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The Impact of Coal Transportation Services and Business Diversification on Customer Trust and Customer Satisfaction at PT Andhika Lines

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Abstract: The coal transportation service industry requires companies not only to provide high-quality transportation services but also to implement business diversification strategies to enhance customer trust and satisfaction. PT Andhika Lines, as a coal transportation service provider, faces increasing competition in maintaining long-term customer relationships while improving service quality and business sustainability. This study aims to analyze the effects of Coal Transportation Services and Business Diversification on Customer Satisfaction, with Customer Trust serving as a mediating variable. This research employed a quantitative approach using a survey design involving 110 respondents who were customers of PT Andhika Lines. Respondents were selected using a purposive sampling technique. Data were collected through a five-point Likert scale questionnaire and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that Coal Transportation Services have a positive and significant effect on Customer Trust ($\beta = 0.284$; $t = 2.324$; $p = 0.010$) and Customer Satisfaction ($\beta = 0.411$; $t = 2.387$; $p = 0.009$). Business Diversification also has a positive and significant effect on Customer Trust ($\beta = 0.517$; $t = 4.442$; $p = 0.000$) and Customer Satisfaction ($\beta = 0.283$; $t = 2.523$; $p = 0.006$). Furthermore, Customer Trust positively and significantly influences Customer Satisfaction ($\beta = 0.295$; $t = 2.110$; $p = 0.018$), while significantly mediating the relationship between Coal Transportation Services and Customer Satisfaction ($\beta = 0.084$; $t = 1.868$; $p = 0.031$), as well as between Business Diversification and Customer Satisfaction ($\beta = 0.153$; $t = 1.821$; $p = 0.035$). The findings reveal that Business Diversification is the most influential variable affecting Customer Trust, with a path coefficient of 0.517, while Market Expansion is the most representative dimension (loading factor = 0.962) represented by indicator X2.7 (loading factor = 0.912). Meanwhile, Empathy is the strongest dimension of the Coal Transportation Services variable (loading factor = 0.943) with indicator X1.10 (loading factor = 0.944). These findings suggest that improving customer satisfaction at PT Andhika Lines depends on

expanding market coverage, delivering customer-oriented services, strengthening trust through service integrity, and maintaining long-term relationships as a source of sustainable competitive advantage.

Keywords: Service Quality, Business Diversification, Customer Trust, Customer Satisfaction.

INTRODUCTION

PT Andhika Lines is a company engaged in cargo transportation services, particularly dry cargo transportation involving coal, and plays an important role in supporting power plant development throughout Indonesia. The coal transported by PT Andhika Lines is distributed to various regions across the country to support the operations of coal-fired power plants (PLTUs). As a shipping company, PT Andhika Lines is committed to maintaining the quality of its fleet and ensuring the availability of competent human resources to support safe, reliable, and efficient shipping operations.

The importance of maritime transportation in both international and domestic trade cannot be overstated. Ports serve as critical nodes for vessels, as they facilitate the loading and unloading of cargo. Maritime transportation enables the movement of large volumes of goods, making it a highly efficient mode of transportation, particularly for bulk commodities such as coal. Coal is classified as a hazardous cargo because of its potential to self-heat and ignite under certain conditions. Due to its carbon and hydrocarbon content, coal may ignite even in the absence of an external flame or spark. Therefore, coal quality must be thoroughly assessed before use to ensure its compatibility with the machinery and equipment intended to utilize it as a fuel source.

The phenomenon reflected in the available data illustrates both challenges and opportunities faced by PT Andhika Lines in the coal transportation industry. Volatility in global coal commodity prices may affect market demand and corporate profitability, while increasingly stringent environmental regulations require companies to continuously innovate and adopt more environmentally responsible technologies. Competition from international shipping companies, together with port infrastructure constraints in several regions of Indonesia, also presents challenges that may affect operational efficiency. Although certain aspects of environmental sustainability have experienced fluctuations, the company remains committed to strengthening environmentally responsible practices in order to meet customer expectations and comply with applicable regulations.

The coal transportation sector is becoming increasingly important as companies seek to adapt to global trends that place greater emphasis on sustainability and environmentally responsible energy systems. In this context, business diversification represents a strategic approach that enables companies to reduce their dependence on the core shipping business while expanding investment opportunities and mitigating concentration risk. For PT Andhika Lines, diversification encompasses activities across the maritime, logistics, and renewable energy sectors, reflecting the company's efforts to develop a more resilient and sustainable business portfolio.

The business diversification data of PT Andhika Lines indicates that the company has pursued several strategic initiatives. Operational digitalization through the Port & BOS application was targeted to reach 87%, while ESG and decarbonization initiatives achieved a target of 100%. Diversification into the renewable energy sector through PT AND Indonesia Kapital was targeted at 90%, while the expansion of integrated maritime and logistics services was targeted at 92%. In addition, the company targeted an 85% improvement in crewing services through more efficient management systems. These initiatives demonstrate

the company's ambition to strengthen operational efficiency, sustainability, market expansion, and value creation across its business portfolio.

