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The Impact of Supply Chain Quality Management Practices on Product Quality: A Case Study of Anbessa Shoe Share Company

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Master of Art in Executive Business Administration (EMBA)

By: Yoseph Regasa

Advisor: Yohannes Workaferahu (Ph.D)

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Declaration

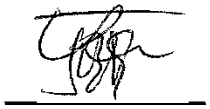
I, the undersigned, declare that this thesis entitled *"**Supply Chain Quality Management Practices and Their Impact on Product Quality: A Case Study of Anbessa Shoe Share Company**"* is my own original work and that all sources have been accurately reported and acknowledged, and that this document has not been submitted for a degree in any other universities.



Yoseph Regasa		June 8, 2026
Name of Author	Signature	Date

Statement of Certificate

This is to certify that Yoseph Regasa has completed his thesis entitled *"**The Impact of Supply Chain Quality Management Practices on Product Quality: A Case Study of Anbessa Shoe Share Company**"* is his original work and is submitted for examination with my approval as a thesis.

Yohannes Workaferahu (Ph.D)		June 8, 2026
Name of Advisor	Signature	Date

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This is to certify that the thesis entitled, *"**The Impact of Supply Chain Quality Management Practices on Product Quality: A Case Study of Anbessa Shoe Share Company**"* was carried out by Yoseph Regasa under the supervision of Yohannes Workaferahu (Ph.D) submitted in partial fulfillment of the requirements for the degree of Executive Master of Business Administration complies with the regulations of the University.

Approved by the Examiners

Damto Basha Chewaka (Ph.D)		**23.06.2026**
Name of External Examiner	Signature	Date
		June 2026
_Demeke Chimdessa (Ph.D)		
Name of the Internal Examiner	Signature	Date
Yohannes Workaferahu (Ph.D)		June 2026
Name of Advisor	Signature	Date

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LIST OF ABBREVIATIONS AND ACRONYMS

SCM- Supply Chain Management

QM- Quality Management

SCQM- Supply Chain Quality Management

ASSC- Anbessa Shoe Share Company

SQM- Supplier Quality Management

PLS-SEM- Partial Least Squares Structural Equation Modeling

RBV- Resource-Based View

AQL- Acceptable Quality Limit

FIFO- First-In, First-Out

AVE-Average Variance Extracted

HTMT-Heterotrait-Monotrait Ratio

VIF-Variance Inflation Factor

PDR- Process Defect Rate

FPDR- Finished product defect rate

CPQ- Customer perceived Quality

ABSTRACT

Supply Chain Quality Management is essential for improving product quality and enhancing the competitiveness of manufacturing firms. This study examined the impact of SCQM practices on product quality at Anbessa Shoe Share Company. A quantitative research design was employed using data collected from 257 employees across production, quality assurance, supply chain, planning, warehouse, and sales departments. Secondary data were obtained from company quality records covering 2024–2026. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with Smart PLS 4.

The findings revealed that Supplier Quality Management, Internal Logistics and Control, and Cross-Functional Coordination significantly improved product quality by reducing process and finished product defects. Process Defect Rate had a significant positive effect on Finished Product Defect Rate. Company records showed a Process Defect Rate of 11.44%, a Finished Product Defect Rate of 4.28%, a rework rate of 6.1%, and a reject rate of 1.47%.

The study concludes that effective implementation of SCQM practices significantly enhances product quality. It recommends strengthening supplier quality management, internal logistics and control, cross-functional coordination, and continuous process improvement to reduce defects and improve organizational performance.

CHAPTER ONE

INTRODUCTION

1.1 Background Of The Study

The current manufacturing paradigm is based more on competition through quality management and robust supply chains as compared to competitive manufacturing through cost management. As noted by contemporary researchers, competitive advantage has increasingly been associated with defect prevention in the entire supply chain, as opposed to focusing on manufacturing (Flynn, Huo, & Zhao, 2010; Zsidisin & Ritchie, 2021). Traditional approaches of quality management have largely been criticized due to their inefficiency and reactivity resulting from emphasis on end-of-line inspections (Deming, 1986; Juran & Godfrey, 1999).

Given that quality issues play a significant role in SCM, there is need for integration between QM and SCM. This is because the process of SCM, besides focusing on costs and competitive issues, should concentrate on the interactions between various participants in the supply chain. In order for such an approach to yield maximum results, there is need to pursue the goals and initiatives associated with both QM and SCM at the same time, with customer satisfaction being the main driver of change.

SCQM has, therefore, been raised to the level of being a key strategic concept in operational excellence. According to Robinson and Malhotra (2005, p. 316), supply chain quality management is the formal coordination and integration of business processes among all organizations involved in the supply chain to measure, analyze, and continually improve products, services, and processes. Thus, SCQM applies quality practices beyond the organizational scope and across the entire supplier network, including logistics and other internal departments. SCQM develops a prevention-based approach that allows managing quality from the very beginning of manufacturing. The core components of SCQM include strategic supplier selection and development, strict controls over incoming material flow, efficient internal logistics and inventory management systems, as well as cross-functional coordination in procurement, production, and quality assurance (Krause, Handfield, & Scannell, 1998).

There is empirical evidence indicating that variation in suppliers' performance, materials, logistics practices, and information exchange can be a significant factor that determines the downstream stability of the manufacturing process and affects the quality of the produced product (Talib, Rahman, & Qureshi, 2011). There exists a logical "quality funnel" in SCQM: efficient practices in the upstream can minimize variability of the material input and provide more stable processes that directly result in smaller rates of in-process defects and, ultimately, defect rates for finished goods (Juran & Godfrey, 1999). This two-fold impact on the nature of the quality indicates that, when viewed as a performance indicator, quality cannot be considered solely based on single-factor causes or effects.

The importance and need for implementation of SCQM in the manufacturing sector, which is a priority industry in Ethiopia, as part of the government’s efforts towards the industrialization of the country are crucial but difficult. This is because the sector is facing difficulties relating to inconsistency in the quality of supplies from local raw material suppliers as well as logistical complications and specification differences between international suppliers (Gebrehiwot, Berihu Assefa and Gebreeyesus, Mulu 2018).

These inconsistencies in the supply chain affect the manufacturing process, leading to high in-process rework, waste of materials and production inefficiencies before the completion of a pair of shoes (LIDI, 2022). It is important, therefore, for established companies such as ASSC to implement systems such as SCQM to enable smooth and efficient production without wastages that are necessary for their competitiveness.

Bogale (2016)'s study on the challenges and performance measures of supply chains at ASSC reveals some serious performance challenges in terms of finances, operations, employees' performances, quality and customer satisfaction. In addition to other issues that affect the footwear and leather industry in Ethiopia, structural quality problems include inconsistency in the quality of raw material supplies, lack of capabilities on the part of the suppliers, insufficient infrastructure, and poor cross-function coordination (Gebrehiwot, Berihu Assefa and Gebreeyesus, Mulu 2018, LIDI, 2022).

Established in 1935 and known as the largest footwear manufacturer in Ethiopia, ASSC has the capacity to manufacture more than two million pairs of shoes per year. However, ASSC still faces process defectives, defective products, and inventory quality loss problems.

1.2 Statement of the Problem

In the manufacturing sector, product quality has gained a lot of importance as it significantly influences organizational competition, profit, customer satisfaction and organizational sustainability. In today's competitive market the manufacturer always faces the challenge to develop high quality products by cutting cost, and optimizing supply chain efficiency. Because of this, quality management is no longer restricted to production related functions but it has become the integrated function of entire supply chain management.

SCQM is a result of this notion. Supply chain quality management is a systematic effort that integrates quality management concepts with supply chain management practices, to ensure quality is established and maintained through all supply chain processes, beginning from the supply and procurement, till the production, delivery, and service of product. Contemporary literature also states that a large proportion of quality failures arise not due to manufacturing processes but upstream supply chain processes such as poor supplier control, poor control of logistics, ineffective inventory management and lack of cross functional coordination (Flynn et al. 2010, Talib et al. 2011). This leads to better defect rates, operational performance and higher customer satisfaction.

In spite of increasing attention on SCQM, empirical evidence regarding its effect on quality performance is still limited and mixed. While the majority of studies have identified positive association between SCQM practices and operational performance, most of these have been conducted in developed economies, and focus on the macro-organizational performance aspects such as productivity, cost, and customer satisfaction (Robinson & Malhotra, 2005; Flynn et al., 2010).

Relatively fewer studies have empirically tested the linkage between SCQM practices and process defect rate and finished product defect rate, especially in labor-intensive manufacturing sector, and less concern is given to explaining how operational quality outcome is finally impacting on the customer perceived quality.

The research gap is still larger in developing countries like Ethiopia where manufacturing firms often operates in an environment of constrained suppliers' capabilities, difficulties in managing stock, poor infrastructure, and insufficient collaboration between different departments of the organization. The limited studies performed in Ethiopia examine the relationship between supply chain management, procurement performance, logistic performance and/or overall organizational performance (Bogale, 2016; Tadesse & Kitaw, 2016).

Empirical studies that examine direct relationships between Supplier Quality Management, Internal Logistics and Control, Cross-Functional Coordination on Process Defect Rate and Finished Product Defect Rate are few. In addition to these, very few studies are conducted in Ethiopia for the finished product defect rate to influence the customer perceived quality.

The areas for consideration are especially important within footwear manufacturing since the quality of the product depends greatly on integrating suppliers, inventory control systems, production processes and management organization and there can be a defect at the process level or the finished goods level, leading to product returns and dissatisfaction.

ASSC one of Ethiopia's largest footwear manufacturers, continues to face substantial quality-related challenges despite implementing various quality improvement initiatives. Analysis of company quality records for the 2024–2025 and 2025–2026 budget years revealed persistent operational quality problems which is more than acceptable standard of ISO 2859-1 / ANSI/ASQ Z1.4. The company's annual average process defect rate was 11.44%, while the average finished product defect rate was 4.28%, both of which exceed commonly accepted manufacturing quality standards which are for a maximum of a 5% AQL for process defects and 2.5% AQL for final products. Rework and reject rates were also high, averaging 6.1% and 1.47%, which are considerably high compared to the industry standard 4% and less than 1% respectively.

The second phase of the analysis resulted in finding out that there were 22,281 Quality defected finished products kept in company warehouses and 1,890 products kept in retail shops. In addition, it was found out that there are over 150,000 pairs of outer soles imported with serious problems relating to their quality and measurement, demonstrating an enormous lack of proper supplier management.

The analysis further revealed materials such as adhesives, textiles, different kinds of accessories, and materials may not move as stocks for more than 4 years as per 2026 ASSC Stock analysis report. From those 175,824 pairs of soles, 361,239 square feet of leather, 113,912 cones of thread, and over 7 million eyelets are major ones that directly affect Quality, efficiency and effectiveness of the company due to the absence of cross-functional coordination in departments. According to customer complaint statistics, 59 percent of total customer complaints were associated with sole opening and sole damage issues, indicating serious flaws in material quality management.

These operational problems lead us to assume that the quality problems at ASSC are not only linked with the production process activities but they might also be related with the broader quality management problems in the supply chain like supplier quality management, logistics & inventory control and cross functional co-ordination. Nevertheless, none of the empirical studies that has explored the association between SQM, Internal Logistics & Control, cross-functional co-ordination, PDR, FPDR, and CPQ in the context of ASSC.

This research therefore is attempting to bridge this theoretical and empirical void by exploring the impact of SQM, Internal Logistics & Control, cross-functional co-ordination on PDR and FPDR and the impact of FPDR on CPQ at ASSC. The result of this research study is expected to be a value-added to the vast body of literature on SCQM and provide a guideline based on evidence-based approach to improve the quality performance in Ethiopian footwear manufacturing.

1.3 Research Questions

For addressing the research problem discussed above, the present study is driven by the following research questions;

1. How are Supplier Quality Management, Internal Logistics and Controls, and Cross-Functional Coordination initiatives being practiced at ASSC?
2. What is the current state of defect rates in process output, defect rates in final product, and customer perception of quality at ASSC?
3. How does the Supplier Quality Management influence the process defect rate?
4. How does the Internal Logistics & Control influence the process defect rate?
5. How does Cross-Functional Coordination influence the process defect rate?
6. How does the process defect rate influence the finished product defect rate?
7. What is the effect of Process Defect Rate on Finished Product Defect Rate?
8. What is the direct impact of Cross-Functional Coordination on Finished Product Defect Rate?

1.4 Research Objectives

1.4.1 General Objective

To investigate the effect of SCQM practices on both process and finished product defect rates at ASSC, developing an integrated understanding of quality propagation mechanisms across the value chain.

1.4.2 Specific objective

1. To assess the implementation level of Supplier Quality Management, Internal Logistics & Control, and Cross-Functional Coordination practices at ASSC.
2. To examine the effect of Supplier Quality Management on Process Defect Rate.
3. To investigate the effect of Internal Logistics & Control on Process Defect Rate.
4. To evaluate the effect of Cross-Functional Coordination on Process Defect Rate.
5. To determine the effect of Process Defect Rate on Finished Product Defect Rate.
6. To assess the effect of Finished Product Defect Rate on Customer Perceived Quality.
7. To evaluate the direct effect of Cross-Functional Coordination on Finished Product Defect Rate.

