Logistics Service Quality, Logistics Cost, and Customs Clearance on Delivery Service Loyalty in the Indonesian Holtikura Industry

Nofrisel[1*], Tiya Gusti Karina[2], Siti Maemunah[3*], Sri Raharjo[4,] Euis Saribanon[5]

[1] Institut Transportasi dan Logistik Trisakti, Cipinang Besar Selatan, Jakarta, Indonesia, nofrisel@gmail.com

[2] Institut Transportasi dan Logistik Trisakti, Cipinang Besar Selatan, Jakarta, Indonesia, tiya karina05@gmail.com

[3] Institut Transportasi dan Logistik Trisakti, Cipinang Besar Selatan, Jakarta, Indonesia, unacsy2015@gmail.com

[4] Institut Transportasi dan Logistik Trisakti, Cipinang Besar Selatan, Jakarta, Indonesia, srirahardjosuwito@gmail.com

[5] Institut Transportasi dan Logistik Trisakti, Cipinang Besar Selatan, Jakarta, Indonesia, nengnonon04@gmail.com

Corresponding Author: unacsy2015@gmail.com[3*]

Abstract: Horticultural companies in Indonesia have links with shipping service companies. Relationships to support vegetable production activities that will be marketed to various places. Problems often experienced by horticultural companies are delays in delivery to the destination, price of goods, quality of logistics services, logistics costs, custom clearance, satisfaction of horticultural companies, and loyalty of delivery services. This research method is a quantitative method with data processing using the Structural Equation Modeling (SEM) method, namely Partial Least Square (PLS)-SEM. The research results of the Logistic Service Quality, Logistic Cost and Custom Clearance variables have a direct effect on Horticultural Company Satisfaction. Logistic Service Quality and Custom Clearance have a positive influence on delivery service loyalty, while Logistic Cost and Horticultural Company Satisfaction do not have a positive influence on delivery service loyalty. It is hoped that further research will not only focus on Indonesia but can be developed to developing or developed countries.

Keyword: Quality of Logistics Services, Logistics Costs, Custom Clearance, Horticultural Companies, Satisfaction With Shipping Service Loyalty

INTRODUCTION

A horticultural company is an official legal entity company that focuses on seeding patterns for cultivating horticultural vegetables on land (Hakim, 2024). Horticultural companies need assistance from several parties in providing production and distribution

activities. The assistance needed is quality logistics services. The quality of logistics services plays a role in determining the loyalty of delivery services to their service users (Firmansyah & Maemunah, 2021; Vergueiro, 2021). Horticulture is the science and practice of cultivating plants with a focus on the production of ornamental plants, fruit plants, vegetable plants and small or medium sized forest plants (Diphayana, 2018). Horticultural practices have existed since ancient times and have evolved along with developments in technology and human knowledge. Horticulture is becoming increasingly important with the growth of human population and increasing demand for food, ornamental plants, and plant raw materials (Yuliartini et al., 2020). Horticultural agriculture makes a significant contribution to the economies of many countries, creating jobs and providing a diverse and healthy food supply.Jumlah perusahaan holtikultura tahun 2022 sebanyak 217 perusahaan, naik sebesar 88,70 % (102 perusahaan) dibandingkan tahun 2021. Sebagian besar perusahaan berada di Pulau Jawa, Bali dan Nusa Tenggara mengalami peningkatan pada tahun 2022, namun menurun di Papua. Perusahaan holtikultura di Indonesia menurut provinsi pada tahun 2018 - 2022 (BPS, 2022).

Horticultural companies need assistance from several parties in supplying production and distribution activities for the goods they produce (MALAYSIA-INDONESIA, 2016) such as logistics service quality. Logistics service quality has a role in determining the loyalty of delivery services to their service users (Maemunah et al., 2021). Hydroponic companies, in terms of logistics services for shipping goods, such as the need for fertilizer (Poulsen & Lema, 2017; Zhang et al., 2017), seeds, pesticides and materials for making greenhouses as houses used to grow hydroponic vegetables (Chan et al., 2018; Erdogan et al., 2020).

