Service Level And Logistics Performance: An Implementation Of Sustainable Quality Assessment

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Abstract.

The study aimed to uncover the impact of quality assessment with the instruments of ISO 9001at major hub of logistics companies in Indonesia which divided into three major regions, western region, middle region and northern region of Indonesia. The implementation of ISO used three different variables as components and parameters of assessment which consist of continuous improvement, satisfaction of users and prevention of nonconformities. The methods were used by interviewing and deployment of structured questionnaires to related parties which directly engaged on quality assessment process in daily assignments. The result showed that the implementation of quality instruments such ISO 9001 affecting significantly the quality delivered to users and customers as well as the performance of overall operation held by the logistics companies. The result also showed that the quality of service was not only could be undertaken by two variables but also could be done with more variables that have not been explored. The opportunity of improvement had been implemented by logistics companies through giving optimum services to users and customers.

Keywords: *Implementation, Quality Assessment and ISO 9001.*

I. INTRODUCTION

The quality management system is one way that can be used by many companies to improve quality because the quality management system requires statistical monitoring and quality circulation, requires cultural changes and also improvements to the work team (Illangakoon & Dissanayake, 2023). Thus, the international world through its economic institutions carried out a quality standardization step (Obura et al., 2023). One of the quality standards currently being developed is ISO (International Organization for Standardization) 9001 (Deng & Karia, 2023). ISO 9001 is an international standard for quality/quality management systems that sets out requirements and recommendations for the design and assessment of a quality management system (Huang et al., 2022). ISO 9001 is not a product standard, because it does not state the requirements that must be met by a product (goods or services) but is a quality management system standard, so that with the application of ISO 9001 (Chen et al., 2022). products (goods or services) produced from a quality management system international will have good quality/standard (Bandi et al., 2022).

By having an ISO 9001 certificate, this can be one of the added values that is currently the need for organizations to improve the quality of service to their stakeholders. ISO emerged as a solution for the quality assessment standards of organizations, companies that are internationally recognized (Elijah et al., 2022).The ISO 9001 system focuses on the effectiveness of the continual improvement process with the main pillars of the PDCA (Plan-Do-Check-Act) mindset, where in every process, careful planning is always carried out, clearly measurable implementation, evaluation and analysis of accurate data and actions are carried out (Bangarwa & Roy, 2022). improvements in accordance with the monitoring of its implementation in order to resolve problems that occur within the organization (Murasandonyi, 2022). Does the implementation of ISO 9001 affect the service quality provided by the company? Does the implementation of ISO 9001 affect the company's operational performance? Does operational performance affect the service quality provided by the company?

II. LITERATURE REVIEW

The concept of quality starts from psychological insights to quality culture. A good operating system is the full responsibility of management (Domenek et al., 2022). Employees will not be able to produce products with quality that is above the company's production capabilities (Uddin & Leo, 2022). Deming stated, there are fourteen management concepts that can be used to achieve TQM (Oke, 2022). Good management is management that can prevent the emergence of the cost of poor quality by doing the job right from the first process (Yu et al., 2022). In fact there is no reason for a company to have a defective product or service. To be able to create products without defects (Zero defects), several theories exist and state that TQM has the goal of creating a management system in an organization so that it can be optimal in all aspects of products and services which are important things for customers (Chidambar & Byali, 2022). Service quality is an expected level of excellence where control over the level of excellence aims to meet customer needs (Chidambar & Byali, 2022). Service quality is defined as the delivery of services that will exceed the level of customer interest (Rizkyansyah et al., 2021). The level of service quality cannot be assessed from the company's point of view but must be seen from the consumer's point of view (Nanyam & Jha, 2022). Therefore, companies must be oriented towards the interests of consumers by paying attention to the components of service quality (Talha et al., 2020).

The characteristics of service quality can be evaluated into five major dimensions, namely: Reliability, to measure the company's ability to provide appropriate and reliable services; Responsiveness (responsiveness), to help and provide services to customers quickly; Assurance (guarantee), to measure the ability and courtesy of employees and the trustworthiness of employees; Empathy (empathy), to measure employee understanding of consumer needs and the attention given by employees; Tangible (visible), to measure physical appearance, employee equipment and means of communication (Rogala & Wawak, 2021). Operational performance is the suitability of the process and performance evaluation of the company's internal operations on conditions or fulfilling requirements in terms of cost, customer service, delivery of goods to customers, quality, flexibility and quality of product/service processes (Taleghani & Taleghani, 2020). Operational performance is closely related to the company's management control system concerned (Taleghani et al., 2022). The accuracy of performance measures used in a study depends on the situation and the uniqueness of the conditions in a study (Gandhi & Sharma, 2014). It is very difficult to establish a single measure of business success (Basu, 2021).

