THE ROLES OF TOTAL QUALITY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE: IN THE CASE OF THREE SELECTED LOGISTICS SERVICE ORGANIZATIONS IN ADDIS ABABA, ETHIOPIA.

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A Thesis Submitted to the Logistics and Supply Chain Management Graduate Program Unit

Submitted in Partial Fulfillment of the Requirements for Master of Arts Degree in Logistics and Supply Chain Management

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Addis Ababa University School of Commerce

Addis Ababa, Ethiopia

2024

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Statement of Declaration

I, Meron Solomon, declare that this thesis Proposal, titled "Roles of total quality management practices in operational performance: in the case of three selected logistics service organizations in Addis Abeba, Ethiopia," is my work. I performed it on my own, using the research advisor's advice. It was not presented at Addis Abeba University or any other university.

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Confirmed by: Tariku Jebena (Ph.D.)

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Addis Ababa University

June 2024

Addis Ababa Ethiopia

Statement of Certification

This is to certify that, Meron Solomon carried out her research proposal work on the topic entitled “Roles of total quality management practices in operational performance: in the case of three selected logistics service organizations in Addis Ababa, Ethiopia” is original work and is suitable for submission for the award of a Master of Arts Degree in Logistics and Supply Chain Management.

Advisor: Tariku Jebena (Ph.D.)

Signature _____

June 2024

Table of Contents

List of Figures and Tables

ACRONYMS

TQM- TOTAL QUALITY MANAGEMENT

QM- QUALITY MANAGEMENT

SRP- SUPERVISED RESEARCH PROJECT

CSR- CORPORATE SOCIAL RESPONSIBILITY

EFQM- EUROPEAN FOUNDATION FOR QUALITY MANAGEMENT

CSR- CORPORATE SOCIAL RESPONSIBILITY

MACCFA- MULUGETA ASSAFA CUSTOMS CLEARING & FRIGHT FORWARDING AGENT

AGL- AFRICA GLOBAL LOGISTICS

SPSS- SCIENTIFIC PACKAGE FOR SOCIAL SCIENCE

LSQ- LOGISTICS SERVICE QUALITY

PDSQ- PHYSICAL DISTRIBUTION SERVICE QUALITY

MCS- MARKETING CUSTOMER SERVICE

SPC- STATISTICAL PROCESS CONTROL

KAM- KEY ACCOUNT MANAGEMENT

B2B- BUSSINES TO BUSSINES

SRM- SUPPLIER RELATIONSHIP MANAGEMENT

OP- OPERATIONAL PERFORMANCE

KPIS- KEY PERFORMANCE INDICATORS

PEM- PERFORMANCE EVALUATION AND MONITORING

Acknowledgments

First, I thank Almighty God and St. Mary for providing me with inspiration and strength during my endeavors. Next, I want to convey my heartfelt thanks to my mentor, Dr. Tariku Jebena, for his invaluable counsel and unwavering support.

My thanks also extend to the logistics organizations and their employees who selflessly dedicated their valuable time and provided honest responses to my surveys. Without their help, the paper would not have been completed.

Finally, I want to thank my beloved Husband for his constant encouragement and gratitude, his unwavering support throughout the process has been the undeniable foundation of my endeavor. May God bless them.

Abstract

This research focuses on the role of six Total Quality Management (TQM) practices on the operational performance of the three selected logistic service organizations in Ethiopia. Among the variables of interest are top management's role, customer focus, employee involvement, continuous improvement, supplier relations, and performance measurement which are tested using the Pearson correlation coefficient and regression analysis to determine their impact on operational performance. The study established that there is a direct relationship between these variables and the extent of operational performance with top management involvement being the most strongly correlated variable ($r = 0.671$, $p < 0.01$). Another insight is that customer focus shares a positive relationship with employee involvement, underlining the significance of such aspects as customer understanding and employees' participation. This research highlights aspects of operational performance stressing the top management team, employee involvement, and continuous improvement while highlighting that ongoing improvement significantly improves results (Pearson correlation = 0.485, $p < 0.01$). Although supplier relationship management and performance evaluation also correlate with operational performance, their direct impacts are less pronounced in the regression analysis, suggesting their benefits might be indirect or moderated by other factors. Thus, based on the findings of this study to achieve operational performance, organizations should prioritize strategies that empower top management roles, employee involvement, and continuous improvement, as customer focus, supplier relationships, performance evaluation, and monitoring all have moderating effects.

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Keywords, Total Quality Management (TQM), operational performance, logistic service organizations,

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the study

The study focuses on the role of total quality management practices in the operational performance of the chosen logistics and customs clearing companies, specifically AGL Logistics Ethiopia (Bollore), MACCFA Freight Forwarding PLC, and Impact Logistics PLC. These companies are the top-performing private logistics companies operating in Addis Ababa Ethiopia. The researcher is driven to find out the role of TQM practices applied to their operational performance. As the competition among the competitors is getting tough it is recommendable for the business companies to maximize their usage of total quality management.

These days Globally, the logistics industry is the backbone of both established and emerging economies. A nation's economy is an aggregate expression of all activities of its citizens devoted to the production of goods and services in one form or the other. By extension, this refers to activities and processes geared towards the production of wealth for individual benefits and the society at large. The importance of logistics and customs clearing companies in the economy therefore derives largely from their active role the supporters of the financial system in promoting efficient allocation of resources. This all-important role is depicted in the primary activities of the organizations in the logistical activities of those organizations. Collaboration among all the supply chain players coupled with a responsive approach can enhance organizational competitiveness through reduced lead-time facilitated by the smooth flow of material from the upstream towards the downstream end of the supply chain. This approach will ensure end customers get value for their money and also reduce the level of uncertainty in the industry (H. Francis & Waiganjo, 2014).

To gain a competitive advantage in today's market, quality has become increasingly important. By providing top-notch goods or services, a business can build a loyal client. The costs of poor quality include wasted time and immediate correction, as well as lost future sales as a result of dissatisfied customers.TQM found its strongest root not merely in improving the quality performance of products, but in organizational transformation specifically in bringing about cultural change, in improving employee morale and in facilitating an empowering working climate for attaining excellent human performance (Dominik, 2017).

Thanks to technological advancements that have blurred geographical boundaries, customers are now more informed. The management is always under pressure to boost competitiveness by optimizing logistics and cutting expenses. Customers can choose from a wide range of products and services, and they are becoming more aware of the standards that are being set.

The market has become extremely competitive due to the growing pressure from customers who demand higher-quality services, and many companies have implemented strategies like benchmarking and total quality management (TQM). Accordingly, a quality management program, or some other kind of quality program, must be implemented in every business organization, starting with executive management, and working down to the lowest level employee.

Individual quality processes should be developed and established by the overall quality management program's principles, even though each specific function within an organization needs quality processes modeled after its particular requirements. Total Quality Management is one such program. TQM is considered a strategic management tool that can be used to improve the competitiveness, effectiveness, and flexibility of the whole organization. (Oakland 2012),

According to Meidutė-Kavaliauskienė, I., Aranskis, A., & Litvinenko, M. (2014) It is crucial to research the role of total quality management on operational performance to apply TQM as a strategy for recovering from service failures since there is evidence that effective TQM implementation benefits organizations by enhancing organizational performance. Thus, this study aimed to assess the role of TQM practices for better operational performance and to bridge a gap in the literature and knowledge regarding total quality management practice and its effect on operational performance in the logistics industry.

1.2 Statement of the problem

Total Quality Management (TQM) is a highly competitive industry policy that should be considered by organizations looking to make major changes to their operations. Organizations that want to make significant changes in their operations and highly competitive industries like logistics should consider implementing Total Quality Management (TQM) as an internal policy. In most cases, firms implement TQM simply as a precaution to deal with shifts that may be seen as threats to their growth, or even survival, in the light of the continuous development of the business environment.

According to (Pal, 2016) The empirical study revealed that Organizations, in general, TQM practices to ensure the organization's entire operations achieve a competitive advantage. Concerning our nation's logistics sector, it is evident that organizations are failing to cultivate the prevalent practices of TQM. These inadequacies in implementation lead to client loss and an environment that is dissatisfying for employees.

The logistics industry is an arena where firms competing for customers abound and hence the reason TQM cannot fall short of serving as the building stone of success for business. Customer loyalty is supposed to contribute a lot to the continuity of profits in the sense that it is not only price competition that matters but also service quality. Poor service not only threatens to harm customer sentiment (bad reputation) but also involves a great deal of expenses in terms of transport companies. Hence, the TQM policy became an important part of leading firms' operations to take their positions higher in the business environment. However, the effectiveness of TQM in enhancing business performance remains a subject of inquiry, particularly concerning its impact on the six core pillars of TQM: The roles of top management/Leadership, employee involvement, continuous improvement, customer-focus, supplier relationship management, and performance evaluation and monitoring environment. (Quais, I., & Siddiqui 2017).

In this case, the key leading logistics companies attempt to put in place the structure that will ensure they outdo the rest of the market in the view of their competitors. Assessing the contributions of the principles of TQM in business performance requires a thorough investigation of these six pillars. Getting to grasp the relationship between top management leadership, employee involvement, continuous improvement, customer focus, supplier relationship and performance evaluation &monitoring approaches is necessary in assessing the whole performance of TQM which could influence the organizational outcomes of the logistics industry. Thereby, the reason for this study is to get deep into the complex connection between TQM implementation and operation performance in the logistics industry, giving the basis for improvement directions and possible strategies for advancing organizational competitiveness and coming up with sustainable solutions.

(Wassan et al., 2022) Stated that accomplishing targets effectively is one of the main objectives of successful organizations. However, the accomplishment of the performance with limited capital and production of social products is somehow difficult to achieve. It cannot be accomplished by seeing sustainability and Total quality management. There is

an absence of research on the achievement of performance by utilization of TQM and sustainability practices.

Hence this study intends to examine the TQM practices in the logistics industry and their effect on operational performance to develop a model for applying TQM practices for better operational performance, and it therefore bridges a gap in the literature and knowledge regarding total quality management practice and its effect towards operational performance in the three selected logistics organizations. Furthermore, this research will contribute to the discipline of quality management of logistics firms.

1.3 Objectives of the study

1.3.1 General objective

The general objective of this study is to assess the role of Total Quality Management practices in the operational performance of selected logistics service organizations in Addis Ababa, Ethiopia.

1.3.2 Specific objectives

The specific objectives of the study are:

1. To assess the role of top management in the operational performance of Logistics organizations.
2. To ascertain how customer focus affects the operational performance of the selected organizations.
3. To find out how employee involvement affects operational performance in the selected organizations.
4. To find out how continuous improvement affects operational performance in the selected organizations
5. To find out how suppliers' relationship management affects operational performance in the selected organizations
6. To determine how performance evaluation and monitoring affects the operational performance of the selected organizations

1.4 Significance of the Study

This study looks at how total quality management affects an organization's ability to do business. Three companies are used in the analysis: The implementation of total quality management, or TQM, has attracted significant interest from managers and researchers and is acknowledged as one of the key issues. TQM procedures were suggested as one of the efficient ways for businesses to enhance their business performance in this study.

Any organization's primary goal is to improve business performance. The study's findings identified essential TQM practices for this purpose, allowing quality managers to better understand and make decisions about how to improve performance and quality to satisfy customers and achieve organizational goals through effective business strategy.

Thus, readers will have a deeper comprehension of the topic from this study. Lastly, the results of this study will provide a foundation for those wishing to carry out additional research in the field. Therefore, it is anticipated that knowledge and appreciation of the advantages of quality management systems in improving customer service delivery in their respective logistics and customs clearing organizations and enhancing their competitiveness in the market will be beneficial to researchers, firms, and other financial institutions. It also helps the government and policymakers since they can demonstrate the advantages of a TQM system in the logistics sector and make it easier for it to be implemented by creating pertinent and useful rules and regulations.

1.5 Scope of the Study

Even though the concept of total quality management and operational performance is very wide and requires detailed investigation of the practice and implementation, effectiveness, and challenges of TQM. This study focused only on investigating the role of TQM practices on the operational performance of the three selected logistics and customs clearing organizations in Addis Ababa namely AGL Logistics Ethiopia (Bollore), MACCFA Freight Forwarding PLC, and Impact Logistics PLC. More specifically, this study identified four TQM practices those are top management role/leadership, employee involvement, continuous improvement, and customer focus. This research will be conducted on a total of 268 employees of the organizations in Addis Ababa with a sample of 160 who will be used.

