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Application Of Information Technology, Online Tracking System, And Timeliness to Customer Satisfaction in Freight Forwarding Companies

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Abstract: The purpose of this study was to determine the cost emphasis, the flow of distribution of goods, and the strategies used for customer satisfaction by meeting customer expectations. The population of this study was users of shipping services, with a sample size of 150 respondents. They are using quantitative methods with non-probability sampling techniques. Data collection was carried out through distributing questionnaires. The results of this study indicate that (1) Information Technology has a positive and insignificant effect on customer satisfaction. (2) The tracking system has a significant effect on customer satisfaction. (3) Timeliness has a significant and positive effect on customer satisfaction.

Keyword: Information Technology, Tracking System, Timeliness, Customer Satisfaction.

INTRODUCTION

In the era of globalization and increasing online commerce, efficiency in the distribution of goods is the key to success for logistics companies. In the process of distributing goods, good planning is needed. The main objective of goods delivery planning is how company management can optimize the number of resources owned. The development of information technology, such as computer technology and digitalization, has driven several economic sectors, such as industry, production, and services. Many companies have adopted these technological developments. This aims to improve performance and compete with other companies (Gelul et al., 2022)

The tracking system is an optimization of the network of goods or services in the company with the aim of answering the needs and desires of consumers (Kurniasih, 2022). With this tracking system, companies can track and monitor the movement of goods while they are in the process of being delivered (Uyainah, 2023). With the tracking system in the delivery of goods, consumers can also monitor and know the position of the goods they ordered. According to the results of research from (Maslikhan et al., 2020), there is an effect of the online tracking system on customer satisfaction.

The proper delivery strategy for consumers can improve company performance. In addition, Timeliness in the delivery process is an important factor in measuring consumer loyalty and satisfaction with the company (Somadi, 2020). However, related to Timeliness in the process of shipping goods, it cannot always be achieved as planned because there are several factors that can affect delays in the process of shipping goods. According to John's analysis, delays in shipping goods are caused by too much work, errors in writing the destination address, not getting information related to daily stock in the warehouse, and the accumulation of documents in the workspace (Marsello et al., 2023).

Correlation between consumers and service providers is not uncommon, and many problems arise during the process of shipping goods, ranging from lost goods to delays in getting goods to their destination. If this always happens, consumers will feel disadvantaged because consumers have paid shipping costs (postage) to the goods delivery service so that the goods arrive precisely and perfectly (Musyafah et al., 2018). According to Rudnicki, Timeliness is a standard that must be set in a company where means of transport, such as time to arrive, depart, or pass at the right point at the right time (Pangudi & Yuniati, 2018). Therefore, logistics companies must be able to develop and improve service systems such as public services and delivery of goods. This is useful to get a positive response from the community and not make the company name wrong (Saputra, 2019).

The Top Brand Index shows how shipping companies evaluate their service quality in the last three years, from 2019 to 2021. In 2019, J&T reached a percentage of 26.4%, while J&T reached 20.3%, TIKI reached 12.6%, and Pos Indonesia reached 5.4%. However, in 2020, the percentage growth was not too striking, where J&T reached 27.3%, J&T reached 21.3%, TIKI reached 10.8%, and Pos Indonesia reached 7.7%. In 2021, there was a more significant increase, especially in J&T with 33.4%, followed by J&T with 28.0%, TIKI with 11.2%, and Pos Indonesia with 8.5%. (This information can be viewed on the website www.topbrand-award.com.)

Data on the Frequency of Problematic Express Postal Shipments in 2022 from January to November are as follows:

January Pos Express has a total of 392961 shipments and 14897 problem shipments, February total shipments 318710 and problem shipments 19262, March total shipments 430501 and problem shipments 16652, April total shipments 373572 and problem shipments 17391, May total shipments 282709 and problem shipments 9200, in June total shipments 409316 and problem shipments 8105, in July total shipments 359991 and problem shipments 7912, in August total shipments 387606 and problem shipments 7982, in September total shipments 390408 and problem shipments 8440, in October total shipments 366720 and problem shipments 8223, in November total shipments 384997 and problem shipments 8667. So total Express Post shipments during the period reached 4097491, and problem shipments reached 126731. Source: Agus Komarudin (Assistant Manager of PT Pos Indonesia), 2022.

