocate resources, ensuring that each component of the production process adds value. This involves the optimization of labour, materials, and equipment, with a keen eye on eliminating excess and non-value-adding elements. Resource efficiency not only contributes to cost reduction but also enhances the overall agility of the organization, allowing it to respond promptly to market changes (Aadithya et al., 2022).

Inventory management emerges as a critical indicator, reflecting the mastery of lean principles. Lean operations strive to maintain minimal inventories, reducing the financial burden of holding excess stock and mitigating the risk of obsolete goods. The emphasis shifts towards a just-in-time approach, where inventory levels align precisely with customer demand, thereby enhancing responsiveness and minimizing storage costs. Customer satisfaction becomes a mirror reflecting the effectiveness of lean operation strategy. As waste is minimized, lead times are shortened, and product quality is optimized, the end result is a heightened level of customer satisfaction. Lean operations place a premium on meeting customer needs precisely, eliminating defects and errors that could erode trust. This indicator underscores the customer-centric philosophy inherent in lean thinking (Jadhav & Ekbote, 2021).

2.4 Empirical Literature Review

The empirical review in this study was based on continuous improvement strategy and Kaizen operational strategy as the indicators of lean operation strategies, in relation to organisational performance of manufacturing firms.

2.4.1 Continuous Improvement Strategy and Organisational Performance

The empirical study done by Smith et al. (2018) examined the influence of continuous improvement strategies on organizational performance within manufacturing organizations. The

present study employed a quantitative research methodology. The data was obtained by administering a survey questionnaire to manufacturing organizations across diverse industries. The survey encompassed issues pertaining to the implementation of continuous improvement strategies and the measurement of organizational performance measures. The research revealed a significant correlation between the adoption of continuous improvement methodologies and the overall effectiveness of a business. Firms that successfully used continuous improvement initiatives observed enhancements in productivity, quality, customer happiness, and financial performance. The results indicate that the adoption and successful implementation of continuous improvement strategies can have a substantial positive impact on the performance of manufacturing companies. The study suggests that manufacturing organizations should give priority to the implementation of continuous improvement initiatives through the establishment of a culture that emphasizes continuous learning and employee involvement. Furthermore, it proposes the provision of sufficient training and resources to facilitate the adoption and execution of continuous improvement endeavours. A potential constraint of this study pertains to its dependence on self-reported data, which has the potential to induce response bias. Furthermore, the study failed to take into account the potential influence of extraneous variables, such as market dynamics or developments in technology.

In their recent study, Wilson et al. (2021) undertook a longitudinal investigation to examine the effects of continuous improvement initiatives on organizational performance within the manufacturing sector. The present study utilized a longitudinal research approach, wherein data was gathered from manufacturing enterprises over a span of five years. The dataset included of several financial performance indicators, employee surveys, and consumer comments. The findings of the study indicate that manufacturing organizations that consistently apply continuous improvement programs observe a notable enhancement in their overall organizational performance. The companies exhibited heightened levels of production, decreased costs, higher quality, and greater customer happiness. The study's findings indicate that the consistent and long-term implementation of continuous improvement initiatives has a favourable and enduring effect on the performance of manufacturing organizations. The study's findings suggest that manufacturing organizations should prioritize long-term continuous improvement programs that involve all levels of the company, as recommended. Additionally, it is suggested that creating a work atmosphere that is supportive and fosters collaboration can effectively promote employee

participation and engagement in improvement initiatives. A major disadvantage of this study is the presence of selection bias, as the firms that chose to participate in the study may have had a preexisting inclination towards engaging in continuous improvement practices. Furthermore, the research failed to consider extraneous variables that could have potentially impacted the operational effectiveness of the organizations under investigation throughout the designated study duration.

In their study, Lee et al. (2019) investigated the impact of continuous improvement strategies on organizational performance. A comparative analysis of manufacturing enterprises The present study utilized a mixed-methods methodology, incorporating both quantitative data gathering via questionnaires and qualitative data gathering through in-depth interviews. The research encompassed a diverse range of manufacturing organizations across multiple industries, with the objective of examining the correlation between continuous improvement strategies and a variety of performance indicators. The research revealed that manufacturing companies who adopted continuous improvement strategies experienced positive performance outcomes, such as heightened efficiency, lower waste, higher product quality, and reduced production costs. The significance of employee involvement and corporate culture in attaining effective continuous improvement was underscored by the qualitative data as well. The results suggest that the effective adoption of continuous improvement strategies has a favourable influence on the overall performance of manufacturing organizations, resulting in a range of operational and financial advantages. The report proposes that manufacturing organizations allocate resources towards implementing training programs aimed at augmenting the skills and knowledge of their employees in the context of continuous improvement. Furthermore, it underscores the importance of promoting transparent communication, proficient leadership, and a nurturing organizational culture in order to facilitate ongoing enhancement endeavours. A major constraint of this research is in the possibility of social desirability bias influencing the self-reported survey results.

2.4.2 Kaizen Operation Strategy and Organisational Performance

The study conducted by Smith et al. (2018) investigated the influence of Kaizen on the overall performance of organizations within the Manufacturing Industry. The present study employed a quantitative research methodology and gathered data by means of surveys distributed to manufacturing enterprises that were in the process of implementing Kaizen. The study utilized a

sample including 100 manufacturing enterprises, and the collected data were subjected to statistical analysis procedures. The results of the study indicate that... The research revealed a statistically significant and favourable correlation between the adoption of Kaizen and key performance measures inside organizations, including productivity, quality, and cost reduction. Additionally, the study recognized employee involvement and the presence of a continuous improvement culture as significant mediating factors. The results indicate that the implementation of Kaizen has a favourable impact on organizational performance within the industrial sector. This is achieved through improvements in productivity, quality, and cost reduction. The study suggests that it would be beneficial for manufacturing organizations to proactively cultivate a culture centred upon ongoing development. This may be achieved by offering comprehensive training and assistance to employees, as well as implementing methods that encourage employee input and involvement. The scope of the study was constrained to a certain sector and depended on survey data that was self-reported, potentially introducing bias. The investigation did not assess the enduring viability of the performance enhancements attained via the implementation of Kaizen.

The study conducted by Lee et al. (2020) investigated the impact of Kaizen implementation on the performance of Small and Medium-Sized Manufacturing Enterprises (SMEs). The present study utilized a mixed-methods methodology, incorporating both quantitative analysis of survey data collected from a sample of 50 small and medium-sized manufacturing businesses, as well as qualitative interviews conducted with important stakeholders. The results of the quantitative study demonstrated a statistically significant positive relationship between the application of Kaizen and several performance metrics, such as improvements in quality, reduction in lead time, and increased employee satisfaction. The qualitative interviews yielded valuable insights into the precise processes by which Kaizen exerted its influence on these outcomes. The research findings indicate that the implementation of Kaizen has the potential to boost the operational performance of small and medium-sized manufacturing firms. This improvement is achieved through the enhancement of product quality, reduction of lead times, and increase in staff satisfaction. The researchers propose that manufacturing organizations should allocate resources towards employee training and development initiatives, implement cross-functional Kaizen teams, and cultivate an organizational culture that promotes employee engagement and empowerment. The study's sample size was rather small and exclusively consisted of SMEs, perhaps constraining the extent to which

the findings can be generalized. The study did not thoroughly examine the financial ramifications associated with the introduction of Kaizen.

