Journal of Logistics Management 2025, 13(2): 29-40
DOI: 10.5923/j.logistics.20251302.01

Total Quality Management Practices in the Seaport Service Delivery

Erick P. Massami[1,*], Juma Kassimu[2]

[1]Department of Maritime Transport Management, National Institute of Transport, Tanzania
[2]Department of Logistics and Transport Studies, National Institute of Transport, Tanzania

Abstract Despite the increased attention to the role of TQM practices on port performance, inadequate evidence exists about the importance of each element of TQM practices on seaport service delivery. The purpose of this study is to assess the effect of TQM practices on seaport service delivery based on the Deming's theory. This study employs a deductive approach to derive empirical evidence from the hypothesized relationships based on the responses of 84 staff of the Dar es Salaam seaport. The SPSS (Version 27) was used to test the significance of conceptualized relationships. The analysis results reveal that customer focus, total employee involvement, integrated business system, and continual improvement have a significant and positive direct effect on seaport service delivery. Accordingly, seaport managers should provide the necessary resources for enhancing the TQM practices. Further research is suggested to undertake a comprehensive study examining the relationships between all TQM practices and seaport service delivery.

Keywords Total Quality Management (TQM), Seaport Service Delivery, Deming Cycle, Customer Satisfaction, Continual improvement

1. Introduction

Seaports are critical nodes for inbound and outbound flow of goods in the global supply chains. More specifically, seaports have evolved into complex logistics hubs critical for global trade. For instance, the port sector in Tanzania handles more than 90% of the country's exported and imported goods. However, the increased globalization and liberalization of services in the supply chain has created intensity of competition and weakened the ability of many seaports to compete, especially in developing countries. Rivalry in the port industry has increased to the extent that seaports are uncertain of future customer demand and the requirements for fulfilling this demand. Port customers are in constant need of high-quality service in service delivery while uncertainties are threatening the competitiveness of many seaports. Unless total quality management practices (TQM) practices are enhanced, seaports' competitiveness will be at stake which in turn affects their contribution to Gross Domestic Product (GDP). Traditional view on the idea of competitive advantage viewed seaports as autonomous bodies [1]. However, the modern view differs from the traditional one since the port customers are the ones who dictate the quality of service they need from port service providers. To ensure high quality service and effective service delivery, enhancing TQM practices is inevitable. Total Quality Management (TQM) practices have been instrumental in enhancing operational performance, particularly in dynamic and competitive industries. Othman et al. [2] posit that TQM is a management philosophy concerned with people and work processes that focuses on customer satisfaction and improves organizational performance.

Studies investigating the role of TQM practices on seaport service delivery are not hard to find. Many scholars strongly support the assertion that enhancing TQM practices improves the competitiveness of seaports [2,3,4,5]. Anderson et al. [6] articulate that TQM practices such as continuous improvement, customer satisfaction, leadership focus and employee involvement are essential for improving service delivery. More specifically, TQM practices play a big role for the long-term survival and competitive advantages of an organization [7,8]. Furthermore, quality management is necessary for organization to reduce costs and improve performance [9,10,11].

On the other hand, Tran et al. [4] argue that seaports in developing countries have ISO certificates for compliance rather than for obtaining long-term sustainability and competitive advantage. In particular, the Dar es Salaam Seaport, despite of handling at least 90% of Tanzania's exported and imported goods the challenges such as congestion, inefficiency, and inconsistent service quality still persist, necessitating the systematic implementation of TQM practices. The TQM practices which are crucial for

* Corresponding author:
erick.massami@nit.ac.tz (Erick P. Massami)
Received: Apr. 25, 2025; Accepted: May 21, 2025; Published: Jul. 3, 2025
Published online at http://journal.sapub.org/logistics

addressing inefficiencies at the port, have not been fully integrated into the port's operations [12]. As the intensity of rivalry escalates in the region, the Dar es Salaam Seaport must enhance the TQM practices to remain competitive [13].

The TQM which is a management system for a customer-focused organization involving all employees in continual improvement has eight guiding principles (i.e. TQM practices): continual improvement, customer focus, total employee involvement, integrated business system, communications, fact-based decision making, strategic and systematic approach, and process approach. Effective communication plays a significant role in enhancing customer relationship management (CRM) with port service users and maintaining morale and motivating employees at all levels. Thus, the attributes of this principle are captured under customer focus and total employee involvement. On the other hand, the process approach ensures that proper steps are taken timely for consistency and effectiveness of port service provision. Consequently, the attributes of this principle are included under the integrated business system. Strategic and systematic approach refers to the management of multiple processes within a port service cycle as a coherent system. As such, the attributes of this principle are included under integrated business system. Further, fact-based decision making refers to collecting and analysing data for informed decision making by every seaport employee. Thus, the attributes of this principle are captured under total employee involvement. Consequently, this study uses the four TQM practices on seaport service delivery: customer focus, total employee involvement, integrated business system, and continuous improvement. This is in line with the views of Anderson et al. [6] who argue that TQM to a large extent relies on continual improvement, customer satisfaction, and employee involvement.

Despite the numerous studies that have examined the roles of customer focus, total employee involvement, and continuous improvement on port service delivery, insufficient evidence exists on the direct relationship and significance of each dimension in the perspective of seaport. More specifically, there is no study that has examined the relationship between TQM practices and service delivery in Tanzania's seaports particularly at the Dar es Salaam seaport. Given the importance of these dimensions and the contradicting views in the literature, this study seeks to examine the existence of the relationship and the significance of each dimension on seaport service delivery. Therefore, the key research question is:

To what extent do customer focus, total employee involvement, system integration, and continuous improvement influence seaport service delivery?

With insights from the Deming's TQM philosophy, this study advances knowledge of existing literature in TQM by revealing the existence of relationship and significance of each dimension of TQM practices on seaport service delivery. Port managers can identify areas of improvement within their settings and be able to attain competitiveness and increased port revenue. The rest of this paper is organized as follows: Section 2 presents the theoretical and empirical review; The research methodology is presented in section 3; Section 4 presents the results and discussion; and section 5 presents the conclusion and implications of the findings.

2. Theoretical and Empirical Review

2.1. Theoretical Review

There are several different theories that guide TQM practices including the Deming's theory, Crosby's theory, Juran's theory, European foundation for quality management (EFQM) model, and Ishikawa's theory. Despite the contribution of the other theories, the Deming's theory gives highly integrated framework for how organizational staff work in team, rather than focusing on actions of the individual staff working in silos. Consequently, Deming theory is adopted by this study.