8. To provide recommendations for improving quality performance through Supply Chain Quality Management practices.

1.5 Significance of the Study

This research findings can be very important for management of the ASSC because of what has been learned about the contribution that SCQM activities can make towards minimizing errors and achieving higher customer-perceived quality. The research also contributes empirically to a limited number of studies on the topic of SCQM and its contribution to organizational quality performance, specifically in relation to the Ethiopian footwear industry context.

1.5.1 Theoretical Significance

The current research makes several contributions to quality management theory. Firstly, it expands the scope of SCQM frameworks into developing economy conditions by introducing moderators for theoretically established relationships from developed economies (Robinson & Malhotra, 2005). Secondly, it synthesizes three theoretical approaches – Systems Theory, Resource-Based View, and Lean Management, in order to provide an analytical framework for SCQM practice (Flynn et al., 2010). Thirdly, it is related to the emerging interest of the academic community to the study of mediators of quality management practices.

1.5.2 Practical Significance

On the one hand, for the leadership of ASSC, the results of the research will provide evidence-driven insight into quality improvement practices. In particular, identifying the SCQM practices most effective in reducing defects allows for targeted efforts to be made. At the same time, mapping the channels through which upstream quality efforts translate into downstream results helps identify control points. On the other hand, for the wider Ethiopian manufacturing industry, this research provides a benchmark and methodology for diagnosing its quality problems. Finally, for the government, the study highlights system-wide problems of manufacturing quality.

1.6 Scope of the Study

The study was centered around the examination of the impact of SCQM practices on quality performance within ASSC. At a conceptual level, this study was restricted to the exploration of

the impact of only three main aspects of SCQM including Supplier Quality Management, Internal Logistics and Control, and Cross-Functional Coordination in respect of Process Defect Rate, Finished Product Defect Rate, and Customer Perceived Quality.

In terms of geographical limitations, the study was delimited to Anbessa Shoe Share Company situated in Addis Ababa, Ethiopia. The population under investigation involved workers in Production, Quality Assurance, Supply, Planning and Control, Warehouse, and Sales departments as they directly relate to the issue of supply chain quality management and quality performance.

The methodology that was used in the current study entailed quantitative research and documentary analysis as the primary methods for obtaining data. Primary data were gathered by means of questionnaires distributed to the workers whereas secondary data was taken from quality audit reports, production reports, defect reports, inventory reports, and customer complaint reports spanning 2024 to 2026. Data were then processed via PLS-SEM in SmartPLS 4 software.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a detailed review of the theoretical and empirical literature on SCQM and its effect on quality performance of manufacturing organizations. The review establishes the theoretical and conceptual basis to study the relationships between Supplier Quality Management, Internal Logistics and Control, Cross-Functional Coordination, Process Defect Rate, Finished Product Defect Rate and Customer Perceived Quality. This chapter synthesizes quality management theories, supply chain management literature and empirical studies from developed and developing economies to identify research gaps and provide justification for the conceptual framework and hypotheses of the study.

In the current competitive manufacturing environment, organizations are increasingly aware that product quality is not just a consequence of production activities but is affected by the effectiveness of quality management practices throughout the entire SCQM

SCQM is the application of traditional quality management principles to supply chain management practices, which ensures that quality is embedded in every step of the value chain from supplier selection and material procurement to production, distribution and customer delivery (Robinson & Malhotra, 2005).

SCQM is especially important in developing economies where manufacturing firms are often faced with challenges in supplier capability, logistics infrastructure, inventory management and organizational coordination. These challenges can lead to process inefficiencies, increased defect rates, customer complaints, and loss of competitiveness. Hence organizations need to have integrated quality management systems that incorporate internal operations and external supply chain relationships.

The paper explains the relation between SCQM practices and quality performance by using theoretical perspectives of Systems Theory, Resource-Based View and Lean Management Philosophy. These theories emphasize that organizational performance is a result of the coordinated interactions among interdependent processes and resources (Flynn et al., 2016). Thus, deficiencies in supplier quality management, logistics control, or cross-functional coordination can increase the process defects, leading to finished product defects and negatively affecting the customer perceptions of quality.

Ethiopian manufacturing sector is particularly relevant in the context of an integrated perspective. Previous studies have shown that major problems that affect operational performance and customer satisfaction are supply chain inefficiencies, inconsistent quality of materials, poor coordination between departments, and poor inventory management systems (Bogale, 2016).

ASSC is one of the leading manufacturing companies of footwear in Ethiopia and thus faces similar challenges making it a suitable setting to examine the effect of SCQM practices on quality outcomes. Thus, this chapter gives an overview of the existing body of knowledge on quality management, supply chain quality management, process defects, finished product defects, customer perceived quality and the theoretical foundations underpinning this study.

2.2 Concept of Quality in Manufacturing

The factor of quality has become increasingly one of the most critical factors determining the success of an organization within the manufacturing industries. In general terms quality is viewed as the fitness of a product or process for its stated or implied requirements and customer satisfaction. In the eyes of Deming (1986) the notion of quality should not be built-in during the inspection stage post-production, instead, it should be engineered in from the process itself; essentially shifting the focus from the detection of defects to their prevention.

Juran and Godfrey (1999) offered another perspective to the definition of quality as "fitness for use" referring to both the quality of design and the quality of conformance to the specification of product or process.

The distinction between product quality and process quality in today's quality management literature, involves determining to what extent process management practices can maintain efficient and consistent operations by minimizing variance, scrap, rework and operations errors, this being the description of the former. Whereas the latter refers to how well the final product fulfills customers' needs and standards. However, the relationship between both is a sequence; one following the other. Poor quality of a product is most commonly due to low quality during its production and processing; while good production practices lead to excellent finished product quality.

Process defects are generally identified when items are re-worked or scrapped, when they have already entered into the subsequent processes or final inspection, when they are in the warehouses, at the distributors or retail stores, and last, when the finished goods reach the customers' homes. Among others, these defects are normally manifested as rework or scrap, and also production and operation delays, or material usage and disposal wastage.

Finished product defects occur when defects reach the inspection stages described above or the customers themselves. The latter brings about product returns, warranty claim and customer dissatisfaction as well as negative reputation towards the organization. Therefore, effective quality management must include process control during production instead of depending on the finished product's inspection alone.

Customer Perceived Quality is one of the other crucial measures of quality performance. This is defined as a customer’s subjective evaluation of a product’s excellence based on a variety of criteria including durability, reliability, appearance, comfort, and performance (Zeithaml, 1988). Customers perceive the quality of the finished product, and in so doing; the greater the number of defective finished goods, the lower customer satisfaction and perception of quality. In such, it is necessary to control quality throughout the entire supply chain in order to deliver desirable product attributes to the customer in order to achieve a sustained competitive advantage.

Quality issues are of great concern in Ethiopian manufacturing. Research conducted in leather and footwear industries has established that those organizations with stronger process control systems,

established standard operating procedures and quality management systems in place have relatively lower levels of defect and quality issues (Tadesse & Kitaw, 2016).

2.3 Supply Chain Quality Management

In addition to internal organizational quality management, SCQM addresses quality-related activities with external organizations within suppliers, logistics channels, production operations, distribution channels, and customers. Robinson and Malhotra (2005) define SCQM as the planned organization and coordination of business processes among supply chain members to provide measurement, analyze, and improve products, services, and processes in order to deliver value and meet customers.

Traditional quality management processes mainly focus on production processes within the organization. However, final products' quality not only relies on the quality of products in the production process but also is impacted by supply chain factors like quality of raw materials, performance of suppliers, stock keeping condition, and transportation. Information share among departments and integration of organizations will definitely affect quality of end products. Hence, organizations must have an overall quality management approach based on partnership and collaboration among all supply chain members and keep on improvement of business processes.

The aim of SCQM is that quality defects are avoided as far as possible before it happens rather than it is found out after. By managing supplier quality effectively and controlling logistics and making integration among cross functional operations, the variability of materials and process can be reduced; operation stability can be increased; quality defect can be decreased; and customer satisfaction can be improved (Talib, Rahman, & Qureshi, 2011). The preventative nature of the model coincides with contemporary quality management philosophy in the pursuit of continuous improvement and defect prevention.

The SCQM is crucial for developing countries, like Ethiopia, in manufacturing firms as they often struggle with rather complicated supply chain settings and resources constraints (Talib et

al. 2011). Weakness such as inconsistent supplier quality, poor inventory management systems, insufficient technology integration and lack of coordination among internal operations tend to lead to poor quality performance (Gebremichael & Monda, 2020). And also process defects, finished product defects and customer dissatisfaction would be raised.

An effective SCQM practice should play a vital role for reducing operation defects, improving finished product quality, and raising customer perceived quality, consequently enhancing market competitive advantage for manufacturing enterprises like ASSC. Hence, this study centers on three key SCQM dimensions, namely Supplier Quality Management, Internal Logistics and Control, and Cross-Functional Coordination and their influences on the Process Defect Rate, Finished Product Defect Rate, and Customer Perceived Quality.

2.4 Dimensions of Supply Chain Quality Management

2.4.1 Supplier Quality Management

SQM is a strategic and systematic process that focuses on the selection, evaluation, monitoring and improvement of supply chain partners on the basis of their quality performance. This is one of the pillars of SCQM. This process is fundamental in SCQM as the quality of the inputs of an organization dictates the quality of production. It is believed that suppliers are an important factor in manufacturing quality as, faulty products will lead directly to process disruption and non-conformance (Joseph M, Juran A, Blanton Godfrey Quality hand book 2.7).

Empirical evidence supports the relationship between quality SQM practices and higher level of performance of organizations. For example Flynn et al. (2010), state that strategic supplier relationships, supplier involvement in new product development, and continuous development with supplier partners lead to improvement in input quality which in return reduces defect rates of the organization. Studies conducted in the Ethiopian manufacturing sectors show that SQM is not formalized but has an ad hoc approach where supplier are often selected on basis of their prices and not quality which affects input quality of the product in different stages of production (Bogale Alemu, 2016).Thus, the researcher poses

H1:- Supplier Quality Management will have a negative impact on Process Defect Rate.

2.4.2 Internal Logistics & Control

Internal Logistics and control- refers to all the activities performed to control materials, such as its handling, warehouse, inventory and storage system. These controls are also relates to conditions such as its stock rotation and handling to ensure quality and storage life of the materials and timely availability of production inputs. Talib et al (2011) claim that the quality of operations can be improved by the effective implementation of internal logistics system which can improve its performance quality through the reduction in variation and quality defects, caused by materials.

On the basis of SQM, the Incoming material inspection and control process would then be the critical stage, where final verification is performed to avoid defects in the production. The inspection practices evolved from exhaustive end-point inspection to risk-based approach, usage of supplier's certification status and sampling techniques (Juran & Godfrey, 1999).

This would be a critical control point, as not arresting defects here can leads to defects which then follow through processes. From many researches, it has been found that robust incoming quality control reduces the cost of non-conformance such as rework and scrap (Robinson & Malhotra, 2005).

Once received the material must be protected until use, in this case it indicates that material handling and storage/inventory management is critical to SCQM, since they directly influence material's condition until use (Robinson & Malhotra, 2005). In the footwear industry for instance the material such as leather, glues and chemicals is very sensitive to storage and handling processes.

Supply chain management performance improvement in the company could be achieved through effective implementation and use of standard performance evaluation methods which will bring a total performance enhancement. This does not rely for its success on the application of specific performance techniques it depends much more on the commitment and creativity of all members of the company.(Bogale Alemu 2016)

Failure to implement proper material handling and storage/inventory control may cause materials' properties to deteriorate over time, which causes variation, so there will be increase in defects (Talib et al., 2011). Hence, the study would suggest that:

H2:- Internal Logistics and Control will have a negative impact on Process Defect Rate.

2.4.3 Cross-Functional Coordination

To be successful, the above SCQM dimensions are dependent on organizational integration. A successful open-loop quality management system requires effective coordination and information exchange between procurement, warehouse, production, and quality assurance functions. In accordance with Flynn et al. (2010), collaboration across functions allows for the prompt reporting, identification, and resolution of quality problems, promoting preventative actions as opposed to corrective actions.

Bogale Alemu (2016) states in his study on the supply chain management performance in a company that the performance improvement does not depend on the use of specific techniques but largely depends on dedication, cooperation and creativity of all company members.

However, function silos can cause major problems, which prevent the transmission of information and inhibit organizational learning on a system-wide level, and it contributes to the recurrence of the quality problems on the process and final products levels. Studies on the Ethiopian manufacturing industries revealed that due to hierarchical management systems and lack of formal communication guidelines the exchange of information related to the quality problems on inter-functions level is difficult, which has led to the creation of small problems into a large one (Tesfaye & Beshah, 2018).

Beyond traditional manufacturing function elements the cross-functional coordination on SCQM should consider downstream functions elements such as warehousing, distribution and retail operations, where coordinated effort from production, QA and sales in inventory turnover, storage condition check and feedback on retail sales is expected and to be incorporated in a quality management system (Garcia-Dastugue & Lambert, 2019). Within the ASSC the exchange of information between the factory, central warehouses and 34 retail shops needs to be coordinated

in order to ensure the quality from being deteriorated after the production. Therefore the study hypothesis is

H3: Cross-Functional Coordination will have a negative impact on Process Defect Rate.