In a longitudinal study conducted by Chen et al. (2019), the researchers examined the effects of implementing Kaizen on operational performance. The present longitudinal study aimed to monitor and analyse the performance of a singular manufacturing firm during a span of three years, both prior to and subsequent to the implementation of the Kaizen methodology. A range of operational performance measures were gathered, followed by the application of statistical analytic tools. The research revealed noteworthy enhancements in crucial operational performance indicators, including production cycle time, defect rate, and on-time delivery, subsequent to the implementation of Kaizen. The enhancements were consistently maintained for the duration of the three-year timeframe. The research findings indicate that the implementation of Kaizen has the potential to generate long-lasting enhancements in operational performance inside manufacturing companies. These benefits manifest in the form of decreased cycle times, heightened product quality, and increased delivery reliability. The researchers propose that manufacturing organizations should engage in ongoing Kaizen activities, foster employee participation, and routinely assess the efficacy of the implemented modifications. The research primarily concentrated on a singular case study, hence constraining the extent to which the findings can be applied to a broader population. The potential impact of additional external factors on the observed enhancements in performance was not adequately controlled or considered.

2.5 Summary of Literature and Research Gaps

This section entails summary of literature and research gaps based on the studies on continuous improvement strategy and Kaizen operation strategy in relation to organisational performance.

Table 2. 1: Knowledge Gap Matrix

Variable	Authors(year)	Tittle of the Study	Findings	Knowledge Gaps
Continuous Improvement Strategy	Smith et al. (2018)	An empirical study on manufacturing firms on the impact of continuous improvement practices on organizational performance.	The study found a positive relationship between the implementation of continuous improvement practices and organizational performance.	Created a methodological research gap since it relied on self-reported data
Continuous Improvement Strategy	Wilson, et al., (2021)	A longitudinal study on continuous improvement programs: impact on organizational performance in the manufacturing industry	The study revealed that manufacturing firms with sustained implementation of continuous improvement programs experienced a significant improvement in their overall organizational performance	Created a conceptual research gap, since it did not account for external factors that may have influenced organizational performance during the study period
Continuous Improvement Strategy	Lee, et al., (2019)	Effects of continuous improvement practices on organizational performance:	The study found that manufacturing firms implementing continuous improvement practices achieved improved performance outcomes, including increased efficiency, reduced waste, enhanced product quality, and decreased production costs.	The study created a methodological research gap, since it had the potential for social desirability bias in the self-reported survey data.
Kaizen Operation Strategy	Smith, et al., (2018)	Impact of Kaizen on organizational performance in the Manufacturing Industry	The study found a positive and significant relationship between the implementation of Kaizen and organizational performance indicators such as	Conceptual research gap was created in this study since, did not examine the long-term sustainability

			productivity, quality, and cost reduction.	of the performance improvements achieved through Kaizen.
Kaizen Operation Strategy	Lee, et al. (2020)	Effects of Kaizen implementation on organizational performance in Small and Medium-Sized Manufacturing Enterprises	Revealed a positive correlation between Kaizen implementation and various performance indicators, including quality improvement, lead time reduction, and employee satisfaction.	Created a contextual research gap since it was limited to small and medium-sized enterprises, which may limit the generalizability of the findings.
Kaizen Operation Strategy	Chen, et al., (2019)	A longitudinal study on the impact of Kaizen implementation on operational performance	The study found significant improvements in key operational performance measures, such as production cycle time, defect rate, and on-time delivery, after implementing Kaizen. The improvements were sustained over the three-year period	The study created a methodological and contextual research gap, since it was a single case study, limiting the generalizability of the findings.

2.6 Conceptual Framework

The term "conceptual framework" pertains to a theoretical construct or model that offers a systematic methodology for comprehending and examining the diverse components and dynamics present within a supply chain (Varpio, et al., 2020). According to Varpio et al. (2020), the document functions as a tool or framework for structuring and analyzing intricate connections, interactions, and procedures.

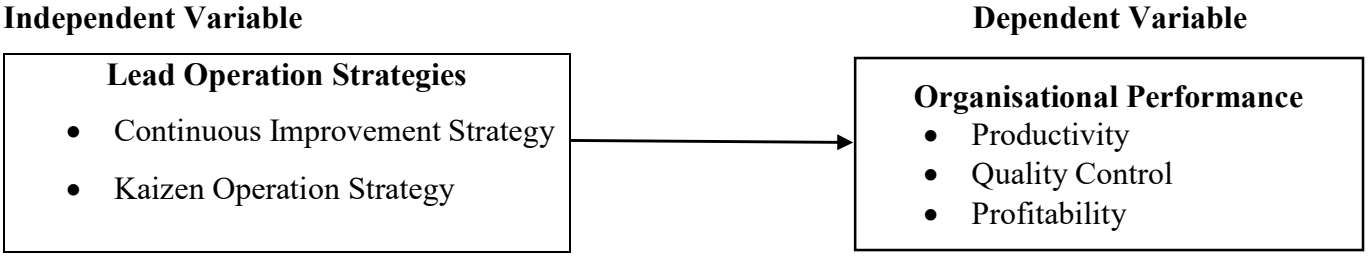

Figure 2. 1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The term "research methodology" pertains to the structured and methodical strategy or framework employed in the execution of research, encompassing the collection of data, analysis of information, and formulation of findings (Gupta & Gupta, 2022). The present study will employ a quantitative research methodology, characterized by the collection of numerical data through various means such as surveys, experiments, or statistical analysis (Bloomfield & Fisher, 2019). This chapter provides an overview of the research strategy, target population, and data collection tools utilized in investigating the relationship between lean operational techniques and organizational performance. The chapter additionally provides an overview of diagnostic, validity, and reliability measures, as well as the data collection technique, data analysis, and presentation. The chapter concludes by addressing the ethical considerations that will be taken into account during the course of the investigation.

3.2 Research Design

The present study will utilize a quantitative correlational non-experimental research approach to investigate the relationship between lean operational techniques and the organizational performance of manufacturing enterprises located in Mombasa County. Correlational research design is a non-experimental research strategy employed to investigate the association between two or more variables (Seeram, 2019). The utilization of a correlation study design is warranted as it entails the investigation of the connection between lean operational techniques and organizational performance among manufacturing enterprises located in Mombasa County. This approach would facilitate the exploration and acquisition of insights pertaining to this particular relationship. The utilization of a correlational research design enables researchers to effectively observe and evaluate pre-existing data without impeding the organic operations of manufacturing enterprises, so rendering it a pragmatic and viable technique. The utilization of a non-experimental research design is justified in cases when the researcher does not intend to modify the dependent variable.