The Deming cycle also known as the Deming wheel or the PDSA cycle (Plan-Do-Study-Act) is a model for effective management of any process in the quality chain of a product or service. The PDSA cycle has got four sequential steps: Plan – what needs to be done, Do – execute the work to plan, Study – outcomes are monitored to test the validity of the plan for signs of progress and success, or problems and areas for improvement, Act – the corrective action is taken or the plan is amended if the circumstance necessitates. The PDSA cycle is a key framework for organizational learning and drives continuous improvement in lean working. Anderson et al. [6] articulates a theory underlying Deming's style of quality management based on seven constructs: process management, customer service, visionary leadership, learning, employee fulfillment, internal and external cooperation, and continuous improvement. More specifically, the PDCA cycle emphasizes continuous improvement and systematic integration of quality practices across organizational processes [14]. In addition, the fourteen points of the Deming's theory of TQM highlight the importance of total employee involvement, customer focus, integrated business system, and continual improvement [6]. The rationale behind this theory is that improvements in quality lead to lower costs and higher productivity due to fewer mistakes, less rework, fewer delays, and better use of time and resources. This view is supported by Othman et al. [2] who posit that TQM is the foundation for activities which include: commitment by high level management and all employees, employee involvement and empowerment, meeting customer requirements, systems to facilitate improvement, and reducing service costs.

The application of the Deming's theory is not new in the TQM literature. Agrawal [15] examines the significance of relationships of the 14 quality principles of the Deming's theory based on interpretive structural modelling (ISM) and MICMAC analysis. The findings reveal that the 14 principles fall into strategic, tactical and operational requirements. Hales and Chakravorty [16] examine the implementation of

the Deming's style of TQM in plastic industries. The findings reveal that the theory has industry wide applications. Another study in the same direction is by Anderson et al. [6] who propose a quality management theory based on the Deming management method. Knouse et al. (2009) explores the effect of Deming's ideas on the twenty-first century based on the ProQuest search. The findings reveal the legacy of the Deming's theory in various areas including customer satisfaction and supply chain management. Thus, the Deming's theory continues to be useful in almost every area of the quality chain of an organization since the underlying principles of the Deming's theory reflex the TQM practices including customer focus, total employee involvement, integrated business system, and continual improvement.

2.2. Empirical Review

The main objective of this study is to assess the effect of customer focus, total employee involvement, integrated business system, and continual improvement on seaport service delivery. An in-depth understanding of the significance of a particular TQM practice on seaport service delivery helps seaport managers to formulate strategies to enhance service delivery which in turn would attract more customers and generate more revenue. Thus, the research model in Figure 1 is developed based on the reviewed literature to illustrate the relationship between the predictors and the responsive variable of the study. The model has five variables: customer focus, total employee involvement, integrated business system, continual improvement, and seaport service delivery. Customer focus, total employee involvement, integrated business system, and continual improvement are predictors whereas seaport service delivery is a responsive variable.

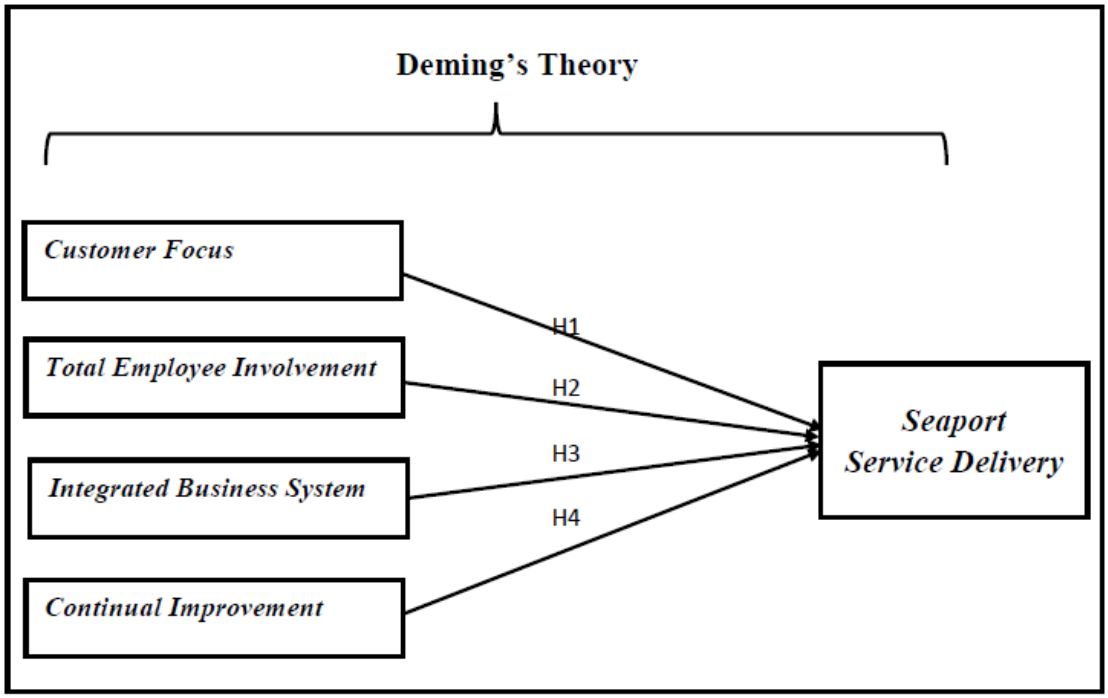

Figure 1. Research model (***Source**: Literature review*)

2.2.1. Customer Focus and Seaport Service Delivery

Customer focus is one of the key TQM practices on seaport service delivery. Customers are the ones who determine the quality of port service. When the seaport understands the customer needs and wants, it has a better position of figuring out how to get the right staff, modern IT and processes to meet and exceed their expectations. The benefits emanating from customer focus include more sales, increased market share and revenue; repeat business due to strong customer loyalty; and attraction of more potential customers due to satisfaction of existing customers. With increased competition, seaport service users (i.e. customers) have a stronger bargaining power, hence strong ties with customers including shipping lines, CFAs, and other port users can be a valuable source of enhancing seaport service delivery [18]. Close customer collaboration in the service chain, reduces ship's turnaround times and improves the overall quality of port services.

The relationship between customer focus and seaport service delivery has been seldom studied. Abdul Rahman et al. [19] assess port service quality in a Gulf country and find that customer orientation improves port service delivery. Tran [4] and Ungereanu et al. [20] emphasize the importance of integrating the quality management practices (i.e. customer focus) in order to improve the efficiency of seaports in the global supply chains. Briggs et al. [21] argue that customer orientation enhances service quality by aligning

operations with customer needs. Solaimani and Van der Veen [22] contend that 50% of supply chains in developing countries are not efficient due to lack of customer focus which in turn leads to sub-optimization of individual supply chain members. Despite the number of studies conducted on customer orientation, the effect of customer orientation on seaport performance is still very much under researched. Samoilovska et al. [23] posit that seaports need to provide attractive services to its consumers (i.e. shipowners, shippers and passengers) which in turn would increase cross-selling, customer commitment, positive word of mouth advertising and decreasing tariff sensitivity. This view is supported by Othman et al. [2] who argue that seaports should focus on meeting customer requirements in order to increase the market share. Based on the identified gap, this study assesses the effect of customer focus on seaport service delivery. Thus, this study proposes that:

H1: Customer focus has a significant positive effect on seaport service delivery.