Besides affecting process quality, Cross-Functional Coordination could directly affect product quality via the decisions, the flow of information, on process storages and the controls. Based on this finding, the paper also assumes that

H6: **Cross-Functional Coordination will have a negative impact on Finished Product Defect Rate.**

2.4.4 Downstream Quality Management

Apart from production activities, the coverage of SCQM is also extended to the subsequent operations namely warehousing, distribution and retail inventory management in order to maintain quality of the product up to the point of sale. Proper warehousing strategies including correct storage conditions, stock rotation and handling mechanisms are imperative in order to prevent quality erosion at the post production stage, such as material decay, discoloration or distortion (Rushton, Croucher, & Baker, 2022). In case of footwear industries whose constituent materials namely leather, soles adhesives and synthetic are prone to certain conditions in the environment, improper or excessive stocking directly result into a defect only appearing after being removed from the factory.

The role of retail inventory management is also pivotal to the quality of the finished product. In fact, over-stocking, poor stock rotation and in-store handling issues might result in loss of "silent quality". Here, defects appear on products that technically conform at the time of production but suffer deterioration prior to being sold (Garcia-Dastugue & Lambert, 2019). In developing countries, these retail infrastructures usually do not possess air-conditioning system or even an automated inventory management system. Studies on the distribution of consumer goods in Ethiopian context have identified stock related quality loss as an important yet often neglected part of defect rate (Girma & Tekle, 2023).

Integration of the sales and warehouse operations into the framework of SCQM provides a closed-loop quality system. Information from the retail and distribution process would be fed back and translated into appropriate changes to production schedules, packaging and material selection strategies (Zsidisin & Ritchie, 2021). Otherwise, the management of quality remain disjointed, leading to the emergence of defects at the final stage of value chain which have a great impact to the customer satisfaction and the brand name (ASSC Sales & Inventory Report, 2025).

2.5 Justification for the Selection of SCQM Dimensions

It can be seen that the definition of SCQM is multidimensional concept, involving many different practices such as supplier quality management, supplier relationship management, customer integration, information sharing, logistics management, process integration, quality information system, cross functional coordination, and so on (Robinson & Malhotra, 2005; Talib et al., 2011). On the other hand, researchers have pointed out that the dimension selection should based on the purpose of research, features of research industry and the quality problems encountered in the organization.

In this study, the dimensions of SCQM used are Supplier Quality Management, Internal Logistics and Control, and Cross-Functional Coordination. Such a selection is also theoretically and practically reasoned. Theoretically, according to System Theory, the organizational quality performance depends on the interaction of inter-connected subsystems in the whole supply Chain (Von Bertalanffy, 1968). In this context, suppliers act as the main source of external inputs that bring quality in, the systems of logistics and inventory provide the processes to maintain materials quality throughout the internal supply chain, while the function of cross-functional coordination provides efficient information flow and decision-making mechanisms across the firm functions. These aspects together cover both external upstream mechanisms and internal processes which affect the final product quality.

In the same vein, RBV focuses on the organization performance derived from proper strategic resource and organizational capabilities management (Barney, 1991).Supplier quality management, control systems for logistics and cross-functional coordination are organizational

capabilities that may contribute to the operational performance through variability reduction and improvement in process variability as well as the final quality.

This choice of dimensions also aligns with Lean Management which aims to prevent defects by embedding quality into the source, eliminating wastes and integration of the process and coordination among the functional units in the organization on continuous basis (Womack & Jones, 1996). The quality management in the supplier side will eliminate or reduce incoming material defects, logistic management will try to minimize the quality degradation in warehouse or when transferring, and cross functional coordination will bring faster identification and resolution of the quality issues before it causes finished goods quality problems.

The choice of these dimensions is also backed up by empirical evidence. Robinson and Malhotra (2005) found supplier integration, logistics management and organization coordination as building blocks of SCQM. The quality practices related to supplier and internal integration found by Flynn et al. (2010) to significantly impact operating and quality performance. Talib et al. (2011) also found that among all the SCQM practices that impact manufacturing quality performance, supplier quality management and cross-functional cooperation appear to have the strongest impact.

The justification of this selection of dimensions also comes from the context in which ASSC operates. Examining ASSC's company quality reports, inventory reports, supplier performance reports, and customer complaint reports reveals common quality problems concerning supplier quality, control of materials and inventory, long storing period for quality-sensitive materials, and poor coordination among the supply, production, quality assurance, planning, warehouse and sales departments. Thus, this confirms Supplier Quality Management, Internal Logistics and Control and Cross-Functional Coordination to be the most relevant SCQM dimensions to explain quality performance problems in the company.

The choice of these three dimensions is also based on theory and empirical studies, and their applicability in explaining the quality-related issues in ASSC. By examining these three dimensions, the research has obtained a clear picture how upstream supply chain and internal

processes relate to each of the Process Defect Rate, Finished Product Defect Rate and consequently Customer Perceived Quality.

2.5 Process Defect Rate

Process defects are problems occurring during the manufacturing itself, i.e. Before a finished product becomes available. These take the form of material waste, scrap and rejects that are reworked, scrap that cannot be salvaged, and unscheduled line stoppages. As Deming (1986) put it, process defects are pure economic loss; they are a burden on the cost of operations, increase overall system output, but fail to provide any value to the customer.

The literature strongly links the incidence of process defects to root causes that are treatable with SCQM input material variability, poor supplier quality and internal coordination (Krause et al., 1998). In the Ethiopian footwear industry process defects commonly mentioned in sector studies include; losses at the cutting stages attributed to inconsistent hide quality, failed adhesive bonding, poor stitching; all of which have commonly been attributed to failures in the supply chain or in-process controls (Ethiopian Leather Industry Development Institute [LIDI], 2022).

The defect rate at ASSC records for process defect averages around 11.44%; therefore, quality of the process quality is a real operational problem. Researchers are in agreement that the existence of process defects adds to manufacturing costs, and directly leads to defectiveness of final product.

Therefore

H4: Process Defect Rate will have a positive impact on Finished Product Defect Rate.

2.6 Finished Product Defect Rate

Finished Product Defects are nonconformities that occur during production and slip through the final inspection process and ultimately reach the hands of the final customer post-sale. This affects the bottom-line as well as brand reputation. This leads to product returns, warranty claims and a lingering damage to the brand name. Studies have proven that the finished product defect is typically not a random failure but has been caused by a previous failure up the supply chain and an in-process failure (Juran & Godfrey, 1999).

This means that final inspection is inherently insufficient and reactive. If Ethiopian manufacturers want to gain market access for their products abroad and be able to sell at premium prices the quality of the finished product is paramount. So for instance product failures such as sole detachment, color run or bad finish typically result from a problem at process stage which hasn't been identified and has a weakness at the SCQM (Abebe, 2020).

2.7 Customer Perceived Quality

Customer perceived quality is "the customer's judgment of product excellence and superiority with respect to its intended function and/or its contribution to the customers' life", (Zeithaml, 1988). Rather than a direct measure of technical quality, the customer's perceived quality depends on the quality evaluation of actual product consumption.

In the context of footwear, the customers' perception quality is composed of perceived quality from factors including durability, comfort, visual appeal, sole quality, stitching quality and materials quality. In contrast, issues such as opening of the sole, sole cracking, poor finishing and color fading in the final products all bring lower customer perceived quality and satisfaction.

The quality of products could greatly affect customer satisfaction, re-purchase intentions, and brand loyalty (Kotler and Keller, 2006). Therefore, manufacturers have not only to improve to reduce production quality problems, but also to meet customer expectation on the product quality at all time.

For ASSC, the quality complaints log has also reflected that sole quality problems accounted for a significant portion of the quality issues, it seems that the defects of final products could lead to the customer perceived quality strongly. Therefore

H5: Finished Product Defect Rate will have a negative impact on Customer Perceived Quality.

2.8 Theoretical Foundations

There are three interrelated conceptual streams which form a strong base for analysis of relationships in the conceptual model.

2.8.1 Systems Theory:- defines an organization as a complex interrelated set of parts (subsystems) that interacts in such a way to determine the behavior of the whole (Von Bertalanffy, 1968). When applied to SCQM, this means that the quality of the final output depends upon the coordinated performance of each subsystem that is upstream of the final output: the supplier subsystem, internal logistics and the internal production subsystem. If one of the upstream subsystems produces defects, all downstream subsystems are impacted. In the context of Ethiopia, the upstream subsystems are prone to problems and therefore, such systems logic fits well.

2.8.2 The Resource-Based View:- argues that sustainable competitive advantage originates from firm resources that are valuable, rare, inimitable and non-substitutable (VRIN) (Barney, 1991). From this viewpoint, effectively managing quality within the supply chain constitutes a capability that has the potential to bring the firm a sustained competitive advantage. Integrating and coordinating quality activities throughout the supply chain would be a tacit, socially embedded capability, which is hard to imitate for the firm's competitors, thereby bringing out the firms' quality-oriented outcomes such as defect-free goods. Developing this capability can be a sustainable competitive advantage for firms such as ASSC in a fiercely competitive environment.

2.8.3 The Lean Management Philosophy:- is derived from Toyota Production System and focuses on systematic reduction of waste (muda) and variation, in order to improve flow and efficiency (Womack & Jones, 1996). Defects produced by the processes are the perfect antithesis to lean principles and hence, Lean thinking would naturally support the model of sequential improvement wherein processes have to be stable and error-free before impacting downstream processes. Lean thinking adaptations are used widely and studied in the context of Ethiopian manufacturing to deal with defects, considering lack of resource availability (Hailemicheal & Raju, 2019).

2.9 Hypotheses Development

Based on these theories and the synthesis of global and local empirical literature, the following hypotheses are developed to guide the investigation at ASSC.

H1: Supplier Quality Management will have a negative impact on Process Defect Rate.
H2: Internal Logistics and Control will have a negative impact on Process Defect Rate.
H3: Cross-Functional Coordination will have a negative impact on Process Defect Rate.
H4: Process Defect Rate will have a positive impact on Finished Product Defect Rate.
H5: Finished Product Defect Rate will have a negative impact on Customer Perceived Quality.
H6: Cross-Functional Coordination will have a negative impact on Finished Product Defect Rate.

These hypotheses collectively propose a model where SCQM practices directly influence the stability of the production process (reducing process defects), and the performance of this process directly determines the quality of the final output and customer perceived quality.

2.10 SCQM–Quality Performance Framework

This study uses conceptual frameworks borrowed from previously established SCQM models, by Robinson and Malhotra (2005), Flynn et al. (2010) and Juran and Godfrey (1999). In Robinson and Malhotra's SCQM integration model, they explain how the use of co-ordinated quality practices across the three different elements; supply base, logistics, and internal organization, affect the overall quality results. Flynn et al. (2010) further add that supplier integration and co-ordination among different functions is an important tool for operational performance.

The model of Juran (1999) argues a sequential relationship between process quality and finished product quality, in that any defects in the process would lead to defects in the final product. Building on those concepts and theories, this study has integrated them to develop a conceptual framework, with Supplier Quality Management, Internal Logistics & Control and Cross-Functional Coordination influencing Process Defect Rate. Additionally Cross-Functional Coordination has a direct influence on Finished Product Defect Rate.

Process Defect Rate has a mediating influence on the relationship between SCQM practices, Finished Product Defect Rate, and Customer Perceived Quality at ASSC. Finished Product Defect Rate has a direct relationship with Customer Perceived Quality. Finished Product Defects can impact a customer’s perception on product quality, as well as the perceived durability, reliability,

performance and customer satisfaction of the product. Thus, effective practice of SCQM can lead to better process quality, reduced number of defects of the final products and an increase in perceived quality.