3.3 Target Population

The concept of the target population pertains to the particular cohort of individuals or entities that a researcher aims to derive inferences about inside a study (Stratton, 2021). In the aim of

investigating the correlation between lean operational strategies and the organizational performance of manufacturing enterprises in Mombasa County, the target population would typically consist of 39 manufacturing firms operating within Mombasa County as indicated in Appendix III, where the unit of analysis will be the individual manufacturing firms. This study will adopt census due to the small nature of the sample size and hence there will be no sampling.

3.4 Data Collection Instrument

A structured questionnaire of closed-ended questions will be employed to gather primary data from operational managers employed in manufacturing enterprises located within Mombasa County. The question will be in the form of Likert scale. It is essential to design the Likert scale items carefully, to ensure that they are clear, unambiguous, and cover the relevant aspects of the constructs being measured. Additionally, the researcher will also consider potential limitations, such as response bias or social desirability bias, and employ appropriate data analysis techniques to derive meaningful insights from the Likert scale data. The data collection procedure will involve getting authorization from the coordinator, faculty of Business Management Sciences of the University of Nairobi, Mombasa Campus and authority from NACOSTI for the researcher to proceed with data collection. The manufacturing firms' operational managers will be conducted and briefed on the study's objective. The respondents will be allowed to sign a consent form before copies of the questionnaires are distributed to them.

3.5 Operationalization of the Study Variables

Lean operation strategy and performance of manufacturing will be operationalized into measurable indicators which will be measured using Likert scale as indicated in table 3.1.

Table 3. 1: Operationalization of the Study Variables

Variable Type	Variable Name	Indicators	Measurement	Source
Independent Variable	Continuous Improvement Strategy	• Waste Elimination • Six Sigma • Quality Improvement System	Likert Scale	Aadithya et al. (2022), Pawlik, et al., (2021).
Independent Variable	Kaizen Operation Strategy	• Process Improvement • Process Standardization	Likert Scale	Aadithya et al. (2022), Pawlik, et al., (2021).
Dependent Variable	Organisational Performance	• Productivity • Quality Control • Profitability	Likert Scale	Baah, et al., (2022), Taouab & Issor (2019)

3.6 Validity and Reliability of the Research Instrument

The validity of research instruments refers to the extent to which they measure what they are intended to measure (Almanasreh, et al., 2019). In the study examining the association between lean operational strategies and the organizational performance of manufacturing firms in Mombasa County, it is crucial to establish the validity of the research instruments used to measure these constructs. In this study, construct validity will be established. Construct validity assesses whether the research instruments accurately measure the underlying constructs of interest (Almanasreh, et al., 2019). Construct validity will be evaluated through the KMO and Bartlett Test. Acceptable values for the KMO test will be above 0.5, and for the chi-square significance in Bartlett's Sphericity test, values lower than 0.05 will be considered acceptable.

Reliability refers to the consistency, stability, and repeatability of the research instrument, indicating the extent to which it produces consistent and reliable results when used repeatedly (Sürücü & Maslakci, 2020). In the study examining the association between lean operational strategies and the organizational performance of manufacturing firms in Mombasa County, it is important to ensure the reliability of the research instrument used to measure these constructs. In

this study, internal measure of consistency will be established through Cronbach Alpha, where an alpha of above 0.7, will be accepted.

3.7 Data Analysis

Data analysis in the study examining the association between lean operational strategies and the organizational performance of manufacturing firms in Mombasa County would involve applying appropriate statistical techniques to analyse the collected data and draw meaningful conclusions. Descriptive analysis involves will be used to provide an overview of the characteristics of the variables under study, such as the distribution of lean operational strategies and organizational performance measures among the manufacturing firms in Mombasa County. A correlation analysis can be used to determine if there is a significant relationship between these variables. Multiple regression analysis allows for the examination of the influence of multiple independent variables (Continuous Improvement Strategy and Kaizen Operation Strategy) on the dependent variable (organizational performance).

3.8 Diagnostic Tests

Table 3.2 indicates key diagnostic tests that will be performed for the model with independent variables like continuous improvement strategy and kaizen operation strategy predicting the dependent variable, organizational performance.

Table 3. 2: Diagnostic Tests

Diagnostic Tests	Purpose	Tests	Interpretation
Multicollinearity Test	Check for multicollinearity among the independent variables.	Variance Inflation Factor (VIF) and tolerance value for each independent variable.	VIF values above 10 and tolerance value of above 0.2 may indicate a problematic level of multicollinearity.
Normality Test	Examine whether the residuals are normally distributed.	Shapiro-Wilk test, Kolmogorov-Smirnov test, or visual inspection of normal probability plot	A non-significant p-value suggests normality; otherwise, there may be an issue
Homoscedascity	Check if the residuals have constant variance across all levels of the independent variables	Scatterplot of residuals against predicted values, or formal tests like Breusch-Pagan test or White test.	A pattern in the scatterplot or a significant p-value may indicate heteroscedasticity.
Serial Autocorrelation	Ensure that the residuals are independent of each other.	Durbin-Watson statistic or visual inspection of residual plots	A Durbin-Watson statistic close to 2 indicates independence; values significantly different from 2 may suggest autocorrelation.
Linearity Test	Verify that the relationship between the independent variables and the dependent variable is linear.	Partial regression plots, component-plus-residual plot, or a nonlinearity test.	Look for patterns in the plots or a significant result in nonlinearity tests.

CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter illustrates data analysis and interpretation of the analysis using descriptive and inferential statistics on data collected on the effect of lean operation strategy on organisational performance of manufacturing firms in Mombasa County. The chapter also entails discussion of the major findings.

4.2 Response Rate

The researcher distributed structured questionnaires 39 questionnaires to the manufacturing firms located in Mombasa County. The respondents returned all the questionnaires, this was attributed to researcher who ensured that the questionnaires had a clear purpose and is relevant to the participants. The researchers ensured that the respondents understood why their input was valuable and how it was used. The 100% was attributed to the anonymity and confidentiality assurance by the researcher.

4.3 Profile of the Manufacturing Organisations

The researcher sought to determine the distribution of the manufacturing firms in terms of duration of the companies' operation, operational structure, number of employees in operation department, and ownership structure of the manufacturing firms.

4.3.1 Duration of the Companies' Operation

The researcher sought to determine the duration the manufacturing has been in operation as indicated in table 4.1.

Table 4. 1: Companies Duration of Operation

		Frequency	Valid Percent	Cumulative Percent
Valid	5 years and below	11	28.2	28.2
	Between 6 to 10 years	12	30.8	59.0
	Between 11 to 15 years	9	23.1	82.1
	16 years and above	7	17.9	100.0
	Total	39	100.0	

The data reveals that a significant portion, comprising 28.2% (n=11), falls within the bracket of 5 years and below. Slightly more than this percentage, at 30.8% (n=12), represents companies operating between 6 to 10 years. These two categories, collectively, make up approximately 59% of the sampled manufacturing companies. Moving further along the timeline, there is a decrease in the frequency of companies: 23.1% (n=9) have been operating between 11 to 15 years. The smallest proportion, 17.9% (n=7), represents companies with a duration of operation of 16 years and above. In essence, this distribution demonstrates a gradual decline in the number of companies as the duration of their operation increases.