Therefore, the relationship between manufacturing and all available and generally accepted measures needs to be analyzed. Improved quality of customer service and service company value is the result of implementing ISO 9001 (Hu et al., 2022). There is a positive relationship between service quality and operational performance (Ding et al., 2021). There is a positive relationship between the implementation of ISO 9001 and the company's operational performance (Ding et al., 2021). Other studies say the advantages of implementing ISO 9001 are the increased internal company performance, improved corporate image and cost savings (Xu et al., 2023). The effective implementation of ISO 9001 has a positive impact on the company's operational performance (Miao et al., 2022). There is a positive relationship between operational performance and service quality (Sensoy, 2021). Other researchers state that there is an indirect relationship between operational performance and service quality (Boruchowitch & Fritz, 2022). Based on the research mentioned above, the research hypothesis could be described as follow:

H1:The implementation of ISO 9001 affects the service quality of logistics company
H2:The implementation of ISO 9001 affects the logistics company’s operational performance
H3:The operational performance of logistic companies affects the service quality

III. METHODS

Based on how to get it, this study uses primary data, where the data is collected and processed by the researcher directly from the object. This research is a descriptive research. Descriptive research is a quantitative research and uses two methods, namely survey methods or observation methods. This study uses a survey method, where the survey method is a descriptive research method that has a unit test using a

questionnaire. The questionnaires given to samples from a population are designed to obtain specific information from respondents. The purpose of conducting descriptive research is to describe the characteristics of a population using a questionnaire, and it is also used to see the relationship between one 'contract' and another. Taking the questionnaire from the sample is only done once, this means that the research uses a cross-sectional design which is more often used by descriptive research than longitudinal designs. This research was conducted as proof of the hypothesis that had been prepared at the beginning of the study. This study uses non-probability sampling techniques, in which every service company included in the list of companies holding ISO 9001 certification by Lloyd's Register Quality Assurance has the same opportunity to be selected as a sample. The sampling technique used by researchers is judgmental sampling. Judgmental sampling is a form of non-probability sampling where the researcher performs the first stage, namely determining the quota of a population and the second stage, namely selecting respondents in a judgmental way. Respondents obtained from judgmental sampling must meet several criteria including having applied and obtained ISO 9001 certificates for at least 1 year or more and are in the territory of Indonesia.

IV. RESULT AND DISCUSSION

The calculation of data analysis which was structural equation model data in this study was carried out using Amos software. The program is used to test the interrelationships between variables according to the conceptual framework in Figure 2. In structural equation model analysis, the research model consists of measurement and structural models. Before conducting an analysis of the two models, a goodness of fit test was first carried out. The structural equation model analysis does not only use a single model fit test, but uses several fit indices which show the suitability between the data presented and the proposed model. Table 1 shows several fit indices for the overall fit of the model based on structural equation model.

The structural model of the research framework was shown in path diagram below:

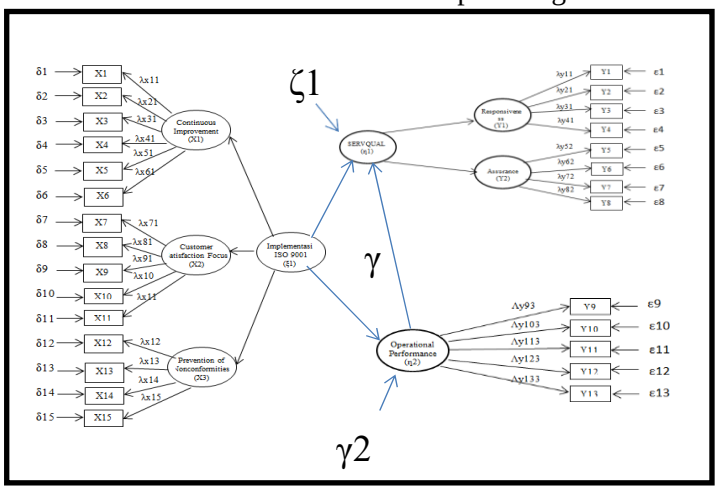

Fig 1. Path Diagram

Source: Research Data (2022)

Table 1. Result of Overall Model Fitness Analysis

GoF	Accepted fit	Test criteria
Absolute fit measure		
Statistik Chi – Square (X^2) P	579.301 (0.000)	Poor Fit
Comparative Fit Index (CFI)	0.824	Marginal Fit
Parsimonius Fit Measure		
Norm Chi-Square	1.887	*Good Fit*
Parsimonius Goodness of Fit Index (PGFI)	0.647	*Good Fit*
Parsimonius Normed of Fit Index (PNFI)	0.722	*Good Fit*