Logistics service quality is also related to logistics costs, where these two things become one unit in determining the loyalty of a delivery service towards customers (Maemunah et al., 2021; Maemunah & Cuaca, 2021). In horticultural companies, are these costs in accordance with the delivery service to meet service user satisfaction? Logistics costs in Indonesia, port activity costs have reached 17% of all operational costs. This cost is quite high compared to countries in the same region, such as Malaysia, only around 8%, the Philippines 7% and Singapore 6% of operational costs.

Very high logistics costs exceed the price of the goods (Lamarre et al., 2023; Maemunah & Syakbani, 2021; Yulianto & Menza, 2024). Therefore, if a delivery service is able to offer competitive rates and matches the value provided, customers will use the delivery service sustainably. Logistic service quality and logistics costs have a positive and significant influence on customer satisfaction (Maemunah & Permana, 2023; Siti Maemunah & Puguh Hadi Susanto, 2020) . This is stated to have a positive effect, because the regression coefficient value is quite large for logistics service quality compared to the value of logistics costs (Hallock et al., 2019; Holguín-Veras et al., 2021).

Horticultural companies not only need logistics service quality and logistics costs, but also need custom clearance to increase customer satisfaction and loyalty (Maemunah & Syakbani, 2021; Maemunah, 2020). Customs clearance problems are the result of human errors and lack of employee ability and experience (Diphayana, 2018; Yulianto & Menza, 2024). A fast and efficient customs clearance process is very important in ensuring horticultural products are processed for import and export. Problems that often occur in horticultural companies today are that several goods often undergo inspection during the import process at Indonesian Customs and Excise, such as several fertilizers, iron and pesticides. Not only this, there are difficulties in the custom clearance process and the process of processing entry permits which requires a lot of documents from various official government institutions (Syahputra, 2020).

The quality of service expected by the company's performance received by consumers. Service quality is defined as the consumer's opinion regarding how the service process goes

as expected by the consumer (Tsai et al., 2014). Assessment of service quality is subjective, where each customer gets a different assessment in evaluating a service activity. Service quality is assessed based on consumer desires and the process of implementing the services received by consumers (Hellier et al., 2003).

The logistics system is triggered by high logistics costs and supporting tools that are still not optimal. The high logistics costs are caused by various factors (Hallock et al., 2019; Meshram et al., 2020). The first is the lack of human resources in the logistics system. Second, there are high costs between the east and west regions, caused by a lack of suppliers. Third is the high shipping costs, this can be covered by reverse loading, but this is still quite difficult in Indonesia. Several other reasons cause high logistics costs, such as unusable and insufficient transportation. This results in high costs in product maintenance and maintenance activities. The infrastructure available at the port is insufficient, such as the dredging process at the port. This activity means that many ships have to queue to dock, so the costs are quite large to incur. Road infrastructure to the port is often an influence, as the journey to Tanjung Priok Port in Jakarta often experiences traffic jams (Monios & Bergqvist, 2017).

Service quality and customer satisfaction are the main elements that must be improved in order to achieve company goals (Kimitei et al., 2019; Maemunah, 2019). Service user satisfaction is a response to the behavior shown by service users by comparing the results or performance received with the service user's expectations. If the perceived results are less than their expectations, then service users will be dissatisfied, dissatisfied or disappointed. However, on the contrary, if the service is in line with expectations, service users will be satisfied and if performance exceeds expectations, service users will become loyal.

Service user satisfaction refers to Kotler's explanation, namely conformity to the expectations desired by customers. Results of satisfaction of companies that carry out cooperative activities with other companies. The high performance expectations in carrying out this collaboration. Availability to recommend to other customers (Tanasale et al., 2023).

Customer loyalty is the result of evaluating positive experiences that customers continuously experience (Siti Maemunah, 2020; Yuliantini & Maemunah, 2023). Loyalty can be related to satisfaction based on the values that can be felt by customers. Customers provide an assessment of their experience in transactions with service providers, so they get a positive assessment of satisfaction. Customers who are satisfied will be interested in becoming loyal customers (Arfan & Ardi, 2021; Karatas-Cetin, 2021).

Based on the research description above, the main problems in the research can be formulated as follows. The first is whether there is a positive influence of logistics service quality on Horticultural Company Satisfaction? Second, is there a positive influence of logistics costs on Horticultural Company Satisfaction? Third, is there a positive influence of custom clearance on Horticultural Company Satisfaction? Fourth, is there a positive influence of logistics service quality on delivery service loyalty? Fifth, is there a positive influence of logistics costs on delivery service loyalty? Sixth, is there a positive influence of custom clearance on delivery service loyalty? Seventh is whether there is a positive influence of Horticultural Company Satisfaction on delivery service loyalty?