2.2.2. Total Employee Involvement and Seaport Service Delivery

Total employee involvement entails promoting teamwork, providing the necessary training to employees for informed decision making in the quality chain [24]. Delivery of quality port service is attained when every employee is involved in the port enterprise and committed to providing a high level of service to customers, and other employees. This view is true since empowering employees makes them more proactive and self-sufficient in assisting a seaport to achieve its goals. Brunner-sperdin et al. [25] expound that employee involvement in the quality chain is linked to improved decision making and operational efficiency. Fening et al. [26] explicate that the participation of employee in quality management is crucial in achieving quality improvement. Elbendary et al. [27] devise a Knowledge Management Model (KMM) on TQM in the Egyptian maritime sector. The findings reveal the importance of employees' decision making in the quality chain. Murenga and Njuguna [28] argue that the involvement of all employees in quality improvement would directly impact the quality of service delivered to customers. However, there are limited studies that highlight the effect of total employee involvement in seaport service delivery. More specifically, the extent of total employee involvement on seaport service delivery in the perspective of the current study is not clear. To address this gap, this study assesses the effect of total employee involvement on seaport service delivery. Thus, the following hypothesis is proposed:

H2: Total employee involvement has a significant positive effect on seaport service delivery.

2.2.3. Integrated Business System and Seaport Service Delivery

The integrated system links business improvement elements in order to continually improve and exceed the expectations of port service users (i.e. customers), port employees, and other stakeholders. Brunner-sperdin et al. [25] explicate that system integration fosters inter-departmental coordination and resource optimization. Although a port enterprise consists of many different functional specialities organized into vertically structured departments, it is the horizontal processes interconnecting these functions that are the focus of TQM. In a TQM effort, all members of the quality chain participate in improving processes, services and the culture in which they work. Integrated business system not only synchronizes the activities of internal functions but also seeks to integrate the relevant activities of external quality chain members through integrated systems such as Single Window System (SWS). Samoilovska et al. [23] posit that seaports should implement new technologies and management solutions in order to curb the escalating competition. Generally, the enhancement of business processes in any organization in an uncertain environment has a key effect on competitive advantage and long-term sustainability. The integrated business system has been found to have a positive effect on seaport service delivery [5,19]. However, these studies they don't give the extent of relationship between the integrated business system and seaport service delivery. Therefore, this study seeks to assess the effect of integrated business system on seaport service delivery. Thus, the following hypothesis is proposed:

H3: Integrated business system has a significant positive effect on seaport service delivery.

2.2.4. Continual Improvement and Seaport Service Delivery

Continual improvement refers to the constant refinement and improvement of seaport systems and services to yield improved value to customers. Continuous improvement, as a core TQM practice, ensures adaptability and resilience in dynamic environments [29]. More specifically, it drives a seaport to be both analytical and creative in formulating and implementing strategies at various levels (i.e. corporate and operational strategies) which would make the port to be more competitive and profitable while meeting port stakeholders' expectations. Continual improvement is concerned with the TQM in the entire process of service provision, from the level of planning to the execution of work by operational staff. Thus, organizations such as seaports operating in a dynamic and competitive environment need to abide to continual improvement in its operation. Enhanced continual improvement for seaport enterprise leads to improved port performance [3,4,20]. However, it should be noted that port performance encompasses many measures including those not directly related to service delivery. Thus, these studies are limited since they don't assess concisely the effect of continual improvement on seaport service delivery. This study therefore seeks to assess the effect of continual improvement on seaport service delivery. Thus, the following hypothesis is proposed:

H4: Continual improvement has a significant positive effect on seaport service delivery.

3. Research Methodology

3.1. Research Design

This study adopted a positivism research philosophy to explain the extent of how TQM practices enable seaports to enhance their service delivery. The application of the positivism philosophy is grounded on the predefined theory and hypotheses which are used to examine the cause-and-effect relationships between the predictor and response variables [30]. For effective testing of the hypotheses, an appropriate research design was implemented. Research design is the general plan of how a researcher goes about answering the research question(s) [30]. It contains specific objectives derived from the research question(s), the sources from which the researcher intends to collect the data, how the researcher proposes to collect and analyse the data, and discussion of ethical issues and the constraints encountered. This study employed a quantitative research design based on explanatory purpose. The choice of the quantitative research is based on the fact that it examines the relationships between variables, which are measured numerically and analysed using a range of statistical and graphical techniques [30]. In addition, considering the devised research question(s) (i.e. objectives), cross-sectional study based on a survey strategy was carried out and involved the collection of quantitative data and testing of hypotheses while ensuring high levels of validity and reliability of findings.

Existing literature has operationalized TQM practices in eight variables (i.e. principles): customer focus, continual improvement, total employee involvement, integrated business system, fact-based decision making, strategic and systematic approach, and process approach [4,5,20,24,31]. For seaport perspective and taking cognizance of the existing literature, fact-based decision making, strategic and systematic approach, and process approach are reflected under integrated business system. Hence, this study operationalized TQM practices using four predictor variables, namely customer-focus, total employee involvement, continual improvement, and integrated business system. The research model in Figure 1 presents the relationship among five reflectively measured latent variables namely, customer focus, total employee involvement, continual improvement, and integrated business system are predictor variables whereas port service delivery is a response variable.

The operational definition of customer focus is "the prioritization of port customers' needs, preferences, and satisfaction above all other aspects of the seaport's operations". More specifically, customer focus in seaports entails understanding customer satisfaction and delivering quality port service. To implement TQM based on customer focus, the seaport should: research and understand customers' needs and expectations; align seaport's objectives with customer needs; communicate with port service users, measure satisfaction, and use the results to improve processes, and find a balance for satisfying port service users and other stakeholders (i.e. employees, suppliers, and investors).

Total employee involvement (TEI) is "a management philosophy that encourages employees to participate in the planning processes, problem-solving, and decision-making. More specifically, TEI in seaports refer to the participation of employees in decisions that may affect the provision of quality port service. The TEI can help a seaport improve its competitiveness since all employees work toward achieving aligned goals. To implement TQM based on total employee involvement, the seaport should: enhance teamwork, provide employees with perceived control, ensure employee-job fit, ensure technology-job fit, develop a supervisory control system, reduce role conflict, and reduce role ambiguity [32].

Integrated business system (IBS) is "a system that connects a business's applications, data, processes, devices and people across an IT landscape". It helps businesses to share information between different systems and data sources, and to flow data across the enterprise in real time. The IBS aims to improve enterprise resource planning (ERP), customer relationship management (CRM), supply chain management (SCM), and human resource management (HRM). It aligns and optimizes all processes and functions of a seaport toward quality goal.

Continual improvement is a process of continually improving service quality by a seaport in order to adapt to changing markets and attain competitive advantage. More specifically, seaports need to sustain quality improvements over time and adapt to changing customer needs. In order to ensure long-term sustainability while providing higher quality service, seaports need to change their management practice [33]. The continual improvement involves constantly exploring ways to improve processes and services. It requires a seaport commitment to ongoing learning and adaptation. The continual improvement leads to: improved service quality, increased efficiency and productivity, reduced costs, customer satisfaction etc.

