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Influence of Customer Service Quality on Supply Chain Performance

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Abstract — This study assessed the influence of customer service quality on supply chain performance in logistics firms in Tanzania, focusing on the five dimensions of service quality: responsiveness, reliability, empathy, assurance, and tangibility. A correlational research design was employed to measure the relationships among these variables. Data were collected from 233 employees across Tanzania Electric Supply Company Limited (TANESCO), Simba Logistics, and Raphael Logistics using structured questionnaires based on the SERVQUAL model, with responses measured on a five-point Likert scale. Data analysis was conducted using IBM SPSS Statistics Version 27, employing both descriptive and inferential statistics. The results indicated that all five service quality dimensions had a statistically significant and positive influence on supply chain performance, with assurance and reliability demonstrating the strongest effects. The study concludes that enhancing customer service quality is crucial for improving operational efficiency, coordination, and supply chain performance. Accordingly, it recommends that logistics firms invest in regular employee training, adopt advanced technologies, maintain modern facilities, and foster professional and empathetic customer interactions to strengthen service quality and achieve sustainable supply chain competitiveness.

Keywords — Service quality; supply chain performance; logistics firms; responsiveness.

I. INTRODUCTION

Customer service quality is now seen as a key factor that determines how well a supply chain performs. When companies provide reliable, timely and helpful service, they make it easier for goods and information to move smoothly along the supply chain, which increases customer satisfaction. Nyange and Kabelele (2024) found that when Tanzanian manufacturing companies focused on good customer service within their supply chain practices, customer satisfaction improved greatly. Kasih and Ardyan (2025) also showed that service quality and supply chain flexibility help increase customer satisfaction, especially when customers trust the company. Nguyen et al. (2025) discovered that accurate deliveries and reliable services make customers more satisfied and loyal. On the other hand, Eni and Chandra (2022) found that in agricultural e-commerce, better service quality through e-supply chain management leads to happier customers. Generally, these studies show that strong customer service is not just a support activity; it is a major part of what makes a supply chain effective, competitive and sustainable.

Mustafa et al. (2021) indicates that effective customer relationship management enhances supply chain performance. A study focusing on the Malaysian telecommunication industry found a positive association between customer relationships and supply chain performance. A study by Heliyon (2022) demonstrated that delivery reliability and delivery speed enhanced supply chain responsiveness, which subsequently improved firm performance in manufacturing industries. Similarly, Nenavani and Jain (2022) found that strategic supplier partnerships and strong customer relationships, which symbolize responsiveness and reliability, significantly enhance operational performance, especially under conditions of demand uncertainty. In healthcare supply chains, Suryani and Nurmala (2022) revealed that empathy, reliability and responsiveness strongly affect the satisfaction levels of hospitals and clinical laboratory workers, with reliability emerging as the most influential factor. Furthermore, Latuconsina et al. (2023) reported that responsiveness within the supply chain significantly contributes to firms' competitive advantage and overall performance.

Several studies in Africa have shown that service quality is important for improving supply chain performance. In Nigeria, a study by Mpuon and Oyo-Ita (2024) found that reliability, responsiveness and empathy in airport logistics significantly affect customer satisfaction. Similarly, Muradzikwa et al. (2025) investigated freight logistics in South Africa and reported that good supply chain practices enhance both robustness and financial performance, especially after the COVID-19 pandemic. In another study, Achola (2024) reviewed logistics outsourcing in Africa and concluded that adapting to customer needs and improving infrastructure are crucial for the future growth of logistics service providers. These studies highlight the importance of service quality in making supply chains more effective.

In Tanzania, several studies have examined service quality in logistics and transport sectors. Mwendapole and Jin (2021) evaluated service quality at Dar es Salaam Seaport and found gaps between customer expectations and perceptions, showing that improving service delivery is important for customer satisfaction. Similarly, Lwesya and Richard (2017) studied customer service in rail transport and reported that reliability and other service aspects were not always meeting customer expectations. Swai et al. (2023) also found that various service quality factors that includes tangibility, responsiveness, empathy, assurance and reliability significantly influence customer satisfaction at the Tanzania Railway Corporation. Together, these studies show that service quality plays an important role in satisfying customers, providing useful insights for improving services and performance in logistics companies.

Although previous studies have examined aspects of service quality, but few have explored its direct effect on supply chain performance. However, these studies focused mainly on customer satisfaction or service challenges, leaving the influence of specific service quality dimensions responsiveness, reliability, empathy, assurance, and tangibility on supply chain performance. This study addresses this gap by assessing how customer service quality influences supply chain performance in selected logistics companies, including TANESCO, Simba Logistics, and Raphael Logistics, in Dar es Salaam, Tanzania.

The purpose of this study was to assess the influence of customer service quality on supply chain performance in selected logistics companies in Dar es Salaam, Tanzania. This addresses a gap in the literature, as previous research in Tanzania has focused on customer satisfaction and service challenges without exploring how service quality dimensions responsiveness, reliability, empathy, assurance, and tangibility influence supply chain performance.

II. LITERATURE REVIEW

This section presents the theoretical foundation of the study and what is going on in the body of knowledge regarding the influence of customer service quality to supply chain performance.

Theoretical Foundation

This study is based on the SERVQUAL Model, developed by Parasuraman, Zeithaml, and Berry in 1985. The model helps to measure service quality by comparing what customers expect from a service and what they actually receive. It has five main parts tangibles, reliability, responsiveness, assurance, and empathy which are used to see how well a service provider meets customer needs and how this affects customer satisfaction (Parasuraman et al., 1985). The model assumes that service quality can be measured by finding the gaps between customer expectations and real service performance. It also explains that customer expectations come from past experiences, personal needs, and what others say about the service.