The hypothesis in this research is:

H1: Logistics Service Quality has a positive effect on Horticultural Company Satisfaction.
H2: Logistic Cost has a positive effect on Horticultural Company Satisfaction.
H3: custom clearance has a positive effect on satisfaction with Horticultural Companies.
H4: Logistic Service Quality has a positive effect on delivery service loyalty.
H5: Logistics Cost has a positive effect on delivery service loyalty.
H6: custom clearance has a positive effect on delivery service loyalty.
H7: Horticultural Company satisfaction with delivery service loyalty.

RESEARCH METHODS

The research method used is quantitative descriptive. The analytical tool used in this research is SEM SmartPLS 4.0 (Asghar et al., 2020; Sarstedt et al., 2017). The sampling technique uses a simple random sample. The data used in this research is primary data. The population of this study consisted of 200 respondents. The research sample was 133 respondents obtained from questionnaires filled out by directors, managers and decision makers at Horticultural Companies (Sugiono et al., 2023).

The test carried out in this research is a validity test, namely to determine the accuracy with which a test equipment performs its measuring function. A measuring instrument that has high validity will obtain a small variance so that the data collected can be trusted (Sugiono). The high or low validity of the instrument shows the extent to which the data collected does not deviate from the description of the variable in question (Kurtaliqi et al., 2024)(Maemunah & Susanto, 2019). The validity test is used to measure whether a questionnaire is valid or not.

Reliability testing is used to determine the level of consistency of measurement results if repeated measurements are carried out on the same symptoms and measuring instruments. Reliability tests are used to assess the consistency of variables, where certain statements are summarized into a total value for a construct (Ashfaq, 2020; Hair, 2008). Reliability test with Cronbach's Alpha, then each (latent) variable obtains a Cronbach's alpha value ≥ 0.6.

PLS-SEM in this research, in terms of outer model evaluation, uses reflective model evaluation, which consists of: (i) reliability indicators, provided that the outer loading must be between 0.5-0.7 because it is exploratory research; (ii) discriminant validity, provided that the cross-loading of the indicator variable on the latent variable must have a greater value on other latent variables. Fornell Larcker each latent variable must be greater than the correlation between the latent variables; (iii) internal consistency, provided that composite reliability is $\geq$ 0.6 due to exploratory research; cronbrah's alpha must be $\geq$, because for exploratory research, and (iv) convergent validity, with the provision that the average variance extracted (AVE) must be greater than 0.5. The inner model evaluation consists of: (i) coefficient of determination (R^2) with general provisions of a value of ≥ 0.74; and (ii) the significance and magnitude of the structural model coefficients must be significant, which is carried out through the t test, t value >1.96.

Hypothesis test, P-value <0.05. Ho: t count < 1.96, meaning there is no significant relationship between the independent variable and the dependent variable. Ho: t count >1.96, meaning there is a significant relationship between the independent variable and the dependent variable. Meanwhile, the significance value of the probability value (P-value) must be smaller than 5% or 0.05 with the following conditions: Ho: accepted if the significance value (P-value) is > 0.05 (5%), Ho: rejected if the P-value <0.05 (5%).

RESULTS AND DISCUSSION

The demographic data taken in this research is data from the Horticulture Company. The first demographic data is the gender of employees of horticultural companies in Indonesia. The gender of the respondents can be seen from Table 1 below:

Table 1. Respondent Data Based on Gender

No	Gender	Amount	Percentage
1	Man	97	72,9
2	Woman	36	27,1
	Total	**133**	**100%**

Table 1 shows the number of respondents was 133 people. A total of 97 respondents (72.9%) were male, and 36 respondents (27.1%) were female. This shows that the majority of respondents are male

Table 2 Demographics based on age of respondents. The age conditions of horticultural company employees in Indonesia are as follows:

Table 2. Data Responden Berdasarkan Usia

No	Age	Amount	Percentage
1	20-30 year	52	39,1
2	31-40 year	54	40,6
3	More than 40 years	27	20,3
	Total	**133**	**100%**

Based on Table 3 above, it shows that there were 52 respondents aged 20-30 years (39.1%), 54 respondents aged 31-40 years (40.6%). Respondents aged more than 40 years were 27 respondents (20.3%). This shows that working respondents are still of productive age.