Port service delivery was operationalized as "the process of providing services to a customer by a seaport which includes cargo handling, pilotage services, and other ancillary services. To achieve competitive advantage, seaports are focusing more on delivering quality services. However, service delivery gap occurs when there is deviation between the actual performance of a port service and the standards set by management. This could be caused by deficiencies in human resource policies, customers not fulfilling roles, failure to match supply and demand, and problems with service intermediaries (eg. CFAs). To get rid of computational errors, all variables were measured based on multi-item indicators of five-point Likert scale ranging from 1=strongly disagree to 5=strongly agree [34,35].

3.2. Target Population, Sampling Techniques, and Data Collection Procedures

The target population comprised 508 staff of the Tanzania Ports Authority at Dar es Salaam seaport. The units of analysis consisted of relevant departments, while units of inquiry comprised staff from departments

responsible for implementing quality management practices. These departments include: Business support, Human resource, Administration, and Operations. The units of inquiry were used to represent departments' interests in the study aspects rather than personal views. Sample size was obtained by using the Yamane's formula, $n=N/[1+N(e)^2]$ where, n=sample size, N=population size, and e=acceptable sampling error [36]. Based on the nature of the study, a 10% margin error was assumed and a 90% confidence interval was allowed to obtain the maximum sample size. The sample size of this study was n=508/[1+508(0.1)2]=84 respondents.

Considering the constraints of time and other resources, a stratified sampling technique based on simple random sampling was used to select respondents from four departments of the Tanzania Ports Authority's Dar es Salaam seaport, namely, Business support, Human resource, Administration, and Operations. The departments were purposively selected, based on the fact that they are the ones responsible for implementing quality management practices. In each stratum, respondents were selected using the fishbowl draw procedure [37]. There are two types of data, namely, primary and secondary data. The primary data are the first-hand data that are collected directly from the respondents for the first time whereas secondary data are adopted from existing data sources. In this research, secondary data were collected by examining records such as relevant research papers, journals, reports, TPA bulletins, and government publications. Primary data, on the other hand, were collected using closed-ended survey questionnaire. The closed-ended questionnaires were chosen because they are cost-effective and time efficient and thus, enabled the collection of data from a large sample.

Before data collection, a preliminary (i.e. pilot) data collection was carried out whereby 10 questionnaires were administered to the purposively selected TPA staff to assess the content validity. Their feedback helped to refine the research instrument to give clarity of questions in the questionnaire. The Cronbach's alpha was used to measure the indicators internal consistency reliability. Generally, an alpha value (α) above 0.70 is considered acceptable (Hair et al., 2016). Using SPSS software version 27, the results of the reliability test were promising: Customer focus (α=0.852), Total employee involvement (α=0.703), Integrated business system (α=0.816), and Continual improvement (α=0.854). When undertaking data collection exercise, questionnaires with request letters, specifying the purpose of the research, respondents' roles, and guaranteed confidentiality were sent to potential respondents for onsite completion. The collected data were coded into IBM SPSS 27 (.csv) data file. All 84 survey questionnaires were filled, making a 100% response rate. Based on the previous studies: 77% [38] and 73% [39], the response rate is considered very high and acceptable. Table 1 presents the demographic profile of respondents.

Table 1. Demographic profile of respondents

Category	Variable	Frequency	Percentage
Gender	Male	45	53.6%
	Female	39	46.4%
	Total	**84**	**100%**
Age Group	18-30 years	18	21.4%
	31-40 years	34	40.5%
	41-50 years	25	29.8%
	51 years and above	7	8.3%
	Total	**80**	**100%**
Education Level	Secondary Education	10	11.9%
	Certificate	7	8.3%
	Diploma	19	22.6%
	Degree	32	38.1%
	Master's	16	19.0%
	Total	**80**	**100%**
Department	Business Support	5	6.0%
	Human Resource and Medical	8	9.5%
	Administration	13	15.5%
	Operations	58	69.0%
	Total	**84**	**100%**
Experience (Years)	0-5 years	24	28.6%
	6-11 years	27	32.1%
	12-17 years	24	28.6%
	18 years and above	9	10.7%
	Total	**84**	**100%**

Source: Field Data (2024)

3.3. Data Analysis Method

Data analysis entailed examination of the relationship between indicators and variables, and the hypothesized relationships [40,41].

In this study, the relationship between predictor variables and response variable was modelled as Multiple Linear Regression Model as given by equation (1).

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad (1)$$

Where Y: Seaport service delivery, $\beta_k | k \in \{0,1,2,3,4\}$: Regression coefficient, ε: the error term, X_1: Customer focus, X_2: Total employee involvement, X_3: Integrated business system, X_4: Continual improvement. IBM SPSS (version 27) was used to estimate the model. The choice was based on the benefits provided by this software such as presence of user-friendly interface, ability to handle a wide range of statistical tests, possession of advanced data management capabilities, ability to present graphical output, and combability with other software [42]. In addition, the software can handle different regression models (e.g. Multiple linear regression). Furthermore, it has the ability to implement many latest modules without difficulties.

3.4. Interpretation of the Model Parameters

R-Value is called the correlation coefficient and indicates the relationship between the predictor variables and response variable. It can take any value in the closed interval [-1,1]. If R=-1, then there exists a perfect negative relationship between the predictor variables and response variable; If R=0, then there is no relationship between predictor variables and response variable; If R=1, then there exists a perfect positive relationship between the predictor variables and response variable. R-squared (R^2) which is knowns as coefficient of determination provides the proportion of the variance in the seaport service delivery that is explained by the TQM practices (i.e. model). The P-Value (Probability value) whose value lies between 0 and 1, gives the lowest significance at which the alternative hypothesis is accepted meanwhile the null hypothesis is rejected. Thus, if the P-Value $< \alpha$ (level of significance), the alternative hypothesis is accepted. The F-value is a test for statistical significance of the regression equation which shows whether the developed linear regression model fits the data better than the other model which doesn't contain the existing predictor variables (Massami et al., 2024). By rule of thumb, an F-Value of greater than 4.0 is usually statistically significant. Given the level of significance α corresponding to the confidence interval $[I_1, I_2]$ and if ∄ t-Value $\in [I_1, I_2]$, then the t-Value can explain the changes in the response variable and hence the null hypothesis is rejected in favour of the alternative hypothesis [44]. For instance, in order to confirm the existence of significant relationship at $\alpha = 5\%$, the t-Value > 1.96 [45]. The beta coefficient (B_k) refers to the degree of change in the response variable for every 1-unit of change in the predictor variable. It should be noted that for the significance testing of beta coefficient, t-test is used. If the beta coefficient is positive ($B_k > 0$) and significant, then for each 1-unit increase in the predictor variable (X_k), the response variable (Y) increases by the beta coefficient value (B_k). If the beta coefficient is negative ($B_k < 0$) and significant, then for each 1-unit increase in the predictor variable, the response variable decreases by the beta coefficient (B_k).