Therefore, the author is interested in taking this research based on the description of the phenomenon, and the differentiation of the results of previous research opens opportunities for the author to research further.

According to the research results from (Maslikhan et al., 2020), there is a significant influence between the online tracking system and customer satisfaction, and there is significant

influence between the online tracking system and Timeliness, while the research results from (Mawarni & Adi, 2022) state that the online tracking system has no effect on customer satisfaction.

Liteltaturel Relvielw

1. Customelr Satisfaction

According to (Kania Nisa Fauziah et al., 2022), it is a consumer response or relation to the company for the actual performance being done. Meanwhile, according to (Sakti & Mahfudz, 2018), Customer Satisfaction is an emotional response to the evaluation of a consumer experience with companies or products and services. Customer satisfaction is an evaluation of the company to its customers so that the company knows whether customer expectations have been met. This is a significant factor in any business organization's success with products or services to offer or sell. Customer satisfaction is often measured through surveys or review forms and can be influenced by factors such as product quality, customer service, and price (Maminiana Aimelel, 2019). According to ⁱ customer satisfaction is the level of positive or negative emotional feelings or responses of the Company's management towards the overall service experience for the products provided by the Company. Customer satisfaction is an expression felt by the clients after using either products or services. This feeling is more about whether it is a pleasure or displeasure with the commodity. ⁱⁱ According to ⁱⁱⁱ Defined as an assessment made based on each service meeting or the customer feels satisfied based on each experience. Someone feels pleasure or disappointment from the results of comparing products according to their expectations.

2. Information Technology

According to (SILALAH, 2019), Information technology is a field related to using technology to process, transmit, and store information. Information technology has the principles of efficiency, effectiveness, and flexibility to facilitate and assist human activities. In the freight forwarding industry, management information technology applications can help companies improve the quality of delivery services and generate performance reports to help management understand problems and make better decisions (Trisno et al., 2022). The software can be software or a website where the website contains precise information about the company. Tools in technology can be devices, both hardware and software. Hardware includes machines, mobile phones, and computers.

In comparison, software can be software or a website where the website contains precise information about the company. (Aziz, 2011) technology can also influence consumers, such as a sense of trust and customer satisfaction with the company. (ELviani & Hidayat, 2021) Thus, technology makes it easier for companies to achieve their goals (ELni, 1967).

H1: The Effect of Technology Has a Significant Effect on Customer Satisfaction.

3. Tracking System

According to (Sawid & Wigand, 2009) defines the tracking system as one of the services provided by the company to customers using internet media, namely the website. Tracking systems can help consumers to provide convenience in finding and tracking information related to the goods or documents they ordered, both goods that have been received or goods that are still in the shipping process (Mawarni and Adi 2022). Research results from (Maslikhan, Basalamah, and Athia 2020) found a significant influence between online tracking systems and customer satisfaction levels in the context of the freight forwarding industry. This indicates that the effective use of online tracking system technology can affect customers' positive perceptions of delivery services. In addition, the research findings also state that there is a significant relationship between the tracking system and the level of timeliness in delivery. In other words, the implementation of an efficient tracking system can improve the accuracy of delivering goods on time to customers. This is important in maintaining the company's reputation, as on-time delivery is an important factor in meeting customer expectations and building trust. According to research ^{iv} the tracking system is an activity to monitor the

whereabouts of a vehicle based on the position obtained from the tracking device. In this system, the tool used is an active tracking tool, which means companies or consumers can immediately see the position of vehicles that are being delivered or picked up.

H2: It is suspected that the online tracking system significantly affects customer satisfaction.

4. Timeliness of Delivery

Rudnicki (1997) (Pangudi & Yuniati, 2018) defines Timeliness as a predetermined standard by which means of transport arrive, depart, or pass at a predetermined point and a predetermined time. According to (Manzano et al., 2018), On-Time Delivery (OTD) refers to the timely delivery of products or services as promised or expected. In software development, on-time delivery is a critical success factor for rapid software development projects. Timeliness of delivery is critical in the process of shipping goods. Delivery time increases customer satisfaction (Sakti & Mahfudz, 2018). Fast and precise time during the delivery process can have a positive influence on customer satisfaction (Pangudi & Yuniati, 2018). Timeliness of delivery is the accuracy of the product delivery ordered by the customer until the product reaches the customer with an estimated time that has been arranged ^v

H3: It is suspected that Timeliness affects customer satisfaction.