4.3.2 Operational Structure of Manufacturing Organisation

The research also sought to determine the operational structure of manufacturing organisation in Mombasa and the findings were illustrated in table 4.2.

Table 4. 2: Operational Structure of Manufacturing Organisation

		Frequency	Valid Percent	Cumulative Percent
Valid	Centralised	21	53.8	53.8
	Decentralised	18	46.2	100.0
	Total	39	100.0	

According to the table, a majority of the manufacturing organizations, constituting 53.8% (n=21), follow a centralized operational structure. On the other hand, 46.2% (n=18) of the manufacturing organizations in the sample employ a decentralized operational structure. In summary, the data illustrates that there is a somewhat balanced distribution between centralized and decentralized operational structures among manufacturing organizations in Mombasa, with a slightly higher percentage employing a centralized approach.

4.3.3 Number of Employees in the Operational Department

The study also sought to determine the number of employees in the operational department of the manufacturing firms in the county.

Table 4. 3: Number of Employees in the Operational Department

		Frequency	Valid Percent	Cumulative Percent
Valid	Below 100 employees	33	84.6	84.6
	Between 101 to 150 employees	5	12.8	97.4
	Between 151 to 200 employees	1	2.6	100.0
	Total	39	100.0	

The findings reveal that the majority of the manufacturing firms, comprising 84.6% (n=33) of the sample, have operational departments with fewer than 100 employees. A smaller percentage, 12.8% (n=5), consists of firms with operational departments ranging between 101 to 150 employees. Furthermore, the data demonstrates that a very limited number of firms, specifically 2.6% (n=1) of the surveyed sample, have operational departments that range between 151 to 200 employees, indicating that only a few companies in the study have relatively larger operational teams within this particular range. In summary, the majority of manufacturing firms in the county have operational departments with less than 100 employees, while a smaller proportion has moderately-sized operational teams, and a very small fraction operates with larger teams in the range of 151 to 200 employees within their operational department

4.3.4 Ownership Structure of the Manufacturing Firms

Finally on the general information the researcher sought to determine different ownership structure of manufacturing firms.

Table 4. 4: Ownership Structure of Manufacturing Firms

		Frequency	**Valid Percent**	**Cumulative Percent**
Valid	Owner-Managed	30	76.9	76.9
	Partnership	7	17.9	94.9
	Shareholding	1	2.6	97.4
	Others	1	2.6	100.0
	Total	39	100.0	

The table 4.4 presents data on the ownership structure of manufacturing firms, detailing the frequency and percentage distribution of various ownership types. The majority of the firms, comprising 76.9%, are classified as owner-managed, indicating that these companies are managed

and overseen by their owners. Following this, partnerships represent 17.9% of the firms surveyed, illustrating that a smaller yet notable portion of manufacturing entities operate under a partnership ownership structure. Shareholding ownership constitutes a minimal fraction, with only 2.6% of the firms falling into this category. Moreover, the table indicates another category labelled as "Others," which similarly accounts for 2.6% of the ownership structures observed within the manufacturing firms studied. In summary, the predominant ownership structure among the surveyed manufacturing firms is owner-managed, followed by a smaller yet significant presence of partnerships.

4.5 Descriptive Statistics on Study Variables

The researcher sought to determine the extent in which the respondents agreed on the various statements on study variables. The following scale was used: 1 represents strongly disagree and 5 represents strongly agree.

4.5.1 Continuous Improvement Strategy

The respondents were asked to indicate the extent in which they agree with the various statements on continuous improvement strategy, where 1 represents strongly disagree and 5 represents strongly agree.

Table 4. 5: Continuous Improvement Strategy

Opinion Statements	Mean	Std. Deviation
Lean manufacturing strategy of the organisation is aimed at maximizing value and eliminating waste	3.8718	.69508
The manufacturing firm applies stream mapping tools to reduce inventory and streamline processes.	4.2308	.66734
Six sigma is applied by the organisation to improve processes and reduce defects	4.8718	4.69703
Six sigma technique implemented can enhance product quality and improve customer satisfaction	3.9744	.87320
The firm has adopted quality improvement systems to enhance product reliability and regulatory compliance	3.6410	1.06344
The firm continuously monitors quality improvement systems	2.9744	1.11183
Valid N =39 (listwise)		

On average, respondents indicated a moderate to high level of agreement (mean = 3.8718, standard deviation = 0.69508) that the organization's lean manufacturing strategy aims at maximizing value and eliminating waste. The participants generally agreed (mean = 4.2308, standard deviation = 0.66734) that their manufacturing firm applies stream mapping tools effectively to reduce inventory and streamline processes. This reflects a higher level of consensus on the implementation of this technique. Respondents expressed a relatively high level of agreement (mean = 4.8718, standard deviation = 4.69703) that the organization uses Six Sigma to improve processes and reduce defects. However, the high standard deviation implies a wider variability in responses, suggesting that opinions might be more diverse regarding the effectiveness of Six Sigma. On average, respondents moderately agreed (mean = 3.9744, standard deviation = 0.87320) that the Six Sigma technique, when implemented, can enhance product quality and improve customer satisfaction. Participants moderately agreed (mean = 3.6410, standard deviation = 1.06344) that the firm has adopted quality improvement systems to enhance product reliability and regulatory compliance. The respondents, on average, showed a lower level of agreement (mean = 2.9744, standard deviation = 1.11183) that the firm continuously monitors quality improvement systems. This indicates a less favourable perception or potentially lower implementation of consistent monitoring practices within the organization. Overall, the data suggests varying degrees of agreement among the respondents regarding different aspects of the continuous improvement strategies implemented within their manufacturing firms, with some areas receiving more consensus and others displaying more diverse opinions or potentially lower implementation levels.

4.5.2 Kaizen Operation Strategy

On the last independent variable, the respondents were asked to indicate the extent in which they agree with the various statements on Kaizen operation strategy, where 1 represents strongly disagree and 5 represents strongly agree.

Table 4. 6: Kaizen Operation Strategy

Opinion Statements	Mean	Std. Deviation
Employees of the organisation are usually involved in the improvement process of the organisation	4.1795	.79046
Employees are encouraged to identify and implement changes	4.0769	.66430
Processes and procedures of the organisation are standardized	3.6154	.90657
Standardization provides a baseline for improvement of the manufacturing processes	4.0256	.98641
Employees of the organisation are continuously trained on the improvement concepts of the firm	3.9744	.77755
Valid N =37 (listwise)		

Table 4.6 illustrated on average, respondents largely agree that employees within the organization are actively involved in the improvement process, with a mean rating of 4.1795 and a standard deviation of .79046. Similarly, respondents generally agree that there is encouragement for employees to identify and execute changes, as indicated by a mean score of 4.0769 and a relatively low standard deviation of .66430. However, the level of agreement appears slightly lower concerning the standardization of processes and procedures within the organization, with a mean rating of 3.6154 and a standard deviation of .90657. Despite this, there seems to be a relatively strong acknowledgment of the role of standardization as a baseline for improvement in manufacturing processes, with a mean score of 4.0256 and a standard deviation of .98641. Furthermore, respondents also show agreement that employees are continuously trained in improvement concepts, albeit slightly lower than some other statements, with a mean rating of 3.9744 and a standard deviation of .77755. In summary, the survey results reveal high agreement among respondents regarding the active involvement of employees in the improvement process and the encouragement for identifying and implementing changes.