4. Results and Discussion

4.1. Results

The general objective of the study is to assess the effect of TQM practices on seaport service delivery using Dar es Salaam Seaport as a case study. In order to achieve this objective, the predictor variables (Customer focus, Total employee involvement, Integrated business system, and Continual improvement) were regressed against seaport service delivery. Using the SPSS (version 27) software, the values of model parameters and coefficients were deduced.

The model summary is presented in Table 2 containing the values of R, R-squared, Adjusted R-squared and std. error of estimate. The model shows a strong fit with an R-value of 0.916 implying that there is a strong positive relationship between the predictor variables (i.e. Customer focus, Total employee involvement, Integrated business system, and Continual improvement) and responsive variable (i.e. seaport service delivery). The findings are in concomitant with the views of Ungereanu et al. [20] and Phan et al. [5] who articulate that port service quality positively influences customer satisfaction and port performance.

Table 2. Modal summary

Model	R	R Squared (R^2)	Adjusted R Squared (R_{aj}^2)	Std. Error of the Estimate
1	0.916[a]	0.838	0.830	0.26861

a. *Predictors*: Constant, Customer focus, Total employee involvement, Integrated business system, Continual improvement.

From Table 1, the coefficient of determination (R-squared=0.838) indicates that 83.8% variation in service delivery at the Dar es Salaam seaport is explained by the four factors (Customer focus, Total employee involvement, Integrated business system, and Continual improvement). Other factors, therefore, explain the remaining 16.2%. These could be investigated by future studies.

The Analysis of Variance (ANOVA) at 5% level of significance gave the values of the parameters as indicated in Table 3.

Table 3. Analysis of variance

Model		Sum of Squares (SS)	df	Mean Square (MS)	F-Value	Sig.
1	Regression	29.535	4	7.384	102.336	0.000[b]
	Residual	5.700	79	0.072		
	Total	35.235	83			

b. *Predictors:* Constant, Customer focus, Total employee involvement, System integration, Continuous improvement.

In Table 3, the value of the computed F is greater than 4.0 ($F_{comp} = 102.336 > 4.0$). Thus, the developed regression model is significant in predicting the effect of TQM practices on seaport service delivery.

On the other hand, the regression coefficients, t-values, and levels of significance are presented in Table 4. Using regression coefficients in Table 4, equation (1) becomes equation (2).

$$Y = -0.184 + 0.305X_1 + 0.372X_2 + 0.194X_3 + 0.197X_4 + \varepsilon \quad (2)$$

Where Y: Seaport service delivery, ε: the error term, X_1: Customer focus, X_2: Total employee involvement, X_3: Integrated business system, X_4: Continual improvement. From equation (2), a number of findings are established.

If the TQM practices are not implemented, the service delivery at Dar es Salaam port is 18.4% below standards; a unit increase in customer focus results into 30.5% improvement in service delivery; a unit increase in total employee involvement results into 37.2% improvement in service delivery; a unit increase in business system integration

results into 19.7% improvement in service delivery, and a unit increase in continual improvement results into 19.7% improvement in service delivery of the Dar es Salaam seaport. This implies that both customer focus and total employee involvement play a major role in enhancing seaport service delivery. Consequently, the Dar es Salaam seaport should craft and implement strategies to improve the satisfaction of port customers (e.g. Ship owners, cargo owners). This would be achieved through an appropriate marketing mix element (i.e. service, tariff, distribution channels, promotion, employees, process, and port environment). Othman et al. [2] posit that seaports should focus on customer satisfaction and improve organizational performance. The Dar es Salaam seaport also need to build a team work sprit whereby the top management, middle management, operational management and other employees are involved in solving problems and improving performance. Furthermore, the Dar es Salaam seaport should continuously improve its integrated business system since enhancing service delivery is infinitely variable and adaptable. The existence of a positive relationship between each of the TQM practices and seaport service delivery is confirmed by the p-values and t-values.

Table 4. Regression coefficients, standard error, t-values and levels of significance (p-values)

Model		Unstandardized Coefficients		Standardized Coefficients	t-Value	p-value
		B	Std. Error	Beta		
1	(Constant)	-0.184	0.173		-1.069	0.288
	Customer Focus	0.305	0.110	0.275	2.777	0.007
	Total employee involvement	0.372	0.103	0.347	3.621	0.001
	Integrated business system	0.194	0.095	0.174	2.031	0.046
	Continual improvement	0.197	0.088	0.188	2.245	0.028

In Table 4, $\beta = 0.305 \neq 0, p = 0.007 < 0.05$, $t = 2.777 > 1.96$, implies that customer focus significantly and positively affects seaport service delivery since beta coefficient is greater than 0, p-value is less than 0.05 and t-value is greater than 1.96. The finding is supported by [2,4,19,20,46] who argue that the focus of management is essential for firms to meet the needs of customers.

Based on beta coefficient, p-value and t-value in Table 4, total employee involvement ($\beta = 0.372 \neq 0, p = 0.001 < 0.05$, $t = 3.621 > 1.96$) significantly and positively affects the seaport service delivery as the beta coefficient is greater than 0, p-value is less than 0.05 and t-value is greater than 1.96. This is supported by Van Looy et al. [13] who contend that employee empowerment assists in handling complaints and hence enhance their ability to offer quality and efficient service. The same views are given by Phan et al. [5] and Elbendary [27] who find a positive impact of linking employee knowledge and maritime sector's quality customer service level. Othman et al. [2] posit that every employee of the seaport is responsible for TQM and should be involved in solving problems and improving performance.

In view of beta coefficient, p-value and t-value in Table 4, integrated business system ($\beta = 0.194 \neq 0, p = 0.046 < 0.05$, $t = 2.031 > 1.96$) significantly and positively affects the seaport service delivery as the beta coefficient is greater than 0, p-value is less than 0.05 and t-value is greater than 1.96. This is supported by Abdul Rahman et al. [19], Ungereanu et al. [20], Samoilovska et al. [23], Othman et al. [2] and Phan et al. [5] who indicate that process-based factors have positive influence on customer satisfaction.

Based on beta coefficient, p-value and t-value in Table 4, continuous improvement ($\beta = 0.197 \neq 0$, $p = 0.028 < 0.05$, $t = 2.245 > 1.96$) significantly and positively affects the seaport service delivery as the p-value is greater than 1.96. This is in line with the findings of Abdul Rahman et al. [19], Ungereanu et al. [20], and Chlomoudis & Lampridis [3] who argue that continuous improvement in the service provision by each department and unit of seaport leads to increase in port performance.

4.2. Discussion

This study was guided by the Deming's theory and it involved the testing of four hypotheses, namely H1, H2, H3 and H4, which were all supported because the beta value was not 0, the p-value was less than 0.05 and the t-value was greater than 1.96. All the four hypotheses address direct effects. The findings confirmed a significant positive influence of customer focus, total employee involvement, integrated business system and continual improvement on seaport service delivery. Thus, these variables play a key role for enhancing seaport service delivery which in turn improves port competitiveness and profitability. The hypotheses test results are discussed in the next sub-sections.