The selection criteria included the range and reputation of the company's operations, proximity to critical road, transport, and delivery infrastructure, and business owner profile. The first is the three organizations that have occupational playing roles within the sector of logistics in Addis Ababa considered the most appropriate candidates to assess the effects of Total Quality Management practices on their operational performance. This would, of course, ensure that the implications that the study could draw would be relevant not only to the industry but also to the practices it uses. Additionally, the above-mentioned companies had differing business profiles which were based on various logistics services such as freight forwarding and customs clearance. It is in such diversity that thorough investigative work can be carried out to know how the TQM practices are expressed and

play a significant role in different domains of logistics. Finally, based on their demonstrated commitment to the TQM principles is what made their organizations be selected explicitly since they have been recognized for quality service delivery and their continuous improvement programs. Within the research scope, which focuses primarily on these three logistic firms, this study is expected to offer readers useful information on the function of TQM systems to increase operational efficiency and competitiveness within the logistics industry of Addis Ababa.

1.6 Limitations of the Study

The primary obstacles that the researcher had to overcome to conduct this investigation were:

unavailability of observed research on the relevant study area, particularly within the nation; and a lack of appropriately published and acknowledged data on the subject. The absence of previously published articles for topic area revisions by other national researchers is insufficient secondary data from outside sources to contrast with the report from the organization. The researcher is compelled by the study to rely solely on primary data, which is gathered using structured questionnaires. Additionally, there was insufficient time to gather all the responses because some respondents were under a lot of pressure to finish and return the questionnaires by the deadline.

1.7 Definition of Terms

The term "**Total Quality Management**" encapsulates the concept: "Total Quality Management." The term "total" suggests that all personnel in the business are expected to improve operations, from development of production to fulfillment. Furthermore, "management" implies that this process should be a concentrated effort. To actively manage product and service quality continually, leadership should offer financing, training, manpower, and well-defined goals.

Logistics; is the process of planning and executing the efficient transportation and storage of goods from the point of origin to the point of consumption. The goal of logistics is to meet customer requirements in a timely, cost-effective manner.

Logistics operations; refers to the processes of moving finished goods, including from the manufacturer to a distribution center, and then to the end user. The entire logistics process consists of managing inventory, fulfilling orders, and shipping packages.

Leadership: is the ability of an individual or a group of people to influence and guide followers or members of an organization, society, or team.

Employee involvement: is the process of allowing employees to give their opinions on decisions that affect their work. This could be done through company meetings, committees, and so on. Employees have more control over their work and workplace when they participate in decision-making.

Continuous improvement: An activity to ensure repeated improvements in products and/or services.

Customer-focused; Paying great attention to the needs and opinions of customers. Or putting your customers' needs first.

Supplier relationship; The systematic and ongoing process of evaluating a company's suppliers, both for goods and services, to determine what changes could be made to improve business operations

Performance evaluation & monitoring; A formal and effective process to assess an employee's work and output regarding their job duties and measuring through performance indicators.

Operational Performance; the process of measuring a firm's performance against standard or prescribed indicators of its effectiveness and efficiency.

1.8 Organization of the Study

This paper is divided into five chapters. The first chapter provides an introduction to the study, including its background, problem statement, objectives, significance, scope, limitations, and term definitions. The second chapter covers the literature review, including theoretical and empirical reviews, study gaps, conceptual framework, and hypothesis. The Third Chapter covers research methodology, including approaches and designs, analysis units, model specifications, data analysis techniques, validity, reliability, and ethical considerations. The fourth Chapter presents detailed findings, including a discussion and summary. Finally, Chapter Five provides a summary, suggestions for future research, and recommendations.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Review of Theoretical Literature

2.1.1 The concept and theories of total Quality chain Management Practices

TQM represents an improvement over traditional business practices. It is a tried-and-true strategy for ensuring survival in world-class competition. The only way to change an organization's culture and behavior is to change management behavior. Most of TQM is simply common sense. Among the three terms,

Total: refers to the entirety.

Quality: The level of excellence that a product or service provides.

Management: is the act, art, or practice of controlling, regulating, leading, and so on. TQM is thus the art of managing the entire process to achieve excellence. The Golden Rule is a simple but effective way to put it: Do unto others as you would have them do unto you.

Total Quality Management (TQM) is a philosophy and set of guiding principles that serve as the foundation for an organization that strives to improve continuously. It is the use of quantitative methods and human resources to improve all internal processes within an organization and to exceed current and future customer expectations. TQM takes a disciplined approach to basic management techniques, continuous improvement efforts, and technical tools. (Besterfield et al., 2011)

Total Quality Management (TQM) is a management philosophy that focuses on the work process and people, with the major concern on satisfying customers and improving organizational performance. It involves the proper coordination of work processes which allows for continuous improvement in all business units with the aim of meeting or surpassing the customer’s expectations. It emphasizes the totality of quality in all facets of an organization to reduce waste and rework to reduce cost and increase production efficiency (Oluwatoyin & Oluseun, 2008).

According to Miller (1996) An ongoing process whereby top management takes whatever steps necessary to enable everyone in the organization in the course of performing all duties to establish and achieve standards that meet or exceed the needs and expectations of their customers, both external and internal.

Total quality management (TQM) is a set of opinions and ideas that is widely called “management philosophy”. This management technique can assist the construction firms in improving continuously the organization's performance, to satisfy customers and

survive in the market (Neyestani & Juanzon, 2016). Without a doubt, quality experts (gurus) had the significant role of expanding and transforming the concept of quality from a mere technical system to a broader body of knowledge known as total quality with management implications in production.

Historically, TQM first emerged through the contributions of quality gurus, such as Deming and Juran in Japan after the Second World War. Then Crosby, Feigenbaum, and others developed this powerful management technique for improving business quality within the organization's quality.

Deming (1986) emphasized that senior management must take the initiative to transform systems and processes. Since upper management must develop and convey a vision to move the company toward continuous improvement, leadership is crucial to the success of quality management. The majority of quality issues are the fault of upper management, which ought to set clear expectations for workers on what constitutes acceptable work and how to meet them (Anderson et al., 1994).

He is widely considered the person who assisted the Japanese in bringing about the quality revolution after the damage in World War II. He is also associated with statistical process control (SPC) and other problem-solving techniques which measure performance in all processes. His definition of quality is "satisfy the customer, not merely to meet his expectations, but to exceed them". This implies quality is meeting and/or exceeding customers‟ expectations.

The Deming management method is well known for his 14 imperative statements these are:

Maintain a consistent focus on improving products and services to become competitive, stay in business, and provide jobs.

Adopt the new philosophy. We are in a new economic era. Western management must wake up to the challenge, learn their responsibilities, and take charge of change.

Stop relying on mass inspections to improve quality. Eliminate the need for mass inspection by designing quality into the product from the start.

Put an end to the practice of awarding business based solely on price. Instead, reduce the total cost. Move toward a single supplier for any one item, with a long-term relationship of loyalty and trust.

Constantly and forever improve the production and service systems to improve quality and productivity while decreasing costs.

Provide job-based training.

Institute leadership. The goal of supervision should be to help people, machines, and gadgets perform better. Management supervision and production worker supervision both require improvement.

Eliminate fear, so that everyone can work effectively for the company.

Remove barriers between departments. People in research, design, sales, and production must collaborate to anticipate production and usage issues that may arise with the product or service.

Eliminate workplace slogans, exhortations, and targets that call for zero defects and increased productivity. Such exhortations only foster adversarial relationships, as the majority of the causes of low quality and productivity are systemic and thus beyond the workforce's control.

Remove work standards (quotas) from the factory floor. Substitute leadership. Eliminate objective-based management. Eliminate management by numbers and numerical goals. Substitute leadership.

Remove barriers that deny the hourly worker the right to take pride in his or her work. Supervisors' responsibilities must shift away from sheer numbers and toward quality. Remove barriers that deny people in management and engineering the right to be proud of their workmanship. This includes, among other things, the abolition of annual or merit ratings as well as objective management.

Implement a rigorous educational and self-improvement program.

Organize everyone in the company to work toward the transformation. The transformation is everyone's responsibility.

Deming believed his fourteen points of management principles are a good instruction for companies to improve quality and reduce their expenses because low quality causes rework, defects, and loss of the ability of the company to compete in the market. As mentioned, Deming always emphasized to reinforcement of top management and management members to overcome. That is why he noted many times regarding “Seven

Deadly Diseases" of management that can cause huge challenges and problems for the companies. Deming argued that "each disease was a barrier to the effective implementation of his philosophy". His "Seven Deadly Diseases" can be described as follows:

Lack of constancy of purpose to plan products and services that will have a market keeps the company in business and provides jobs.

Emphasis on short-term profits.

Employing personal review systems, or evaluation of performance, merit rating, annual review, etc. for people in management, the effects of which are devastating.

The mobility of management (Job-Hopping by managers).

Use of visible figures only for management, with little or no consideration of figures that are unknown or unknowable.

Excessive medical costs, and.

Excessive costs of liability-driven up by lawyers who work on contingency fees.

Joseph M. Juran - defines quality as "fitness for purpose or use". This definition applies to all organizations that are manufacturing, service, profit-making, or nonprofit makers. Quality is judged by the user or customer. Juran believed that management was to blame for the majority of quality issues, not the workers. Quality must be achieved through activities in all aspects of a company's operations. Quality improvement requires firm-wide quality assessments, supplier quality management, the use of statistical methods, a quality information system, and competitive benchmarking. Juran's approach focuses on teamwork (QC circles and self-managing teams) and project work, which can promote quality improvement, improve communication between management and employees, and improve coordination among employees. He also emphasized the significance of top management commitment, empowerment, participation, recognition, and rewards.

Juran emphasizes the importance of understanding customer needs. This requirement applies to anyone involved in marketing, design, manufacturing, or services. Identifying customer needs necessitates more thorough analysis and comprehension to ensure that the product meets their needs and is fit for its intended use, rather than simply meeting product specifications. Thus, market research is critical for determining customer needs. To ensure design quality, he proposed using techniques such as quality function deployment, experimental design, reliability engineering, and concurrent engineering. Juran defined quality management as three fundamental processes (the Juran Trilogy): quality control, quality improvement, and quality planning. In his opinion, the approach to quality

management consists of: The sporadic problem is detected and acted upon by the process of quality control; the chronic problem requires a different process, namely quality improvement; Chronic problems can be traced back to an inadequate quality planning process.

Juran defined four broad categories of quality costs that can be used to assess a company's quality-related costs. Such information is useful for quality improvement. The four quality costs are listed below.-

Costs for internal failures, such as scrap, rework, and failure analysis, related to defects discovered before product transfer to the customer.

External failure costs (warranty charges, complaint adjustment, returned material, allowances, etc.) for defects discovered after the product has been shipped to the customer.

Appraisal costs (incoming, in-process, and final inspection and testing, product quality audits, maintaining accuracy of testing equipment, etc.) for determining the degree of conformance to quality requirements.

Prevention costs (quality planning, new product review, quality audits, supplier quality evaluation, training, and so on) incurred to keep failure and appraisal costs low.

Philips B Crosby - Defined quality as conformance to requirements, thus the requirements of a product need to be defined and specified clearly so that they are properly understood.

An organized method for managing an organization as a whole is total quality management. The process's main goal is to raise the caliber of an organization's outputs including its products and services by continuously enhancing its internal procedures. The TQM approach's standards can consider both internal goals and any existing industry standards.

removing mistakes from business procedures. It guarantees that staff members receive the most recent training, expedites supply chain management, and enhances customer satisfaction. Holding everyone engaged in the production process responsible for the overall caliber of the finished good or service is the goal of total quality management.

Crosby (1979) identified A successful quality improvement program requires several key principles and practices, these include management involvement, management responsibility for quality, employee recognition, education, and a reduction in the cost of quality (prevention, appraisal, and failure costs). Additionally, the program should emphasize prevention rather than after-the-event inspection, doing things right the first time, and having zero defects. According to Crosby, errors arise from two factors: insufficient knowledge and insufficient focus. The first cause can be eliminated with

education and training, while the second can be resolved with a personal dedication to perfection (zero defects) and meticulous attention to detail. Crosby emphasized the significance of management style in achieving effective quality enhancement. Changing the mindset of top managers is crucial to improving quality because it will prevent them from accepting errors and flaws, which will lower standards and work expectations for them. Commitment, communication, and understanding are all necessary. Businesses can assess their quality management maturity by using the quality management maturity grid that Crosby introduced. The stages are Awakening, Enlightenment, Wisdom, Uncertainty, and Certainty. A variety of measurement categories, including management comprehension and attitude, quality organization status, problem-solving, cost of quality as a percentage of sales, and summation of firm quality posture, can be evaluated using these stages. The two primary instruments that managers use to assess their quality status are the cost of quality measures and the quality management maturity grid.