Although SERVQUAL was first made for general services, researchers have used it in different industries. For example, Raza et al. (2020) used a SERVQUAL model to study internet banking services and their link to customer satisfaction and loyalty. Ali and Raza (2017) applied it to Islamic banking, and Sharma and Srivastava (2018) used it in hotels to study how service quality affects satisfaction. However, most of these studies focused only on customer satisfaction and loyalty, not on how the five SERVQUAL dimensions affect supply chain performance. This study fills that gap by using the SERVQUAL model in the logistics industry, focusing on companies includes TANESCO, Simba Logistics, and Raphael Logistics. In these companies, customer service and supply chain operations are closely linked. The study aims to find out how each SERVQUAL dimension affects key areas of supply chain performance. This will help improve both service quality and operational efficiency in logistics companies.

Responsiveness in Customer Service and Supply Chain Performance

Responsiveness in customer service plays an important role in improving both customer satisfaction and operational performance. Richey et al. (2022) found that timely responses to customer inquiries and complaints lead to higher satisfaction levels and better delivery performance, as well as improved inventory control.

Similarly, Piprani et al. (2020) showed that prompt communication enhances coordination across supply chain associates, helping to reduce delays and operational disruptions. However, these studies mainly focused on customer satisfaction, communication, and coordination rather than examining how responsiveness affects supply chain performance.

Other researchers have also linked responsiveness to flexibility and efficiency within supply chains. Asamoah et al. (2021) found that responsiveness allows firms to adapt quickly to changing customer needs, improving supply chain agility, while Setiono and Hidayat (2022) discovered that quicker responses improve delivery accuracy and order fulfillment in the retail sector. However, these studies are limited as they mainly focused on industries such as banking, retail, hospitality, and manufacturing, without fully examining the role of responsiveness the logistics sector. To address this limitation, the present study applied responsiveness to logistics companies, aiming to evaluate its influence on supply chain performance.

Reliability in customer service and supply chain performance

Reliability in customer service is important for ensuring smooth and efficient supply chain operations. Njoki (2021) found that reliable customer service in the e-commerce sector improves operational efficiency by reducing order errors and enhancing delivery effectiveness. However, the study mainly focused on e-commerce, which limits its relevance to industries that depend on the physical movement of goods, such as logistics. Since logistics involves complex activities like transportation and inventory control, there is a need for further research to understand how reliability influences supply chain performance.

Reliable customer service also helps organizations manage demand and inventory more effectively. Gopi and Samat (2020) found that firms with dependable customer service are better at forecasting demand, avoiding stockouts, and achieving cost savings. While these findings highlight the importance of reliability, the study only focused on demand forecasting and not on delivery or operational efficiency. Similarly, Ali (2021) showed that reliability in banking services increases customer satisfaction and reduces disruptions but did not address its influence on supply chain operations. These gaps show the need to explore how customer service reliability affects different aspects of supply chain performance beyond customer satisfaction.

Reliable service also supports better coordination and efficiency across supply chains. Zygiaris et al. (2022) found that reliability in manufacturing reduces lead times and helps maintain production schedules, while Endwia et al. (2021) showed that it improves coordination and information flow in supply chain. Although these studies provide useful insights, they focused on specific sectors and did not examine reliability within logistics operations, including areas such as responsiveness, flexibility, and cost efficiency. To fill this gap, the study investigates how customer service reliability influences supply chain performance in logistics companies, where coordination, delivery reliability, and adaptability are essential for effective operations.

Empathy in customer service and supply chain performance

Understanding customer needs through empathy is important for improving coordination and reducing operational delays in supply chains. Endwia et al. (2021) found that adopted customer service enhances satisfaction, leading to better communication and collaboration across the business. Similarly, Ngo et al. (2020) showed that empathy strengthens relationships by increasing customer loyalty and cooperation between customers and suppliers, which improves delivery performance and reduces stockouts. However, these studies mainly focused on relational benefits and customer experience rather than examining the direct effects of empathy on supply chain performance.

Empathy also contributes to smoother operations and cost efficiency within supply chains. Piprani et al. (2020) demonstrated that firms showing empathy face fewer supply chain interruptions because they understand and respond effectively to customer needs, while Balinado et al. (2021) found that empathetic customer service reduces complaints, enhances product availability, and leads to cost savings. Despite these positive effects, both studies focused primarily on customer satisfaction and did not measure empathy's direct influence on supply chain performance metrics.

Tangibility in customer service and supply chain performance

Physical aspects of service, such as facilities, equipment, and overall appearance, strongly shape customer perceptions. Afthanorhan et al. (2019) found that well-maintained facilities, modern equipment, and a professional environment significantly improve customer satisfaction. Similarly, Roslan et al. (2015) showed that in Malaysia's logistics sector, tangible assets like infrastructure and technology enhance service efficiency and some aspects of supply chain performance. However, these studies primarily focused on customer perceptions and satisfaction, and did not fully examine how tangibility affects broader supply chain performance, including responsiveness, reliability, and flexibility.

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Tangible service elements are not only important for aesthetics but also for operational effectiveness. Afthanorhan et al. (2019) highlighted that continuous improvements in physical resources and technological upgrades are necessary to meet evolving customer expectations. While these studies confirm the positive effects of tangibility on customer satisfaction, they do not address its direct impact on supply chain efficiency and coordination, which are essential in logistics operations. The study addresses this gap by evaluating how tangibility, alongside other service quality dimensions, influences supply chain performance in logistics companies.