4.2.1. Relationship between Customer Focus and Seaport Service Delivery

This study reveals the existence of a significant positive relationship between customer focus and seaport service delivery. This is in line with the findings of Abdul Rahman et al. [19], Othman et al. [2], Teshome et al. [47], Briggs et al. [21], Haverila et al. [48], Macintosh [49], and Kapanen [50] who find a significant positive relationship between customer orientation and service delivery. By enhancing customer relationship management (CRM), seaports improve their ability to: determine future expectations for customers, assess customer satisfaction, facilitate customers' complaints and evaluate their relationship with customers [34]. These measures have a high impact on seaport service delivery. In a hyper-competitive environment, effective CRM is important in the quality chain. During development stage of the service

life cycle, port service providers need to collaborate with customers to obtain service features that will enhance the CRM experience. Thatte and Rao [51] contend that the co-creation of marketing strategies with existing and potential customers improves the time to market new port services. For instance, the use of customer's resources such as ICDs, improves the delivery times of goods and significantly reduces costs.

4.2.2. Relationship between Total Employee Involvement and Seaport Service Delivery

Also, this study indicates the existence of a significant positive effect of total employee involvement on seaport service delivery. This echoes studies of Barinua and Godwin [52], Njuguna and Minja [53], Kejo [54], Phan et al. [5], Elbendary [27], Murenga and Njuguna [28], Motieri and Minja [55], Fening et al. [26], and Van Looy et al. [13] who find a positive effect of employee involvement on service delivery in the service industry. Thus, the findings support that the total involvement of qualified and competent staff improves seaport service delivery. The outcome suggests the need of engagement all port employees in understanding customers' needs and providing efficient and effective solutions. This will only be achieved if there are frequent CRM training courses offered to all port employees.

4.2.3. Relationship between Integrated Business System and Seaport Service Delivery

On the other hand, the study indicates the existence of a significant positive relationship between integrated business system and seaport service delivery. This agrees with the findings of Abdul Rahman et al. [19], Ungereanu et al. [20], Samoilovska et al. [23], Othman et al. [2] Phan et al. [5], and Ojiako [56] who find positive relationship between integrated business system and service delivery. By using effective integrated business system, seaports improve their ability to provide efficient and excellent services that can satisfy their client's needs and wants. More specifically, enhancing of business processes in uncertain environment has a key effect on competitive advantage and long-term sustainability of seaports. It is based on this view, Samoilovska et al. [23] propose the quality 4.0 software model for digital technologies to modernize traditional port management.

4.2.4. Relationship between Continual Improvement and Seaport Service Delivery

Further, the study indicates that there is a significant positive relationship between continual improvement and seaport service delivery. These findings are in line with studies concluded by Davis and Bodkin [57], Abdul Rahman et al. [19], Ungereanu et al. [20], Subramaniam and Diyana Suhaimi [58], and Terziovski [59] who find positive relationship between continual improvement and service delivery. The results reinforce the claims of Mbaya [60] that superior service delivery is a result of operational continuous improvement of all departments and units of the seaport. Othman et al. [2] argue that TQM views a seaport as a collection of processes and maintains that seaports must strive to continuously improve these processes. Thus, strategic managers always provide continuous improvement with the goal of increasing business in seaports. Furthermore, continuous improvement in service delivery is attained by constantly analyzing customer feedback and making necessary adjustments to enhance their experience.

5. Conclusions

This study aimed to assess the effect of TQM practices on seaport service delivery. It used multiple linear regression model to test the interplay between the four TQM practices (customer focus, total employee involvement, integrated business system, and continual improvement) and seaport service delivery. Based on the study results, customer focus, exerted influence on seaport service delivery ($\beta = 0.305$; $p = 0.007$), implying that the consideration of customer satisfaction is important in determining the service delivery in the port industry. The total employee involvement exerted influence on seaport service delivery ($\beta = 0.372$; $p = 0.001$), indicating that total employee involvement is important contributor to the service delivery in the port industry. The study also showed that integrated business system exerted influence on seaport service delivery ($\beta = 0.194$; $p = 0.046$), implying that integrated business system is critical in determining the service delivery in the port industry. Furthermore, the study revealed that continual improvement exerted influence on seaport service delivery ($\beta = 0.197$; $p = 0.028$), suggesting that continuous improvement of business processes is critical in determining service delivery in the port industry. Among the four essential TQM practices, total employee involvement, by virtue of its highest beta coefficient of 0.372 is the strongest or most driver of the service delivery in the port industry. The results of this study have important implications for seaports accentuating the need to prioritize TQM practices such as customer focus, total employee involvement, integrated business system and continual improvement in seaport service delivery.

This study provides empirical evidence that seaport service delivery to a large extent depends on the seaport's TQM practices. The effective implementation of these practices improves port performance. To achieve port performance, seaports should prioritize customers' needs through feedback-driven strategies, foster employee engagement and improvement initiatives, enhance system integration by investing in modern technology and enhance operational coordination, emphasize continuous improvement by evaluating processes and promoting innovation to adapt to changing demands. In addition, monitoring and assessing the effectiveness of these practices using performance metrics will enable seaports to reformulate their strategies and ensure sustained operational excellence and improved

customer satisfaction. Based on the study objectives, findings and discussion thereof, this study concludes that customer focus, total employee involvement, integrated business system, and continual improvement significantly affects seaport service delivery.

5.1. Implications for Research

5.1.1. Theoretical Contributions

This study contributes to the body of knowledge by providing literature that builds organisational capabilities for the TQM by testing a research model for the relationship between TQM practices and seaport service delivery. The current study is ground-breaking in that it tests the research model in a relatively uncharted quality management context. Though there are several studies on TQM practices in other industries, the present study is unique in that it was directed towards the port industry. Evidence of similar previous empirical studies directed at the seaports in developing countries is currently rare. Moreover, the fact that all four TQM practices positively impacted the seaport service delivery confirm the hypothesized relationships between TQM practices and seaport service delivery.

The study is further novel in that it is anchored on the Deming's theory applied in the seaport context, addressing an important existential research gap. Consequently, the study generates new and current knowledge which adds to the existing body of literature. The study is thus available as a source of literature to future researchers working in similar or related areas.

5.1.2. Practical Contributions

The study has several practical contributions. Firstly, it presents a research model that can be applied by TQM professionals in improving seaport performance. The model presented in Figure1, integrates four critical TQM practices (customer focus, total employee involvement, integrated business system, continual improvement) and seaport service delivery. Secondly, the study presents an opportunity for port managers to advance and achieve the TQM philosophy. Specifically, the study suggests that attention should be directed to all four TQM practices (customer focus, total employee involvement, integrated business system, and continual improvement). Among these four practices, greater attention should be directed to total employee involvement, given that employees are strategic resources that organize other port resources to offer quality service and create customer value. Also, the study encourages port managers to understand and fulfil customers' needs.