2.2 Dimensions of Total Quality Management

Total quality management is a strategic, integrated management system that is focused on customer satisfaction and involves everyone in the organization using quantitative measurement tools to continuously improve the organization's services and products Furthermore, the principle of TQM is customer focus.

The TQM approach integrates three fundamental aspects: commitment, involvement, and continuous improvement. Commitment is the sense of taking the pledge for never-ending improvement in quality and services to the customer, involvement means the involvement of all the team members in achieving a common goal (i.e. from top to bottom), working as a single unit for better results and thinking about continuous improvement by looking any error and defects and eliminating it on spot. TQM addresses the issues of customer satisfaction and guidance on implementing the marketing concept (Talib, 2013).

According to a study by Pal (2016), 300 participants from 50 service and manufacturing industries in India and the study results found that the operational performance views Leadership, Strategic and Planning, Customer Focus, Information and Analysis, People Management and Quality Performance are statistically significant in both kinds of industries. Hence the application of TQM practices in both service and manufacturing industries is necessary to maintain the quality of the work as well as enhance the competition level in society.

2.2.1 Top Management Role

Total Quality Management (TQM) is a process that begins with a vision that is actively promoted by the organizational leader. Its achievement requires an effective leader who will be in a position to build a healthy organizational culture that later under his leadership will be easily transformed into a TQM. The model of leadership convenient for the accomplishment of the TQM program is known as PDCA leadership and includes four phases: Plan, Do, Check, and Act. Each of these phases contains elements that need to be accomplished to achieve total realization of the TQM program (Serafimovska & Ristova, 2011).

In today's dynamic competitive environment, logistics management strategy plays a significant part in overall corporate governance, especially in the area of asset management

and the financial flows of the company. In other words, logistical savings will allow the policy of lower prices, longer payment terms, and a higher level of service to customers and therefore, increased operating efficiency (Ristovska et al., 2017).

Key account management (KAM) has emerged during the last decades as one of the most important concepts in business-to-business (B2B) marketing. The purpose of this study was to present and empirically test a model of top management's contribution to performance outcomes from KAM relationships. As a result, that top management commitment positively affects top management involvement. In addition, top management involvement mediates the relationship between top management commitment and relationship quality. Finally, relationship quality positively relates to financial performance (Tzempelikos, 2015).

The use of TQM encourages employees at all levels of the organization to participate not just in resolving the problem of quality, but also in continual work improvement and achieving the projected goals. However, only the leadership of top management is in a position to create a necessary organizational culture that is capable of leading and supporting TQM (Serafimovska & Ristova, 2011).

Without good top management, a total quality management program cannot run smoothly. An organizational leader's ability and behavior can directly influence organizational success or failure. The level of service provided by logistics organizations will have a direct impact on all business transactions. Because of this, each employee in this sector is accountable for the quality of their services.

2.2.2 Employee involvement

The study that examines the elements that influence employee creativity in a Malaysian logistics company by Omar et al., (2022) studied that employee creativity is essential among employees in logistics companies because a creative employee will give satisfaction to their customers and productivity. The study decided that the creativity among the studied logistic company's employees would be significantly influenced by their leaders, i.e., whether their supervisors are supportive in encouraging them to initiate new ideas and innovations. Thus, when the leaders take good care of their subordinates, the individual employee's psychology will not be a significant factor as the employee shall work following the guidance and facilitation of their supervisors.

According to Bashir Memon et al., (2017), employee involvement empowers workers in the decision-making process, thus giving them greater control over their workplace performance. workers must feel that management recognizes and supports their expectations with a variety of employee participation programs that are integrated into the organizational decision-making process.

Employee empowerment has a statistically significant influence on efficient employee performance; the study indicated through its results that empowerment can lead to better performance by providing employees with the necessary autonomy and resources to pursue the goals of their positions. With the right amount of flexibility and support, employees will be better equipped to do their jobs and flourish professionally. Empowerment can also boost employee morale and satisfaction, thus leading to improved performance (Alshemmari, 2023).

In creating a healthy workplace, it is important to understand the various forms of employee involvement and the roles each can play. Employee involvement can range from simple practices, such as open-door policies to input into decision-making to major programs such as self-managed work teams or total quality management initiatives. Employee involvement, though seldom emphasized in discussions of a healthy workplace, is critical to the success of new initiatives. Employee involvement relies on the human capital of an organization to improve organizational functioning. It describes ways of fostering employee involvement, recognizing that all organizations, for-profit, and not-for-profit, large and small, can use employee involvement to identify high-leverage practices that will have a mutual benefit for employees and organizations (Grawitch et al., 2009).

2.2.3 Continuous improvement

To provide goods and services that live up to customer expectations, organizations must improve their processes. This is known as continuous improvement. Stated differently, innovation could contribute to ongoing progress. To ensure customer satisfaction, companies must consistently develop novel products and services. Innovation and constant improvement should be the cornerstones of any organization since they have a direct impact on overall quality control.

The relationship between technological progress and employment structure in China's logistics industry and analyzes the industry characteristics reflected in the level of technological progress and employment structure in various subsectors of the logistics industry, and then it explores the adaptability between employment structures and level of technological progress. The study concludes that on the whole, technological progress in China's logistics industry will have a significant positive impact on the structure of employment skills. With the continuous improvement of the level of information technology, both the proportion of personnel with a college degree or above and the proportion of nonproduction personnel are showing an increasing trend. Secondly, the expansion of the scale of Chinese logistics companies will significantly increase the relative demand for highly educated personnel, but it will also inhibit the growth of the proportion of nonproductive personnel. That is the larger the scale of the company, the greater the proportion of personnel with a college degree or above and the more decreases of the relative proportion of nonproduction personnel. Finally, the increase in the wage level of employees in China's logistics industry will significantly increase the proportion of nonproductive personnel in the company, but it will not have a significant impact on the increase in personnel with a college degree or above (Lei et al., 2020).

Both the lean philosophy and the Six Sigma methodology have become two of the most important initiatives for continuous improvement in organizations. Combining both alternatives Lean Six Sigma (LSS) brings significant benefits for companies applying this method and its influence on logistics services can be relevant. LSS can be defined as a broad long-term strategic decision-making method that maximizes value-added content and minimizes variation of quality and process characteristics, thereby improving customer satisfaction. The research result also shows that in logistics services LSS implementation corresponds with improving service quality. One may conclude that the logistics services sector has the potential to benefit from LSS implementation (Gutierrez-Gutierrez et al., 2016).

2.2.4 Customer focus

Logistics are to improve the overall organization performance and customer satisfaction by improving products or service delivery to customers. The relationship between customer satisfaction and logistics management has many indicators; one of the most important indicators is the cost of the product. The logistics analysis aims to reduce the cost from suppliers to final users, taking into consideration the quality and the time, two of the major customer satisfaction indicators are the costs and the waiting time. Both customer satisfaction indicators are implied in the logistics process which results in a cheap product using cheap raw material, choosing the cheapest transportation method, high production with low labor costs, and low-cost storage and delivery (Ghoumrassi & Țigu, 2017). Customer satisfaction measures how well the expectations of a customer concerning a product or service provided by a company have been met. Customer satisfaction is an abstract concept and involves factors such as the quality of the product, the quality of the service provided, the atmosphere of the location where the product or service is purchased, and the price of the product or service (Ghoumrassi & Țigu, 2017).

The organization will also need to establish customer requirements by reviewing the market needs, particularly in terms of unclear or unstated expectations or preconceived ideas held by customers. It is central to identify the key characteristics that determine the suitability of the product or service in the eyes of the customer. This may, of course, call for the use of market research techniques, data gathering, and analysis of customer complaints (Oakland, 2012).

Customer satisfaction depends on various factors such as the perceived quality of service, customer mood, emotion, social interaction, customers' associates' experience, and other specific subjective factors. In addition, it is necessary to keep in mind that customer satisfaction with the quality of service is not the objective assessment of the real situation, but an element of an emotional nature. Customer expectation satisfaction is generally seen as a positive opinion of the client about the service after the service is performed. In other words, this is an evaluation of the results of the process. The research also proved that a logistics company, properly carrying larger quantities of logistic operations, receives better performance evaluations, thereby also increasing its competitive advantage and creating favorable conditions for the development of the economics of scale. Consumers, while selecting from potential providers, evaluate not only service quality (physical) but also the cost of services, servicing, the applied technological solutions, the provider's experience, and the range of services (Meidutė-Kavaliauskienė et al., 2014).

2.2.5 Supplier Relationship Management

The concept of supplier relationship management works on the notion of supplier involvement in technological development, and decision-making, as well as satisfying the expectations of their customers through collaboration. Such collaboration involves risk, proportionate profit sharing, and information (Sriyakul et al., 2019).

According to (Waithira et al., 2018) The goal of Supplier Relationship Management (SRM) is to streamline and make more effective the processes between an enterprise and its suppliers just as customer relationship management CRM is intended to streamline and make more effective the processes between an enterprise and its customers

(Poku, 2022) Stated in her study that SRM has become a crucial corporate practice because of the need to consider risk and sustainability, competitive pressures, achieve cost efficiency to be cost-competitive, and the need to develop closer relationships with key suppliers who can provide the proficiency necessary to create innovative new products and successfully bring them to market. Other phases of SRM include material selection, engagements in product design, innovation, information sharing, long-term cooperative arrangements, and technology investments.

2.2.6 Performance evaluation and monitoring

Monitoring is evaluating the progress and limitations of a work process. It ought to be carried out consistently and uniformly. You can use a variety of checklists for this. The data gathered from the observation is used to inform decisions about process modification and/or resource input adjustment to ensure the work is carried out smoothly. In general, evaluation is the process of going over the entire work process to identify lessons that can be applied to both positive and negative outcomes. The results are then examined to create a more effective action plan for the upcoming stage of the project.

Monitoring and evaluation (M&E) are integral parts of the logistics management process and provide a link between planning and implementation. While monitoring focuses on the activities organizational logistics perform and their outputs, evaluation focuses on the outcome and goal achievement.

According to (Marie Vianney et al., 2020) The most effective way to assess a project's progress and make sure the work being done can achieve the desired results is through monitoring and evaluation. On the other hand, monitoring and evaluation are distinct processes that are also intended to provide an assessment of the organization's performance.

2.3 The concepts and theories of operational Performance of logistics organizations

Operations performance is the measurement and evaluation of the effectiveness and efficiency of an organization's operational activities. The process of organizing, carrying out, and managing the effective movement and storage of products, services, and related data from the point of origin to the point of consumption to satisfy client demands is known as logistics. It includes controlling the flow of raw materials through an organization to produce finished goods (Ristovska et al., 2017).

Because today's business environment is competitive and dynamic, companies evaluate their performance in comparison to competitors. Since any organization's ability to grow successfully in the modern world depends on its ability to respond quickly to changing needs, it is now essential to assess business performance and work to improve it (Akintokunbo & Ali, 2021).

Total quality management may improve logistics performance. Therefore, total quality management on improving logistics performance has economic significance. The study investigates pharmaceutical logistics, was influenced by logistics activities and capabilities from the sample consists of 500 pharmacies locate in the Chang-Zhu-Tan region in China. It also indicated that in the current competitive environment, logistics capacities become a key factor to obtain a competitive advantage in the pharmaceutical industry and the result of the research shows that logistics activities have a positive relationship with cost & service and capacity of delivery (Sriyakul et al., 2019).

Armenia Androniceanu, (2017) researched the three-dimensional approach of total quality management and provided some concrete cation ways through which organizations in Romania that implement total or partial quality management integrated systems would produce significant competitive advantages and concluded that the paper was based on demonstrated that TQM, in general, and its three-dimensional approach, in particular the technical, economic and social subsystem, represent an essential, feasible, viable and sustainable option for companies in Romania, whose managers continue to be concerned with the development and modernization of management instruments to reach higher levels of quality and business excellence.