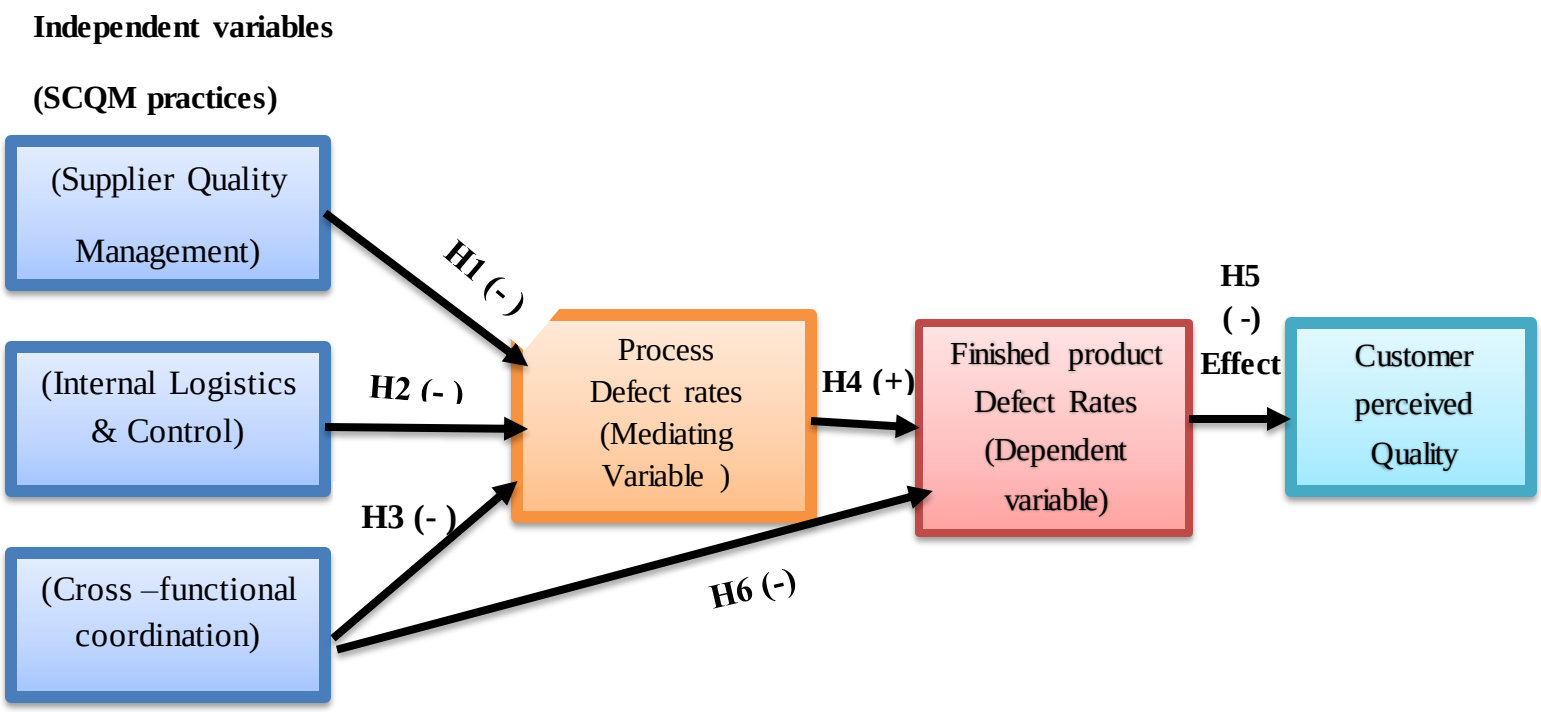


Figure 2.1 Conceptual Framework diagram

CHAPTER THREE

RESEARCH METHODOLOGY

3.1Introduction

This chapter is about the research methodology of the study of SCQM Practices and Their Influence on Product Quality in ASSC. This research methodology is proposed to answer the objectives and test the hypotheses of this study, regarding the effect of Supplier Quality Management, Internal Logistics & Control, Cross-functional coordination and Process Defect Rate on the Finished Product Defect Rate. In this chapter, the methodology is discussed by mentioning research philosophy, research design, population to study, sampling, collecting and analyzing data, validity and reliability measures and limitations.

3.2 Research Philosophy and Approach

For the research philosophy, the research was conducted under a pragmatic philosophy of research. A pragmatic approach involves the utilization of methods that effectively solve the research problem and that produce workable answers (Saunders et al., 2019).

Quantitative research design was mainly adopted to test the hypothesized associations among variables being studied. Quantitative data were gathered through self-administered structured questionnaires with employees engaged in supply chain and quality functions. Data from existing company quality records over 2024-2026 were also reviewed.

3.3 Research Design

It permits collection and analysis of data both at departmental level and in between the departments' process. Research design used in the study was single-case explanatory research design to explore ASSC. A case study design is suited for an examination of a contemporary phenomenon within its real-life context where the boundaries between a phenomenon and context are not clearly evident (Yin, 2018).

Explanatory design was chosen as the study aimed to explore the causal relationships between SCQM practices and finished products and process defect rates and it mainly focuses on Supply, Production, Quality, Planning and Controling and Sales Departments.

These departments were chosen as they play an integral role in supply chain management and quality performances activities in the company.

3.4 Population and Sampling Techniques

3.4.1 Target Population

The target population of this study comprises all 637 employees of ASSC across five core departments involved in supply chain quality management and production operations. The departmental distribution is as follows

Department	**Population (N)**
Planning	6
Supply	21
Quality	46
Sales	24
Production	540
Total	637

Table 3.1 Target Population

The Production department is further stratified into four operational sections

Production Section	**Population**
Cutting	82
Lasting	157
Stitching	256
Leather Articles	40
Total Production employees	540

Table 3.2 Production department Allocation

3.4.2 Sampling Strategy

Stratified random sampling technique was used to ensure representation proportional to each department and the production sections (Bryman & Bell, 2015). The questionnaire items were adapted from widely used Supply Chain Quality Management and operational performance measurement scales by Robinson and Malhotra (2005), Flynn et al. (2010) and Juran and Godfrey (1999) and adapted for the footwear manufacturing operations context at ASSC and the questionnaire is made in Amharic language for more feasibility and most of respondents cant understand English.

The sample size was allocated to departments proportional to their relative size in the population with the help of proportional allocation formula by Kish (1965).

$$no = \frac{N}{1+N(e^2)} = \frac{637}{1+637(0.05^2)} \approx 246$$

Where = no is the sample size
N= is the population size, and
e = is the level of precision or sampling error

To account for non-response and incomplete questionnaires, an additional 10% is added, yielding a final target sample size of 271 employees.

Proportional Allocation by Department

Department	Population	Proportion (%)	Allocated Sample
Planning	6	0.9%	2
Supply	21	3.3%	9
Quality	46	7.2%	20
Sales	24	3.8%	10
Production	540	84.8%	230
Total	637	100%	271

Table 3.3 Stratified Sampling Allocation

Production Department Sub-Sampling

The Production sample (n = 230) is further stratified proportionally across its four sections (Zikmund, Babin, Carr, & Griffin, 2013):

$$nprod - h = \frac{Nprod - h}{Nprod} \; x \; nprod$$

Production Section	Population (Nh)	Proportion (%)	Allocated Sample (nh)
Cutting	82	15.2%	35
Lasting	157	29.1%	67
Stitching	256	47.4%	109
Leather Articles	40	7.4%	17
Total Production	540	100%	230

Table 3.4 Production Department Stratification

3.4.3 Sampling Procedures

Systematic Random Sampling: Applied with sampling interval $k = \frac{Nh}{nh}$ (Kish, 1965)

Cluster Sampling: Used within the Production Department to select employees from different production sections.

Purposive Sampling: Applied to select relevant company quality records, defect reports, customer complaint reports, rework and reject records, and quality audit reports covering the 2024–2026 period.

Stratified Random Sampling: Used to ensure proportional representation of all departments.

3.5 Data Collection Methods

The study adopted two types of data, i.e., primary and secondary data.

Primary Data

Primary data was collected using a standardized questionnaire based on a 5-point Likert scale. Where, 1 means Strongly Disagree and 5 means Strongly Agree. It assesses supplier quality management, internal logistics and control, cross functional coordination, process defect rate, finished product defect rate and customer perceived quality.

Secondary Data

Secondary data were collected from company documents for the year 2024-2026. They include process defect reports, finished product defect reports, rework and reject reports, customer complaint data, quality audit reports and inventory quality data.The evidence from documents was used for the triangulation of survey data.

3.6 Data Analysis Methods

Data were analyzed using both descriptive and inferential statistical techniques. The questionnaire data were coded and analyzed using SmartPLS 4 software through Partial Least Squares Structural

Equation Modeling (PLS-SEM).The analysis proceeded through Measurement Model Assessment and Structural Model Assessment

Descriptive analysis was also conducted on company archival quality records to examine trends in process defects, finished product defects, rework rates, reject rates, customer complaints, and inventory quality issues.

3.7 Validity, Reliability, and Ethical Considerations

Validity

Expert review of the questionnaire by academic advisor and industry experts contributed to the content validity. In terms of construct validity, convergent and discriminant validity tests were used within PLS-SEM to measure the construct validity.

Reliability

The reliability of the constructs was evaluated by using Cronbach's Alpha and Composite Reliability values. The reliability values obtained for all constructs were higher than the acceptable value of 0.70, therefore ensuring adequate internal consistency.

Ethical consideration

In order to respect the ethical principles, all respondents were informed about the aim of this research and participation was voluntary. The confidentiality and anonymity of all participants were also assured, and information collected from this research was used only for academic purpose. The approval of the ASSC managers was also obtained to gain access to the company's quality record.

3.8 Limitations of the Methodology

There are various limitations in this study. Firstly, the case of one company makes the results less generalizeable to other manufacturing organizations. Secondly, the cross sectional survey nature of this research hinders us from drawing conclusive causal relationship. Thirdly, although there were strict guarantees regarding anonymity, questionnaire respondents could be influenced by

social desirability effect. Fourthly, certain quality records did not present comprehensive historical data, whereas access to some financial and operational data was limited.

Nevertheless, both survey results and archived quality records serve a credible approach to analyse the relationship between Supply Chain Quality Management practices and quality performance at ASSC.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

The chapter summarizes the empirical results of the investigation conducted on Supply Chain Quality Management Practices and Their Effect on Product Quality at ASSC. These results were derived using PLS-SEM analysis carried out with the help of the software SmartPLS 4. The chapter is divided into the measurement model and structural model assessment of the study which are utilized to test the study hypothesis and to test and identify various variable relations.

The standard two stage PLS-SEM analysis procedure was used. The first stage of the PLS-SEM approach deals with the testing and assessment of the measurement model. This is performed using three types of reliability indicator tests; internal consistency reliability, convergent validity, and discriminant validity tests. The second stage is concerned with the assessment of the structural model by undertaking various tests:collinearity analysis, coefficient of determination (R2), effect size (f2) and hypothesis testing.

Employees from five main ASSC departments, Production, Supply, Quality, Planning and Sales department were the sample in this study. From the 271 questionnaires distributed, 257 valid answers were gathered and were then used for further testing and analysis. Therefore the response rate was 94.8 percent. A response rate above 70 percent can be defined as a very good one (Babbie, 1990), thus our response rate is superb.

4.1.1 Organizational Quality Performance Overview

To complement the survey findings, archival quality records from ASSC were analyzed. The records covered process defect rates, finished product defect rates, rework rates, reject rates, customer complaints, and quality-defected inventory.

Process and Finished Product Defect Rate

The below table presents the monthly process defect rates and finished product defect rates recorded during the 2025 budget year.

Month	Process Defect Rate (%)	Finished Defect Rate (%)
July 2024	11.2	4.2
August 2024	12.1	4.5
September 2024	10.8	4.0
October 2024	11.5	4.3
November 2024	12.5	4.7
December 2024	11.0	4.1
January 2025	10.5	3.9
February 2025	11.8	4.4
March 2025	12.0	4.5
April 2025	11.3	4.2
May 2025	10.9	4.0
June 2025	11.8	4.5
Annual Average	11.44	4.28

Table 4.1 process and finished products defect rate

Source: ASSC Annual Quality Report

Throughout the reporting period, the overall process defect rate for ASSC was 11.44% on average and the overall finished product defect rate was 4.28% on average. Both values are significantly higher than what are recognized as acceptable by the industry, specified by the quality levels stated in ISO 2859-1 / ANSI/ASQ Z1.4 standards which are for a maximum of a 5% AQL for process defects and 2.5% AQL for final products.

Although both a process inspector and a final product inspector are utilized in the company, a separate lack of cross functional coordination contributed to the quality problems encountered by the company. Quality issues were routinely addressed by isolated quality departments, instead of cross-functional teams; and a culture of blaming employees, rather than timely collaborative efforts, was established and amplified these problems, demonstrating a clear deficiency in the cross-functional cooperation which should be inherent in a SCQMS.

Analysis of data clearly reveals that the quality issue of high process defects continuously throughout the year was consistently in correlation to a high amount of finished product defect rate. The high points were identified as occurring when the process defect rate was the highest, 12.5%, and when the finished product defect rate was 4.7% both in November 2004.

These results indicate that process defect rates are closely linked to final product quality, and strongly reinforce the structural model indicating a substantial link between the Process Defect Rate and the Finished Product Defect Rate ($\beta = 0.499$, $p < 0.001$)

Rework and Reject Performance

The annual quality report shows substantial rework and reject rates across major production processes.

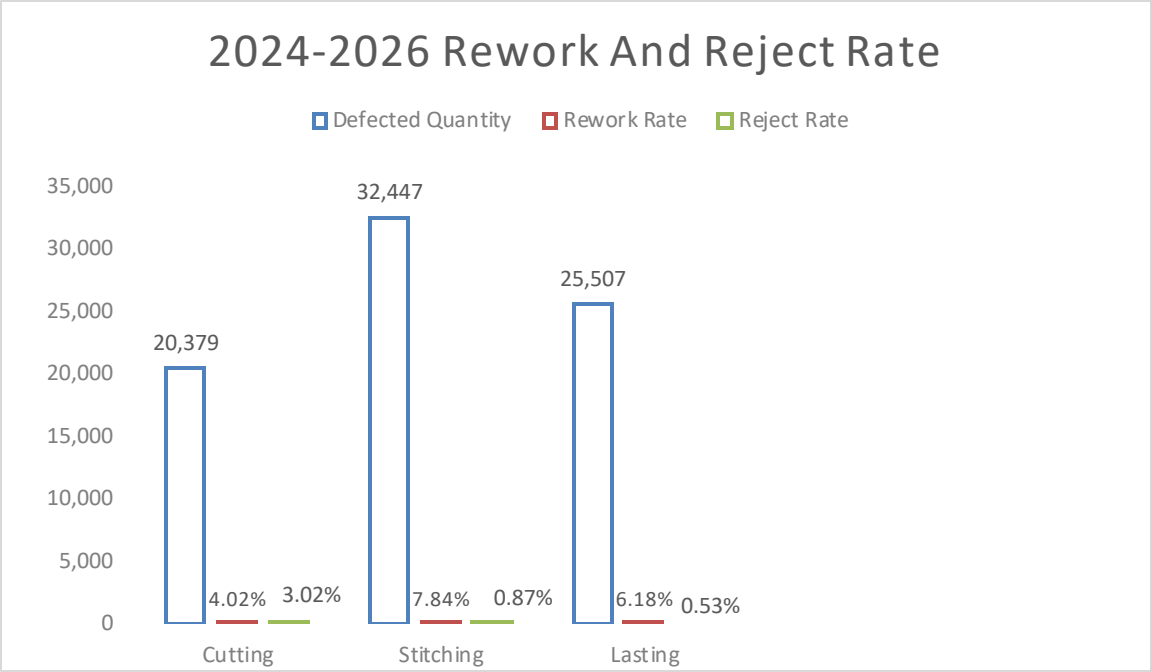


Figure 4.1:- Rework and Reject rate

Source: ASSC Quality Report.