5.2. Limitations and Directions for Future Research

Despite the useful insights provided by this study, it is important to note several limitations. Firstly, the study mainly focussed on seaport industry in Tanzania whereby Dar es Salaam seaport was considered as a case study. Thus, caution should be exercised when generalising the empirical results of the study to other environments that were excluded from the study. Secondly, measures used in the research instrument for this study were adapted from previous studies and were originally developed for other purposes. Thirdly, the study was based on the quantitative approach, which relies on numerical data and does not collect in-depth or qualitative explanations for the observations made. Fourthly, the study used a cross-sectional research strategy since the data were collected at a single point in time. The primary limitation of the cross-sectional study design is that the predictor variable and response variable are simultaneously assessed, there is generally no evidence of a temporal relationship between predictor variable and response variable. However, the cross-sectional study design was employed since it is less expensive and time-consuming than the longitudinal study design. Furthermore, the study was limited to the four TQM practices (i.e. customer focus, total employee involvement, integrated business system, and continual improvement); other TQM practices were not explicitly included in this study. Though the findings disclose useful insights, the deep understanding of the effect of TQM practices on seaport service delivery is lacking. Therefore, in order to get down to the nitty-gritty of the effect of TQM practices on seaport service delivery, it is suggested to conduct a similar study involving all the eight TQM practices in different seaport settings.

REFERENCES

[1] Assensoh-Kodua, A. 2019. The resource-based view: A tool of key competency for competitive advantage. *Problems and Perspectives in Management*, Vol.17, No.3, pp. 143.

[2] Othman, M.R., Noralam, N.A., Jeevan, J., Saadon, M.S.I. & Kowang, T.O. 2021. The sustainability stimulus of Malaysian seaport cluster toward competitive vigilance: The total quality management (TQM) approach. *Turkish Journal of Computer and Mathematics Education*, Vol.12, No. 3, pp. 1636-1646.

[3] Chlomoudis, C.I. & Lampridis, C.D. 2006. A business excellence approach for the port industry. Paper presented at the International Conference "Shipping in the era of social responsibility" Greece, 14-16 September 2006.

[4] Tran, H. 2011. Integration quality management for seaports in supply chains? [Online]. Available: https: www. anzam.org. [Accessed December 15, 2024].

[5] Phan, T.M., Thai, V.V. & Vu, T.P. 2021. Port service quality (PSQ) and customer satisfaction: An exploratory study of container ports in Vietnam. *Maritime Business Review*, Vol.6, No. 1, pp. 72-94.

[6] Anderson, E.W., Fornell, C., and Lehmann, D.R. 1994. "Customer satisfaction, market share, and profitability: Findings from Sweden," *Journal of Marketing*, Sweden, Vol. 58, No. 3, pp. 53-66.

[7] Mehra, S. & Agrawal, S. 2002. Total quality as a new global competitive strategy. *International Journal of Quality and Reliability Management*, Vol. 20, pp. 8-9.

[8] Maguad, A.B. 2006. The modern quality movement: origins, development and trends. *Total Quality Management and Business Excellence*, Vol. 17, No. 2, pp. 179-203.

[9] Powell, T.C. 1995. Total quality management as competitive advantage: A review and empirical study. *Strategic Management Journal*, Vol. 16, No. 1, pp. 15-37.

[10] Terziovski, M. & Samson, D. 1999. The link between total quality management practice and organizational performance. *International Journal of Quality and Reliability Management*, Vol. 16, pp. 226-237.

[11] Zhang, Z. 2000. Developing a model of quality management methods and evaluating their effects on business performance. *Total Quality Management*, Vol. 11, pp. 129-137.

[12] Bhattacharyya. T. 2013. A barometer of trends in quality management. National Productivity Review: USA.

[13] Van Looy, B., Gemmel, P., & Van Dierdonck, R. 2013. *Services Management: An Integrated Approach*, 2nd ed. Great Britain: Pearson Education Limited.

[14] D. H. Besterfield, D.H., Besterfield-Michna, C.A.R.C.L., Besterfield, G.H., Besterfield-sacre, M.A.R.Y., Urdhwareshe, H. & Urdhwareshe, R. 2019. *Total Quality Management* (5th ed.). Person: India.

[15] Agrawal, N.M. 2019. Modeling Deming's quality principles to improve performance using interpretive structural modeling and MICMAC analysis. *International Journal of Quality & Reliability Management*, Vol. 36, No. 7, pp., 1159 – 1180.

[16] Hales, D.N. & Chakravorty, S.S. 2006. Implementation of Deming's Style of quality management: An action research study in a plastics company. *International Journal of Production Economics*, Vol. 103, No.1, pp. 131-148.

[17] Knouse, S.B., Carson, P.P., Carson, K.D. & Heady, R.B. 2009. Improve constantly and forever: The influence of W. Edwards Deming into the twenty-first century. *The TQM Journal*, Vol.21, No.5, pp.449 – 461.

[18] Andalib Ardakani, D., Soltanmohammadi, A., and Seuring, S. 2023. The impact of customer and supplier collaboration on green supply chain performance. *Benchmarking: An International Journal*, Vol. 30, No.7, pp. 2248 – 2274.

[19] Abdul Rahman, S.F., Balasa, A.P., Othman, M.K. & Alemu, A.E. 2024. Port service quality assessment using a ROPMIS modeling: Seaports scenario in a Gulf country. *Maritime Business Review*, Vol.9, No. 1, pp. 17-34.

[20] Ungereanu, A.M., Doicin, C.V., Stanca, C. & Titu, A.M. 2023. The role of an integrated quality management system in improving performance in the port organization. In Proceedings of the International Conference on Business Excellence (Vol.17, No. 1, pp. 1286-1296).

[21] Briggs, S., Sutherland, J. & Drummond, S. 2017. Are hotels serving quality? An exploratory study of service quality in the Scottish hotel sector. *Tourism Management*. Vol. 28, No. 4, pp. 1006-1019.

[22] Solaimani, S. & Van der veen, J. 2022. Open supply chain innovation: An extended view on supply chain collaboration. *Supply Chain Management: An International Journal*, Vol. 27, No. 5, pp. 597-616.

[23] Samoilovska, V., Kyryllova, O. & Piterska, V. 2023. Model for evaluating the efficiency of seaports development projects based on the quality 4.0 information and analytical system. [Online]. Available: https: ceur-ws. org. [Accessed March 23, 2025].

[24] Kaynak, H. 2003. The relationship between total quality management practices and their effects on firm performance. *Journal of Operations Management*, Vol. 21, No. 4, pp. 405-435.

[25] Brunner-Sperdin, A., Peters, M., and Strobl, A.2012. It is all about the emotional state: Managing tourists' experiences. *International Journal of Hospitality Management*. Vol. 31, No. 1: 23-30.

[26] Fening, F.A., Amaria, P. & Frempong, E.O. 2013. Linkages between total quality management and organizational survival in manufacturing companies in Ghana. *International Journal of Business and Social Science*, Vol. 4, No. 10.

[27] Elbendary, S., Elgazzar, S. & El Gamal, S. 2021. Developing a model of knowledge management to enhance the TQM in the Egyptian maritime sector. In International Conference on management and industrial engineering; Bucharest, Nov. 2021.