The logistics performance construct reflects the organization’s performance as it relates to its ability to deliver goods and services in precise quantities and at the precise times required by customers (Green et al., 2008). A logistics performance model that incorporates logistics performance as the focal construct with supply chain management

strategy as antecedent and organizational performance, both financial and marketing, as consequences (Green et al., 2008).

Logistics plays a key role in both micro and macro perspectives. From a micro perspective, logistics service could fulfill the customer's expectations through excellent logistics service provision, and from a macro perspective, it drives the economic development of a country (Bakar et al., 2014).

2.4 Dimensions of operational performance of logistics Organizations

Operations performance is defined as the ability to measure and evaluate the effectiveness and efficiency of an organization's operational activities. It entails assessing multiple performance dimensions, including cost, delivery, quality, flexibility, and dependability.

"Quality" refers to the features of products that meet customer needs and thus provide customer satisfaction. Managing quality makes extensive use of these three managerial processes: Quality planning, quality control, and quality improvement. These processes are now referred to as the "Juran trilogy."(Juran 1079). Quality is related to both the product and the services provided. As a result, all outcomes that lead to customer satisfaction are important (Sarode et al., 2008).

Delivery dimensions are delivery reliability and delivery speed. Delivery reliability, also known as dependability or on-time delivery, refers to the ability to deliver as planned. Delivery speed is proportional to delivery cycle length. A company's long-term success requires that promises of timely deliveries be kept with a high level of reliability.

According to (Sarode et al., 2008) Speed is the time it takes from receiving an order to final delivery. A company with superior delivery speed can "deliver more quickly than its competitors or meet a required delivery date when only some or even none of the competition can do so". Reliability is the ability to deliver products or services on time

The total cost is the sum of all the complex attributes. Each attribute's contribution may vary depending on the industry. A delivery service company should deliver its goods in the shortest possible time. Some may believe that cost should be primarily a function of distribution and inventory costs, but a high contribution from inventory costs may indicate poor performance because goods are always kept for an extended period. A manager should thoroughly investigate each sub-cost contribution to performance (Sarode et al., 2008).

companies may make significant investments in quality improvement programs such as Six Sigma or Kaizen, and managers must be able to assess the return on investment of these programs. Quality improvement costs can be classified as internal, controllable, and

quality-related costs. However, they differ from traditional prevention and appraisal costs. Prevention and appraisal costs are associated with efforts to prevent poor quality and assess quality at a given level.

The ability or adaptability of the business to deal with change or diversity is referred to as flexibility. Flexibility is a term that is rarely used in supply chain analysis. Still, it can be used to quantify how well a system adapts to changes in volume and schedule from manufacturers, suppliers, and consumers. A flexible system is essential to accomplish a range of operating attributes and respond to unique service requirements. An adaptable system is necessary to facilitate the launch of new products and is centered on providing customers with innovative services. The ability to adapt an operation to a customer's needs is known as flexibility. This could entail customizing the operation's functions or methodology to provide a tailored service.

The case study investigates British Airways' importance of competitive advantage, operation management, and the role of five performance indicators in British Airways are discussed in detail and stressed the flight time needs to be more flexible than at present as there is a need to develop a strategy that customers choose the timing from the large schedule to ease (Irfan & Riffat, 2022).

Dependability is a key component of operation principles because it ensures the consistent delivery of goods and services. When a company is dependable, clients know they can count on you to deliver the goods and/or services you've promised. Since they have already "consumed" the product, this may not have an impact on the likelihood that a customer will choose the service, but it does have an impact on whether or not they will return or recommend your company to others.

According to (Jacyna-Gołda & Lewczuk, 2017) The quality of a logistic system services can be considered using dependability issues, but applying classic measures of dependability is impeded for logistics systems due to their complexity.

2.5 Measurements of Total Quality Management Practices

TQM can be measured by using several key performance indicators (KPIs), such as customer satisfaction, defect rates, employee engagement and retention, productivity levels, and financial performance. These KPIs can be tracked over time to determine whether TQM initiatives are resulting in improvements in these areas.

2.6 Operational Performance Measurements of Logistics Organizations

Creating indicators for the essential components of logistics activity is a helpful way to assess performance and gauge how well a specific activity or ongoing process is going. Key performance indicators, or KPIs, are measurable assessments of an organization's or team's performance for important activities. They consist of all the tasks required to maintain an operation's continuous operation. A KPI consists of the following elements:

Identified Metric means Anything the organization chooses to measure is a metric. There are some metrics that the organization or teams classify as “key” those are the ones that become KPIs.

Ongoing Value: The running value of the defied metric at any given time is known as the ongoing value. The minimum or maximum desirable value for the designated metric is known as the target value.

Unit of Measure: The unit at which an organization and measurement modality decide to view and track an activity.

Numerical: a fixed figure that represents a target number; an example would be the quantity of goods beneficiaries receive.

A percentage measurement is expressed as a percentage of the total, such as the percentage of orders that are delivered on schedule.

Rate is the amount of activity measured with another number. For instance, the dollar amount per metric tonnage is kept.

Everyone involved must have access to all the information required to comprehend the KPI units of measure, and when measuring two or more variables, this information must be made explicit. By defining the KPIs, the intervention's key areas are identified. Each key area's performance is indicated by a predefined metric and target value. KPIs are thus used to assess the condition of a company as well as the teams and departments that make up the organization. Because they provide vital signs and issue warning signals when the metrics are abnormal, KPIs are frequently referred to as "health metrics”. (Monitoring and Evaluation | Logistics Operational Guide, n.d.)"

According to (Besterfield et al., 2011), Performance measures are used to achieve the objectives of Establishing baseline measures and revealing trends. Determining Performance measures are used to meet the objectives of Establishing baseline measurements and identifying trends. Determining which processes require improvement. Indicate the process of gains and losses. Compare goals to actual performance. Provide

information for individual and team evaluations. Provide information so that people can make informed decisions. Determine the overall performance of the organization.

Quality measurement components for the efficiency on cost, speed, and environment as well as effectiveness components measured in quality, flexibility, dependability, and communications to achieve competitive advantages of logistics performance. According to Quais & Siddiqui (2017) logistics performance measurement described as the dynamic capabilities, firms' competitive advantages, firms' service capabilities, and information sharing capabilities has revelations on the operational performance of logistics firms.

2.7 Review of Empirical Literature

2.7.1 Total Quality Management Practices in Logistics Organizations

Total quality management is a strategic, integrated management system that is focused on customer satisfaction and involves everyone in the organization using quantitative measurement tools to continuously improve the organization's services and products Furthermore, the principle of TQM is customer focus.

The TQM approach integrates three fundamental aspects: commitment, involvement, and continuous improvement. Commitment is the sense of taking a pledge for never-ending improvement in quality and services to the customer, involvement means the involvement of all the team members in achieving a common goal (i.e. from top to bottom), working as a single unit for better results and think about continuous improvement by looking any error and defects and eliminating it on spot. TQM addresses the issues of customer satisfaction and guidance on implementing the marketing concept (Talib, 2013).

According to a study by Pal (2016), 300 participants from 50 service and manufacturing industries in India and the study results found that the operational performance views Leadership, Strategic and Planning, Customer Focus, Information and Analysis, People Management and Quality Performance are statistically significant in both kinds of industries. Hence the application of TQM practices in both service and manufacturing industries is necessary to maintain the quality of the work as well as enhance the competition level in society.

Joseph & Rajan (2010) describe empirical research on the development of an instrument for TQM implementation in business units in India. Through a detailed analysis of the literature, this research identified 150 measures of quality management. After a pre-test, 111 measures were used to develop a questionnaire. These items were empirically tested by data collected from 50 respondents. A factor analysis uncovered ten underlying

dimensions of TQM with a total of 106 items. These factors and items were found to be reliable and valid

2.7.2 Operational Performances of Logistics Service Providers

Research was conducted to identify the quality management (QM) practices that are related to operational performance. Five of the QM practices that were examined in this study were documented in both measurement studies and studies that looked into the relationship between QM practices and different dependent variables: top management support, human resource management, reporting and analysis of quality data, product/service design, and process management.

The results of this research showed that four main practices including top management support, human resource management, reporting and analysis of quality data, product/service design, and process management are directly and indirectly related to operational performance. In addition, 57.1% variance. Cronbach's Alpha and EFA were calculated with the support of SPSS (Statistical Package for the Social Sciences) in advance. The extraction method used in EFA is the principal component – rotation method of Varimax. The breakpoint is at Eigenvalue ≥ 1 for all constructs in the theory model

The theoretical model was tested by the method of Structural Equation Modeling (SEM) with the support of AMOS 5.0 software (Byrne, 1998). Test results of the structural model indicate that the structural model is an appropriate fit with the collected data (Truong et al., 2014).

(Aichouni et al., 2023) presents an empirical study to assess the level of implementation of total quality management and occupational safety and health in Saudi organizations and to investigate the relationship between TQM and OSH to identify the impact of TQM on occupational safety and health (OSH) performance. Based on a sample of 99 valid responses, empirical results were obtained through descriptive and advanced statistical analysis, indicating that TQM practices and OHS are highly implemented in Saudi organizations. The statistical results also showed that TQM practices have a significant positive impact on OSH performance in the surveyed organizations. The seven TQM fundamental pillars and the five OSH program components can be considered essential success factors and fundamental pillars for TQM implementation in organizations and performance improvement

2.7.3 The Role of Total Quality Management Practices in Operational Performance of Logistics Service Providers

According to Sukdeo (2001), Many advantages will result from the effective application of TQM, including lower costs, higher-quality goods and services, a larger market share, and higher customer satisfaction.

To build long-term profitable organizations, total quality performance is used in organizations to improve the quality of people, processes, services, and goods. They added that when it comes to overall quality, customers are in charge and can direct businesses on exactly what they should offer to be the customer's choice. Aiming for quality that meets the intended expectations of the customer, Total Quality Management (TQM) is a philosophy. The goal of TQM approaches is to improve a business's processes by meeting the needs of its clients and giving them the best possible value (Nawaz, 2024).

2.8 Summary of Gaps in the Empirical Studies

According to Truong et al., (2014), many other factors may have an impact on operational performance that are not included in their study, such as external environment, capital, technology, equipment, information flow, outsourcing, and so on, and the generalizability of the results would be higher if the sample scope was expanded to include other industries and countries. These indicate directions for further studies.

The research group identified limitations in the empirical study conducted by (Aichouni et al., 2023) Organizational characteristics can have an impact on how TQM and OSH management systems are implemented. TQM and OSH implementation can be influenced by an organization's size, business activity type, quality experience, and safety experience. These effects were not investigated in the current paper, so they can be considered a limitation. This will be taken into account in subsequent analyses.

The second limitation concerns the measurement of TQM practices in Saudi organizations. The literature, which does not specifically take into account the Saudi context, is where the measurements of TQM practices were obtained. Based on a thorough review of the literature published globally, the authors developed their research instrument. They then tailored the survey instrument questions to the Saudi context, making them more suitable for assessment in a cross-sectional setting that encompassed a variety of economic sectors (industrial, services, NPOs, etc.). The respondents from different sectors who speak different business languages might become a little confused by this. Furthermore, the study's actual sample size may be regarded as being somewhat small to extrapolate the results. common method bias is typically present in empirical research when the same

respondent provides data for both the independent and dependent variables within the same measurement context, using the same item context and comparable item characteristics. This circumstance exists in the current study, and it would be required to resolve it to verify the accuracy of the conclusions and results. By adjusting the survey instrument according to the features of various organizations, gathering data from a larger sample size, and carrying out thorough statistical data analyses, future research would be able to overcome these limitations.