4.5.3 Organisational Performance

On the dependent variable, the respondents were also asked to indicate the extent in which they agree with the various statements on organisational performance of manufacturing firms in Mombasa, where 1 represents strongly disagree and 5 represents strongly agree.

Table 4. 7: Organisational Performance

Opinion Statements	Mean	Std. Deviation
Lean operations aim to improve productivity by eliminating waste, streamlining processes, and enhancing efficiency.	3.9744	.84253
Lean operation contributes to improved productivity as resources are utilized more effectively, and processes become smoother and more efficient	3.7692	.90209
Quality improvement is possible through implementation of lean operations	4.0000	.82717
Through reducing waste, eliminating non-value-added activities, and optimizing processes, manufacturing firms can lower production costs	4.2821	.64680
Through listening to customer feedback and continuously striving to meet their expectations, which can enhance customer satisfaction and retention, leading to increased sales and profitability.	3.9231	.83932
Lean operation strategy fosters culture of engagement and innovation, which can drive overall business growth and profitability.	4.4103	.78532
Valid N=39 (listwise)		

The findings reveal a moderately high level of agreement among respondents regarding the concept that lean operations aim to enhance productivity by eliminating waste, streamlining processes, and boosting efficiency. The mean rating for this statement was 3.9744, with a standard deviation of .84253. Similarly, respondents expressed a relatively positive perception that implementing lean operations contributes to increased productivity by more effectively utilizing resources and making processes smoother and more efficient. The mean score for this statement was 3.7692, with a standard deviation of .90209, indicating a somewhat consistent but slightly more varied perception compared to the previous statement. Moreover, there was a strong agreement among respondents that quality improvement is achievable through the implementation of lean operations, indicated by a mean score of 4.0000 and a standard deviation of .82717. Furthermore, respondents highly agreed that by reducing waste, eliminating non-value-added activities, and optimizing processes, manufacturing firms can lower production costs. The mean rating for this statement was 4.2821, with a relatively low standard deviation of .64680, indicating a strong consensus among respondents regarding the cost-reducing potential of lean operations. Respondents also showed a considerable level of agreement regarding the belief that listening to customer feedback and continuously striving to meet their expectations can lead to enhanced

customer satisfaction and retention, consequently resulting in increased sales and profitability. The mean score for this statement was 3.9231, with a standard deviation of .83932, implying a relatively consistent positive perception among respondents regarding the impact of customer-centric practices on organizational performance. Moreover, the survey participants expressed a strong agreement that the adoption of a lean operation strategy fosters a culture of engagement and innovation, potentially driving overall business growth and profitability. The mean rating for this statement was notably high at 4.4103, with a standard deviation of .78532, indicating a robust consensus among respondents regarding the transformative potential of lean operation strategies in fostering a conducive organizational culture for growth and profitability. In summary, the survey findings illustrate a generally positive perception among respondents regarding the benefits of lean operations in enhancing productivity, improving quality, reducing costs, and fostering an organizational culture conducive to growth and profitability within manufacturing firms in Mombasa.

4.6 Pearson Correlation Analysis

Pearson correlation analysis was done to measure of the strength of the linear relationship between lean operation strategies (continuous improvement strategy and Kaizen operation strategy) and organisational performance. The coefficient ranges from -1 to +1. A value close to +1 indicates a strong positive linear relationship (as one variable increases, the other also increases), while a value close to -1 signifies a strong negative linear relationship (as one variable increases, the other decreases). A value near 0 suggests a weak or no linear relationship.

Table 4. 8: Pearson Correlation Analysis

		Continuous Improvement Strategy	Kaizen Operation Strategy	Organisational Performance
Continuous Improvement Strategy	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	39		
Kaizen Operation Strategy	Pearson Correlation	.111	1	
	Sig. (2-tailed)	.502		
	N	39	39	
Organisational Performance	Pearson Correlation	.314	.512**	1
	Sig. (2-tailed)	.005	.001	
	N	39	39	39

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

The relationship between continuous improvement strategy and organisational performance, a moderate positive correlation of 0.314 is observed, indicating a significant association at the 0.05 level ($p = 0.005$). Regarding the association between Kaizen operation strategy and organisational performance, a stronger positive correlation of 0.512 is found, showing a highly significant relationship at the 0.01 level ($p = 0.001$). Both strategies demonstrate a positive and significant association with organisational performance. Specifically, Kaizen operation strategy exhibits a stronger relationship with organisational performance compared to continuous improvement strategy.

4.7 Regression Analysis

To understand and quantify the relationship between organisational performance of manufacturing companies and lean operation strategies.

4.7.1 Coefficient of Determination

Coefficient of determination was done to explain the proportion of the variance in the organisational performance of manufacturing organisations, that is predictable from the lean operation strategies in a regression analysis. This analysis was done to assess the goodness of fit of the regression model to the observed data.

Table 4. 9: Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.574[a]	.329	.292	.34269

a. Predictors: (Constant), Kaizen Operation Strategy, Continuous Improvement Strategy

The regression model demonstrates an overall moderate level of fit to the observed data, indicated by an R Square value of 0.329. This suggests that approximately 32.9% of the variability in organisational performance among manufacturing organisations can be accounted for by the predictors included in the model, which are the Kaizen operation strategy and continuous improvement strategy. The adjusted R Square value, which considers the number of predictors in the model and adjusts for the sample size, is 0.292. This value implies that after accounting for the number of predictors and sample size, roughly 29.2% of the variance in organisational performance remains explained by the lean operation strategies included in this analysis. The standard error of the estimate is recorded as 0.34269, indicating the average distance between the observed values of organisational performance and the values predicted by the regression model. Overall, the results suggest that while the included lean operation strategies (Kaizen Operation Strategy and Continuous Improvement Strategy) account for a moderate proportion of the variance in organisational performance among manufacturing organisations, there are other factors not accounted for by these predictors that contribute to the variability in performance.

4.7.2 Analysis of Variance

Analysis of variance was done to assess the overall significance of the regression model on the relationship between lean operation strategies and organisational performance of manufacturing firms.