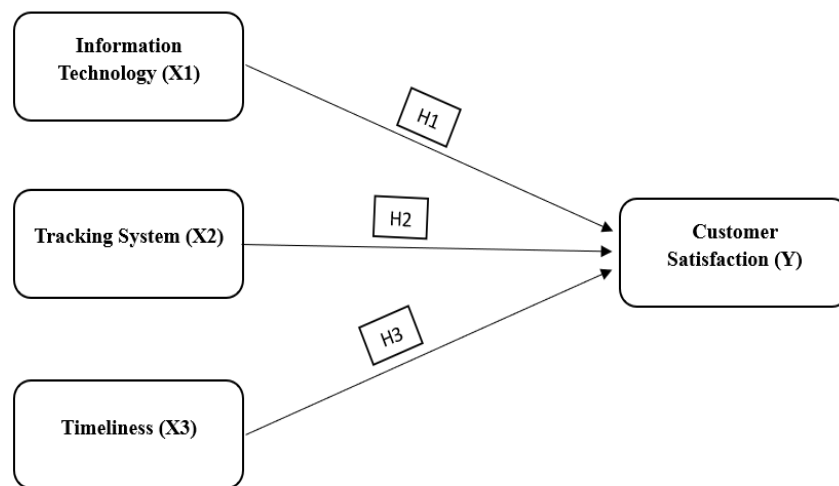


Figure 1. Research Model

METHOD

The method used in writing this research is quantitative, which means data collection techniques using previous research results and distributing questionnaires. This research collects information and data as support in quantitative methods (Sari et al., 2023).

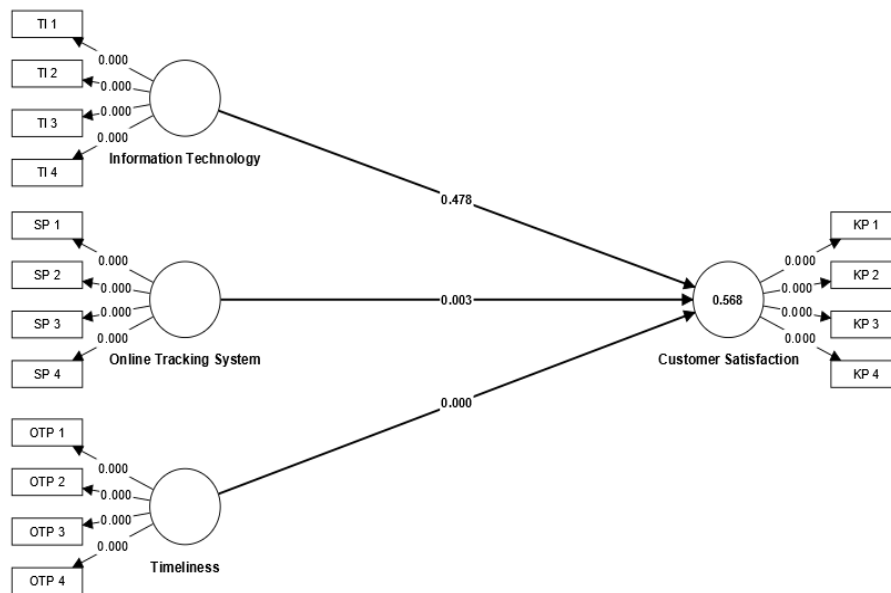
As for data analysis using SmartPLS statistical software, this aims to connect between variables. There are several advantages of SmartPLS. The SmartPLS approach is considered influential because it is not based on several assumptions, and the number of samples required in the analysis is relatively small. Moreover, there are also disadvantages to SmartPLS: SmartPLS can only read data from Excel in CSV form (Harahap, 2018).

Sampling technique is a technique to determine the sample that will be used as a source of actual data by taking into account the characteristics and distribution of the population in order to obtain a representative sample. The sampling technique used is nonprobability sampling technique. In this study, the sample size was 150 respondents.