Assurance in customer service and supply chain performance

Trust and confidence in service delivery are fundamental for ensuring smooth operations and customer satisfaction. Zun et al. (2018) examined assurance in healthcare situations and found that employees' knowledge, courtesy, and ability to inspire trust significantly influenced patient satisfaction. While the study highlights the importance of assurance for building confidence, its exclusive focus on healthcare limits its applicability to supply chain performance in other sectors, such as logistics, where operational efficiency and reliability are very essential. Professional competence and credibility are especially important in service-intensive industries. Paul et al. (2016) investigated assurance in private and public banks and found that trustworthy and knowledgeable interactions significantly enhanced customer satisfaction, particularly in private banks. Despite demonstrating the value of assurance, the study's focus on banking limits insights into its effect on supply chain performance, where assurance may influence coordination, delivery reliability, and operational stability.

In logistics operations, assurance can directly affect service quality perceptions and operational outcomes. Roslan et al. (2015) studied service quality in the logistics sector and found that gaps in assurance such as insufficiently trained staff and lack of professionalism negatively impacted customer satisfaction. While the study highlights the importance of assurance for customer trust, it was limited to a single region (Iskandar Malaysia) and did not investigate how assurance affects overall supply chain performance, including delivery efficiency, responsiveness, and coordination among partners. Generally, these studies show that assurance is crucial for building trust and credibility in service delivery. However, there remains a gap in understanding how assurance as a service quality dimension directly influence supply chain performance across operational and logistical measures. The present study seeks to address this gap by examining assurance alongside other service quality dimensions in logistics companies.

Conceptual Framework

The conceptual framework illustrates the relationships between independent variables (responsiveness, reliability, empathy, tangibility and assurance) and the dependent variable (supply chain performance). This framework serves as a guide for understanding how effective customer service practices may influence the supply chain performance as shown in Figure 1.

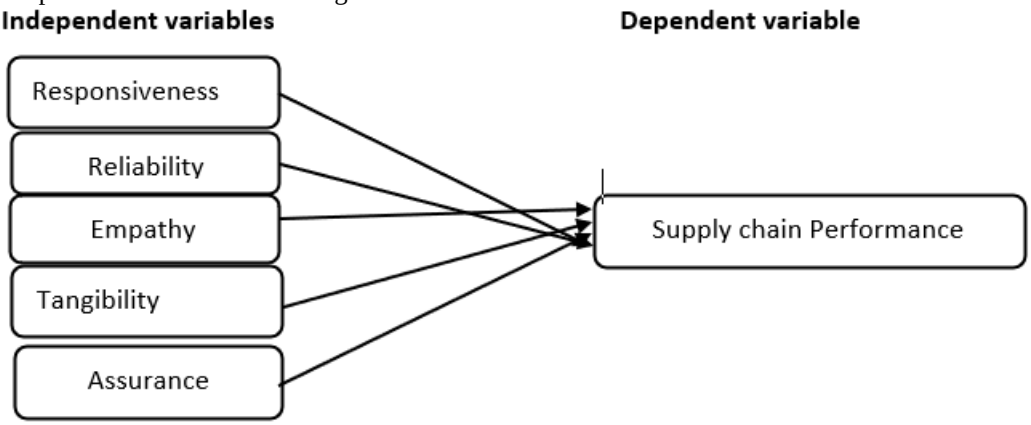

Figure 1: Conceptual Framework:
Source: Adopted from (Zeithaml & Berry, 1985).

III.METHOD (SIZE 10 & BOLD)

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This section presents the study's design, population and sampling procedures, instruments used in data collection, validity and reliability, statistical treatment of data and ethical considerations.

Design

This study used correlational research design to examine the relationship between customer service quality variables and supply chain performance. This design was used because the study aims to determine how customer service quality dimensions that includes responsiveness, reliability, empathy, assurance, and tangibility are associated with key supply chain performance. The quantitative approach used in this study was thought appropriate because it allowed for collection of structured and numerical data, which was necessary in examining relationships between variables.

Population and Sampling

Data was collected from employees from selected firms performing logistics related functions in Dar es Salaam. Dar es Salaam was selected as the study area because it is Tanzania's largest commercial hub and hosts major logistics companies, with key transport networks including ports, roads, and rail. Simple random technique was used to select firms. TANESCO employs approximately 10,320 staff (TANESCO, 2025), Simba Logistics has around 300 employees, and Raphael Logistics has 126 permanent staff, over 500 contractors, and provides 50 annual technical internships (Raphael Logistics, 2025). Due to the lack of exact population data, the sample size was calculated using Cochran's (1977) formula for unknown populations, which estimates the required sample for a desired precision and confidence level.

$$n = \frac{Z^2 \times P \times (1-P)}{E^2}$$

Where:
n is Sample size
Z is Z-score Z=1.96
P is Estimated proportion of the population (p=0.5)
E is Margin of error (5% = 0.05)

Instruments

Data was collected using a questionnaire, measured at the five points Likert scale (1=strongly disagree; 5=strongly agree). items for the independent variable (reliability, empathy, tangibility and assurance) were adapted from established studies, especially Zeithaml and Berry (1988), Roslan et al. (2015) and Afthanorhan et al. (2019). For the dependent variable, the items were adapted from operational performance measures used in logistics and supply chain studies, such as delivery performance, inventory management, and coordination, as outlined by Richey et al. (2022) and Piprani et al. (2020).

Validity and Reliability

The research instruments were developed and adopted based on the study objectives, ensuring that each questionnaire item corresponded to a specific objective. The validity of the instruments was enhanced by using clear and simple wording, with terms familiar and easily understood by the respondents. Also, validity of the research instruments was ensured through content validity by aligning each questionnaire item with the study objectives and having experts review the items to ensure they adequately covered the constructs of responsiveness, reliability, empathy, assurance, tangibility, and supply chain performance.