2.8.1 General Gaps of the Study

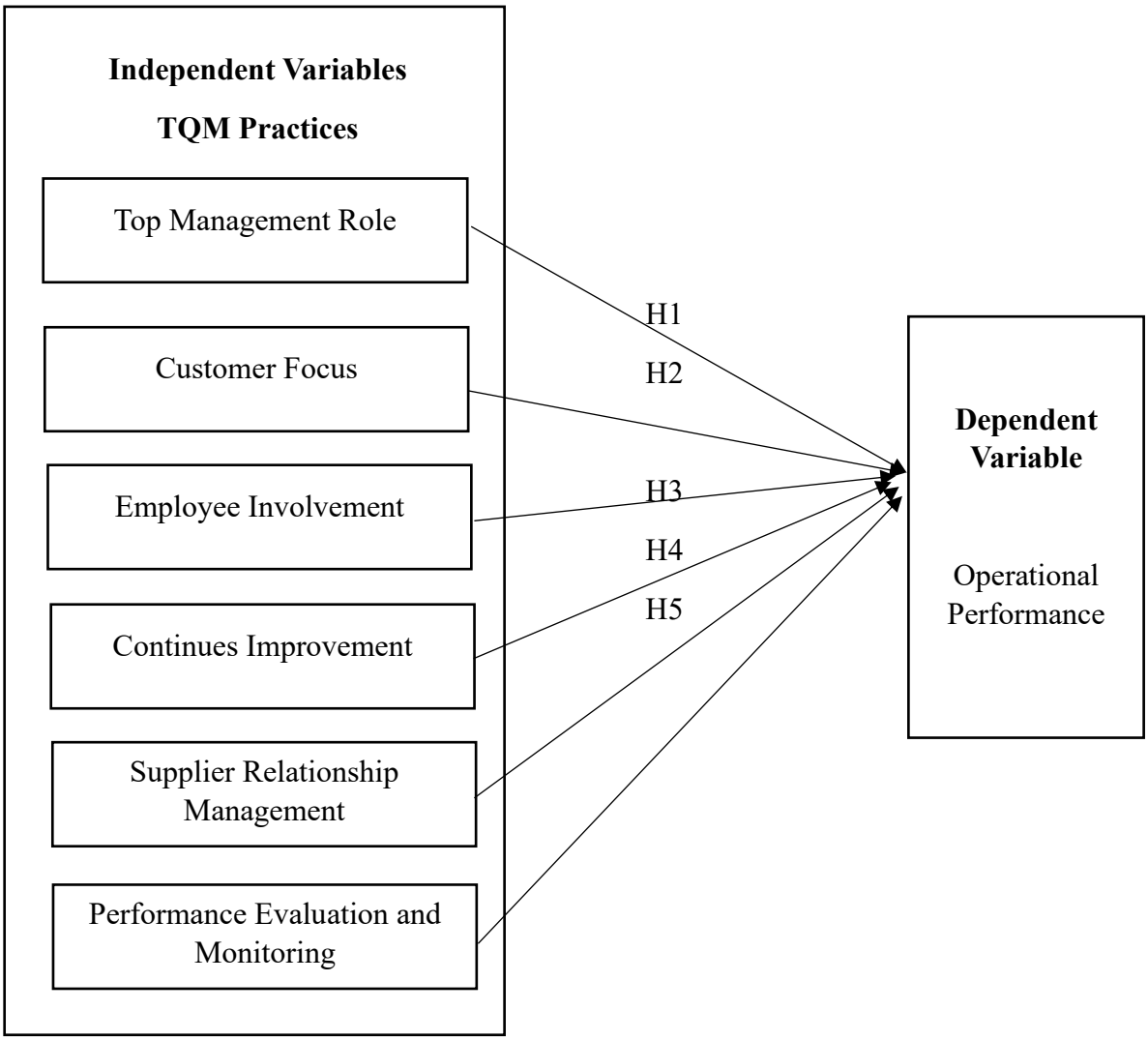
The importance of TQM Practice and the rapidly expanding logistics industry in our country has a big impact on the general expansion of businesses. Even though the subject matter is broad and applicable to all types of operations to achieve operational performance, this significant factor prompts researchers to study and contribute something essential. However, the scope of the research is limited to the three logistics organizations that were chosen in a capital city, and this is insufficient to demonstrate their role in the logistics industry's operational performance with the phenomena that can be observed in these intricate relationships. These gaps in literature present chances for more research in this area.

2.9 Conceptual Framework of the study

The conceptual framework demonstrates the relationship between TQM practices and operational performance, stating why they are chosen as the main components under investigation. The study provides the skeleton of the independent and dependent variables, and their assumable relations, which will be tested later by data analysis. From an analysis of a literature review, the four basic TQM procedures of this study were pinpointed. These most prominent strategies have been well-proven in practice and have remained the cornerstone of the successful implementation of the total quality management approach.

Independent variables are measured by Top management role, Customer focus, Employee Involvement, Continuous Improvement, Supplier Relationship management, and performance evaluation and monitoring. whereas the dependent variable was operational performance, measured using deliverability, affordability, Quality, customer satisfaction, and firm performance.

As shown in Figure 1, the general conceptual framework of this study is based on the TQM techniques, which have been identified as the independent variables whereas operational performance is the dependent variable.



(Source: Adopted based on a reviewed article (Mehmood et al., 2014))

Figure 1. Conceptual framework

2.10 Hypotheses of the Study

To investigate the role of TQM on an organization's operational performance the following alternative hypothesis is proposed

H1 There is a significant positive effect of the top management role on the operational performance of the selected logistics organizations

H2 There is a significant positive effect of customer focus on the operational performance of the selected logistics organizations.

H3 There is a significant positive effect of employee involvement on the operational performance of the selected logistics organizations.

H4 There is a significant positive effect of Continuous improvement on the operational performance of the selected logistics organizations.

H5 There is a significant positive effect of supplier relationship management on the operational performance of the selected logistics organizations.

H6 There is a significant positive effect of performance evaluation and monitoring on the operational performance of the selected logistics organizations.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Description of the Study Area

The study focuses on the Role of Total Quality management practices in the business performance of the chosen logistics and customs clearing companies, specifically AGL Logistics Ethiopia (Bollore), Maccfa Freight Forwarding PLC, and Impact Logistics PLC. These companies are the top-performing private customs clearing and logistics companies operating in Addis Ababa. The researcher is driven to find out how far those companies have gone in implementing total quality management into their business performance. As the competition among the competitors is getting tough it is recommendable for the business companies to maximize their usage of total quality management

Bolloré Africa Logistics has rebranded and operated as Africa Global Logistics (AGL Logistics) At the end of 2022, The new subsidiary was created as part of a joint venture between Bolloré Transport & Logistics and the Ethiopian company CLS Logistics. the company has been the exclusive agent of Bolloré Transport & Logistics in Ethiopia since 2008 and through this partnership presence in Ethiopia for more than ten years, providing a full range of services to support businesses, both locally and internationally. AGL also employs more than 120 Ethiopian staff, whom it supports through training and career development activities.

MACCFA Freight Forwarding PLC is a company that handles import and export customs clearance, freight forwarding, transportation, and shipping agency. It was founded in Addis Ababa in 1994 and has provided logistics services in Ethiopia. MACCFA has established a joint venture agreement with CEVA Logistics, a strong partnership with CMA CGM, a global leader in transportation and logistics, and Ethiopian Airlines and many other international carriers and shipping companies. Approximately 93 employees take part in daily tasks to meet the needs of both inbound and outbound clients.

Impact Logistics PLC Setup in 2009, Impact Logistics PLC is a Complete Service Provider for international Transportation Logistics Solutions. Headquartered in Addis Ababa, Ethiopia Impact Logistics is one of the leading logistics companies in Ethiopia. With a staff of extremely skilled professionals and a network of offices in Ethiopia and overseas, worked to ensure that customers' cargo got the care it deserved till it reached its destination. There are about 55 employees held in Impact Logistics plc to fulfill its corporate objective of providing clients with end-to-end service.

3.2 Research Approach and Design

3.2.1 Research Approach

In this research a quantitative research approach is applied, it is more suited to describe and evaluate the TQM effect on operation performance. The technique gathers numerical data and applies mathematical analysis to explain relationships or phenomena. This research aims to investigate the role of TQM practices and operational performance. To establish the research result between the variables under investigation, a quantitative research approach was selected.

The methodology used to determine the quality of the data and the study's reliability. Primary data collection/survey and secondary data analysis will be used to quantitatively evaluate the research model and ascertain the impact of total quality management on operational performance.

using quantitative research methods, are better suited to characterize and assess TQM's impact on the operational performance of the business. This method collects numerical data and uses mathematical analysis to explain phenomena or relationships. For example, the empirical study reviewed in Chapter Two is also used qualitatively. The purpose of this study is to look into the relationship that exists between operational performance and TQM practices. The reliability of the study and the caliber of the data will also depend on the methodology that is employed.

3.2.2 Study Design

Both descriptive and correlational designs work well for this investigation. To explain the relationships between variables, explanatory studies establish causal relationships between variables and concentrate on analyzing a situation or problem. Studies that aim to accurately depict people, events, or circumstances are known as descriptive research (Saunders et al., 2019). Descriptive research studies are primarily concerned with describing the traits of specific people or groups. Thus, to investigate the role of TQM practices on the operational performance of the chosen logistics companies, Population and Sampling.

3.3 Units of Analysis

The target population for this study is employees of the selected companies in Addis Ababa and the number of employees working in it is about 268 employees. The information on the number of employees is found on the selected three logistic companies' official websites and LinkedIn pages.

The sample size for the quantitative information survey method from a selected sample of the target population will be undertaken. The sample size should be representative based on credibility (Kothari, 2004). As per Kothari (2004) for the target population, which is not large in number 5%-10% of the total could be enough. Although there are more complex formulas, the general rule of thumb is that no less than 50 participants for a correlation or regression are required. In this regard, the total number of the target population who are currently working in the selected logistics companies and expected to understand the whole system/service endeavor. In line with that, potential respondents thought that they were able to handle the questionnaire on their own.

As the sample size grows, research becomes less likely to provide misleading results. The size of the sample will be determined by elements such as time necessary, financial implications, and the life situations of the persons included all of which will influence all three criteria. This study will use Yamane's formula: n=N/(1+N(〖e)〗^2) to decide the number of samples to be used in this study.

Where: n = the sample size

N = the population of the study

e = the margin error in the calculation

Using a confidence level of 95% and a margin of error of 5% the sample size for this study will be 160 employees from the total population of 268.

The study employed five-point Likert-scaled questions and dichotomous questions. After the completion of the survey, the data will be entered into the computer using SPSS software. Coding and data cleaning are done case by case and variable by variable.

3.4 Specifications of the Research Model

To examine the effect of total quality management practices on the operational performance of the selected logistics organization the following linear regression model is developed. Variables are carefully selected in the review of literature which needs to be specified. As a rule of thumb, the higher R^2 value in multiple regressions implies more probability that the important variables are included in the model. Multiple Regression techniques are applied to analyze the straight-line relationships among two or more variables and estimate the β‟s in the equation. Sample regression model equation for linear relationship among variables is.

yj = β 0 + β1x1 j + β2x2 j +….+ βp xpj +ε j

where:

Yj‟s represents the dependent variable for observation j. (Operational Performance)

Xj‟s represents the independent variables (VIs) for observation j (top management role, customer focus, employee involvement, continuous improvement, supply relationship management, and)

β0 is the intercept.

β‟s is the unknown regression coefficient.

εj is the error (residual) of observation j.

To investigate the impact of total quality management practices on the operational performance of the chosen logistics companies, the model is adjusted based on the research variables outlined in the conceptual framework in chapter two.

$OP = \beta 0 + \beta 1TMR + \beta 2CF + \beta 3EI + \beta 4CI + \beta 5SRM + \beta 6PEM + \varepsilon$ …….

Where ;-

OP= Operational performance

TMR= Top Management Role

CF= Customer focus

EI= Employee involvement

CI= Continues improvement

SRM= Supplier relationship management

PEM= Performance evaluation and monitoring

β1 TMR = The partial change in the operational performance of selected logistics and companies due to a change in Top management roles while other things remain constant.

B2 CF = The partial change in the operational performance of selected logistics companies due to a change in customer focus while other things remain constant.

B3 EI = The partial change in the operational performance of selected companies due to a change in employee involvement while other things remain constant.

B4 CI = The partial change in the operational performance of selected logistics companies due to a change in continuous improvement while other things remain constant.

B5 SRM = The partial change in the operational performance of selected logistics companies due to a change in supplier relationship management while other things remain constant.

B6 PEM = The partial change in the operational performance of selected logistics companies due to a change in Performance evaluation and monitoring while other things remain constant.

3.5 Data Analysis Techniques

A five-point Likert scale is used to quantify the quantitative data, which is collected using structured questionnaires that were created by going over earlier research on TQM and service literature. The respondents' correctly completed questionnaires will be chosen, coded, and imported into SPSS V25.

Multiple regressions, correlation analyses, and descriptive analyses are used to examine the gathered data. The mean, standard deviations, and frequency are used to quantitatively characterize the variables using descriptive statistics. Correlation analysis was performed to identify the direction and the strength of the relationship between variables. However, as correlation analysis only shows the direction and degree of association between variables, multiple regression analysis was performed to make causal inferences regarding the relationship between variables.