From the data above, ASSC suffered from the rework rate of 6.1% on average, and 1.47% on average for reject rate. The rework rate and reject rate are considerably high compared to the industry standard 4% and less than 1% respectively. It represents that there are critical defects issue occurred in company's production line. It is also shown that stitching had the largest amount of rework rates, therefore process control and quality management in this department need to be strictly improved.

Other than the assembly issue from inside, ASSC's quality data indicated that 120,800 soles with critical quality and dimensional measurement defect were imported. Huge number of supplier defects caused big waste of working time and decrease of production efficiency; what's more, the company's image in customer's mind severely dropped. This operation disruption can be clearly attributed to a poor SQM and its damage to quality and process and eventually to the efficiency and productivity.

Quality Defected Finished Products

The company's quality records indicate the existence of a substantial volume of defective finished products.

Sq. No	Quality Defected Products Available	Quantity
1	All Warehouses	22281
2	Retail Shops	1890

Table 4.2 Defective finished products available

Source: ASSC Quality Report.

The numerous poor quality final products evidence that financial and operation losses suffered due to the quality shortcomings are significant, and stress the strategic necessity to address the process defects upstream, prior the finished goods get into the final inspection and distribution areas, and also strengthen warehouse and retail material-handling process with regards to finished products.

From the operational data obtained, the major contributor to the increased defect rates were the shortcomings in internal logistics and controls, especially in non-existence of FIFO management and unfavorable layout design within warehouses, coupled with the extreme overproduction and non-conformance to demand because of absence of inter-departmental cross-functional coordination and long warehousing times, making the final products are subject to be seriously deteriorates and physically damaged by material condition.

Customer Complaints by Defect Type

Customer complaint records show that the major causes of customer dissatisfaction are

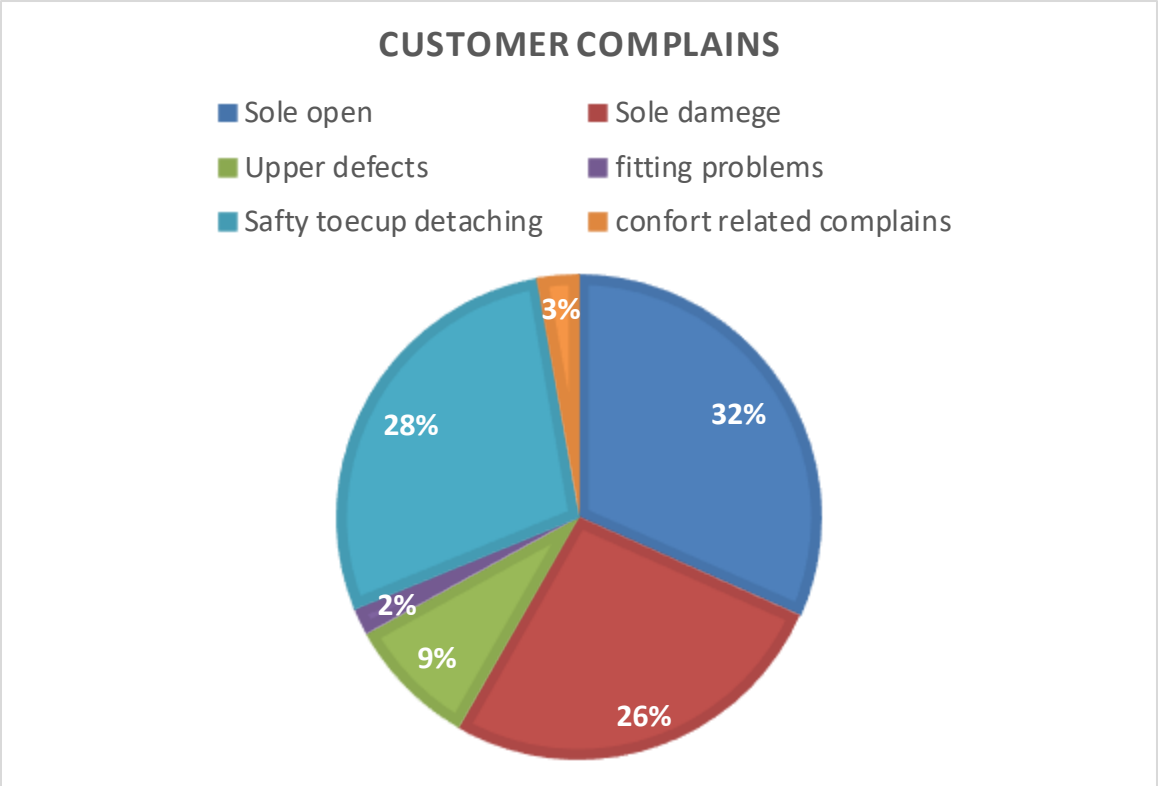


Figure 4.2:- Customer Complain

Source: ASSC Annual Quality Report, 2024–2025 Budget Years.

The findings reveal that sole-related quality problems account for nearly 60% of total customer complaints. This suggests weaknesses in material quality, bonding processes, and process controls. Such defects directly affect customer perception of quality and support the structural model finding that Finished Product Defect Rate significantly reduces Customer Perceived Quality ($\beta = -0.458$, $p < 0.001$).

Inventory and Non-Moving Materials

The analysis further revealed substantial levels of non-moving inventory, including 175,824 pairs of soles, 361,239 square feet of leather, 113,912 cones of thread, and over 7 million eyelets in stock.

S.NO	Material	Unit of measurement	Total Non-moving stock quantity
1	Sole	Pair	175,824
2	Leather	Sq. ft	361,239.10
3	Thread	Cons	113,912.00
4	Shoe accessories	Mr sq	15,893.00
5	Zipper	Pcs	252487
6	Elastic binding	Mtr	70910
7	Eyelet	Pcs	7,056,468
8	Bag accessories	Pcs	284,164
9	Shoe accessories	Pcs	153,737

Table 4.3:- Non-moving materials

Source:- Proposal of nonmoving by Supply team on Jun 23 2025

The huge pile up of idle raw materials and finished goods causes storage capacity bottleneck, increases inventory holding cost and leads to degradation of materials rapidly. This degradation of materials finally results in defective quality for finished products, which results in significantly low production and quality performance. The above empirical evidence confirms that internal logistics and control system plays an important role in reducing process defect rate.

Another situation shows the significant failure of inter-departmental integration where long backlog of non-moving materials such as glue, textile, several accessories and leather cannot move properly. Because of lack of coordination of purchase department placing order, a technical specification based defect rejection of material at production and quality departments follow. A huge working capital is immobilized and major financial losses are caused to the company by sitting such goods.

4.2 Assessment of the Measurement Model

The measurement model assessment was conducted to evaluate the reliability and validity of the constructs included in the study. The constructs assessed were Supplier Quality Management ,Internal Logistic and Control ,Cross Functional Coordination ,Process Defect Rate, Finished Product Defect Rate and Customer Perceived Quality

4.2.1 Indicator Reliability

Indicator reliability was assessed using outer loadings. Hair et al. (2021) recommend that indicator loadings should be 0.708 or above to demonstrate adequate reliability. Indicators with high loadings indicate that the observed variables strongly represent their respective latent constructs.

The results showed that most indicators had satisfactory loadings above the acceptable threshold. However, indicator IL2 under Internal Logistic and Control recorded an extremely low loading of 0.031, indicating that the item did not adequately measure the intended construct and Removed.

Construct	**Indicator**	**Loading**	**Decision**
Cross Functional Coordination	CF2	0.859	Accepted
Customer Perceived Quality	CQ4	0.901	Accepted
Finished Product Defect Rate	FD4	0.967	Accepted
Internal Logistic and Control	IL2	0.031	Removed
Process Defect Rate	PD3	0.852	Accepted
Supplier Quality Management	SQ3	0.930	Accepted

Table 4.4 Outer Loadings

The majority of the indicators demonstrated strong reliability, confirming that the constructs were appropriately measured.

4.2.2 Internal Consistency Reliability

Internal consistency reliability was assessed using Cronbach's Alpha and Composite Reliability (CR). According to Hair et al. (2021), values above 0.70 indicate satisfactory reliability.

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**	**Status**
Cross functional cordination	0.815	0.857	0.872	0.582	Good
Customer Percived Quality	0.891	0.903	0.921	0.702	Good
Finished Product Defect Rate	0.977	0.980	0.982	0.916	Excellent
Internal Logistic and Control	0.801	0.822	0.845	0.574	Acceptable
Process Defect Rate	0.894	0.897	0.922	0.703	Good
Supplier Quality Managment	0.875	1.028	0.894	0.631	Good

Table 4.5 Construct Reliability and Convergent Validity

The results indicate that all constructs exceeded the minimum threshold values, confirming satisfactory internal consistency reliability

4.2.3 Convergent Validity

Convergent validity was evaluated using the AVE. An AVE value of 0.50 or higher indicates that the construct explains more than half of the variance of its indicators.As shown in Table 4.5, all AVE values exceeded 0.50, confirming adequate convergent validity for all constructs.

4.2.4 Discriminant Validity

Discriminant validity was assessed using the HTMT. According to Henseler et al. (2015), HTMT values should generally be below 0.85 and All HTMT values were below the threshold value of 0.85, indicating acceptable discriminant validity among the constructs.

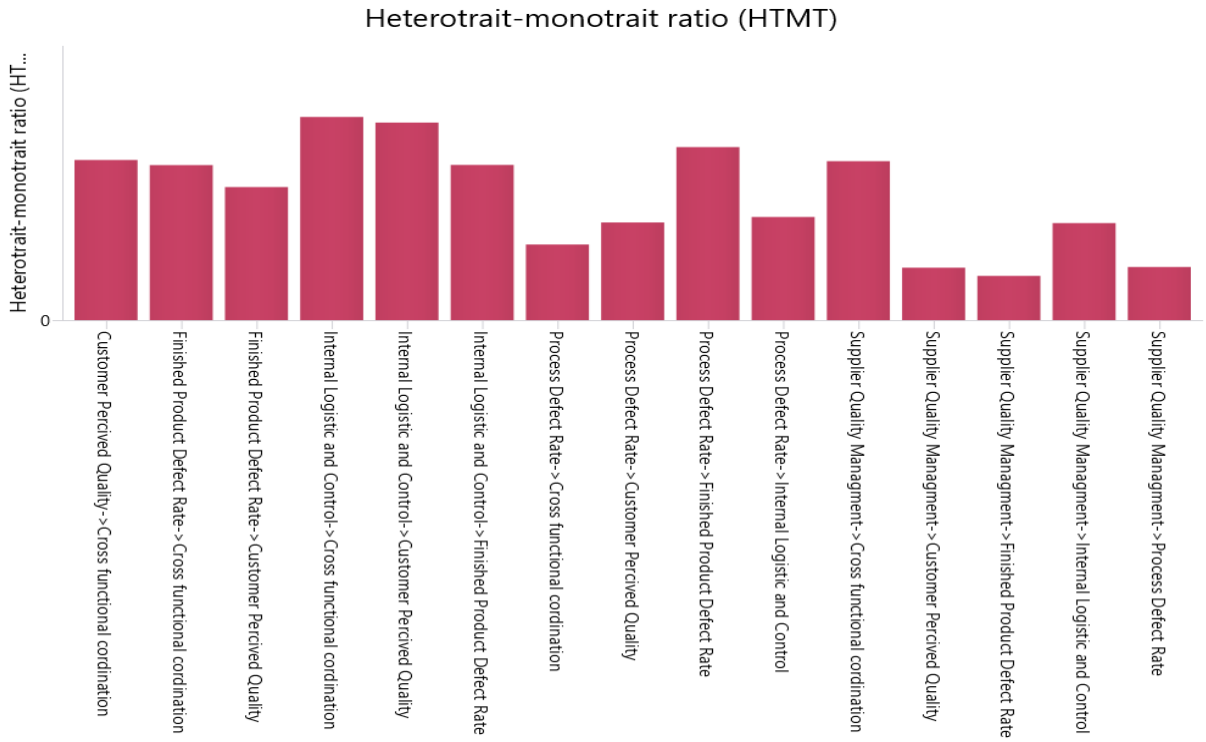


Figure 4.3:- HTMT Ratio

4.3 Assessment of the Structural Model

After confirming the adequacy of the measurement model, the structural model was assessed to examine the relationships among the constructs and test the study hypotheses.

4.3.1 Collinearity Assessment

Prior to assessing structural relationships, collinearity among the predictor constructs was determined by calculation of the VIF. Hair et al. (2021) recommends no concerns about collinearity if VIF values are less than 3, moderate concerns if values are between 3 and 5, and potential concerns about multicollinearity if values exceed 5.