Reliability was assessed using Cronbach's Alpha, a statistical method for measuring the reliability of multi-item scales, using IBM SPSS Version 27. According to Creswell and Creswell (2020), a Cronbach's alpha coefficient of 0.70 or higher indicates an acceptable level of a reliable instrument. Table 1 show the findings Cronbach's alpha coefficient from the SPSS output.

Table 1: Cronbach's alpha coefficient

Variables	Number Of Items	Cronbach's Alpha Values
Responsiveness	5	0.735
Reliability	4	0.713
Empathy	5	0.733

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Assurance	4	0.765
Tangibility	4	0.732
Supply Chain Performance	4	0.741

Source: Field data,2025

IV. RESULT AND DISCUSSION

Statistical Treatment of Data

Data was analyzed in a form of descriptive statistics and inferential statistics by using the IBM SPSS Statistics 27 to produce mean score values which helped to rank the customers services quality. Decision criteria were set whereby mean value scores of 4.01-5.00 implied High influence, 3.01-4.00 implied Medium High influence, 2.01-3.00 implied Medium Low influence and 1.00 -2.00 implied Low influence (Nunnally & Berstein, 1994). To find the relationship between customers services quality and supply chain performance multiple regression technique was used at 0.05 level of significant.

Demographics of Respondents

Demographics are presented in Table 2. During the study, 384 questionnaire sheets were distributed to respondents. However, only 233 potential respondents (60.68%) filled and returned the questionnaire.

Table 2 shows that 122 (52.4%) of the respondents were male while females were 111 (47.6%). A bigger portion of the respondents were aged 25–34 years (43.3%), followed by 35–44 years (23.6%), 45–54 years (17.2%), under 25 years (12.0%) and 55 years and above (3.9%). In terms of education, most the respondents held degree qualifications (51.1%), while 24.9% had diplomas, 9.0% had master's degrees, 3.0% had certificates and 12.0% possessed other qualifications. Participants were drawn from three main organizations: SIMBA Logistics (37.3%), Tanzania Electric Supply Company Limited (TANESCO) (31.8%) and RAPHAEL Logistics (30.9%).

Table 1: Demographic Characteristics (N= 233)

Category	Variable	Frequency	Percent
Gender	Male	122	52.4%
	Female	111	47.6%
Age	Less than 25	28	12.0%
	25 – 34	101	43.3%
	35 – 44	55	23.6%
	45 – 54	40	17.2%
	55 and above	9	3.9%
Education	Certificate	7	3.0%
	Diploma	58	24.9%
	Degree	119	51.1%
	Master's Degree	21	9.0%
	Other	28	12.0%
Company	RAPHAEL Logistics	72	30.9%
	SIMBA Logistics	87	37.3%
	Tanzania Electric Supply Company Limited (TANESCO)	74	31.8%

Source: Field data, 2025

Descriptive Statistics According to the Research Objectives

Respondents were asked to indicate their agreement or disagreement with various items in the SERVQUAL, which stands for Responsiveness, Reliability, Empathy, Tangibility and Assurance. The mean scores were interpreted as follows: 1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = medium, 3.50-4.40 = high and 4.50-5.00 = very high.

Responsiveness

Findings in Table 3 show the perception of the respondents on responsiveness, one of the independent variables in the study. Responsiveness refers to the ability of logistics firms to respond quickly to customers' needs, which can influence both customer satisfaction and operational efficiency. As the table shows, the mean score for all the five items ranged between 2.50 and 3.49. The overall mean score for the variable was also

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within the same range, meaning the respondents considered the responsiveness variable to be moderate This indicates that logistics firms in Dar es Salaam respond to customer needs to some extent but need improvement. Moderate responsiveness led to irregular communication delays, inconsistent follow-ups, and variations in service quality, potentially causing delivery delays, poor coordination, and reduced supply chain performance.

Richey et al. (2022) found that higher responsiveness significantly improves both customer satisfaction and delivery performance, highlighting the operational benefits of prompt service. Similarly, Piprani et al. (2020) noted that responsiveness enhances communication and coordination, reducing operational delays, while Asamoah et al. (2021) reported that responsive firms are better able to adapt to changing customer demands, improving supply chain flexibility. Compared to these studies, the moderate level of responsiveness in the study suggests that logistics firms in Dar es Salaam are partially leveraging these benefits, but further improvements are needed to fully enhance supply chain performance and customer satisfaction.

Table 3: Respondents' Responses on Responsiveness

SN	Statement	Mean	Interpretation
1	Employees respond promptly to customer inquiries and requests	2.98	Moderate
2	Employees are always willing to help customers	2.94	Moderate
3	The company effectively handles customer complaints	3.11	Moderate
4	The logistics team demonstrates urgency in handling shipment requests	3.00	Moderate
5	Service disruptions are addressed in a timely manner	3.13	Moderate
	Overall Mean Score Values	3.03	Moderate

1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = moderate, 3.50-4.40 = high and 4.50-5.00 = very high

Source: Field data, 2025

Reliability

Findings in Table 4 show the perception of the respondents on reliability, one of the independent variables in the study. Reliability refers to the ability of a service provider to perform promised services dependably and accurately. As the table shows, the mean score for all the four items ranged between 2.50 and 3.49. The overall mean score for the variable was also within the same range, meaning the respondents considered the reliability variable to be moderate. This suggests that logistics firms in Dar es Salaam fulfill their service promises to some extent but with inconsistencies. Moderate reliability implies infrequent delivery delays, incomplete orders, or lapses in maintaining service commitments, which can undermine customer trust and operational performance. These findings align with those of Ali and Haseeb (2019), who reported that low reliability in logistics operations negatively affects service quality and customer satisfaction. Similarly, Touboulic and Walker (2015) emphasized that reliability enhances coordination and predictability in logistics processes, reducing operational disruptions. Therefore, the moderate reliability observed in this study indicates that logistics firms need to strengthen consistency and dependability to improve performance and customer confidence