[28] Murenga, Y.A. & Njuguna, R. 2020. Total quality management practices and service delivery of small and medium enterprises: case of horizons offices limited in Kenya. *International Journal of Human Resource and Business Administration*, 3(8): 207-226.

[29] Castellanos-Verdugo, M., Oviedo-García, J.L, and N. Roldán, N. 2013. The employee-customer relationship quality: Antecedents and consequences in the hotel industry. *International Journal of Contemporary Hospitality Management*, Vol. 21, No. 3, pp. 251–274.

[30] Saunders, M., Lewis, P. and Thornhill, A. 2013. Research methods for business students. 6th ed. Pearson: UK.

[31] Prajogo, D.I. & McDermott, C.M. 2005. The relationship between total quality management practices and organizational culture. *International Journal of Operations and Production Management*, Vol.25, No. 11, pp. 1101-1122.

[32] Zeithaml, V.A., Berry, L.L. & Parasuraman, A. 1988. Communication and control processes in the delivery of service quality. *Journal of Marketing*, Vol.52, pp. 35-48.

[33] Tran, H.T., Cahoon, S. & Chen, S.L. 2012. Quality management for seaports integrated in supply chains. *International Journal of Shipping and Transport Logistics*, Vol.4(4), pp. 376-392.

[34] Myamba, B.M., Shatta, D. and Massami, E. (2024). Benchmarking supply chain collaboration dimensions with insights from resource-based theories: a key to manufacturing competitiveness. *Brazilian Journal of Operations and Production Management*, Vol. 21, No. 4, e20242221.

[35] Myamba, B.M. and Nguni, W.S. (2022). Aligning the risk hedging strategy with supplier collaboration and manufacturing competitiveness: a resource-based and contingency approach. *International Journal of Productivity and Performance Management*, Vol. 72, No. 6, 1740-1770.

[36] Yamane, T. 1973. Statistics: An introductory analysis. 2nd ed. Harper & Row: New York.

[37] Kumar, R. 2011. Research methodology: A step-by-step guide for beginners, 3rd ed. SAGE Publications Ltd, London.

[38] Wu, T. et al. 2014. Aligning supply chain strategy with corporate environmental strategy: A contingency approach.

International Journal of Production Economics, Vol. 147, pp. 220-229.

[39] Rahimnia, F. and Keyvanipoor, S.2014. Analysis of BSC perspectives as related to the alignment of environmental uncertainty and supply chain strategy. *Benchmarking: An International Journal*, Vol. 21, No. 6, pp. 903-916.

[40] Henseler, J., Hubona, G. and Ray, P.A. 2016. Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management and Data Systems*, Vol. 116, No.1, pp. 2-20.

[41] Hair, J.F. et al. 2017. A primer on partial least squares structural equation modeling (PLS-SEM). 2nd edn. SAGE Publications, Inc., California.

[42] Raja, C., Ramachandran, M., Nanjundan, P. & Rajamanickam, J. 2023. Industrial engineering using IBM SPSS statistics. *Journal on Electronic and Automating Engineering*, Vol. 2, No. 3.

[43] Massami, A.B., Massami, E.P. & Ngongi, W. 2024. Assessment of the port resource constraints contributing to ship clearance delays: A case of Dar es Salaam seaport. *International Journal of Research Publication and Reviews*, Vol.5, No. 10, pp. 3562-3572.

[44] Wou, D. 2021. The impact of comprehensive quality management and organizational resilience on financial performance in the maritime administration of a local port. *Applied Innovations in Industrial Management*, Vol. 1, No.1, pp. 49-62.

[45] Gunawan, F., Ali, M.M. & Nugroho, A. 2019. Analysis of the effects of perceived ease of use and perceived usefulness on consumer attitude and their impacts on purchase decision on PT TOKOpedia in Jabodetabek. *European Journal of Business and Management Research*, Vol.4, No. 5, pp. 1-6.

[46] Flynn, B.B., Schroeder, R. & Sakakibara, S. 2015. The impact of quality management practices on performance and competitive advantage. *Decision Sciences*, Vol.26, No. 5, pp. 659-692.

[47] Teshome, Z., Belete, B., Gizaw, G. & Mengiste, M. 2020. Customer satisfaction and Public service delivery: The case of Dire Dawa Administration. *Public Policy and Administration Research*, Vol. 10, No. 7.

[48] Haverila, M.J., Martinsuo, M. & Naumann, E. 2013. Drivers of customer satisfaction and relationship quality in system delivery projects. *Journal of Strategic Marketing*, Vol. 21, No. 7, pp. 613-636.

[49] Macintosh, G. 2007. Customer orientation, relationship quality, and relational benefits to the firm. *Journal of Services marketing*, Vol. 21, No. 3, pp. 150-159.

[50] Kapanen, R. 2004. Customer relationship management and service delivery. *International Journal of Services Technology and Management*, Vol.5, No. 1, pp. 42-55.

[51] Thatte, A.A., and Rao, S.S. (2013). Impact of SCM practices of a firm on supply chain responsiveness and competitive advantage of a firm. *Journal of Applied Business Research*, Vol. 29, No.2, pp. 499-530.

[52] Barinua, V. & Godwin, K. 2022. Employee involvement and service delivery. *African Journal of Business and Economic Development*, Vol.2, No. 4, pp. 90-101.

[53] Barinua, V. & Godwin, K. 2022. Employee involvement and service delivery. *African Journal of Business and Economic Development*, Vol.2, No. 4, pp. 90-101.

[54] Kejo, M.R. 2023. Effects of employee participation on improvement of service delivery performance in Tanzania. Dissertation submitted for MBA in Human Resource Management, Arusha Institute of Accountancy. [Online].

[55] Motieri, S.O. & Minja, D. 2019. Influence of employee participation on service delivery: A case of Nairobi City water and sewage company, Nairobi City County, Kenya. *American Journal of Public Policy and Administration*, Vol. 4, No. 2: 1047672.

[56] Ojiako, U. 2012. Using IS/IT to enhance service delivery. *Industrial Management & Data Systems*, Vol. 112, No. 4, pp. 584-599.

[57] Davis, T.J. & Bodkin, C.P. 2024. Assessment of public service delivery performance: Process improvement. Book chapter. *Political Science and Public Policy 2024*, 270-282.

[58] Subramaniam, T.T & Diyana Suhaimi, N.A. 2019. Continual quality improvement of online course delivery using perceived course learning outcomes. *Malaysian Journal of Distance Education*, Vol. 21, No. 1, pp., 43-55.

[59] Terziovski, M. & Sohal, A.S. 2000. The adoption of continuous improvement and innovation strategies in Australian manufacturing firms. *Technovation*, Vol. 20, No. 10, pp. 539-550.

[60] Mbaya, R.B. 2018. Total quality management practices and service delivery of Kenya Ports Authority. Dissertation submitted for MBA (Strategic Management) at Kenyatta University. [Online]. Available: [Accessed December 12, 2024].