The VIFs were calculated for all predictor constructs, and most of these values were below 5, meaning there were not concerns about multicollinearity within the relationships tested. However, the VIF associated with predictors of Finished Product Defect Rate was slightly above the recommended threshold.

This elevated VIF may be due to the statistical and theoretical connection between Process Defect Rate and Cross-Functional Coordination, which are both explanatory variables of Finished Product Defect Rate. As the VIF was not excessively large and path coefficients remained significant and theorized, the construct was kept in the model.

Although there appears to be a moderate collinearity problem with the equation for Finished Product Defect Rate, it is not serious enough to compromise structural model interpretation and the structural model is acceptable for testing the hypotheses.

4.3.2 Coefficient of Determination (R^2)

The coefficient of determination (R^2) measures the predictive power of the structural model.

Construct	R-square	R-square adjusted	Interpretation
Customer Percived Quality	0.210	0.207	Moderate
Finished Product Defect Rate	0.502	0.498	Substantial
Process Defect Rate	0.225	0.216	Moderate

Table 4.6 R-Square Values

The model explains 50.2% of the variance in Finished Product Defect Rate, indicating substantial explanatory power. Similarly, the model explains 22.5% of the variance in Process Defect Rate and 21.0% of the variance in Customer Perceived Quality.

4.3.3 Effect Size (f^2)

Effect size (f^2) was used to evaluate the contribution of each predictor construct to the R^2 values of endogenous variables.

Path	f-square	Effect Size
Cross functional cordination -> Finished Product Defect Rate	0.294	Medium
Cross functional cordination -> Process Defect Rate	0.056	Small
Finished Product Defect Rate -> Customer Percived Quality	0.266	Medium
Internal Logistic and Control -> Process Defect Rate	0.047	Small
Process Defect Rate -> Finished Product Defect Rate	0.468	Large
Supplier Quality Managment -> Process Defect Rate	0.138	Small-Medium

Table 4.7 Effect Size (f^2)

The strongest effect was observed between Process Defect Rate and Finished Product Defect Rate.

4.4 Hypothesis Testing

The structural relationships proposed in the conceptual framework were evaluated using path coefficients (β), t-values, and p-values obtained through the bootstrapping procedure in SmartPLS 4. The significance of the relationships was assessed using the standard criteria of t-value > 1.96 and p-value < 0.05.

Hypothesis	Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Decision
H1	Supplier Quality Managment -> Process Defect Rate	0.362	0.364	0.074	4.867	0.000	Not Supported
H2	Internal Logistic and Control -> Process Defect Rate	-0.228	-0.239	0.065	3.522	0.000	Supported
H3	Cross functional cordination -> Process Defect Rate	-0.272	-0.264	0.081	3.343	0.001	Supported
H4	Process Defect Rate -> Finished Product Defect Rate	0.499	0.496	0.044	11.389	0.000	Supported
H5	Finished Product Defect Rate -> Customer Percived Quality	-0.458	-0.463	0.053	8.587	0.000	Supported

H6	Cross functional cordination -> Finished Product Defect Rate	-0.395	-0.399	0.050	7.950	0.000	Supported

Table 4.8 Hypothesis Testing Results

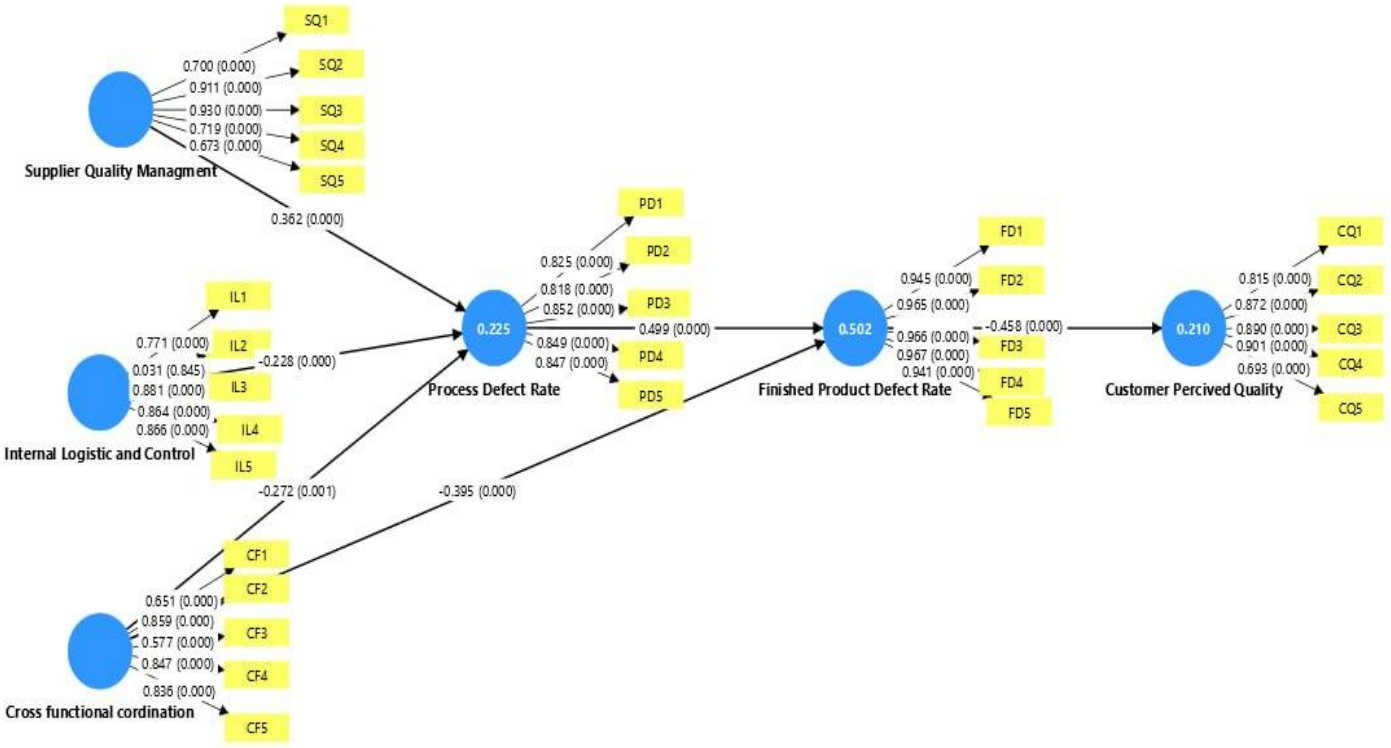


Figure 4.4:- Path Diagram

4.4.1 Analysis of Hypothesis One

H1: Supplier Quality Management will have a negative impact on Process Defect Rate.

The results of the structural model revealed that the Supplier Quality Management significantly influences Process Defect Rate ($\beta = 0.362$, $t = 4.867$, $p < 0.001$). Since the p-value is less than 0.05 significance level, the relationship is statistically significant. Therefore, H1 is supported for statistically significant result.

But the direction of this positive relationship is contrary to the theoretical direction that good Supplier Quality Management practices are expected to contribute to a decrease in the process defect rate. There are a few reasons that this result occurred; these reasons are the nature of actual practices on Supplier Quality Management in ASSC.

As document review and organizational assessments show, there is no well-defined system which fully supported the practices for Supplier Quality Management (including a set of policies and procedures, and monitored by several controls and reports). A standard framework for supplier quality management with features of frequent supplier audits, a system of supplier performance scorecard, a scheme for supplier certification, the system for supplier development, and quality-based supplier evaluation standard are not available in the company. The activities for selection and evaluation are more related to operating efficiency and supply capability rather than a systematic effort to achieve the best in supplier quality management practices.

The implications were that the personnel would feel that quality management practices are actually carried out in the firm thus producing positive questionnaire returns. However, the fact that a properly structured supplier quality management system is not in place will lead to less utilization of supplier quality management practices thus not effective in reducing the occurrence

of quality defects from materials. Therefore supplier defects may be part of what lead to the Process Defect rate.

This will imply that in ASSC the current practices of supplier quality management are not enough to achieve the desired results of quality improvement. The result above indicates the company will need to create Supplier Quality Policies, Supplier Performance measurement systems, Supplier Auditing mechanisms on a periodic basis, Supplier Quality Development initiatives and strategic partnership for key suppliers in long-term based.

Consequently while Supplier Quality Management is positively related to Process Defect Rate the positive coefficient indicates the existing system of quality management for suppliers need a lot of support to institutionalize and strengthen it so it effectively contributes to reduce the defect rates.

4.4.2 Analysis of Hypothesis Two

H2: Internal Logistics and Control will have a negative impact on Process Defect Rate.

From the analyses, Internal Logistics & Control has a negative and significant effect on Process Defect Rate ($\beta = -0.228$, $t = 3.522$, $p < 0.001$), hence, H2 is supported.

This finding shows that good logistics management, handling system, storage system and inventory control is important for reducing the level of defect occurring during process stage. Good internal logistics control provides a better quality of raw material, less defect caused by handling, smooth process stage.

The result of negative relationship between the variables means that better internal logistics and control, lesser will be the process defects. The negative relationship is quite important from the operation point of view.

This result can be related with the theory on supply chain quality management which states that efficient internal logistics system increases the consistency of operations and reduce variability at the operational level.

For the ASSC, this result means that improving the warehouse, storage condition, inventory accuracy and material handling systems is crucial in order to decrease process defects.

4.4.3 Analysis of Hypothesis Three

H3: Cross-Functional Coordination will have a negative impact on Process Defect Rate.

The study results showed that Cross-Functional Coordination significantly and negatively impacted on the Process Defect Rate ($\beta = -0.272$, $t = 3.343$, $p = 0.001$). So, H3 is supported.

The result implies that there are close relation between process defect rate and cross-functional coordination and effective cooperation between each department leads to less process defects at ASSC. With improved coordination, problems could be quickly recognized and accurate and necessary information may easily be shared. And they were more likely to take actions to fix problems in an efficient and effective manner.

The negative coefficient indicates that a greater level of integration of production, supply, quality, planning, sales departments reduced process defects and rework of materials/finished goods. More important, better product quality could be achieved in an order which showed it affected finished goods handling more in a positive way.

This is aligned with Robinson and Malhotra (2005) findings. They stressed that the improvement in operational quality performance achieved through effective information sharing, collaborative decision-making, process integration in supply chain.

At ASSC, it showed it was importance of strengthening interdepartmental communication network, collaboration culture and the practice of quality management for collaborative quality control.

4.4.4 Analysis of Hypothesis Four

H4: Process Defect Rate will have a positive impact on Finished Product Defect Rate

The result showed that Process Defect Rate had a positive and significant impact on Finished Product Defect Rate($\beta = 0.499$, $t = 11.389$, $p < 0.001$).hence H4 is confirmed.

The positive coefficient showed that increased levels of production process defects result in increased levels of finished product defects. This relationship had the highest effect size compared to other relationships (f = 0.468) and is the strongest predictor of finished product quality performance at ASSC.

This is in agreement that the operation losses, production defects, re-work and difference in process flows had a major impact on the finished product quality. This finding clearly supports the famous Deming school of thought that the cause of quality problems is process failures and not inspection.The result is in accordance with Lean Manufacturing in which it is necessary to prevent detection of faults to source, improving product quality.

For ASSC, the result signifies that reducing process defects should be a high strategic focus in order to enhance product quality and minimize customer complaints.

4.4.5 Analysis of Hypothesis Five

H5: Finished Product Defect Rate will have a negative impact on Customer Perceived Quality.

Shows that the path from finished product defect rate to customer perceived quality is significantly negative (β =-0.458, t=8.587, p<0.001). The path coefficient is significant at 5% level of significance because its p value is below 0.05 and its t value (8.587) is bigger than critical value 1.96.

The negative path coefficient implies that when finished product defects increases, customer's perception of product quality declines. On the contrary, when finished product defects is lowered, customer's perception of product reliability, durability, design and the overall product quality is elevated.

This finding is compatible with quality management theory which posits that customer judge product quality through product experience, not the product information. Defects such as sole opening,sole damage, sewing breakage, inferior finishing, and component decay will harm the customer trust and satisfaction towards the product. The result is also in conformity with the quality

records of ASSC which stated that the customer complaint is mostly related to finished product quality.

Hence, H5 is supported. This finding proved that improving finished product quality is important not only for saving operational loss but also for the customer perceived quality and competitiveness.

4.4.6 Analysis of Hypothesis Six

H6:Cross-Functional Coordination will have a negative impact on Finished Product Defect Rate.

It was found that Cross-Functional Coordination has a negative and significant direct impact on Finished Product Defect Rate ($\beta = -0.395$, $t=7.950$, $p<.001$). As such, H6 is supported.

The finding shows that Cross-Functional Coordination not only indirectly impacts the Finished Product Defect Rate through its indirect effect on Process Defect Rate but also directly has a negative and significant relationship with Finished Product Defect Rate. The direct negative relationship signifies that good collaboration among departments helps in reducing not only the process defects, but also the finished product quality performance.

The relation was found to be of medium effect size ($f=0.294$), signifying the strategic role that cross-functional coordination plays in governing the quality of the final products.

The result is consistent with the principles of Systems Theory and Total Quality Management, where the integrated collaboration of the entire organization leads to better efficiency in operations and quality performance of the products.