Table 3. Respondent Data Based on Last Education

No	Last Education	Amount	Percentage
1	High school	8	6
2	Diploma 3	35	26, 3
3	Bachelor /S1/D4	73	54, 9
4	Postgraduate /S2	17	12, 8
	Total	**133**	**100%**

Based on Table 3 above, it shows that 8 respondents had a SMA/SMK education (6%), 35 respondents had a Diploma education (26.3%). There were 73 respondents with a bachelor's/bachelor's degree (54.9%), and 17 respondents with a postgraduate degree (12.8%). In this research, it shows that the majority of respondents had completed university education at Bachelor/S1 level.

Table 4 Respondent data based on length of service at horticulture companies in Indonesia. The distribution of respondents based on length of work can be seen in Table 4 below:

Table 4. The distribution of respondents based on length of work

No	Years of service	Amount	Percentage
1	Less than 1 year	5	3,8
2	1-2 years	32	24,1
3	3-4 years	53	39,8
4	More than 5 years	43	32,3
	Total	**133**	**100%**

Table 4 above explains that there were 5 respondents who worked for less than 1 year (3.8%), 32 respondents who worked 1-2 years (24.1%). Respondents who had worked for 3-4 years were 53 people (39.8%), and respondents who had worked for more than 5 years were 43 people (32.3). This shows that the majority of employees have worked for more than 2 years.

Table 5 is the result of the first processing for latent variables, there are several outer loading indicators that do not meet convergent validity greater than 0.7; namely X1.3 (0.683) on the latent variable logistic service quality, X2.4 (0.629) on the latent variable logistics cost. This shows that these 2 indicators are invalid.

Table 5. Outer loading results of First Processing

Indicator	Outer Loanding Results	Information	Indicator	Outer Loading Results	Information
X1.1	0.749	Valid	X3.3 <- X3	0.824	Valid
X1.2	0.752	Valid	X3.4 <- X3	0.816	Valid
X1.3	0.683	Not valid	Y1 <- Y	0.724	Valid
X1.4 <- X1	0.790	Valid	Y2 <- Y	0.728	Valid
X2.1 <- X2	0.842	Valid	Y3 <- Y	0.867	Valid
X2.2 <- X2	0.783	Valid	Y4 <- Y	0.837	Valid
X2.3 <- X2	0.707	Valid	Z1 <- Z	0.877	Valid
X2.4 <- X2	0.629	Not valid	Z2 <- Z	0.740	Valid
X3.1 <- X3	0.743	Valid	Z3 <- Z	0.801	Valid
X3.2 <- X3	0.786	Valid	Z4 <- Z	0.852	Valid

Therefore, a second running is carried out to obtain indicators that meet the outer loading. If in the first running each latent variable contains 20 indicators, in the second running there are 18 indicators, namely for the Logistic Service Quality variable it has 3 indicators after deducting X1.3 (0.683), the logistic cost variable has 3 indicators after deducting X2.4 (0.629), the custom clearance variable has 4 indicators, the Horticultural Company Satisfaction variable has 4 indicators and the shipping service loyalty variable has 4 indicators.

Outer Loading Second Processing
As explained in the first processing of outer loading, the calculation is carried out again by eliminating invalid variables in this second processing. Table 6 of the running results shows that all indicators are valid, because all outer loading values are ≥ 0.7. This means that after this second running, each latent variable contains the following indicators: the latent variable Logistic service quality has 3 indicators, the variable logistics cost has 3 indicators, the variable custom clearance has 4 indicators, the variable Horticultural Company Satisfaction has 4 indicators, and the variable service loyalty shipping has 4 indicators.