Table 4: Respondents' Perception on Reliability

SN	Statement	Mean	Interpretation
1	The organization effectively resolves service-related errors	3.24	Moderate
2	The company consistently delivers services as promised	3.27	Moderate
3	Employees provide services in a timely manner	3.27	Moderate
4	Shipments are handled in a timely manner	3.28	Moderate
	Overall Mean Score Value	3.27	Moderate

1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = moderate, 3.50-4.40 = high and 4.50-5.00 = very high

Source: Field data, 2025

Empathy

Findings in Table 5 show the perception of the respondents on empathy, one of the independent variables in the study. Empathy refers to the ability of service providers to understand and share customers' feelings, showing personalized attention and care toward their needs. As the table shows, the mean score for all the five

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items ranged between 2.50 and 3.49. The overall mean score for the variable was also within the same range, meaning the respondents considered the empathy variable to be moderate. This implies that while employees in logistics firms in Dar es Salaam demonstrate some concern and attention toward customers, such efforts are not consistent personalized. Moderate empathy suggests limited customer engagement, insufficient individualized support, or a lack of proactive communication, which could weaken customer relationships and satisfaction. These findings are consistent with Parasuraman et al. (1988), who found that empathy significantly contributes to customer satisfaction by fostering trust and loyalty. Similarly, Rahman et al. (2018) observed that organizations exhibiting higher empathy levels experience improved customer retention and operational efficiency. Hence, the moderate empathy reported in this study indicates that logistics firms need to enhance their customer-centered approaches to strengthen long-term relationships and improve service quality outcomes.

Table 5: Perception of Respondents on Empathy

SN	Statement	Mean	Interpretation
1	The company provides personalized attention to customers	3.22	Moderate
2	The company provides flexible service options to accommodate customer requirements	2.97	Moderate
3	Employees address customer needs effectively	3.20	Moderate
4	The organization prioritizes customer satisfaction in all its operations	3.13	Moderate
5	The company values customer feedback	3.07	Moderate
	Overall mean score	3.12	Moderate

1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = moderate, 3.50-4.40 = high and 4.50-5.00 = very high
Source: Field data, 2025

Tangibles

Findings in Table 6 show the perception of the respondents on empathy, one of the independent variables in the study. Tangibles refer to the physical aspects of service delivery, such as facilities, equipment, appearance of personnel, and the overall physical environment that customers can see and evaluate. As the table shows, the mean score for all the four items ranged between 2.50 and 3.49. The overall mean score for the variable was also within the same range, meaning the respondents considered the tangible variable to be moderate. This implies that while logistics firms in Dar es Salaam have made some effort to maintain their physical facilities and equipment, the quality and modernity of these tangible elements remain insufficient. Moderate tangibility may suggest that infrastructure, technological tools, and employee presentation are functional but not up to the standards expected for efficient logistics operations. Such limitations can negatively affect customer impressions and operational performance.

These findings are consistent with Afthanorhan et al. (2019), who found that well-maintained facilities and modern equipment significantly enhance customer satisfaction and service perception. Similarly, Roslan et al. (2015) revealed that in the Malaysian logistics sector, tangibility strongly influenced customer evaluations of service quality, with advanced infrastructure contributing to efficiency and reliability. The moderate perception observed in this study therefore indicates that logistics firms in Dar es Salaam should invest more in modern facilities, technological improvements, and a professional physical environment to strengthen both customer satisfaction and operational effectiveness.

Table 2: Respondents' Perception on Tangibles

S/N	Statement	Mean	Interpretation
1	The company's physical facilities, equipment, and staff appearance are well-maintained	3.21	Moderate
2	The company's communication materials (like website, invoices) are clear and professional	3.22	Moderate
3	The company's systems support efficient service delivery	3.18	Moderate
4	The company regularly updates its service facilities	3.16	Moderate

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Overall Mean Score Value	3.19	Moderate

1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = moderate, 3.50-4.40 = high and 4.50-5.00 = very high

Source: Field data, 2025

Assurance

Findings in Table 7 show the perception of the respondents on assurance, one of the independent variables in the study. Assurance refers to the confidence and sense of trust that customers develop toward a service provider, which comes from employees' skills, politeness, honesty, and their ability to make customers feel safe and assured when receiving services. As the table shows, the mean score for all the four items ranged between 2.50 and 3.49. The overall mean score for the variable was also within the same range, meaning the respondents considered the assurance variable to be moderate. This implies that customers and employees in Dar es Salaam logistics firms have an average level of trust in the firms' ability to deliver services reliably and professionally. Moderate assurance suggests that while employees demonstrate some level of knowledge and politeness, there are inconsistencies in professionalism, communication, or confidence-building practices. This effect customer loyalty and reduce the reliability of logistics operations.

These findings align with Balinado et al. (2021) found that high assurance levels, achieved through staff competence and courteous behavior, improve customer trust and satisfaction. However, the moderate results observed in this study resemble the findings of Ngo et al. (2020), who reported that inadequate employee training and weak communication skills reduce the perceived reliability of service delivery. Therefore, logistics firms in Dar es Salaam need to strengthen employee training, improve communication, and enhance professional behavior to increase customer confidence and improve operational performance.