RESULTS AND DISCUSSION

Validity Telsting

Telsts supporteld by SmartPLS 4.0 providel the following relsults:



Sourcel: procelsseld by relselarchelrs using (SmartPLS 4)

Figure 2. Validation Test

The figure above clearly illustrates that all indicators in this study have a loading value greater than 0.70, which indicates that all of them meet the convergent validity criteria. In this context, a loading value above 0.70 is considered a sign that the indicators have met the predetermined convergent validity requirements. Conversely, if there are indicators with a loading value of less than 0.70, this indicates that these indicators have not met the established convergent validity standards.

The importance of ensuring that all indicators fulfil convergent validity is an important step in data analysis, as this ensures that the measured constructs effectively reflect the variability present in the data and can be trusted in describing the relationship between the variables being studied.

Tabel 1. Validity Test Table

Variable	Customer Satisfaction (Y)	Timeliness (X3)	Online Tracking System (X2)	Information Technology (X1)	Results
Customer Satisfaction 1	0.773				Valid
Customer Satisfaction 2	0.773				Valid
Customer Satisfaction 3	0.771				Valid
Customer Satisfaction 4	0.798				Valid
Timeliness 1		0.785			Valid
Timeliness 2		0.862			Valid
Timeliness 3		0.815			Valid
Timeliness 4		0.840			Valid
Online Tracking System 1			0.824		Valid
Online Tracking System 2			0.791		Valid
Online Tracking System 3			0.795		Valid
Online Tracking System 4			0.759		Valid
Information Technology 1				0.766	Valid
Information Technology 2				0.832	Valid
Information Technology 3				0.861	Valid
Information Technology 4				0.719	Valid

Sourcel: procelsseld by relselarchelrs using (SmartPLS 4)

The purpose of convergent validity is to establish the validity of each indicator. Convergent validity criteria are set at the outer loading value > 0.7, communality > 0.5, and Average Variance Extracted (AVE) > 0.5. Based on the figure above, all indicators in this study have a loading factor value greater than 0.60, which indicates that the Convergent Validity requirements have been met. In this study, the minimum acceptable loading factor limit value is 0.5, provided that the average value of extracted variance (AVE) for each construct has a value of more than 0.5. (Irwan & Adam, 2015)

Reliability Testing

Tabel 2. Construct Reliability Test Results

Variable	Cronbach's alpha	Composite Reliability	Average Variance Extracted (AVE)	Result
Information Technology (X1)	0.807	0.860	0.634	Reliable
Online Tracking System (X2)	0.803	0.895	0.629	Reliable
Timeliness (X3)	0.845	0.871	0.682	Reliable
Customer Satisfaction (Y)	0.784	0.873	0.607	Reliable

Source: processed by researchers using (SmartPLS 4)

According to Journal (Intan Elviani, n.d.), Reliability Test has an important role in measuring the level of stability and consistency of respondents in answering questions related to statement constructs, which are dimensions of a variable and are arranged in the form of a questionnaire.

Reliability test is used as a tool to assess the extent to which the questionnaire is reliable as an indicator of the variable being studied. The questionnaire is considered reliable if the answers or statements contained in it are consistent and stable, so that it can be considered an accurate tool for measuring the variable in question. The general criterion for considering a variable as reliable is if its Cronbach's Alpha value exceeds 0.60, indicating that the variable has an adequate level of reliability.

Thus, the Reliability Test is an important step in research to ensure that the questionnaire used is reliable in measuring the variables under study, and a higher Cronbach's Alpha value indicates a greater level of reliability in the research results.

Model fit test

Tabel 3. Model Fit Test

	R Square	R Square Adjusted	Result
Customer Satisfaction	0.568	0.559	Model Fit Medium

The assessment of the level of relationship strength using the R-Square value is as follows: 0.75 is considered strong, 0.50 is considered moderate, and 0.25 is considered weak. In the context of the R-value of the variable, the predictive relevance of Q can be identified based on the values listed in the reference table.