The result is significant for ASSC in the sense that it indicates that, by enhancing collaboration between departments, better quality performance of finished products can be achieved through rapid decision making and better dissemination of quality related information and operational synchronization.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of the Study

- ✓ This study aimed to understand the influence of SCQM practices on Process Defect Rate, Finished Product Defect Rate and Customer Perceived Quality within ASSC. Quality issues within the company have been continually high despite existing quality improvement efforts.

- ✓ From analyzing the company quality data during the 2024/25 and 2025/26 budget periods, quality performance was very poor. During this period the company averaged a 11.44% process defect rate, an average of 4.28% finished product defect rate. Stitching and lasting processes also maintained very high rework rates of 6.84% and 5.18% respectively. More than 24,000 units of finished product defects were found both in warehouses and at retail stores. Based on customer complaint data, customer complaints that stemmed from sole opening and damage issues made up for a majority of complaints and were indicative of the constant quality issues faced at the operational and customer level.
- ✓ Based on company quality data, 120,800 soles had major quality issues; this issue caused high production downtime, low productivity levels and created an immensely negative brand image in the customers' eyes. This proves the management of suppliers in the company is very poor.
- ✓ This research has employed the quantitative research design approach. Primary data was collected via structured questionnaires to the Production, Quality Assurance, Supply, Planning, Warehouse, and Sales department employees. Secondary data were gathered from company quality reports, audit data, defect reports, customer complaints data and operational performance data between 2024 and 2026. 257 valid questionnaires were collected and analyzed via SmartPLS 4.
- ✓ The research looked at how supplier quality management, internal logistics and control and cross-functional coordination would impact process defect rate; it also looked at the impact

of process defect rate on finished product defect rate, the impact of finished product defect rate on customer perceived quality, and also the direct impact that cross-functional coordination has on finished product defect rate.

- ✓ For the measurement model, the assessment verified that it possessed adequate reliability and validity levels for each construct. All constructs have acceptable levels of internal consistency reliability, convergent and discriminant validity. The structural model assessment was undertaken by use of bootstrapping procedures to confirm the hypotheses tested.

The findings revealed that

1. Supplier Quality Management had a significant positive effect on Process Defect Rate ($\beta = 0.362$, $p < 0.001$).
2. Internal Logistics and Control had a significant negative effect on Process Defect Rate ($\beta = -0.228$, $p < 0.001$).
3. Cross-Functional Coordination had a significant negative effect on Process Defect Rate ($\beta = -0.272$, $p = 0.001$).
4. Process Defect Rate had a significant positive effect on Finished Product Defect Rate ($\beta = 0.499$, $p < 0.001$).
5. Finished Product Defect Rate had a significant negative effect on Customer Perceived Quality ($\beta = -0.458$, $p < 0.001$).
6. Cross-Functional Coordination had a significant negative direct effect on Finished Product Defect Rate ($\beta = -0.395$, $p < 0.001$).

- ✓ As far as overall quality performance of operational level, it is found that well implemented SCMQ is important. Among other factors that we measured, high level of logistics control and good coordination across functional teams seem to have the most importance in reducing manufacturing defects and improving final product quality. Finally, the result confirms that reducing finished product defects will bring benefits of customer's satisfaction on the product quality.

5.2 Conclusion

Based on the results of the study the following conclusions are drawn.

- The results shows that there is a statistically significant positive relationship between Supplier Quality Management and Process Defect Rate, but the direction is against our expectation. This result seems to indicates that ASSC's current supplier quality management practice is not effective enough to solve quality problems coming from suppliers. We also found from documentary evidence that there is no explicit supplier quality policy and performance card, supplier development program, supplier's periodic audit, formal supplier certification. As a result, quality problems of raw material and import components are likely to lead to defects production.
- In this study Internal Logistics and Control is proved to greatly minimize the Process Defect Rate. This result indicates that controlling the inventory, materials handling, storage, stock keeping processes etc has a crucial role to sustain the material quality and process defect rate. This finding is further validated by the documentary analysis which exposed large amount of the material that is quality sensitive to lie in the warehouse for long time and risks of degradation of material and loss of its quality.
- It is also found that Cross-Functional Coordination minimizes the Process Defect Rate and the Finished Product Defect Rate to a large extent. This proves that there is a need for coordination, communication and sharing of information among the Supply, Production, QA, Planning, Warehouse and Sales departments. The finding is supported by the company records, which stated the build-up of the inventory, defect stock and slow correction actions because of non-coordination between departments.
- The study proved that Process Defect Rate significantly increases the Finished Product Defect Rate. This proves that process quality issues are transformed to the finished products. The level of the rework, scrap and process defects stated by ASSC show that the quality control must focus at the process stage, rather than only inspection of finished goods.
- The research discover that Finished Product Defect Rate has a negative effect on Customer Perceived Quality, which indicates that customer connects product defects with

quality, reliability, durability and satisfaction. This is consistent with that a large number of customers complaint for sole opening and sole defect.

- Finally in order to achieve quality improvement performance at ASSC, an integrative Supply Chain Quality Management system including quality of supplier, logistics and inventory management, process management and cross-functional management, should be adopted. Consistent improvement on customer perceived quality could be attained only through reducing the process and finished product defect in an overall manner.

5.3 Recommendations

Based on the findings of the study, the following recommendations are proposed.

Recommendations Related to H1: Supplier Quality Management → Process Defect Rate

Supplier Quality Management's positive correlation with Process Defect Rate implies that the present supplier quality system needs improvement. Thus ASSC shall

- ✓ Define and implement a written Supplier Quality Management Policy.
- ✓ Set up a standard system for supplier selection and approval by quality, delivery and consistency.
- ✓ Create supplier scorecards and set up regular quality review with suppliers every quarter.
- ✓ Regular quality audit for the strategic suppliers.
- ✓ Define Supplier Certification and Supplier Development program.
- ✓ Put quality requirements and acceptance criteria in the contract for the suppliers.
- ✓ Define Incoming Material Quality indicators for all key suppliers.

These actions will strengthen supplier accountability and reduce the occurrence of material-related quality problems.

Recommendations Related to H2: Internal Logistics and Control → Process Defect Rate

The impact of Internal Logistics & Control implies that material management & handling have a bearing on process quality. Thus ASSC should

- ✓ Ensure Strict enforcement of FIFO by identifying all finished products and row materials inventory by production dates at all warehouses.
- ✓ Set limits on the maximum inventory age for materials where quality is of critical importance.
- ✓ Make disposal plane for available non conformity row materials and finished products
- ✓ Enhance warehouse control measures for materials such as leather, adhesives, soles, textiles and trimmings.
- ✓ Analyze obsolete and slow moving items every month.
- ✓ Define quality control procedures for materials past acceptable inventory age limits.
- ✓ Give trainings for all retail shops and warehouse managers about warehouse management and FIFO
- ✓ Implement 5'S

Recommendations Related to H3 and H6: Cross-Functional Coordination → Process Defect Rate and Finished Product Defect Rate

According to the results, Cross-Functional Coordination is one of the most effective quality improvement factors in the company.

Thus, ASSC should

- ✓ Form a standing Cross-Functional Quality Improvement Committee.
- ✓ Hold weekly quality review meetings between departments such as Supply, Production, Quality Assurance, Warehouse, Planning, and Sales.
- ✓ Create centralized quality performance dashboards that all employees will be able to access.
- ✓ Introduce a systematic quality escalation and corrective action procedures.
- ✓ Introduce shared cross-departmental quality KPIs.

Improve communication between the retail stores and the warehouse and production facilities to promptly identify and resolve quality issues.

Recommendations Related to H4: Process Defect Rate → Finished Product Defect Rate

Process Defect Rate was the best predictor for Finished Product Defect Rate, therefore, management should ensure defects are prevented at the source. ASSC should

- ✓ Apply Statistical Process Control techniques.
- ✓ Improve in-process quality checks.
- ✓ Perform root cause analysis for frequent defects in production.
- ✓ Standardize work processes for all sections of production.
- ✓ Increase preventive maintenance for essential equipment's and machineries.
- ✓ Develop systems for process capability monitoring.
- ✓ Empower quality team
- ✓ Give continues quality training for all operators

The processes of stitching, lasting, and sole bonding which have the highest rates for defects and rework are of most concern.

Recommendations Related to H5: Finished Product Defect Rate → Customer Perceived Quality

These findings support the belief that the quality of the product has a profound effect on customer perceptions. Based on this information, ASSC must

- ✓ Develop a systematic customer complaint handling procedure
- ✓ Monitor the trend of customer complaint every quarter.
- ✓ Use customer complaint in their quality improvement program.
- ✓ Intensify the final product test before delivery to the market.
- ✓ Reinforce quality monitoring activities after market introduction.
- ✓ Monitor quality performance of each retail shop and segment separately.

Improve the finished product defect to improve customer satisfaction, brand image and customer loyalty

Strategic Recommendations

In order to maintain sustainable quality improvement, ASSC has to

- ✓ Adopt total quality management as a corporate management philosophy,
- ✓ Develop lean manufacturing and Kaizen improvement programs,
- ✓ Introduce a set of quality improvement targets for the company and evaluate manager's performance based on them,
- ✓ Upgrade employee training programs regarding quality management, problem solving techniques and supply chain quality,
- ✓ Put in place an electronic quality information management system that connects suppliers, warehouses, production units and retail shops.

5.4 Recommendations for Future Researchers

1. Future studies should include additional dimensions of Supply Chain Quality Management practices such as supplier relationship management, customer integration, and information technology integration.
2. Future researchers may conduct comparative studies involving multiple manufacturing companies to improve the generalizability of findings.
3. Future studies may apply longitudinal research designs to better examine causal relationships among SCQM practices and quality performance variables over time.
4. Researchers may also incorporate financial performance indicators and customer satisfaction measures to examine the broader organizational impact of SCQM practices.

5.5 Final Remark

This study proves that SCQM practices are crucial to achieve quality performance and decrease defect products within ASSC. Supply Chain Quality Management practice integrates quality management in the whole Supply Chain, from suppliers, logistics, production, to all organization function. It indicates that ASSC should improve internal logistics & control, cross functional coordination, supplier quality management and process quality improvement to get decrease of defect product, improvement of customer perceived quality and competitiveness in the long run.

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APPENDIX

Appendix A: Questionnaire

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

PROGRAM OF EXCUTIVE BUSINESS MANAGMENT

Questionnaire for Employees and Managers of Anbessa Shoe Share Company

This study aims to assess the impact of Supply Chain Quality Management practices on product quality at Anbessa Shoe Share Company. The questionnaire is for academic purposes only, and all responses will remain confidential.

Instructions: Please indicate your level of agreement with each statement using the following scale

1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree.

Section 1: Demographics

1) Primary Department

1.Production (Cutting/Stitching/Lasting) ☐ 2. Supply (Procurement/Ware☐e)

3. Quality Department ☐ 4. Planning Dep☐ent ☐ales

2) Position

1. Départements Manager ☐ 2. Section Head ☐ 3. Superviser /Form☐

4. Technical staff/ Officer ☐ 5. Operator ☐ 6. Others ☐

3) Years of Service at ASSC

1. Less than 1 years ☐ 2. 1-3 years ☐ 3.4-7 years ☐ 4.More than 7 years ☐

Section *2:- Supplier Quality Management*

No	Statement	1	2	3	4	5
1	Suppliers are selected based on quality criteria.					
2	A supplier performance evaluation system exists.					
3	Suppliers consistently meet required quality standards.					
4	Corrective actions are taken when supplier quality problems occur.					
5	Quality verification is conducted before purchasing.					

Section 3:- Internal Logistics & Control

No	Statement	1	2	3	4	5
1	Raw materials are stored properly to prevent damage.					
2	FIFO is strictly followed when issuing materials to production.					
3	Materials are clearly labeled with receipt date, batch number, and description.					
4	All incoming materials are verified against approved samples and specifications.					
5	Physical inventory records match actual stock.					

Section 4:- Process Defect Rates

No	Statement	1	2	3	4	5
1	Raw materials frequently have quality variations.					
2	Production problems are not resolved quickly.					
3	Rework and scrap rates are high.					
4	It is difficult to trace defective raw material batches.					
5	Poor quality causes waste of materials and production time.					

Section 5:- Finished Product Defect Rate

No	Statement	1	2	3	4	5
1	Finished products frequently have quality defects.					
2	There are many B-quality shoes due to warehouse storage.					
3	Many products fail final quality inspection.					
4	Finished products do not consistently meet quality specifications.					
5	Packaging materials are inadequate to protect product quality.					