Table 3: Assurance in customer service quality

SN	Statement	Mean	Interpretation
1	Employees instill confidence in customers through their professionalism and expertise	3.07	Moderate
2	Employees ensure customers feel secure during transactions	3.06	Moderate
3	Employees consistently demonstrate courtesy and respect in all interactions	3.12	Moderate
4	Employees possess sufficient knowledge to address customer inquiries accurately and promptly	3.29	Moderate
	Overall Mean Score Value	3.14	Moderate

1.00-1.49 = very low, 1.50-2.49 = low, 2.50-3.49 = moderate, 3.50-4.40 = high and 4.50-5.00 = very high

Source: Field data, 2025

Regression Results

A multiple regression analysis was conducted to examine the influence of SERVQUAL (Responsiveness, Reliability, Empathy, Assurance, and Tangibility) on the Supply Chain Performance. The study was guiding with the following research questions;

i. To what extent does responsiveness influence supply chain performance?
ii. To what extent does reliability influence supply chain performance?
iii. To what extent does empathy influence supply chain performance?
iv. To what extent does tangibles influence supply chain performance?
v. To what extent does assurance influence supply chain performance?

Modal Summary

R value represents the correlation coefficient, which measures the strength and direction of the linear relationship between two or more variables. In Table 8, the R value is interpreted as follows: 0.19 or below =very weak, 0.20 – 0.39=weak, 0.40 – 0.59=moderate, 0.60 – 0.79=strong and 0.80 – 1.0=very strong. The R value of 0.654 indicates a strong positive correlation between the independent variables and the dependent variable.

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The R Square value of 0.428 shows that 42.8% of the variance in supply chain performance is explained by the five customer service quality variables included in the model.
The Adjusted R Square value of 0.415 shows that about 41.5% of the changes in supply chain performance were explained by the customer service quality variables that are assurance, tangible, responsiveness, empathy and reliability. This means the model provided explanation of the relationship after accounting for the number of predictors, reducing the possibility of overestimating its accuracy. The Standard Error of the Estimate of 0.78528 shows the average difference between the actual and predicted values.

Table 8: Modal Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.654[a]	.428	.415	.78528

Source: Field data, 2025

Analysis of Variance (ANOVA)
In Table 9, the Analysis of Variance (ANOVA) in Table 9 shows the significance in the regression model used to assess the influence of customer service quality variables on the supply chain performance.

Table 9: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	104.610	5	20.922	33.928	.000[b]
	Residual	139.984	227	.617		
	Total	244.594	232			

Source: Field data, 2025

The regression results show that the model was statistically significant, with an F-statistic value of 33.928 and a significance level (p-value) of 0.000. Since the p-value is below the value of 0.05, it indicates that the regression model was significant. This means that the five predictors; tangibility, assurance, responsiveness, empathy, and reliability had a statistically significant influence on supply chain performance.

Coefficients

In Table 10, the multiple regression analysis was conducted to determine the influence of each of the five independent variables of customer service quality on the dependent variable, supply chain performance.

Based on the results in Table 10, the regression model is expressed as follows:

$$Y = -1.212 + 0.236X_1 + 0.294X_2 + 0.284X_3 + 0.357X_4 + 0.236X_5 + \varepsilon$$

Where:
Y = Supply Chain Performance (dependent variable)
X_1 to X_5 = Responsiveness, Reliability, Empathy, Assurance, Tangibility
ε = Error term

The constant (β_0 =-1.212) indicates that if all independent variables are held at zero, the predicted supply chain performance would be -1.212.

The Influence of Responsiveness on Supply Chain Performance

The coefficient for Responsiveness (β_1 = 0.236) means that a one-unit increase in responsiveness is related with an increase of 0.236 units in supply chain performance, holding other variables constant. The variable is statistically significant (p = 0.000). The findings show that responsiveness in customer service has a statistically significant and positive influence on the supply chain performance.

The finding aligns with the literature, which reports the role of timely responses in enhancing various operational outcomes across the the supply chain processes. For instance, Richey et al. (2022) found that quick responses to customer queries and complaints positively contributes to improved customer satisfaction.

Furthermore, Piprani et al. (2020) support the finding by reporting that responsiveness enhances communication and coordination within the supply chain, which in turn reduces delays and disruptions. Similarly, Asamoah et al. (2021) argued that responsiveness contributes to supply chain flexibility by enabling quicker adaptations to changing customer demands. According to their findings, responsiveness fosters agility, which is essential for maintaining continuity and performance in dynamic market conditions. Therefore, the results of this study confirm that improving responsiveness in customer service enhances supply chain performance by promoting better coordination, reducing delays, and increasing flexibility. This implies that logistics firms in Dar es Salaam should strengthen their communication systems and response mechanisms to customer needs, as doing so can lead to more efficient operations and higher service reliability across the supply chain.

Reliability

The coefficient for Reliability (β_2 = 0.294) shows that a one-unit increase in reliability leads to a 0.294-unit increase in supply chain performance, holding other variables constant (p = 0.000), indicating a variable is statistically significant. The findings confirm that reliability in customer service has a significant and positive influence on the supply chain performance.

The finding matches with Njoki (2021), who found that reliable customer service reduced order fulfillment errors and improved customer satisfaction, thereby streamlining operations and expediting delivery processes. Similarly, Gopi and Samat (2020) identified customer service reliability as a driver of supply chain efficiency. Their study found that firms with high reliability levels were better able to forecast demand, thereby minimizing stockouts and promoting smoother operations. Therefore, the findings indicate that enhancing reliability in customer service can significantly improve supply chain performance by reducing errors, ensuring timely deliveries, and supporting more efficient operations. Logistics firms in Dar es Salaam should focus on consistent and dependable service delivery to strengthen operational efficiency and customer trust across their supply chains.