Table 6. Second Processing Outer Loading Results

Indicator	Outer Loading Results	Information	Indicator	Outer Loading Results	Information
X1.1	0.775	Valid	X3.3 <- X3	0.824	Valid
X1.2	0.748	Valid	X3.4 <- X3	0.817	Valid
		Not Valid	Y1 <- Y	0.728	Valid
X1.4 <- X1	0.801	Valid	Y2 <- Y	0.724	Valid
X2.1 <- X2	0.859	Valid	Y3 <-Y	0.864	Valid
X2.2 <- X2	0.785	Valid	Y4 <- Y	0.840	Valid

X2.3 <- X2	0.710	Not Valid	Z1 <- Z	0.876	Valid
		Not Valid	Z2 <- Z	0.738	Valid
X3.1 <- X3	0.742	Valid	Z3 <- Z	0.803	Valid
X3.2 <- X3	0.786	Valid	Z4 <- Z	0.854	Valid

Discriminant Validity Test

Discriminant validity test to test whether the indicators of a construct are not highly correlated with indicators of other constructs. The discriminant validity measurement for the reflective model was carried out using two indicators, namely the cross loading indicator (Table 6), and Fornell lacker (Table 7). In the cross-loading test, the cross-loading value of the indicator variable on the latent variable must be greater than the cross-loading value of the other indicator variables.

Based on Table 7, it appears that the cross loading value of X1.1 towards logistics service quality (X1) is 0.775, which is proven to be greater than the cross loading value of proven to be greater than the cross loading logistic cost (X2) value (0.136). The cross loading value of X1.1 towards logistics service quality (X1) is proven to be greater than the cross loading value of custom clearance (X3) (-0.006). The cross loading value of X1.1 towards logistics service quality (X1) was proven to be greater than the cross loading value of Horticultural Company Satisfaction (Y) (0.069). The cross loading value of X1.1 towards logistics service quality (X1) is proven to be greater than the cross loading value of delivery service loyalty (Z) (0.327).

Next, based on Table 7, it appears that the cross loading value of X2.1 towards logistic costs (X2) is 0.859, which is proven to be greater than the cross loading value of proven to be greater than the cross loading value of logistic service quality (X1) (0.128). The cross loading value of X2.1 towards logistics costs (X2) is proven to be greater than the cross loading value of custom clearance (X3) (0.210). The cross loading value of X2.1 towards logistics costs (X2) was proven to be greater than the cross loading value of Horticultural Company Satisfaction (Y) (0.087). The cross loading value of X2.1 towards logistics costs (X2) is proven to be greater than the cross loading value of delivery service loyalty (Z) (0.256).

Based on Table 7 it appears that the cross loading value of X3.1 towards custom clearance (X3) is 0.742 which is proven to be greater than the cross loading value of X3.1 towards other latent variables. greater than the cross loading value of logistics service quality (X1) (0.068). The cross loading value of X3.1 towards custom clearance (X3) is proven to be greater than the cross loading value of logistics costs (X2) (0.190). The cross loading value of X3.1 towards custom clearance (X3) was proven to be greater than the cross loading value of Horticultural Company Satisfaction (Y) (0.095). The cross loading value of X3.1 towards custom clearance (X3) is proven to be greater than the cross loading value of delivery service loyalty (Z) (0.140).

Next, based on Table 7, it appears that the cross loading value of Y leading to Horticultural Company Satisfaction (Y) is 0.728 which is proven to be greater than the cross loading value of Y towards other latent variables, the cross loading value of Y leading to Horticultural Company Satisfaction (Y) is proven to be greater than on the cross loading value of logistics service quality (X1) (0.128). The cross loading value of Y towards Horticultural Company Satisfaction (Y) is proven to be greater than the cross loading value of logistics costs (X2) (0.154). The cross loading value of Y towards Horticultural Company Satisfaction (Y) was proven to be greater than the cross loading value of custom clearance (X3) (0.083). The cross loading value of Y towards Horticultural Company Satisfaction (Y) was proven to be greater than the cross loading value of delivery service Loyalty (Z) (0.119).

Next, based on Table 7, it appears that the cross loading value of Z1 towards delivery service loyalty (Z) is 0.876 which is proven to be greater than the cross loading value of Z1

towards other latent variables. The cross loading value of Z1 towards delivery service loyalty (Z) is proven to be greater than on the cross loading value of logistics service quality (X1) (0.343). The cross loading value of Z1 towards delivery service loyalty (Z) is proven to be greater than the cross loading value of logistics costs (X2) (0.247). The cross loading value of Z1 towards delivery service loyalty (Z) is proven to be greater than the cross loading value of custom clearance (X3) (0.176). The cross loading value of Z1 towards Delivery Service Loyalty (Z) was proven to be greater than the cross loading value of Horticultural Company Satisfaction (Y) (0.114).