Table 4. 10: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.077	2	1.039	8.844	.001[b]
	Residual	4.228	36	.117		
	Total	6.305	38			

a. Dependent Variable: Organisational Performance

b. Predictors: (Constant), Kaizen Operation Strategy, Continuous Improvement Strategy

The regression model as a whole has shown statistical significance in explaining the variance in organisational performance, as indicated by an f-statistic of 8.844 with a corresponding p-value of .001. This suggests that the model, which includes Kaizen operation strategy and continuous improvement strategy as predictors, is statistically significant in explaining the variability observed in organisational performance among the entities studied. The sum of squares regression, which represents the variability accounted for by the predictors (Kaizen operation strategy and continuous improvement strategy) in the model, is calculated as 2.077. The degrees of freedom associated with the regression model are 2, and the mean square (the variance explained per degree of freedom) is computed as 1.039. Conversely, the residual sum of squares, which reflects the unexplained variability or 'error' in the model, is 4.228, with 36 degrees of freedom and a mean square of .117. The total sum of squares is 6.305, representing the overall variability in organisational performance. In summary, the ANOVA results indicate that the regression model, incorporating Kaizen operation strategy and continuous improvement strategy as predictors, significantly contributes to explaining the variance observed in organisational performance among the studied entities.

4.7.3 Regression Coefficient

Regression coefficients were determined to indicate the strength and direction of the relationship between the organisational performance and each lean operation strategies while holding other variables constant.

Table 4. 11: Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.942	.507		3.832	.000
	Continuous Improvement Strategy	.328	.167	.361	2.899	.006
	Kaizen Operation Strategy	.404	.115	.483	3.520	.001

a. Dependent Variable: Organisational Performance

The constant term in the model is estimated at 1.942. This value represents the expected mean value of Organisational Performance when both Continuous Improvement Strategy and Kaizen Operation Strategy are zero. The associated t-value of 3.832 and the p-value of .000 indicate that

this intercept is statistically significant. Regarding the predictors, the coefficient for Continuous Improvement Strategy is 0.328 with a standard error of 0.167. The standardized coefficient (Beta) for Continuous Improvement Strategy is 0.361. This suggests that for every one-unit increase in Continuous Improvement Strategy, there is a 0.361 standard deviation increase in Organisational Performance. The t-value associated with this coefficient is 2.899, and the corresponding p-value is .006, indicating that the Continuous Improvement Strategy is statistically significant in predicting Organisational Performance. Similarly, the coefficient for Kaizen Operation Strategy is estimated at 0.404 with a standard error of 0.115. The standardized coefficient (Beta) for Kaizen Operation Strategy is 0.483. This indicates that for every one-unit increase in Kaizen Operation Strategy, there is a 0.483 standard deviation increase in Organisational Performance. The t-value associated with this coefficient is 3.520, and the p-value is .001, indicating that the Kaizen Operation Strategy is also statistically significant in predicting Organisational Performance.

In summary, both Continuous Improvement Strategy and Kaizen Operation Strategy exhibit statistically significant relationships with Organisational Performance. The coefficients suggest that higher levels of both strategies are associated with higher predicted values of Organisational Performance, and these relationships are deemed statistically meaningful based on the provided t-values and associated p-values.

CHAPTER FIVE: SUMMARY, CONCLUSION, AND RECOMMENDATION

5.1 Introduction

This chapter presents summary of the study, conclusion, and practical and policy recommendation based on study conclusion. The chapter also addressed limitations and suggestions of further studies.

5.2 Summary

Based on the data collected from 39 manufacturing firms, the study aimed to investigate the relationship between Continuous Improvement Strategy, Kaizen Operation Strategy, and Organisational Performance. The correlation analysis revealed several insights. There was a weak and statistically insignificant correlation (0.111) observed between Continuous Improvement Strategy and Kaizen Operation Strategy. However, both strategies individually showed significant positive correlations with Organisational Performance. Continuous Improvement Strategy demonstrated a moderate positive correlation (0.314), while Kaizen Operation Strategy exhibited a stronger positive correlation (0.512) at a highly significant level.

In assessing the effectiveness of the regression model, the coefficient of determination (R Square) indicated that the model, incorporating both Continuous Improvement Strategy and Kaizen Operation Strategy, accounted for approximately 32.9% of the variance in Organisational Performance among the manufacturing firms studied. The ANOVA further supported the model's significance, signifying that the combined influence of Continuous Improvement Strategy and Kaizen Operation Strategy significantly contributed to explaining the variability observed in Organisational Performance across the 39 manufacturing firms.

Examining the regression coefficients, it was evident that both Continuous Improvement Strategy and Kaizen Operation Strategy had substantial impacts on Organisational Performance. For every one-unit increase in Continuous Improvement Strategy, there was a predicted 0.361 standard deviation increase in Organisational Performance. Similarly, a one-unit increase in Kaizen Operation Strategy predicted a 0.483 standard deviation increase in Organisational Performance.

5.3 Conclusion

The analysis revealed a moderate positive correlation between continuous improvement strategy and organisational performance among the manufacturing firms in Mombasa County. This suggests that an emphasis on continuous improvement strategies within these organizations showed a statistically significant association with improved organisational performance. For every one-unit increase in continuous improvement strategy, there was a predicted 0.361 standard deviation increase in organisational performance. Thus, it can be concluded that a greater focus on and implementation of continuous improvement strategies have a meaningful impact on enhancing organisational performance within these manufacturing firms.

In contrast, Kaizen operation strategy demonstrated a notably stronger positive correlation with organisational performance in Mombasa County. The analysis highlighted a highly significant relationship between Kaizen operation strategy and improved organisational performance among the studied manufacturing firms. For every one-unit increase in Kaizen operation strategy, there was a more substantial predicted 0.483 standard deviation increase in organisational performance. Hence, it can be concluded that implementing Kaizen operation strategies significantly contributes to bolstering organisational performance within the manufacturing sector.

5.4 Recommendation

Based on the findings gleaned from the analysis of 39 manufacturing firms regarding the relationships between Continuous Improvement Strategy, Kaizen Operation Strategy, and Organisational Performance, several practical and policy recommendations can be suggested:

Manufacturing firms in Mombasa should consider integrating Continuous Improvement Strategies into their operational frameworks. Encouraging a culture of continuous enhancement across various facets of the organization, such as processes, products, and systems, can lead to incremental but steady improvements in Organisational Performance. This might involve regular feedback mechanisms, employee training programs, and the allocation of resources to facilitate ongoing improvements. Given the substantial impact revealed in the study, adopting Kaizen Operation Strategies is highly recommended. Firms should implement methodologies that encourage continuous small-scale improvements involving all employees. Facilitating bottom-up initiatives, empowering workers to suggest and implement improvements, and fostering a culture

of continuous learning and adaptation can significantly contribute to enhancing Organisational Performance.

A balanced approach focusing on both Continuous Improvement Strategy and Kaizen Operation Strategy might yield optimal results. Combining the structured and systematic approach of Continuous Improvement with the participatory and continuous improvement aspects of Kaizen can create a comprehensive strategy for sustainable enhancements in Organisational Performance. Management should allocate resources and provide adequate support to facilitate the implementation of these strategies. This could involve investing in technology, training programs, leadership development, and fostering an environment that encourages innovation and experimentation.