Before the analysis of the data, the researcher carried out data cleaning. The data cleaning procedure enabled the researcher to spot and eliminate all errors emanating from unclear responses, omission of unwanted data, and other related mistakes. The collected data through questionnaires and documents are edited, coded, classified, and tabulated so that they can be amendable for analysis. The SPSS package was employed in the analysis of different variables. SPSS (Statistical Package for Social Science) software version 25 was used to analyze and present the data as tables, charts, and diagrams. The impact of the independent variables on the dependent variables was examined using a variety of statistical techniques, including multiple regressions, correlation, and the descriptive arithmetic mean of the constructs. Finally, conclusions are made based on the findings/results of the study, and recommendations are forwarded based on the data analyzed.

3.6 Validity and Reliability

3.6.1 Validity of Research Instruments

The validity of the questionnaire was checked by Pearson Product Moment Correlations using the Statistical Product and Service Solutions (SPSS) software. In this approach, the researcher compared the relationship that each of the items in the questionnaire has with the total score to establish how closely they match the total measurement. In this way, the scores of all the items of a particular questionnaire can be matched with the total score, establishing the validity and reliability of each item to measure the intended construct.

Analyzing the results of the correlation analysis presented in the correlation table it is possible to mention that in almost all cases the values of the coefficients were significantly less than 0. 001. This relatively high level of significance indicates that the individual items bear a high relationship with the total scores they make up and is, therefore, proof of their validity. In other words, the items assist in measuring the factors, hence making the questionnaire capture the whole polarity or construct in question.

3.6.2 Reliability of Research Instruments

The first was to establish the degree of measurement reliability or the extent to which the same measurement yielded consistent results across similar situations. To assess the internal consistency reliability of the questionnaires, Cronbach's alpha reliability coefficient was used. Overall, Cronbach's alpha of 0.7 is generally good. It is desirable to have 0.8 or higher, and reliability is best when Cronbach's alpha is 0.9 or higher. Among the methods for verifying study reliability, Cronbach's Alpha is the most frequently used, so it was used for the reliability analysis. The results of the reliability tests are provided in Table 1.

Table 1. Reliability Statistics of the Study Objectives

Scale	Cronbach's alpha	Number of Items	Remark
Top Management Role	0.847	6	Acceptable
Customer focus	0.755	5	Acceptable
Employee Involvements	0.822	6	Acceptable
Continuous Improvement	0.963	6	Acceptable
Supplier relationship management	0.788	5	Acceptable
Performance evaluation and Monitoring	0.837	5	Acceptable
Operational Performance	0.839	6	Acceptable
Average Score	**0.934**		**Acceptable**

Source: (Survey, 2024)

The results in Table 1 indicate that the overall Cronbach's alpha value for the seven categories was 0.934. Additionally, the Cronbach's alpha values for each specific category were as follows: Top Management Role (0.847), Customer Focus (0.755), Employee Involvement (0.822), Continuous Improvement (0.963), Supplier Relationship Management (0.788), Performance Evaluation and Monitoring (0.837), and Operational Performance (0.839). All these values exceeded the recommended threshold of 0.7.

As it is the most important factor validity shows how well an instrument measures the things is meant to measure (Kothari, 2004). The question of whether the content of the manifest variables (questionnaires) is appropriate to measure the latent concept (TQM) that the researcher is attempting to measure is addressed by one test of validity, known as content validity. By carefully selecting all the TQM variables and their measurements from reputable sources, the researcher will carefully search the literature to develop content-valid constructs for this study.

A measure's consistency is referred to as its reliability. Internal reliability, one of the reliability types, is crucial when it comes to multi-scale items because it helps ascertain whether each scale is measuring a single concept and, consequently, whether the scale's constituent items are internally consistent (Bryman & Cramer, 1999). Internal consistency is measured by the coefficient alpha, which must be greater than 0.7 to be considered internally consistent (Muijs, 2010).

3.7 Ethical Considerations

All the data and information provided by the respondents will be kept confidential concerning ethical considerations. The goal of the research was made evident to respondents. The answers to the questionnaire are not shared with outside parties and only be used by the researcher for academic purposes; identities or other personal information should not be written on it.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1 Response rate

The study used data from 160 respondents from three selected logistics companies. Interestingly, out of all the participants, the study collected 152 questionnaires. Of the 152 collected questionnaires, 149 responded to all questions on the form and were used in the study. This yielded a response rate of 93.13% which is coherently okay for analysis. Babbie (2006) has stated that a 60% response rate is good, and a 70% response rate is very good.

4.2 Demographic Data of Respondents

The study aimed to determine the demographic characteristics of the respondents, including gender, age bracket, and duration of employment at the three selected logistics companies: Africa Global Logistics (AGL Logistics), MACCFA Freight Forwarding PLC, and Impact Logistics PLC.

Table 2. Demographic Data of Respondents

Attribute	Category/Factor	Frequency	Percentage
Gender	Male	87	58.4%
	Female	62	41.6%
	Total	**149**	**100%**
Age	Below 25	0	0.0%
	26-35	44	29.5%
	36-45	68	45.6%
	46-60	34	22.8%
	Above 60	3	2.0%
	Total	**149**	**100%**
Level of Education	TVET/Diploma	6	4.0%
	Undergraduate	58	38.9%
	Postgraduate	67	45.0%
	PhD	10	6.7%
	Others	8	5.4%
	Total	**149**	**100%**
Current Job Position	Manager	30	20.1%
	Assistant Manager	53	35.6%

	Supervisor	32	21.5%
	Others	34	22.8%
	Total	**149**	**100%**
Year of Service in current position	Less than 2 years	11	7.4%
	2-5 years	65	43.6%
	5-8 years	46	30.9%
	More than 8 years	27	18.1%
	Total	**149**	**100%**

Source: (Survey, 2024)

The study's respondents were predominantly male, comprising 58.39% of the total (87 individuals), while female respondents made up 41.61% (62 individuals). This gender disparity could be attributed to the job's operational nature, which may demand more male workers. Age-wise, the largest group of respondents were aged 36-45, making up 45.7% (68 individuals), followed by those aged 26-35 at 29.5% (44 individuals). The third group, aged 46-60, accounted for 22.8% (34 individuals), and the smallest group, those above 60, included only 3 respondents (2%). Most respondents were under 45 years old, indicating a relatively young workforce.

Educationally, the majority of the 149 respondents held postgraduate degrees (67 individuals, 45%), reflecting a high level of advanced education among participants. The second largest group held undergraduate degrees (58 individuals, 38.9%), and together, these two groups constituted 83.9% of the total. Smaller groups included those with PhDs (10 respondents, 6.7%), other qualifications (8 respondents, 5.4%), and TVET/Diploma holders (6 respondents, 4.0%), suggesting notable educational diversity. Job position data showed Assistant Managers as the largest group (53 individuals, 35.6%), followed by various other job titles (34 respondents, 22.8%), Supervisors (32 respondents, 21.5%), and Managers (30 respondents, 20.1%). Regarding years of service, the most common length was 2 to 5 years (65 respondents, 43.6%), with significant representation from those with 5 to 8 years (46 respondents, 30.9%) and more than 8 years (27 respondents, 18.1%). Only 7.4% (11 respondents) had less than 2 years of service, indicating substantial work experience among most respondents.

4.3 TQM Practices on the Selected Logistics Organizations

Table 3. Aggregate Summary of TQM Practices

TQM Practices	Mean	Std. Deviation
Top management role	27.0000	3.58488
Customer focus	20.4094	3.37722
Employee involvement	27.8054	2.99702
Continuous improvement	24.9060	5.02741
Supplier relationship management	23.6711	2.03497
Performance evaluation and monitoring	20.7315	3.47701

Source: (Survey, 2024)

The above table shows the role of top management in the operational performance of logistics organizations is underscored by a mean score of 27.0000 and a standard deviation of 3.58488. This high mean indicates that top management is highly involved in TQM practices. The relatively low standard deviation suggests a consistent level of engagement among top management across the organization. Their role is crucial as they provide strategic direction, foster a quality culture, and ensure resources are allocated effectively for quality initiatives. This leadership is vital for integrating TQM principles into daily operations, significantly enhancing the organization's overall performance.

Customer focus has a mean score of 20.4094 with a standard deviation of 3.37722. This suggests that while there is a strong emphasis on understanding and meeting customer needs, there is some variability in how consistently this focus is applied across the organization. Customer focus is essential for maintaining high levels of customer satisfaction and loyalty. By prioritizing customer needs and preferences, the logistics organization can tailor its services to better meet market demands. This, in turn, helps improve operational performance by aligning service delivery with customer expectations, although it is less impactful than top management and employee involvement.

Employee involvement is reflected by a high mean score of 27.8054 and a low standard deviation of 2.99702. This indicates a very high and consistent level of employee engagement in TQM practices within the organization. When employees are actively involved in decision-making processes and their contributions are recognized, they are more motivated and committed to the organization's goals. This high level of involvement fosters a collaborative environment where employees contribute to continuous

improvement and innovation. Such engagement is critical for enhancing operational performance, as it leverages the collective expertise and creativity of the workforce.

Continuous improvement has a mean score of 24.9060 and a standard deviation of 5.02741. This suggests a strong commitment to ongoing process enhancements, though there is notable variability in its application across the organization. Continuous improvement is a core aspect of TQM, involving the regular assessment and refinement of processes to eliminate inefficiencies and improve quality. This variability might indicate differing levels of maturity in continuous improvement practices within different departments. However, where it is effectively implemented, it significantly boosts operational performance by fostering a proactive approach to problem-solving and process optimization.

Supplier relationship management has a mean score of 23.6711 and a low standard deviation of 2.03497. This high and consistent mean score indicates that the organization places significant importance on managing supplier relationships. Effective supplier management ensures that high-quality materials and services are consistently procured, which is crucial for maintaining operational continuity and quality. Strong relationships with suppliers can lead to better coordination, reduced delays, and enhanced supply chain efficiency, all of which are essential for supporting the organization's operational performance, although its impact is more indirect compared to other TQM practices.

Performance evaluation and monitoring are reflected by a mean score of 20.7315 and a standard deviation of 3.47701. This indicates a strong but somewhat variable focus on tracking and analyzing performance metrics within the organization. Regular performance evaluation and monitoring are crucial for identifying areas for improvement and measuring the effectiveness of implemented changes. This data-driven approach ensures that decisions are based on objective insights, leading to more accurate and effective operational adjustments. While its impact on operational performance is significant, it is less pronounced compared to the direct effects of top management involvement, employee engagement, and continuous improvement practices.

4.4 Operational Performance of the Selected Logistics Organization

Operational performance is assessed using six TQM components: top management role, customer focus, employee involvement, continuous improvement, supplier relationship

management, and performance evaluation and monitoring. The following sections discuss the results based on these components.

Table 4. Findings of the Operational Performance

	Mean	Std. Deviation
The organization delivers services at an affordable price	4.9362	0.28697
Strategies and plans are developed for the quality service measurement	4.7315	0.61106
There is an increasing activity rate/ transactions compared to the previous year	4.6174	0.72221
Employees have high morale and low turnover	4.3221	0.93193
Organizations concerned about applying on-time service deliveries	4.0738	0.94507
There is a good internal control system to satisfy customers	3.3289	0.70176
Grand Mean	4.3333	0.54628

Source: (Survey, 2024)

The components of operational performance as the dependent variable are delivering services at an affordable price, strategies and plans developed for quality service, increasing activity compared to the previous year, high employee morale and low turnover, on-time service deliveries, and a good internal control system. The six components are depicted in Table 4.

The table presents data on various organizational practices and their effectiveness as perceived by respondents. The highest mean score (4.9362) is associated with the statement "The organization delivers services at an affordable price," indicating a strong consensus that the organization is successful in providing cost-effective services. The low standard deviation (0.28697) suggests that there is little variation in responses, reflecting a consistent perception across the board. This high level of agreement highlights the organization's ability to maintain affordability, which is likely a significant factor in customer satisfaction and competitiveness.

Other statements also received high mean scores, indicating positive perceptions but with slightly more variability. "Strategies and plans are developed for quality service measurement" has a mean score of 4.7315 and a standard deviation of 0.61106, suggesting

strong agreement that the organization is proactive in planning and measuring service quality, though there is some variation in how consistently these strategies are perceived. The statement "There is an increasing activity rate/transactions compared to the previous year" has a mean of 4.6174 and a standard deviation of 0.72221, indicating positive perceptions of growth in organizational activity or transactions, albeit with some variability in respondent experiences.