Section 6:- Customer-Perceived Quality

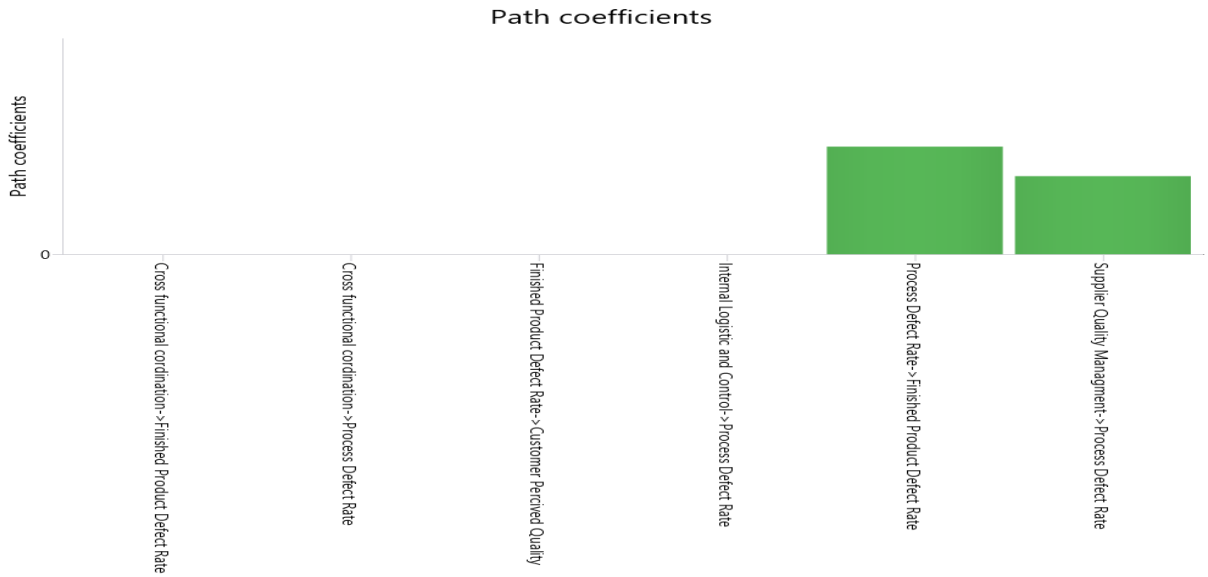
No	Statement	1	2	3	4	5
1	Customer complaints about our shoe quality are low.					
2	Customers consider our products reliable.					
3	Customer feedback on product quality is positive.					
4	Customers recommend our products to others because of their quality.					
5	Customers repurchase our products because of their quality.					

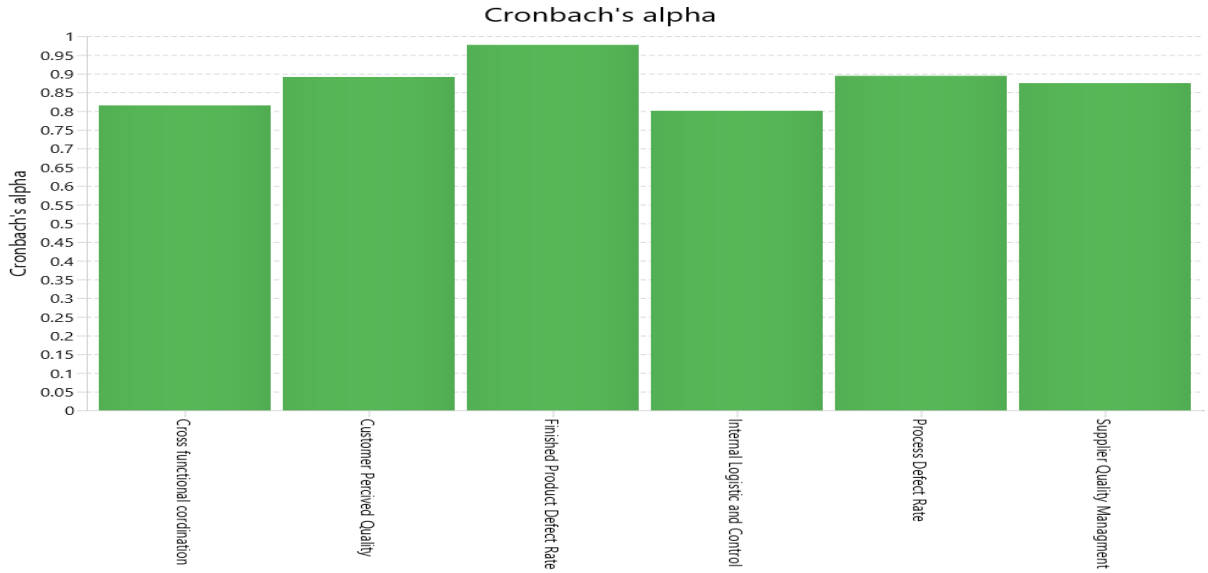
Section 7:- Cross-Functional Coordination

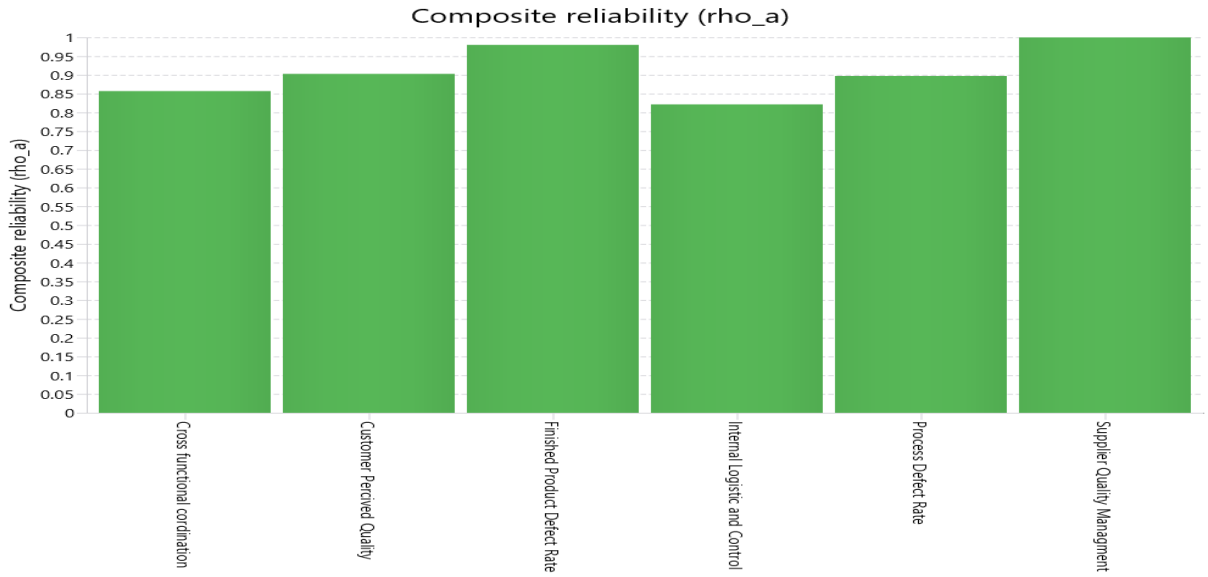
NO	Statement	1	2	3	4	5
1	Quality issues are communicated promptly to all relevant departments.					
2	Departments work together as a team to solve problems.					
3	Quality problems caused by poor interdepartmental coordination are minimal.					
4	Quality monitoring covers production, warehouses, and retail stores.					
5	Departmental decisions consider their impact on quality in other departments.					

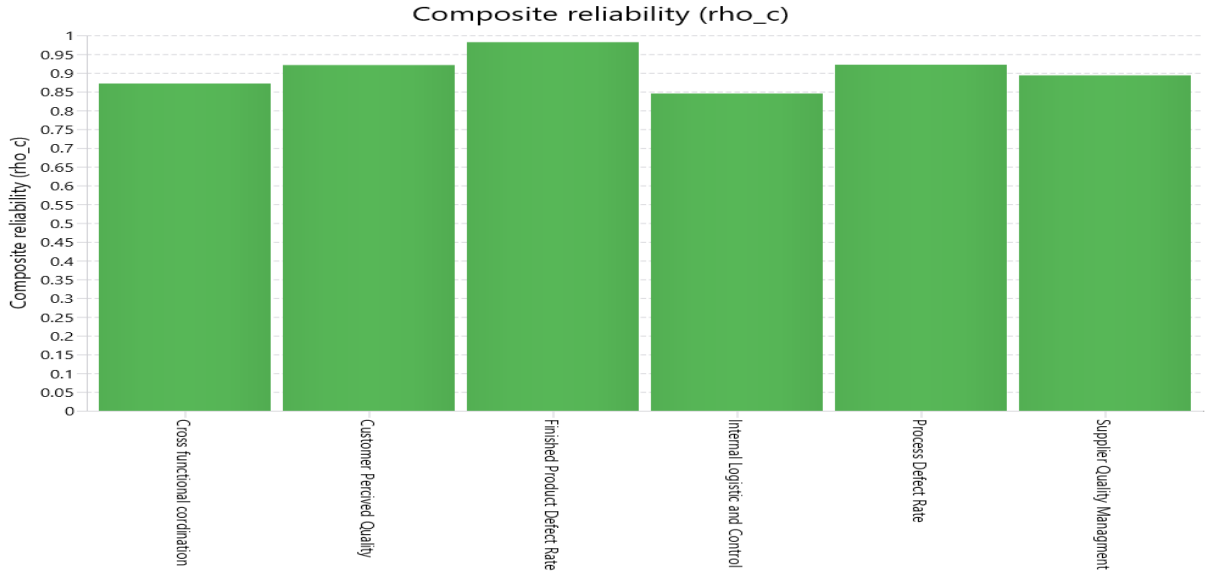
Thank you for your valuable time and participation!

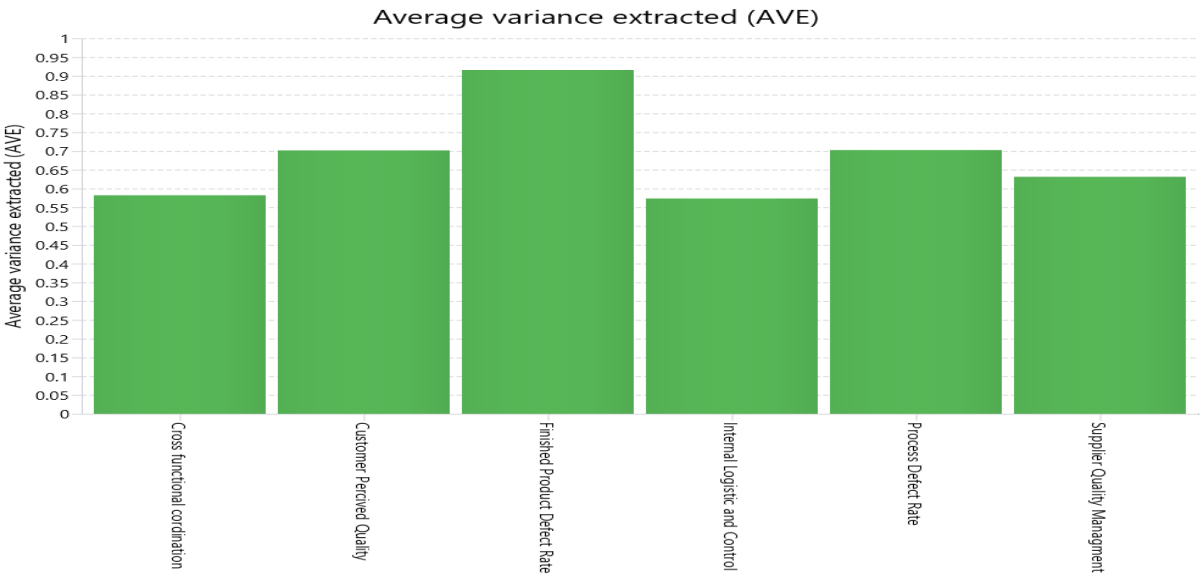
Appendix B: Smart PLS Results Chart






Composite reliability (rho_a)
Composite reliability (rho_a)
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Cross functional cordination
Customer Percived Quality
Finished Product Defect Rate
Internal Logistic and Control
Process Defect Rate
Supplier Quality Managment


Composite reliability (rho_c)
Composite reliability (rho_c)
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Cross functional cordination
Customer Percived Quality
Finished Product Defect Rate
Internal Logistic and Control
Process Defect Rate
Supplier Quality Managment


Average variance extracted (AVE)
Average variance extracted (AVE)
1
0.95
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Cross functional cordination
Customer Percived Quality
Finished Product Defect Rate
Internal Logistic and Control
Process Defect Rate
Supplier Quality Managment

Appendix C: Company Recognition

አንበሳ ጫማ አ/ማ Anbessa Shoe Share Co.

ስልክ) 011 471 54 54, 011 471 69 97 ፖ.ሳ.ቁ) 1641 ፋክስ) 251 011 471 67 79 E-mail: info@anbessashoesc.com
Tel. P.O.Box Fax https://www.anbessashoesc.com

ቁጥር: ASSC/1023/18
Ref
ቀን 15 JUN 2026
Date
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Addis Ababa-Ethiopia

To: Addis Ababa University School of Business and Economics
EMBA Department
Addis Ababa

Subject: Confirmation of Research Conducted at Anbessa Shoe Share Company

Dear Sir/Madam

This is to certify that Mr. Yoseph Regasa, an Executive MBA (EMBA) student at Addis Ababa University, conducted his research <<**Supply Chain Quality Management Practices and Their Impact on Product Quality: A Case Study of Anbessa Shoe Share Company**>> as part of the requirements for the completion of his EMBA program.

The company provided the necessary support and access to information required for the study. Mr. Yoseph Regasa carried out the research with professionalism and dedication, and the company recognizes his valuable contribution and commitment throughout the research process.

We appreciate Addis Ababa University for promoting applied research and wish Mr. Yoseph Regasa continued success in his academic and professional endeavors.

Sincerely,

Syed Fakkruddin Mohammed
Deputy General Manager

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An Autonomous Share Company By a Board