Policymakers and industry regulators might consider promoting and incentivizing the adoption of Continuous Improvement and Kaizen Strategies within the manufacturing sector. This could be achieved through policy frameworks that offer tax incentives, subsidies for training programs, or industry-wide initiatives that encourage collaboration and knowledge-sharing among firms to enhance their competitiveness. It is essential for firms in Mombasa to continuously evaluate the effectiveness of these strategies. Regular monitoring, feedback mechanisms, and performance evaluations should be in place to assess the impact of the implemented strategies. This enables organizations to adapt and refine their approaches based on changing market conditions and emerging best practices.

5.5 Limitations of the Study

The study was conducted on a limited sample size of 39 manufacturing firms in Mombasa County. This might not adequately represent the diverse spectrum of manufacturing industries, potentially limiting the generalizability of the findings. The specific characteristics, geographical locations, and unique operational contexts of these firms might not be fully reflective of the entire manufacturing sector's dynamics.

The analysis focused primarily on Continuous Improvement Strategy, Kaizen Operation Strategy, and their correlation with Organisational Performance. Other critical factors influencing performance within manufacturing firms, such as market conditions, economic fluctuations, industry-specific challenges, or leadership styles, were not comprehensively considered. These

unaccounted variables might have an impact on Organisational Performance that was not captured in the study.

While the study revealed associations between Continuous Improvement Strategy, Kaizen Operation Strategy, and Organisational Performance, establishing a causal relationship was beyond its scope. It's plausible that other unmeasured variables might be influencing both the strategies implemented and the Organisational Performance observed, creating a potential confounding effect.

5.5 Suggestions of Further Findings

Conducting studies with larger and more diverse samples across various manufacturing sectors or industries could enhance the generalizability of findings. This would involve including a broader spectrum of manufacturing firms with varying sizes, geographical locations, and operational characteristics.

Undertaking longitudinal studies that observe these relationships over an extended period could provide insights into how strategies evolve and their impact on Organisational Performance over time. This approach would capture the dynamic nature of organisational strategies and their effects.

Future research should consider incorporating a more extensive range of variables beyond Continuous Improvement Strategy and Kaizen Operation Strategy. Factors like leadership styles, market dynamics, technological advancements, and external environmental influences should be accounted for to provide a more holistic understanding of Organisational Performance.

REFERENCES

Aadithya, B. G., Asokan, P., & Vinodh, S. (2022). Lean manufacturing in fabrication industry: literature review and framework proposal. *International Journal of Quality & Reliability Management*, (ahead-of-print). 40 (6), 1485-1517. https://doi.org/10.1108/IJQRM-03-2021-0084

Ali, Y., Younus, A., Khan, A. U., & Pervez, H. (2020). Impact of Lean, Six Sigma and environmental sustainability on the performance of SMEs. *International Journal of Productivity and Performance Management*, *70*(8), 2294-2318. https://doi.org/10.1108/IJPPM-11-2019-0528

Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in social and administrative pharmacy*, *15*(2), 214-221. https://doi.org/10.1016/j.sapharm.2018.03.066

Baah, C., Acquah, I. S. K., & Ofori, D. (2022). Exploring the influence of supply chain collaboration on supply chain visibility, stakeholder trust, environmental and financial performances: a partial least square approach. *Benchmarking: An International Journal*, *29*(1), 172-193. https://doi.org/10.1108/BIJ-10-2020-0519.

Balocco, R., Cavallo, A., Ghezzi, A., & Berbegal-Mirabent, J. (2019). Lean business models change process in digital entrepreneurship. *Business Process Management Journal*, *25*(7), 1520-1542. https://www.emerald.com/insight/content/doi/10.1108/BPMJ-07-2018-0194/full/html.

Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses Association*, *22*(2), 27-30. doi/abs/10.3316/INFORMIT.738299924514584

Ciliberto, C., Szopik-Depczyńska, K., Tarczyńska-Łuniewska, M., Ruggieri, A., & Ioppolo, G. (2021). Enabling the Circular Economy transition: A sustainable lean manufacturing recipe for Industry 4.0. *Business Strategy and the Environment*, *30*(7), 3255-3272. https://doi.org/10.1002/bse.2801

Florescu, A., & Barabas, S. (2022). Development Trends of Production Systems through the Integration of Lean Management and Industry 4.0. *Applied Sciences*, *12*(10), 4885. https://doi.org/10.3390/app12104885

Gupta, A., & Gupta, N. (2022). *Research methodology*. SBPD Publications. https://books.google.co.ke/books?hl=en&lr=&id=PzSYEAAAQBAJ&oi=fnd&pg=PP1&dq=Research+methodology+&ots=CqsPsaEq3g&sig=YWaSw7nsZDe0I57xS8UZ4PZm0lk&redir_esc=y#v=onepage&q=Research%20methodology&f=false

Hardcopf, R., Liu, G. J., & Shah, R. (2021). Lean production and operational performance: The influence of organizational culture. *International Journal of Production Economics*, *235*, 108060. https://doi.org/10.1016/j.ijpe.2021.108060

Inegbedion, H., Sunday, E., Asaleye, A., Lawal, A., & Adebanji, A. (2020). Managing diversity for organizational efficiency. *Sage Open*, *10*(1), 2158244019900173. doi/pdf/10.1177/2158244019900173.

Iranmanesh, M., Zailani, S., Hyun, S. S., Ali, M. H., & Kim, K. (2019). Impact of lean manufacturing practices on firms' sustainable performance: Lean culture as a moderator. *Sustainability*, *11*(4), 1112. https://doi.org/10.3390/su11041112

Jadhav, P., & Ekbote, N. (2021). Implementation of lean techniques in the packaging machine to optimize the cycle time of the machine. *Materials Today: Proceedings*, *46*, 10275-10281. https://doi.org/10.1016/j.matpr.2020.12.162.

Khan, M. A., & Muhammad, D. I. (2022). Toyota Production System: "Epistemology of Paradigm shift in Japan". *GSJ*, *10*(2), 341-350. https://www.researchgate.net/profile/Mudasser-Khan-3/publication/358464370_Toyota_Production_System_Epistemology_of_Paradigm_shift_in_Japan/links/6205eee0cf7c2349ca08b59a/Toyota-Production-System-Epistemology-of-Paradigm-shift-in-Japan.pdf

Kimathi, I. K. (2022). *Effect of Strategic Planning on Organizational Performance of Agricultural Trading Companies in Mombasa Kenya* (Doctoral dissertation, University of Nairobi).

Mishra, A. K. (2020). Implication of theory of constraints in project management. *International Journal of Advanced Trends in Engineering and Technology*, *5*(1), 1-13. https://www.researchgate.net/profile/Anjay-Mishra/publication/338570730_Implication_of_Theory_of_Constraints_in_Project_Management/links/5e1d4e154585159aa4ce8b7c/Implication-of-Theory-of-Constraints-in-Project-Management.pdf

Mohammed, R. A., & Rugami, J. (2019). Competitive Strategic Management Practices and Performance of Small and Medium Enterprises in Kenya: A Case of Mombasa County. *International Journal of Current Aspects*, *3*(6), 193-215. https://pdfs.semanticscholar.org/9d43/0ee7f95e411522041db9ec96cd11ae7b8bc4.pdf

Mukhopadhyay, M. (2020). *Total quality management in education*. SAGE Publications Pvt. Limited.