Table 7. Discriminant Validity Table with Cross loading

	X1	**X2**	**X3**	**Y**	**Z**
X1.1	0.775	0.136	-0.006	0.069	0.327
X1.2	0.748	0.164	0.044	0.109	0.262
X1.4	0.801	0.104	0.126	0.205	0.352
X2.1	0.128	0.859	0.210	0.087	0.256
X2.3	0.086	0.785	0.255	0.143	0.155
X3.1	0.195	0.710	0.086	0.025	0.189
X3.2	0.068	0.190	0.742	0.095	0.140
X3.3	0.073	0.264	0.786	0.098	0.141
X3.4	0.044	0.130	0.824	0.236	0.072
Y3	0.067	0.197	0.817	0.228	0.146
Y4	0.128	0.154	0.083	0.728	0.119
Z1	0.130	0.048	0.144	0.724	0.067
Z2	0.120	0.090	0.184	0.864	0.179
Z3	0.167	0.070	0.262	0.840	0.090
Z4	0.343	0.247	0.176	0.114	0.876

The next discriminant validity test uses the Fornell Larcker measure, namely the comparison value between the AVE value and the quadrant of the correlation value between the constructs, or comparing the root of the AVE with the quadrant of the correlation value between the constructs as shown in Table 8. The Fornell-Larcker of each latent variable must be greater than the correlation between latent variable. Table 8 shows that the Fornell-Larcker value, namely the correlation of logistics service quality to logistics service quality (0.775) is greater than the correlation of logistics service quality to logistics costs (0.169), greater than the correlation of logistics service quality to custom clearance (0.078), greater greater than the correlation between logistics service quality and satisfaction with Horticultural Companies (0.173), greater than the correlation between logistics service quality and delivery service loyalty (0.410).

Next, the correlation value of logistics costs to logistics costs (0.787), is greater than the correlation of logistics costs to custom clearance (0.238), greater than the correlation of logistics costs to Horticultural Company Satisfaction (0.109), greater than the correlation of logistics costs to delivery service loyalty (0.260).

Next, the correlation value of custom clearance to custom clearance (0.793), is greater than the correlation of custom clearance to Horticultural Company Satisfaction (0.225), greater than the correlation of custom clearance to delivery service loyalty (0.154). Next, the correlation value of horticultural company satisfaction with Horticultural Company Satisfaction (0.792), is greater than the correlation of Horticultural Company Satisfaction with delivery service loyalty (0.145). The latter is greater than the correlation between delivery service loyalty and delivery service loyalty (0.819).

Table 8. Discriminant Validity Test with Fornell Larcker

	X1	X2	X3	Y	Z
X1	0.775				
X2	0.169	0.787			
X3	0.078	0.238	0.793		
Y	0.173	0.109	0.225	0.792	
Z	0.410	0.260	0.154	0.145	0.819

Convergent Validity Test

The convergent validity test is to measure the level of accuracy of the indicators used in measuring constructs or dimensions by measuring the magnitude of the correlation between the construct and the latent variable. In measuring convergent validity, Average Variance Extracted (AVE) is used as a criterion for testing convergent validity. Based on AVE, Table 9 shows that the five latent variables (Logistic service quality, Logistic cost, Custom clearance, Horticultural Company Satisfaction, and Delivery service loyalty) have an AVE value greater than 0.5, making it feasible to measure the level of accuracy. indicator. Thus, one of the requirements for convergent validity has been fulfilled.

Table 9. Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)	Appropriateness
Logistic service quality	0.600	> 0,50 → worthy
Logistic cost	0.620	> 0,50 → worthy
Custom clearance	0.629	> 0,50 → worthy
Company satisfaction horticulture	0.627	> 0,50 → worthy
Loyalty of delivery services	0.671	> 0,50 → worthy

Internal Consistency Test

The internal consistency test uses composite reliability indicators and Cronbach's alpha. The accepted limit value for composite reliability level (pc), for exploratory research is ≥ 0.6. Composite reliability does not assume the same boot of each indicator, while Cronbach's alpha assumes this similarity. Table 10 shows that the composite reliability values for the five variables are above 0.6, so that all of them support one of the internal consistency requirements.