Akaike Information Criterion (AIC)	M = 710.375 S = 749.000 I = 3195.884	Good Fit
Goodness-of-Fit Index (GFI)	0.795	Poor Fit
Root Mean Square Errof Approximation (RMSEA)	0.082	Good Fit
Expected Cross Validation Index (ECVI)	M = 4.751 S = 5.187 I = 22.325	Good Fit
Incremental Fit Measure		
Tucker-Lewis Index atau Non-Normed Fit Index (TLI atau NNFI)	0.865	Marginal Fit
Normed Fit Index (NFI)	0.811	Marginal Fit
Relative Fit Index (RFI)	0.788	Poor Fit
Incremental Fit Index (IFI)	0.923	Good Fit

Source: Research Data (2022)

From the results above, it can be seen that the chi square value is 579,301 with P = 0.000. So it can be said that the level of fit of this study is poor fit. The results above show that the GFI value is 0.795. So it can be said that the fit level of this study is poor fit. The results above show the RMSEA value is 0.082. So it can be said that the level of fit in this study is good fit. The results above show the ECVI value in the model is 4.751, the saturated model is 5.187, and the independence model is 22.325. So it can be said that the level of fit in this study is good fit. The results above show that the TLI value is 0.865. So it can be said that the level of fit of this study is marginal fit. The results above show the RFI value is 0.788. So it can be said that the level of fit of this study is poor fit. The results above show the IFI value is 0.923. So it can be said that the level of suitability of this study is good fit.

The results above show that the CFI value is 0.824. So it can be said that the level of fit of this study is marginal fit. Norm Chi-Square, the results above show a value of 1.887, so it can be said that the level of compatibility of this study is good fit. The results above show the PGFI value is 0.647. So it can be said that the level of suitability of this study is good fit. The results above show that the PNFI value is 0.722. So it can be said that the level of suitability of this study is good fit. The results above show that the AIC value of the model is 710.375, the saturated model is 749.000, and the independence model is 3195.884. So it can be said that the level of suitability of this study is good fit. Through Table 1, it can be seen that there are seven GOFs that show good fit, three that show marginal fit and there are three GOF measures that show poor fit, so it can be concluded that the overall model fit overall is good and research can be continued.

a. Continuous improvement

Σ std. loading = 0.788+ 0.816 + 0.739 + 0.736 + 0.585 = 3.664

Σe = 0.407 + 0.363 + 0.481 + 0.485 + 0.682 = 2.418

CR = $3.609^2/(3.609^2 + 2.363) = 0.846$

$\sum std.\ loading^2 = (0.777)^2 + (0.805)^2 + (0.728)^2 + (0.725)^2 + (0.574)^2 = 2.637$

Σe = 0.407 + 0.363 + 0.481 + 0.485 + 0.682 = 2.418

AVE = 2.648 / (2.648+ 2.418) = 0.619

b. Customer satisfaction focus

Σ std. loading = 0.565 + 0.527 + 0.749 + 0.872 + 0.918 = 3.621

Σe = 0.712 + 0.745 + 0.466 + 0.270 + 0.188 = 2.373

CR = $3.576^2/(3.576^2 + 2.318) = 0.874$

$\sum std.\ loading^2 = (0.554)^2 + (0.516)^2 + (0.738)^2 + (0.861)^2 + (0.907)^2 = 2.682$

Σe = 0.712 + 0.745 + 0.466 + 0.270 + 0.188 = 2.373

AVE = 2.682 / (2.682 + 2.318) = 0.536

c. Preventive of nonconformities

Σ std. loading = 0.743 + 0.869 + 0.718 + 0.841 = 3.159

Σe = 0.475 + 0.275 + 0.511 + 0.322= 1.571
CR = $3.127^2/(3.127^2 + 1.539)$ = 0.864
$\sum std.\ loading^2$ =$(0.732)^2$ + $(0.858)^2$ + $(0.707)^2$ + $(0.830)^2$
=2.461
Σe = 0.475 + 0.275 + 0.511 + 0.322= 1.571
AVE = 2.461 / (2.461 + 1.539) = 0.615

d. Operational performance

Σ std. loading = 0.724 + 0.781 + 0.645 + 0.891 + 0.799 = 3.827
Σe = 0.492 + 0.407 + 0.598 + 0.226 + 0.376 = 2.098
CR = $3.787^2/(3.787^2 + 2.098)$ = 0.872
$\sum std.\ loading^2$ =$(0.713)^2$ + $(0.770)^2$ + $(0.634)^2$ + $(0.880)^2$ +
$(0.790)^2$ = 2.902
Σe = 0.501 + 0.416 + 0.607 + 0.235 + 0.385 = 2.143
AVE = 2.902 / (2.902 + 2.098) = 0.580