Omwoyo, J. N., Wanyoike, D. M., & Mbeche, W. (2019). Influence of lean procurement initiatives on supply chain agility in manufacturing firms in Nakuru county, Kenya. *Int. J. Bus. Manag. Technol*, *3*(5), 150-158. https://www.theijbmt.com/archive/0929/326823207.pdf

Osoko, O. O., & Muda, H. B. (2021). Issues and Challenges of Total Quality Management Practices on Customer Satisfaction. *The Journal of Management Theory and Practice (JMTP)*, 12-19. https://doi.org/10.37231/jmtp.2021.2.2.94

Pawlik, E., Ijomah, W., Corney, J., & Powell, D. (2021). Exploring the application of lean best practices in remanufacturing: empirical insights into the benefits and barriers. *Sustainability*, *14*(1), 149. https://doi.org/10.3390/su14010149

Ribeiro, S., Schmitz, E., Alencar, A. J. S. M., & Silva, M. (2018). Literature review on the theory of constraints applied in the software development process. *IEEE Latin America Transactions*, *16*(11), 2747-2756. https://ieeexplore.ieee.org/abstract/document/8795116

Sancha, C., Wiengarten, F., Longoni, A., & Pagell, M. (2020). The moderating role of temporary work on the performance of lean manufacturing systems. *International Journal of Production Research*, *58*(14), 4285-4305. https://doi.org/10.1080/00207543.2019.1651458

Seeram, E. (2019). An overview of correlational research. *Radiologic technology*, *91*(2), 176-179. http://www.radiologictechnology.org/content/91/2/176.extract

Sommer, A. C., & Blumenthal, E. Z. (2019). Implementation of Lean and Six Sigma principles in ophthalmology for improving quality of care and patient flow. *Survey of ophthalmology*, *64*(5), 720-728. https://doi.org/10.1016/j.survophthal.2019.03.007.

Stratton, S. J. (2021). Population research: convenience sampling strategies. *Prehospital and disaster Medicine*, *36*(4), 373-374. https://doi.org/10.1017/S1049023X21000649.

Sürücü, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*(3), 2694-2726. https://doi.org/10.15295/bmij.v8i3.1540

Taouab, O., & Issor, Z. (2019). Firm performance: Definition and measurement models. *European Scientific Journal*, *15*(1), 93-106. http://dx.doi.org/10.19044/esj.2019.v15n1p93.

Varpio, L., Paradis, E., Uijtdehaage, S., & Young, M. (2020). The distinctions between theory, theoretical framework, and conceptual framework. *Academic Medicine*, *95*(7), 989-994. https://doi.org/10.1097/ACM.0000000000003075

APPENDICES

APPENDIX I: INTRODUCTION LETTER

APPENDIX II: QUESTIONNAIRE

Answer the following questions as honestly. Your responses will be treated with confidentiality.

Mark (/) appropriately on the spaces provided.

Section A: Profile of the Manufacturing Organisation

1. How long has been the company in operation

5 years and below ( ) Between 6 to 10 years ( )

Between 11 to 15 years ( ) 16 years and above ( )

2. Specify the operational structure of your organisation.

Centralized ( ) Decentralized ( )

3. Indicate the number of employees in your operation department

Below 100 employees ( ) Between 101 to 150 employees ( )

Between 151 to 200 employees ( ) Between 201 to 250 employees ( )

Between 251 to 300 employees ( ) Above 301 employees

4. Indicate ownership structure of the company

Owner-Managed ( ) Partnership ( )

Shareholding ( ) Family Owned ( )

Others ( )

Section B: Study Variables

Indicate the extent in which you agree with the following statements on the study variables, where 1 represents strongly disagree and 5 represents strongly agree.

Continuous Improvement Strategy

Opinion Statements	**1**	**2**	**3**	**4**	**5**

Lean manufacturing strategy of the organisation is aimed at maximizing value and eliminating waste					
The manufacturing firm applies stream mapping tools to reduce inventory and streamline processes.					
Six sigma is applied by the organisation to improve processes and reduce defects					
Six sigma technique implemented can enhance product quality and improve customer satisfaction					
The firm has adopted quality improvement systems to enhance product reliability and regulatory compliance					
The firm continuously monitors quality improvement systems					

Kaizen Operation Strategy

Opinion Statements	**1**	**2**	**3**	**4**	**5**
Employees of the organisation are usually involved in the improvement process of the organisation					
Employees are encouraged to identify and implement changes					
Processes and procedures of the organisation are standardized					
Standardization provides a baseline for improvement of the manufacturing processes					
Employees of the organisation are continuously trained on the improvement concepts of the firm					

Organisational Performance

Opinion Statements	**1**	**2**	**3**	**4**	**5**
Lean operations aim to improve productivity by eliminating waste, streamlining processes, and enhancing efficiency.					
Lean operation contributes to improved productivity as resources are utilized more effectively, and processes become smoother and more efficient					
Quality improvement is possible through implementation of lean operations					
Through reducing waste, eliminating non-value-added activities, and optimizing processes, manufacturing firms can lower production costs					
Through listening to customer feedback and continuously striving to meet their expectations, which can enhance customer satisfaction and retention, leading to increased sales and profitability.					
Lean operation strategy fosters culture of engagement and innovation, which can drive overall business growth and profitability.					

APPENDIX III: LIST OF MANUFACTURING FIRMS IN MOMBASA

African Marine & General Engineering Co Ltd

All Fruit Epz Ltd

Atta (Kenya) Limited

Bahari Tea Company Limited

Brollo Kenya Limited

C. Steinweg Bridge Kenya Limited

Coast Industrial And Safety Supplies Limited

Coastal Bottlers Ltd

Cook N Lite Limited

Corrugated Sheets Limited

Crystal Adhesives Ltd

Devchand Keshavji (Kenya) Limited

Dhanjal Brothers Ltd

E A Motor Industries Ltd.

Global Tea & Commodities (K) Ltd

Gold Crown Foods (Epz) Ltd.

Grain Industries Limited

Kenya Adhesive Products Limited

Kenya Bixa Limited

Kenya General Industries Limited

Kenya Suitcase Manufacturers Limited

Kitui Flour Mills Limited

M J Clarke Limited

Milly Glass Works Ltd

Mombasa Cement Limited

Mombasa Maize Millers Ltd

Mzuri Sweets Ltd

Prudential Tea Brokers East Africa Limited

Revital Health Care (Epz) Limited

Salt Manufacturers Kenya Ltd

Springtech (K) Limited

Standard Rolling Mills Limited

Taifa Packaging Limited

Tarmal Steel
Transocean Marine Surveyors (E.A) Limited

Umoja Rubber Products Limited

Van Rees Kenya Limited

Weld - Con Limited

Zaverchand Punja Limited