Other aspects such as employee morale, on-time service delivery, and internal control systems received lower mean scores. The statement "Employees have high morale and low turnover" has a mean score of 4.3221 and a higher standard deviation of 0.93193, suggesting that while employee morale is generally perceived positively, there is considerable variation in responses, indicating that not all employees may feel equally positive. "Organizations concerned about applying on-time service deliveries" has a mean score of 4.0738 and a standard deviation of 0.94507, showing a moderate level of agreement with notable variability, suggesting mixed experiences with on-time service delivery. The lowest mean score (3.3289) is for "There is a good internal control system to satisfy customers," with a standard deviation of 0.70176, indicating that while some respondents perceive the internal control system as adequate, there is significant room for improvement and variability in satisfaction levels. Overall, while affordability and strategic planning for quality measurement are strong points, areas like internal controls and employee morale could benefit from further attention to ensure consistency and overall satisfaction.

4.5 The Role of TQM on the Operational Performance of the Selected Logistics Organization

Table 5. Correlation of operational performance and TQM components

		Operational Performance	Top Management Role	Customer Focus	Employee Involvement	Continuous Improvement	Supplier Relationship Management	Performance Evaluation and Monitoring
Operational Performance	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	149						
Top Management Role	Pearson Correlation	.671**	1					
	Sig. (2-tailed)	.000						
	N	149	149					
Customer Focus	Pearson Correlation	.548**	.369**	1				
	Sig. (2-tailed)	.000	.000					
	N	149	149	149				
Employee Involvement	Pearson Correlation	.524**	.153	.345**	1			
	Sig. (2-tailed)	.000	.062	.000				
	N	149	149	149	149			
Continuous Improvement	Pearson Correlation	.485**	.162*	.471**	.450**	1		
	Sig. (2-tailed)	.000	.049	.000	.000			
	N	149	149	149	149	149		
Supplier Relationship Management	Pearson Correlation	.227**	.156	.068	.074	.081	1	
	Sig. (2-tailed)	.005	.058	.411	.372	.323		
	N	149	149	149	149	149	149	
Performance Evaluation and Monitoring	Pearson Correlation	.580**	.391**	.946**	.365**	.483**	.261**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	
	N	149	149	149	149	149	149	149

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

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

Source: (Survey, 2024)

Pearson's correlation coefficient was used to measure the relationship between the independent and dependent variables in the study. This is presented in 5.

The correlation table provides insights into the relationships between various organizational factors and operational performance. The strongest correlation with operational performance is observed with the top management role (Pearson correlation = 0.671, $p < 0.01$), indicating that the involvement and effectiveness of top management significantly influence operational outcomes. This strong positive correlation suggests that organizations, where top management plays a proactive role in guiding and supporting operations, tend to achieve better operational performance.

Customer focus also shows a significant positive correlation with operational performance (Pearson correlation = 0.548, $p < 0.01$). This indicates that organizations that prioritize understanding and meeting customer needs tend to perform better operationally. The correlation between customer focus and top management role (Pearson correlation = 0.369, $p < 0.01$) further suggests that top management's active involvement may help in fostering a customer-oriented culture within the organization, thereby enhancing overall performance.

Employee involvement has a notable correlation with operational performance (Pearson correlation = 0.524, $p < 0.01$), underscoring the importance of engaging employees in decision-making processes and operational activities. This positive relationship indicates that when employees are actively involved and feel a part of the organization, their contributions can significantly enhance operational performance. The correlation between employee involvement and continuous improvement (Pearson correlation = 0.450, $p < 0.01$) suggests that employee engagement also plays a crucial role in fostering a culture of continuous improvement, which is vital for long-term success.

Continuous improvement itself is positively correlated with operational performance (Pearson correlation = 0.485, $p < 0.01$), highlighting the importance of ongoing efforts to enhance processes and services. Interestingly, supplier relationship management has a weaker but still significant correlation with operational performance (Pearson correlation = 0.227, $p < 0.01$), indicating that while managing supplier relationships is important, its direct impact on operational performance may not be as strong as the other factors. Performance evaluation and monitoring show a strong correlation with both customer focus (Pearson correlation = 0.946, $p < 0.01$) and operational performance (Pearson correlation = 0.580, $p < 0.01$), emphasizing the critical role of regular performance assessments in achieving and maintaining high operational standards.

Overall, the data underscores the multifaceted nature of operational performance, highlighting the significant roles of top management, customer focus, employee

involvement, continuous improvement, and performance evaluation. Each of these elements interrelates to create a robust framework for organizational success, with top management playing a pivotal role in steering these efforts toward better performance outcomes.

Table 6. The ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,121.367	6	186.895	56.631	.000[b]
	Residual	468.633	142	3.300		
	Total	1,590.000	148			

Source: (Survey, 2024)

ANOVA was done to determine the differences in means of the dependent and independent variables. As depicted in table 6.

The ANOVA table provides a statistical analysis of the variance for a regression model. The table shows that the regression model explains a significant portion of the variance in the dependent variable. Specifically, the "Sum of Squares" for the regression is 1,121.367 with 6 degrees of freedom (df), resulting in a mean square of 186.895. This is compared to the residual sum of squares of 468.633 with 142 degrees of freedom, giving a mean square error of 3.300. The F-statistic for the model is 56.631, with a significance level (Sig.) of .000, indicating that the model is statistically significant at the 1% level. This means that the independent variables collectively have a significant impact on the dependent variable.

The high F-value (56.631) and the low p-value (Sig. = .000) suggest that the regression model fits the data well and that the explanatory variables included in the model significantly predict the outcome variable. The total sum of squares (1,590.000) is partitioned into the regression and residual components, with most of the variability being explained by the regression model. This strong significance indicates that the model provides a good fit to the data, and the independent variables used in the regression explain a substantial amount of the variance in the dependent variable.

Table 7. Regression Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840[a]	.705	.693	1.81665

Source: (Survey, 2024)

The regression model summary provides key statistics that describe the fit of the model. The correlation coefficient (R) is 0.840, indicating a strong positive relationship between the independent variables and the dependent variable. This suggests that the model's predictors collectively have a substantial impact on the outcome. The R Square value is 0.705, meaning that approximately 70.5% of the variance in the dependent variable is explained by the independent variables in the model. This high R Square value indicates a good fit, as a significant portion of the variability in the dependent variable is accounted for by the model.

The Adjusted R Square value, which adjusts for the number of predictors in the model, is 0.693. This value is slightly lower than the R Square but still indicates a strong model fit, considering the adjustment for potential overfitting. The standard error of the estimate is 1.81665, which provides a measure of the average distance that the observed values fall from the regression line. A lower standard error would indicate that the data points are closer to the fitted line, suggesting a more accurate model. In this case, while 1.81665 is not negligible, the strong R and R Square values indicate that the model is effective in explaining the variance of the dependent variable, although there is still room for improvement in reducing prediction errors.

Table 8. Regression Coefficients

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-5.514	2.622		-2.103	.037
Top Management Role	.476	.045	.521	10.485	.000
Customer Focus	.114	.167	.118	.685	.494
Employee Involvement	.327	.057	.299	5.746	.000
Continuous Improvement	.119	.036	.182	3.286	.001
Supplier Relationship Management	.144	.093	.089	1.548	.124
Performance Evaluation and Monitoring	.043	.169	.045	.252	.802

a. Dependent Variable: Operational Performance

Source: (Survey, 2024)

The regression equation established from the data in Table 8 above as follows

$yj = \beta\ 0 + \beta 1x1\ j + \beta 2x2\ j + \ldots + \beta p\ xpj + \varepsilon\ j$

$OP = -5.514 + 0.476TMR + 0.327EI + 0.119CI$

The regression model summary table provides detailed information on the impact of each independent variable on the dependent variable, operational performance. The constant term (intercept) is -5.514 with a standard error of 2.622, and it is statistically significant ($t = -2.103$, $p = .037$), indicating that when all predictors are held at zero, the expected operational performance would be -5.514.

Among the predictors, the top management role has the highest standardized coefficient (Beta = .521) and is highly significant ($t = 10.485$, $p = .000$). This suggests that top management's involvement is the most influential factor in determining operational performance, with each unit increase in top management role associated with a .476 increase in operational performance, holding other factors constant.

Employee involvement also shows a strong positive impact on operational performance, with a standardized coefficient of .299 and a significant t-value of 5.746 ($p = .000$). This indicates that greater employee involvement significantly enhances operational performance. Continuous improvement has a smaller but still significant positive effect (Beta = .182, $t = 3.286$, $p = .001$), highlighting the importance of ongoing enhancements in processes and procedures.

In contrast, customer focus (Beta = .118, $t = .685$, $p = .494$), supplier relationship management (Beta = .089, $t = 1.548$, $p = .124$), and performance evaluation and monitoring (Beta = .045, $t = .252$, $p = .802$) do not show significant effects on operational performance in this model. These results suggest that while customer focus and performance evaluation are important, their direct statistical impact on operational performance may be less pronounced or possibly mediated through other variables. Overall, the significant predictors indicate that top management role, employee involvement, and continuous improvement are crucial drivers of operational performance.

CHAPTER FIVE

5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study's findings, conclusions, and recommendations. Additionally, the researcher offers suggestions for future studies in the same field.

5.2 Summary

The findings are organized into sub-sections based on the research objectives. The study investigates the impact of six Total Quality Management (TQM) components on operational performance using Pearson's correlation coefficient. The analysis reveals significant insights into how each component influences operational performance.

The strongest correlation with operational performance is found with the top management role (Pearson correlation = 0.671, $p < 0.01$). This indicates that the involvement and effectiveness of top management significantly influence operational outcomes. Organizations where top management actively guides and supports operations tend to achieve better operational performance.

Customer focus also shows a significant positive correlation with operational performance (Pearson correlation = 0.548, $p < 0.01$). This suggests that organizations prioritizing understanding and meeting customer needs tend to perform better operationally. However, in the regression analysis, customer focus does not show a significant impact on operational performance (Beta = 0.118, t = 0.685, p = 0.494), indicating that its direct effect may be mediated through other factors.

Employee involvement has a notable correlation with operational performance (Pearson correlation = 0.524, $p < 0.01$), highlighting the importance of engaging employees in decision-making processes. The regression analysis confirms its significant positive impact on operational performance (Beta = 0.299, t = 5.746, p = 0.000). Active employee involvement enhances their contributions, thereby significantly boosting operational performance.

Continuous improvement is positively correlated with operational performance (Pearson correlation = 0.485, $p < 0.01$), emphasizing the importance of ongoing efforts to enhance processes and services. The regression analysis also shows a significant positive effect (Beta = 0.182, t = 3.286, p = 0.001), underscoring the need for continuous enhancements to achieve better operational outcomes.

Supplier relationship management has a weaker yet significant correlation with operational performance (Pearson correlation = 0.227, $p < 0.01$). Despite its importance, the regression analysis indicates that its direct impact on operational performance is not statistically significant (Beta = 0.089, t = 1.548, p = 0.124). This suggests that while managing supplier relationships is beneficial, it may not be a primary driver of operational performance.

Performance evaluation and monitoring show a strong correlation with operational performance (Pearson correlation = 0.580, $p < 0.01$). However, the regression analysis reveals that it does not have a significant direct impact on operational performance (Beta = 0.045, t = 0.252, p = 0.802). This indicates that regular performance assessments are crucial but may influence operational performance indirectly.

Overall, the findings underscore the multifaceted nature of operational performance, highlighting the critical roles of top management, employee involvement, and continuous improvement. These elements interrelate to create a robust framework for organizational success, with top management playing a pivotal role in steering efforts toward enhanced operational outcomes.

5.3 Conclusion

Conclusively the study objectives are discussed in the following sections. Based on the comprehensive analysis of the relationships between independent variables and operational performance, several key conclusions are drawn:

The study finds a robust positive correlation between top management's active involvement and operational performance (Pearson correlation = 0.671, $p < 0.01$). This underscores that organizations benefit significantly when top management plays a proactive role in guiding and supporting operational activities. The regression analysis further confirms that the top management role (Beta = 0.521, t = 10.485, p = 0.000) is the most influential factor among all variables studied, with each unit increase associated with a 0.476 increase in operational performance. Therefore, empowering and engaging top management effectively can lead to substantial improvements in overall operational outcomes.