e. Responsiveness

Σ std. loading = 0.534 + 0.768 + 0.763 + 0.797 = 2.847
Σe = 0.737 + 0.438 + 0.445 + 0.376= 1.977
CR = $2.829^2/(2.829^2 + 1.953)$ = 0.804
$\sum std.\ loading^2$ =$(0.523)^2$ + $(0.757)^2$ + $(0.752)^2$ + $(0.797)^2$
= 2.047
Σe = 0.737 + 0.438 + 0.445 + 0.376= 1.977
AVE = 2.047 / (2.047 + 1.953) = 0.512

f. *Assurance*

Σ *std. loading* = 0.889 + 0.907 + 0.712 + 0.585 = 3.081
Σe = 0.240 + 0.208 + 0.520 + 0.585= 1.637
CR = $3.049^2/(3.049^2 + 1.605)$ = 0.853
$\sum std.\ loading^2$ =$(0.878)^2$ + $(0.896)^2$ + $(0.701)^2$ + $(0.574)^2$
=2.395
Σe = 0.240 + 0.208 + 0.520 + 0.585= 1.637
AVE = 2.395 / (2.395 + 1.605) = 0.599

The following is the result of the reliability test of the total number of 270 respondent data (bootstrap data). Based on this equation, it can be seen that the AVE value of all variables has a value of ≥ 0.5, and the CR of all variables has a value of ≥ 0.7. Therefore a conclusion can be drawn, that all indicators of each variable are reliable. The structural model aims to see the relationship between variables according to the conceptual framework. Structural model analysis relates to the coefficients or parameters that show the effect of the relationship between latent variables on other latent variables.The following is a table of regression weights from the results of structural model research.

Table 2. Regression Weight

			Estimate	S.E.	C.R.	P
OP	<---	ISO	1.053	0.138	9.157	***
SERV	<---	ISO	1.046	0.178	5.688	***
SERV	<---	OP	1.021	0.143	6.761	***

Source: Research Data (2022)

Based on table 2, the results of the hypothetical structural model are obtained as follows:

Table 3. Structural Model Analysis Result

Hypothesis	Path	P	Descriptions
H1	ISO 9001 □ service quality	***	Data Supporting Hypothesis
H2	ISO 9001 □ service quality	***	Data SupportingHypothesis
H3	Operational Performance □ Service Quality	***	Data supporting Hypothesis

Source: Research Data (2022)

In the hypothesis test H1, H2, H3 can be accepted if the P value is in the table Regression Weights < 0.05. Then it can be concluded that:

H1: Implementation of ISO 9001 affects the service quality provided by the company. In the P column, it can be seen that the value of P in the ISO 9001 test with service quality is ***. This shows a P value of less than 0.05, namely 0.000, which means that there is a very close relationship between the implementation of ISO 9001 and the service quality provided by the company. Because the value of P <0.05, the data in this study significantly support the statement that the implementation of ISO 9001 has an effect on the service quality provided by the company.

H2: Implementation of ISO 9001 affects the operational performance of the company. In the P column, it can be seen that the value of P in the ISO 9001 test with operational performance is ***. This shows that the P value is less than 0.05, namely 0.000, which means that there is a very close relationship between ISO 9001 and operational performance. Because the value of P <0.05, it is significant that the data in this study support the statement that the implementation of ISO 9001 has an effect on the operational performance of companies.

H3: Operational performance affects the service quality provided by the company. In the P column, it can be seen that the P value in the operational performance test with service quality is ***. This shows a P value is less than 0.05, namely 0.000, which means that there is no relationship between operational performance and service quality. Because the value of P > 0.05, it is significant that the data in this study support the statement that operational performance affects the service quality provided by the company.

V. CONCLUSION

The results of data analysis using Structural Equation Modeling showed that not all of the data in this study matched the proposed research model. However, for the measurement model all indicators have valid criteria and all variables have good measurement reliability or consistency. Based on the structural model of the three proposed research hypotheses, it turns out that not all of the hypotheses are appropriate. So the results of the structural model can be summarized as follows: ISO 9001 has a positive influence on service quality. This shows that if ISO 9001 is implemented effectively, the quality of service in a company can be said to be good. ISO 9001 has a positive influence on operational performance. This proves that if ISO 9001 is implemented effectively, the operational performance of a company can be good. Operational performance has a negative influence on service quality.

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