Table 10. Composite Reliability

	Composite Reliability	Kelayakan
Logistic service quality	0.685	≥ 0,6 → worthy
Logistic cost	0.730	≥ 0,6 → worthy
custom clearance	0.840	≥ 0,6 → worthy
Company satisfaction horticulture	0.837	≥ 0,6 → worthy
Service loyalty delivery	0.839	≥ 0,6 → worthy

Table 11 shows that the Cronbach's alpha value for the five latent variables (Logistic service quality, Logistic cost, custom clearance, Horticultural Company Satisfaction, and

Delivery Service Loyalty) exceeds or equals 0.60. Therefore, the Cronbach's alpha value meets one of the internal consistency requirements.

Tabel 11. Cronbach's alpha

	Cronbach's alpha	Kelayakan
Logistic service quality	0.673	≥ 0,60 → worthy
Logistic cost	0.695	≥ 0,60 → worthy
Custom clearance	0.808	≥ 0,60 → worthy
Company satisfaction horticulture	0.804	≥ 0,60 → worthy
Service loyalty delivery	0.835	≥ 0,60 → worthy

Inner Model Test

Evaluation of the structural model is related to testing hypotheses that influence the research variables. The structural model evaluation examination was carried out in three stages, namely first, checking the absence of multicollinearity between variables and the inner VIF (Variance Inflanted Factor) measure. An inner VIF value below 5 indicates there is no multicollinearity between variables (Hair et al: 2021).

Second is hypothesis testing between variables by looking at the t-statistical value or p-value. If the calculated t statistic is greater than 1.96 (t-table) or the p-value of the test results is smaller than 0.05 then there is a significant influence between the variables. 95% confidence estimated path coefficient parameters. Third is the f-square value, namely the influence of direct variables at the structural level with criteria (f square 0.02 low, 0.15 moderate and 0.35 high).

Before testing the structural model hypothesis, it is necessary to see whether there is multicollinearity between the variables, namely the static inner VIF measure. The estimation results show that the inner VIF value is <5, so the level of multicollinearity between the variables is low in Table 12. This result confirms that the parameter estimation results in SEM-PL4 are robust (not biased).

Table 12. Table *Inner vif*

	X1	X2	X3	Y	Z
X1				1.031	1.056
X2				1.086	1.087
X3				1.061	1.107
Y					1.082
Z					

The structural model in PLS is evaluated using R2 for the dependent variable and the path coefficient value for the independent variable which is then assessed for significance based on the t-statistic value of each path.

Hypothesis Test

The significance of the estimated parameters provides very useful information regarding the relationship between research variables. The basis used in testing the hypothesis is the value contained in the path coefficient output.

Table 13. Path Coefficient Analysis Results (path coefficient)

Path	Original sample	T-statistics (|O/STDEV|)	P- values
X1 -> Y	0.163	2.628	0.004
X1 -> Z	0.337	3.463	0.001
X2 -> Y	0.025	2.221	0.025
X2 -> Z	0.162	2.884	0.060
X3 -> Y	0.205	2.479	0.039
X3 -> Z	0.077	2.787	0.032
Y -> Z	0.049	2.550	0.582

Based on Table 13, conclusions can be drawn from hypothesis testing as follows:

H1 : It is suspected that logistics service quality has a positive effect on satisfaction with horticultural companies

The hypothesis which states that there is a positive influence of variable X1 on Y is accepted. The results of the analysis show a positive path coefficient of 0.163 with a t-statistic value of 2.628 and a p value of 0.004 which is smaller than the specified significance level.

H2 : It is suspected that logistics costs have a positive effect on Horticultural Company Satisfaction

The hypothesis which states that there is a positive influence of variable X2 on Y is accepted. The results of the analysis show a positive path coefficient of 0.025 with a t-statistic value of 2.221 and a p value of 0.025 which is smaller than the specified significance level.

H3: It is suspected that custom clearance has a positive effect on satisfaction with horticultural companies

The hypothesis which states that there is a positive influence of variable X3 on Y is accepted. The analysis results show a positive path coefficient of 0.205 with a t-statistic value of 2.479 and a p value of 0.039 which is smaller than the specified significance level.