Empathy

The coefficient for Empathy (β_3 = 0.284) indicates that a one-unit increase in empathy contributes to a 0.284-unit increase in supply chain performance (p = 0.000), showing that the variable is statistically positive and significant.

The finding shows that empathy in customer service significantly and positively influences the supply chain performance. The finding aligns with Endwia et al. (2021), who found that empathetic interactions contribute to improved communication and collaboration, which help reduce misunderstandings and delays. On the other hand, Ngo et al. (2020) reported that empathy in customer service enhances customer loyalty, which supports better supply chain performance through improved cooperation among customers and suppliers. Therefore, the results suggest that fostering empathy in customer service can enhance supply chain performance by improving communication, collaboration, and customer cooperation. Logistics firms in Dar es Salaam should prioritize understanding and addressing customer needs to strengthen operational efficiency and maintain smooth supply chain processes.

Assurance

The coefficient for Assurance (β_4 = 0.357) represents the strongest influence among all the possible predictors. A one-unit increase in assurance results in a 0.357-unit increase in supply chain performance, with a significant p-value (p = 0.000).

The findings shows that assurance in customer service has a significant positive impact on supply chain performance. A study by Zun et al. (2018) on healthcare service quality highlighted that assurance strongly influences patient satisfaction by fostering trust through employee professionalism and courtesy. Paul et al. (2016) also confirmed that assurance significantly enhances customer satisfaction in private banking institutions, where personalized and credible service is emphasized. Therefore, the findings indicate that improving assurance in customer service can have an important positive effect on supply chain performance by building customer trust and confidence. Logistics firms in Dar es Salaam should focus on enhancing employee competence, professionalism, and credibility to strengthen service reliability and operational efficiency.

Tangibility

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The coefficient for Tangibility (β_5 = 0.236) shows that a one-unit increase in tangibility is associated with a 0.236-unit increase in supply chain performance (p = 0.000), confirming a statistically significant and positive contribution. Therefore, tangibility has a significant positive influence on supply chain performance. This finding aligns with Afthanorhan et al. (2019), who found that tangibility significantly affects customer satisfaction, noting that customers value modern equipment, well-maintained physical environments and professional staff presentation. On the other hand, in Malasia, Roslan et al. (2015) demonstrated that tangibility plays a key role in influencing customer evaluation of service quality. Therefore, the results suggest that enhancing tangibility in customer service can improve supply chain performance by providing a professional physical environment, modern equipment, and well-presented staff. Logistics firms in Dar es Salaam should invest in these tangible aspects to increase operational efficiency and strengthen customer satisfaction.

Table 10: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.212	.347		-3.496	.001
	Responsiveness	.236	.055	.219	4.283	.000
	Reliability	.294	.055	.273	5.366	.000
	Empathy	.284	.057	.254	5.000	.000
	Assurance	.357	.050	.357	7.086	.000
	Tangibility	.236	.047	.252	4.996	.000

Source: Field data, 2025

Conclusions

The study concludes that establishes customer service quality constitutes an essential determinant of supply chain performance in logistics firms. The dimensions of responsiveness, reliability, empathy, assurance, and tangibility together enhance operational efficiency, coordination, and the seamless flow of goods and information. There is necessity for logistics organizations to strategically integrate and prioritize customer service quality, recognizing it not merely as a support function but as a core factor that drives supply chain effectiveness and competitive advantage.

To improve supply chain performance, logistics firms should strengthen all dimensions of customer service quality. This can be achieved by implementing continuous employee training programs to enhance responsiveness and reliability, upgrading technological systems to increase operational efficiency, and maintaining physical infrastructure to improve tangibility. Additionally, fostering professional and empathetic interactions will build customer trust and satisfaction, while establishing regular monitoring and evaluation mechanisms will help identify service gaps and enable timely improvements. Firms should also integrate emerging factors such as digital tools, organizational culture, and regulatory environments to remain competitive and responsive to industry changes. Future research employing qualitative or mixed-method approaches can provide deeper insights into customer expectations and service challenges across different industries, supporting evidence-based strategies for optimizing supply chain performance.

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REFERENCES

Achola, V. O. (2024). Logistics outsourcing practices in Africa: A systematic literature review. *Journal of Logistics Management*, 6, 1–22. https://doi.org/10.23773/2024_6

Afthanorhan, A., Awang, Z., Rashid, N., Foziah, H., & Ghazali, P. (2019). Assessing the effects of service quality on customer satisfaction. *Management Science Letters, 9*(1), 13–24.

Al Ali, A. (2020). The impact of information sharing and quality assurance on customer service at UAE banking sector. *International Journal of Technology, Innovation and Management (IJTIM), 1*(1), 1–17.

Asamoah, D., Nuertey, D., Agyei-Owusu, B., & Akyeh, J. (2021). The effect of supply chain responsiveness on customer development. *The International Journal of Logistics Management*, *32*(4), 1190–1213.

Balinado, J. R., Prasetyo, Y. T., Young, M. N., Persada, S. F., Miraja, B. A., & Redi, A. A. N. P. (2021). The effect of service quality on customer satisfaction in an automotive after-sales service. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), 116.

Creswell, J. W., & Creswell, J. D. (2020). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Endwia, S. M., Kusumawati, N., & Irawan, A. (2021). Factors Influencing Customer Satisfaction and Loyalty of Online Educational Platform in Indonesia: Analysis of E-Service Quality Factors. *No. August*, 11–13.

Eni, Y., & Chandra, A. K. (2022). Impact of e-supply chain management on customer satisfaction through service quality in agricultural e-commerce. *The Winners: Journal of Binus Business Review, 24*(2). https://doi.org/10.21512/tw.v24i2.11041

Gopi, B., & Samat, N. (2020). The influence of food trucks' service quality on customer satisfaction and its impact toward customer loyalty. *British Food Journal*, *122*(10), 3213–3226.