The positive correlation between customer focus and operational performance (Pearson correlation = 0.548, $p < 0.01$) highlights the importance of understanding and meeting customer needs. However, the regression analysis (Beta = 0.118, t = 0.685, p = 0.494) indicates that while customer focus contributes positively, its direct impact on operational

performance may be moderated by other factors. Nonetheless, fostering a customer-oriented culture can indirectly enhance organizational performance through improved service delivery and customer satisfaction.

The study reveals a significant positive correlation between employee involvement and operational performance (Pearson correlation = 0.524, $p < 0.01$). Engaging employees in decision-making processes and operational activities not only boosts their morale but also enhances their commitment to organizational goals. The regression analysis reinforces this finding (Beta = 0.299, t = 5.746, p = 0.000), indicating that greater employee involvement leads to better operational outcomes. Therefore, organizations should prioritize strategies that empower and involve employees to achieve higher performance standards.

Continuous improvement efforts positively correlate with operational performance (Pearson correlation = 0.485, $p < 0.01$), emphasizing the significance of ongoing enhancements in processes and services. The regression analysis (Beta = 0.182, t = 3.286, p = 0.001) further supports this, suggesting that organizations committed to refining their operations tend to achieve better overall performance. This highlights the necessity of fostering a culture that encourages innovation and continual learning within the organization.

While supplier relationship management shows a significant but weaker correlation with operational performance (Pearson correlation = 0.227, $p < 0.01$), its direct impact is not statistically significant in the regression model (Beta = 0.089, t = 1.548, p = 0.124). This implies that while maintaining strong supplier relationships is important, its influence on operational performance may be less direct compared to other factors studied.

Performance evaluation and monitoring demonstrate a strong correlation with both customer focus (Pearson correlation = 0.946, $p < 0.01$) and operational performance (Pearson correlation = 0.580, $p < 0.01$). However, the regression analysis does not show a significant direct effect on operational performance (Beta = 0.045, t = 0.252, p = 0.802). Regular assessments and monitoring are crucial for maintaining high operational standards and aligning organizational efforts with strategic goals, although their direct impact on performance may be more indirect.

In conclusion, this study underscores the complex interplay of organizational factors in shaping operational performance. Top management's proactive role emerges as the most influential factor, followed by employee involvement and continuous improvement efforts. While customer focus, supplier relationship management, and performance evaluation & monitoring are also important, their impacts may be more nuanced or

mediated through other variables. Organizations aiming to enhance operational performance should thus prioritize strategies that empower leadership, engage employees, and foster a culture of continuous improvement.

5.4 Recommendations

Based on the analysis, organizations should prioritize enhancing the role of top management to improve operational performance. The strong correlation and significant impact observed in the regression analysis indicate that proactive and effective top management is crucial. Leaders at the top must be deeply involved in strategic decision-making and provide robust support for operational activities. This involvement can be operationalized through regular strategic reviews, direct engagement with operational teams, and the establishment of clear performance goals aligned with the organization's mission.

Employee involvement is another critical factor for enhancing operational performance. The significant correlation and regression analysis findings highlight the importance of engaging employees in decision-making and operational processes. Organizations should implement programs that encourage employee participation, such as suggestion schemes, collaborative problem-solving sessions, and empowerment initiatives. Providing training and development opportunities will also ensure that employees feel valued and are equipped to contribute effectively to the organization's success.

Continuous improvement must be a foundational element of the organization's culture. The positive correlation and significant impact on operational performance underscore the necessity of ongoing efforts to enhance processes and services. Organizations should adopt methodologies such as Lean, Six Sigma, or Kaizen to systematically identify and eliminate inefficiencies. Encouraging a mindset of continuous improvement among employees and regularly reviewing and updating operational processes will help maintain high standards and drive long-term success.

Customer focus, supplier relationships, and performance evaluations and monitoring are essential for better operational performance. The significant positive correlation with operational performance suggests that understanding and meeting customer needs, managing supplier relationships and performance & evaluations have directly benefited organizational outcomes. While the direct impact of the regression analysis was not significant, Organizations should invest in market research, customer focus, supplier relationships, and performance & evaluation management likely influences performance through other mediating factors

5.5 Suggestions for Further Research

Future studies should adopt this research model for sectors sharing the operational model of logistic service organizations in Ethiopia. Doing so will contribute to a novel source of knowledge and facilitate the formulation of robust conclusions. Additionally, it is essential to conduct similar studies among other logistical service companies in peer countries that resemble Ethiopia's economy. This comparative approach will enable a more comprehensive cross-reference of total quality management aspects, thereby fostering improved operational performance and providing insights into innovation and advancements within the logistics sector.

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APPENDICES 1

Addis Ababa University
School of Commerce
Logistics and Supply Chain Management
Graduate Program Unit

Dear respondent,

This is an academic survey questionnaire intended to investigate the Roles of total quality management practices in operational performance: in the case of three selected logistics service organizations in Addis Ababa, Ethiopia. The researcher believes that the research findings will contribute to providing answers to the TQM that these Logistics service organizations practice in their operational performance. Your impartial responses will shed light on these practices from your viewpoint, supporting the formulation of practical solutions. Rest assured, this research is strictly academic and will be used solely for its intended purpose. Any information shared will remain confidential.

Part one: Personal information

1. Sex:

   Male ☐
   Female ☐

2. Age:

   Below 25 ☐ 46-60 ☐
   26-35 ☐ Above 60 ☐
   36-45 ☐

3. Level of Education:

   TVET/Diploma ☐ Ph.D ☐
   Undergraduate ☐ Others ☐
   Postgraduate ☐

4. Current Job Position:

   Manager ☐ Supervisor ☐
   Assistant Manager ☐ Other ☐

5. Year of service in current position:

   less than 2 years ☐ 5-8 years ☐
   2-5 years ☐ more than 8 years ☐

Part two: Total quality management (TQM) practices in operational performance

The following statements that address different aspects of Total Quality Management (TQM) practice in operational performances are listed below. To indicate the most relevant response for each question, please add a check (√) mark next to it.

Top Management Role						
No	**Factors**	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
1	Top management regularly analyzes the efficacy of quality policies and objectives.					
2	Top management provides visible leadership in maintaining an environment that supports operational performance					
3	Top management encourages employees' involvement in quality management activities.					
4	The top management has a clear vision for meeting quality objectives.					
5	Top management supports technological developments for quality improvement.					
6	Top management allocates enough organizational resources (Eg. Finance, people, time, and equipment) to improve operational performance					
Customer focus						
No	**Factors**	**Strongly Disagree (1)**	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
1	The organization focuses on understanding and satisfying the demands and expectations of customers.					
2	The staff of the organization replies quickly to customer compliance					
3	Customer feedback on service quality helps build customer relationships.					
4	The overall goal of quality management is the customers.					
5	Market research is used to analyze customers' expectations for the future in great detail.					

Employee Involvements

No	Factors	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	The organization provides motivation, support, and encouragement to its employees.					
2	Employees participate actively in operational and quality decision-making.					
3	Employees are invited to participate in the creation and teamwork to ensure collaboration.					
4	Employee suggestions are taken into consideration and carried out.					
5	Policies and programs are developed with input from employees at all levels.					
6	Employees receive fair compensation based on the level of their performance.					

Continuous Improvement

No	Factors	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	The organization approaches work with an entrepreneurial spirit, rather than following traditional processes.					
2	Employees are encouraged to improve procedures using creativity and imagination to get better outcomes.					
3	Managers take an active part in facilitating continuous improvement, coaching new approaches, mentoring, and leading empowered employees.					
4	The organization conducts regular training for workers					
5	Employees continually strive to enhance the quality of their services and procedures.					

6	The organization values innovation and strives for continuous development.					

Supplier relationship management

	Factor	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	Organizations have long-term contracts with suppliers.					
2	The organization periodically visits suppliers to inspect and evaluate services for quality improvement.					
3	The organization has detailed Information about suppliers and their performance					
4	The organization regularly gives feedback on supplier's request					
5	Organization gives more emphasis on quality of service than price for supplier selection					

Performance evaluation and Monitoring

	Factor	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	Organizations use service management software for monitoring and evaluation of information adequacy, fright safety, on-time delivery, and operational cost management					
2	There is an increase in service delivery(service achieved/service planned)					
3	Employees who serve the customers have enough knowledge					
4	There is an increase in sales in comparison to the previous year					

5	Managers are constantly involved in monitoring activities					

Operational Performance

No	Factors	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
1	The organization delivers services at an affordable price					
2	Strategies and plans are developed for the quality service measurement					
3	There is an increasing activity rate/ transactions compared to the previous year					
4	Employees have high morale and low turnover					
5	Organizations concerned about applying on-time service deliveries					
6	There is a good internal control system to satisfy customers					

Source;- adapted based on the reviewed thesis (Berhane, 2022), (Aga, 2018), (Dejene, 2018)

APPENDICES 2

Result of Top Management Role

	Mean	Std. Deviation
Top management regularly analyzes the efficacy of quality policies and objectives.	4.9128	0.36637
Top management provides visible leadership in maintaining an environment that supports operational performance	4.5436	0.74872
Top management encourages employees' involvement in quality management activities.	4.4497	0.80904
The top management has a clear vision for meeting quality objectives.	4.1812	0.97989
Top management supports technological developments for quality improvement.	4.4631	0.90437
Top management allocates enough organizational resources (E.g. Finance, people, time, and equipment) to improve operational performance	4.4497	0.80904
Grand Mean	4.5000	0.59748

Source: (Survey, 2024)

Result of Top Customer Focus

	Mean	Std. Deviation
The organization focuses on understanding and satisfying the demands and expectations of customers.	4.4631	0.90437
The staff of the organization replies quickly to customer compliance	4.0067	1.00335
Customer feedback on service quality helps build customer relationships.	3.8993	0.94257
The overall goal of quality management is the customers.	3.6040	0.97827
Market research is used to analyze customers' expectations for the future in great detail.	4.4362	0.91771
Grand Mean	4.0819	0.67544

Result of Employee Involvement

	Mean	Std. Deviation
The organization provides motivation, support, and encouragement to its employees.	4.8792	0.4787
Employees participate actively in operational and quality decision-making.	4.7987	0.71641
Employees are invited to participate in the creation and teamwork to ensure collaboration.	4.7315	0.64337
Employee suggestions are taken into consideration and carried out.	4.5705	0.77333
Policies and programs are developed with input from employees at all levels.	4.8792	0.47807
Employees receive fair compensation based on the level of their performance.	3.9463	0.9211
Grand Mean	4.6342	0.49950

Source: (Survey, 2024)

Result of Continuous Improvement

	Mean	Std. Deviation
The organization approaches work with an entrepreneurial spirit, rather than following traditional processes.	4.3221	0.88736
Employees are encouraged to improve procedures using creativity and imagination to get better outcomes.	4.1946	0.91295
Managers take an active part in facilitating continuous improvement, coaching new approaches, mentoring, and leading empowered employees.	4.0604	0.93164
The organization conducts regular training for workers	3.9463	0.92111
Employees continually strive to enhance the quality of their services and procedures.	4.0604	0.93164
The organization values innovation and strives for continuous development.	4.3221	0.88736
Grand Mean	4.1510	0.83790

Source: (Survey, 2024)

Result of Supplier Relationship Management

	Mean	Std. Deviation
Organizations have long-term contracts with suppliers.	5	0.0
The organization periodically visits suppliers to inspect and evaluate services for quality improvement.	4.9195	0.33925
The organization has detailed Information about suppliers and their performance	4.7584	0.56534
The organization regularly gives feedback on supplier's request	4.2349	0.88064
Organization gives more emphasis on quality of service than price for supplier selection	4.75839	0.565339
Grand Mean	4.7342	0.40699

Source: (Survey, 2024)

Result of Performance Evaluation and Monitoring

	Mean	Std. Deviation
Organizations use service management software for monitoring and evaluation of information adequacy, fright safety, on-time delivery, and operational cost management	4.4631	0.90437
There is an increase in service delivery(service achieved/service planned)	4.0067	1.00335
Employees who serve the customers have enough knowledge	3.8993	0.94257
There is an increase in sales in comparison to the previous year	3.6040	0.97827
Managers are constantly involved in monitoring activities	4.7584	0.56534
Grand Mean	4.1463	0.69540

Source: (Survey, 2024)