H4: It is suspected that logistics service quality has a positive effect on delivery service loyalty

The hypothesis which states that there is a positive influence of variable X1 on Z is accepted. The results of the analysis show a positive path coefficient of 0.337 with a t-statistic value of 3.463 and a p value of 0.001 which is smaller than the specified significance level

H5: It is suspected that logistics costs have a positive effect on delivery service loyalty.

The hypothesis which states that there is a positive influence of variable X1 on Z is rejected. The results of the analysis show a positive path coefficient of 0.162 with a t-statistic value of 2.884 and a p value of 0.060 which is greater than the specified significance level.

H6: It is suspected that custom clearance has a positive effect on delivery service loyalty.

The hypothesis which states that there is a positive influence of variable X3 on Z is accepted. The results of the analysis show a positive path coefficient of 0.077 with a t-statistic value of 2.787 and a p value of 0.032 which is smaller than the specified significance level.

H7: It is suspected that satisfaction with horticulture companies has a positive effect on delivery service loyalty

The hypothesis which states that there is a positive influence of variable Y on Z is rejected. The analysis results show a positive path coefficient of 0.049 with a t-statistic value of 2.550 and p-values of 0.582 which is greater than the specified significance level.

Research Discussion

Based on Table 13, several path coefficients were found that illustrate.The relationship between the variables studied is as follows:

H1: There is an influence of logistics service quality on satisfaction with horticultural companies.

The path coefficient value of 0.163 indicates that there is a significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.628 which exceeds the significance limit and p-values of 0.004 which is smaller than the specified significance level.

H2: There is an influence of logistics costs on satisfaction with horticultural companies.

The path coefficient value of 0.025 indicates that there is a significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.221 which exceeds the significance limit and p-values of 0.001 which is smaller than the specified significance level.

H3: There is an influence of custom clearance on Horticultural Company Satisfaction.

The path coefficient value of 0.205 indicates that there is a significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.479 which exceeds the significance limit and p-values of 0.039 which is smaller than the specified significance level.

H4: There is an influence of logistics service quality on delivery service loyalty.

The path coefficient value of 0.337 indicates that there is a significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.628 which exceeds the significance limit and p-values of 0.001 which is smaller than the specified significance level.

H5: There is no influence of logistics costs on delivery service loyalty.

The path coefficient value of 0.162 indicates that there is no significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.884 which does not reach the significance limit and p-values of 0.060 which is greater than the specified significance level.

H6: There is an influence of custom clearance on delivery service loyalty.

The path coefficient value of 0.077 indicates that there is a significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 2.787 which exceeds the significance limit and p-values of 0.032 which is smaller than the specified significance level.

H7: There is no influence of Horticultural Company Satisfaction on Delivery Service Loyalty.

The path coefficient value of 0.049 indicates that there is no significant positive influence between these variables. This result is strengthened by the T-statistic (IO/STDEVI) value of 0.550 which does not reach the significance limit and the p-value of 2.582 which is greater than the specified significance level.

CONCLUSION

Based on the results of the research conducted and data analysis as explained above, the following conclusions are presented from the research results.

There is a positive and significant influence of logistics service quality on the satisfaction of horticulture companies in Indonesia, meaning that logistics service quality plays an important role in increasing the satisfaction of horticulture companies in Indonesia. There is a positive and significant influence of logistics costs on the satisfaction of horticultural companies in Indonesia, meaning that logistics costs have an important role in increasing the satisfaction of horticultural companies. There is a positive and significant influence of custom clearance on the satisfaction of horticultural companies in Indonesia, which means that custom clearance plays an important role in increasing the satisfaction of horticultural companies in Indonesia. There is a positive and significant influence of logistics service quality on delivery service loyalty, meaning that logistics service quality plays an important role in increasing the loyalty of Indonesian delivery services. There is no positive

and significant influence of logistics costs on Delivery Service Loyalty, meaning that Logistics costs do not have an important role in increasing Delivery Service Loyalty in Indonesia. There is a positive and significant influence of custom clearance on Delivery Service Loyalty, which means that custom clearance plays an important role in increasing Delivery Service Loyalty in Indonesia. There is no positive and significant influence on the satisfaction of horticultural companies in Indonesia on Delivery Service Loyalty, meaning that the satisfaction of Horticultural Companies in Indonesia does not have an important role in increasing Delivery Service Loyalty in Indonesia.

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