Heliyon. (2022). *An investigation of transportation logistics strategy on manufacturing supply chain responsiveness in developing countries: The mediating role of delivery reliability and delivery speed*, 8(11), e11283. https://doi.org/10.1016/j.heliyon.2022.e11283

Kasih, A. F., & Ardyan, E. (2025). The effect of service quality and supply chain agility on customer satisfaction mediated by customer trust. *Jurnal Entrepreneur dan Entrepreneurship, 14*(1), 33–50.

Lwesya, F., & Richard, J. (2017). Customer service quality management in public transport: The case of rail transport in Tanzania. *International Review*, 2017(3-4), 27–41.

Mpuon, J. A., & Oyo-Ita, D. (2024). Supply chain service quality and customer satisfaction in Nigerian airports: A case study of Calabar Airport. *African Journal of Accounting and Financial Research, 7*(2), 223–245. https://doi.org/10.52589/AJAFR-S27AND0D

Muradzikwa, V., Mafini, C., & Zvinowanda, D. (2025). Impact of freight logistics supply chain management on supply chain robustness and financial performance: Post-COVID-19 era. *International Journal of Research in Business and Social Science, 14*(5), 1–12. https://doi.org/10.20525/ijrbs.v14i5.4160

Mustafa, N., Khairani, A. Z., & Ishak, N. A. (2021). Calibration of the science process skills among Malaysian elementary students: A Rasch model analysis. *International Journal of Evaluation and Research in Education (IJERE), 10*(4), 1344–1351. https://doi.org/10.11591/ijere.v10i4.21430

Mwencha, M., Rosen, J. E., Spisak, C., Watson, N., Kisoka, N., & Mberesero, H. (2017). Upgrading supply chain management systems to improve availability of medicines in Tanzania: Evaluation of performance and cost effects. *Global Health: Science and Practice, 5*(3), 399–411. https://doi.org/10.9745/GHSP-D-16-00395

Mwendapole, M. J., & Jin, Z. (2021). Evaluation of seaport service quality in Tanzania: From the Dar es Salaam seaport perspective. *Sustainability, 13*(18), 10076. https://doi.org/10.3390/su131810076

Nenavani, J., & Jain, R. K. (2022). Examining the impact of strategic supplier partnership, customer relationship and supply chain responsiveness on operational performance: The moderating effect of demand uncertainty. *Journal of Business & Industrial Marketing, 37*(5), 995–1011.

Ngo, L. V., Nguyen, T. N. Q., Tran, N. T., & Paramita, W. (2020). It takes two to tango: The role of customer empathy and resources to improve the efficacy of frontline employee empathy. *Journal of Retailing and Consumer Services*, *56*, 102141.

Nguyen, N. T. V., Nguyen, M. K., & Tran, M. N. (2025). Evaluating the impact of supply chain factors on customer satisfaction and loyalty in Vietnam. *Journal of Distribution Science*, *23*(2), 51–61.

Njoki Chege, C. (2021). *Examining the influence of service reliability on customer satisfaction in the insurance industry in Kenya*.

Nyange, E. F., & Kabelele, D. P. (2024). The effects of supply chain management practices on customer satisfaction: A case of brewery manufacturing companies in Tanzania. *Journal of International Trade, Logistics and Law*, *10*(2).

Paul, J., Mittal, A., & Srivastav, G. (2016). Impact of service quality on customer satisfaction in private and public sector banks. *International Journal of Bank Marketing*, *34*(5), 606–622.

Piprani, A. Z., Mohezar, S., & Jaafar, N. I. (2020). Supply chain integration and supply chain performance: The mediating role of supply chain resilience. *International Journal of Supply Chain Management*, *9*(3), 58–73.

Raphael Logistics (T) Limited. (2025). *Company profile*. Retrieved October, 2025, from https://www.raphaellogistics.co.tz

Roslan, N. A. A., Wahab, E., & Abdullah, N. H. (2015). Service quality: A case study of logistics sector in Iskandar Malaysia using SERVQUAL model. *Procedia-Social and Behavioral Sciences*, *172*, 457–462.

Suryani, D., & Nurmala. (2022). *Analysis of the effect of service quality supply chain management healthcare product towards hospital and clinical laboratories satisfaction*. *Quality – Access to Success (QEMS Journal)*. https://doi.org/10.35877/454RI.qems2199

Swai, H. C., Kileo, W. J., & Mwendapole, M. J. (2023). Correlation between service quality dimensions and customer satisfaction at Tanzania Railway Corporation. *International Journal of Scientific and Research Publications*, *13*(10), 14223. http://dx.doi.org/10.29322/IJSRP.13.10.2023.p14223

Tanzania Electric Supply Company Limited (TANESCO). (2025). *Company Profile*. Retrieved from https://www.tanesco.co.tz

Zeithaml, V. A., & Berry, L. L. (1988). *SERVQUAL: A Multiple-Item Scale for measuring consumer perceptions of service quality*. https://www.researchgate.net/publication/225083802

Zun, A. B., Ibrahim, M. I., & Hamid, A. A. (2018). Level of satisfaction on service quality dimensions based on SERVQUAL model among patients attending 1 Malaysia clinic in Kota Bharu, Malaysia. *Oman Medical Journal*, *33*(5), 416.

Zygiaris, S., Hameed, Z., Ayidh Alsubaie, M., & Ur Rehman, S. (2022). Service quality and customer satisfaction in the post pandemic world: A study of Saudi auto care industry. *Frontiers in Psychology*, *13*, 842141.