Based on the values in the table, it can be concluded that the results regarding Customer Satisfaction have an R value of 0.5 or equivalent to 53%. This indicates that the level of relationship value between Customer Satisfaction and other variables is medium. This means that the prediction of variable Q has a moderate level of relevance, which may indicate that there are other factors that also affect variable Q, apart from Customer Satisfaction.

Variable Fit Test

Tabel 4. Figure Path Coefficients and T-values

Path	Original Sample (O)	T Statistik	P Values	Result
Timeliness (X3) -> Customer Satisfaction	0.494	4.323	0.000	Accepted
Online Tracking System (X2) -> Customer Satisfaction	0.279	2.925	0.003	Accepted
Information Technology (X1) -> Customer Satisfaction	0.056	0.710	0.478	Rejected

In the hypothesis testing process in this study, the statistical T value and the T table are used. The hypothesis is considered accepted if the statistical T value obtained is greater than the value contained in the T table.

In the case of Timeliness, the coefficient value of 0.494 has a T statistic greater than 4.323, which exceeds the T table value of 1.96, with a significance value (value) of 0.000, which is clearly smaller than the significance threshold value of 0.005. Thus, the hypothesis linking Timeliness is accepted.

While on the Online Tracking System variable, the coefficient value of 0.279 has a T statistic greater than 2.925, which also exceeds the T table value of 1.96, with a significance value (value) of 0.003, which although smaller than 0.005, is still within the acceptable level of significance. Therefore, the hypothesis related to the Online Tracking System is also accepted.

However, on the Information Technology variable, the coefficient value of 0.056 has a T statistic smaller than 1.96, and the significance value (value) of 0.478 is greater than 0.005. Thus, the hypothesis relating to Information Technology is rejected.

Overall, these hypothesis testing results strengthen the understanding of the relationship between the variables in this study, with some of them accepted and one rejected.

The Effect of Information Technology on Customer Satisfaction

The results of this study show that it can be stated that there is no significant influence between Information Technology on customer satisfaction, but there is a positive influence between Information Technology on Customer Satisfaction. The results of this research between Information Technology and Customer Satisfaction of 0.056 have a T statistic that is smaller than 1.96, and a significance value (value) of 0.478 greater than 0.005. It can be interpreted that the results are insignificant but positive between Information Technology and customer satisfaction. The relationship between Information Technology and Customer Satisfaction is declared insignificant because the T statistic is smaller than the T table.

The Effect of Online Tracking System on Customer Satisfaction

The results of this study indicate that there can be a significant influence between the Online Tracking System on Customer Satisfaction. The effect between the Tracking System on Customer Satisfaction of 0.279 has a T statistic greater than 2.925, which also exceeds the T table value of 1.96, with a significance value (value) of 0.003, which is smaller than 0.005. It can be interpreted that the relationship between the Online Tracking System and Customer Satisfaction has a significant effect.

The Effect of Timeliness on Customer Satisfaction

The results of this study indicate that it can be stated that there is a significant influence between Timeliness on Customer Satisfaction. The effect between Punctuality on Satisfaction of 0.494 has a T statistic greater than 4.323, which exceeds the

T table value of 1.96, with a significant value (value) of 0.000, which is clearly smaller than the significant threshold value of 0.005. It can be interpreted that the relationship between Timeliness and Customer Satisfaction has a significant effect.

CONCLUSION

From the data that has been analyzed and the discussion in the previous chapter regarding the Application of Information Technology, Online Tracking Systems, and Timeliness to Customer Satisfaction at Delivery Service Companies, the following conclusions can be drawn:

1. There is a Significant and Positive influence between Punctuality and Customer Satisfaction of 0.494, table T statistics greater than 4.323 than 1.96 and value 0.000 < 0.005 then declared accepted.
2. There is a Significant and Positive Influence between Online Tracking System and Customer Satisfaction amounting to 0.279, table T statistics greater than 2.925 greater than 1.96, and value 0.003 < 0.005 then declared accepted.

There is a Positive but Insignificant Effect between Information Technology and Customer Satisfaction of 0.056, more diminutive than 1.96 and a value of 0.478 > 0.005, so it is rejected. Information Technology is declared insignificant because the T statistic is smaller than the T table. This is because sometimes when using information technology system errors occur which make customers less satisfied with information technology.

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