The diversification strategy also creates managerial challenges for PT Andhika Lines. Managing multiple business sectors requires specialized capabilities, effective resource allocation, and an integrated risk-management approach. Investments in renewable energy, for example, involve different market dynamics and regulatory requirements from those associated with the established maritime sector. Consequently, successful performance in one business segment does not necessarily guarantee success in another. The company's ability to integrate new business activities with its core maritime operations will therefore depend on its capacity to manage operational complexity, allocate resources effectively, and ensure that diversification contributes to long-term customer and organizational value.

Preliminary survey results concerning business diversification provide further evidence of the challenges faced by the company. The survey of 30 respondents assessed four dimensions: related diversification, unrelated diversification, market expansion, and resource development. The results indicate that negative responses, particularly disagreement and strong disagreement, were dominant across most dimensions. This pattern was particularly evident in unrelated diversification and market expansion, suggesting that customers have not yet clearly perceived the benefits of the company's diversification strategy. Similarly, investments in technology and human resource development have not been fully translated into benefits that are directly recognized by customers. These findings indicate the importance of aligning business diversification initiatives with customer needs and service quality.

Based on these conditions, this study aims to examine the effects of coal transportation services and business diversification on customer trust and their subsequent impact on customer satisfaction at PT Andhika Lines. The study is based on the premise that high-quality coal transportation services, supported by reliable operations, safety, responsiveness, and service consistency, can strengthen customer trust. At the same time, effective business diversification may influence customers' perceptions of the company's capability to provide broader and more sustainable value. Customer trust is expected to play a critical role in translating these factors into higher levels of customer satisfaction. Therefore, understanding the relationships among coal transportation services, business diversification, customer trust, and customer satisfaction is essential for PT Andhika Lines to formulate strategies that strengthen customer relationships, improve service performance, and enhance its competitiveness in the increasingly dynamic maritime transportation industry.

METHOD

This study uses a quantitative explanatory research design to empirically examine the relationships among coal transportation services, business diversification, customer trust, and customer satisfaction. The research applies a cross-sectional survey design, in which data are collected from respondents at a specific period using a structured questionnaire. The design is intended to test the proposed hypotheses and explain the direct and indirect relationships among the research constructs.

The population comprises customers of PT Andhika Lines' coal transportation services in 2024. The target population consists of approximately 30 customer companies, with an estimated five respondents from each company, resulting in a total population of 150 respondents. The sample size was determined using the Taro Yamane formula with a 5% margin of error, resulting in approximately 109.09 respondents and subsequently rounded to 110 respondents. The sampling technique used was simple random sampling, whereby each member of the population has an equal opportunity to be selected. Respondents were customers who had sufficient experience and interaction with PT Andhika Lines' coal

transportation services and were therefore considered capable of providing relevant assessments of service quality, business diversification, customer trust, and customer satisfaction.

Data were collected through a structured questionnaire using a Likert-scale measurement and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The analysis comprised evaluation of the measurement model (outer model) and structural model (inner model). The outer model was assessed through indicator reliability, convergent validity, discriminant validity, Cronbach's alpha, and composite reliability, while the inner model was evaluated using R^2 , f^2 , Q^2 , VIF, and path coefficients. Hypothesis testing was conducted using bootstrapping to determine the significance of direct and indirect effects. PLS-SEM was specifically applied to test the effects of coal transportation services (X1) and business diversification (X2) on customer trust (Y) and customer satisfaction (Z), including the mediating effect of customer trust on the relationship between the independent variables and customer satisfaction.

RESULTS AND DISCUSSION

Result

Measurement Model Assessment (Outer Model)

The measurement model, or *outer model*, is used to assess the relationship between indicators and their respective latent variables. The measurement model is evaluated through *convergent validity*, *discriminant validity*, and *composite reliability*. This assessment is conducted to determine the validity and reliability of the research data and to ensure that the indicators appropriately measure their respective latent constructs.

Validity Test

In general, a validity test is conducted to determine whether a measurement instrument is valid for measuring the intended construct. In PLS-SEM, the validity of reflective indicators is generally assessed through two stages: *convergent validity*, which is evaluated based on the *outer loading* or *loading factor* of each indicator, and *discriminant validity*, which is assessed using criteria such as AVE and construct distinctiveness (Yusuf & Sartika, 2021).

Convergent Validity Test

Convergent validity is used to assess the extent to which indicators adequately reflect their respective latent constructs. An indicator is generally considered valid when its *outer loading* value is greater than 0.70. Loading values between 0.50 and 0.60 may still be considered acceptable under certain circumstances, whereas indicators with loading values below 0.50 are generally considered for removal from the model (Fazriansyah et al., 2022). The results of the *outer loading* assessment are presented in Figure 1.

Based on Figure 1 and the corresponding results, all *outer loading* values for the indicators of the Coal Transportation Services, Business Diversification, Customer Trust, and Customer Satisfaction variables are greater than 0.70. These results indicate that all indicators used in the study meet the required threshold for convergent validity. Therefore, all indicators can be retained and used for subsequent hypothesis testing.

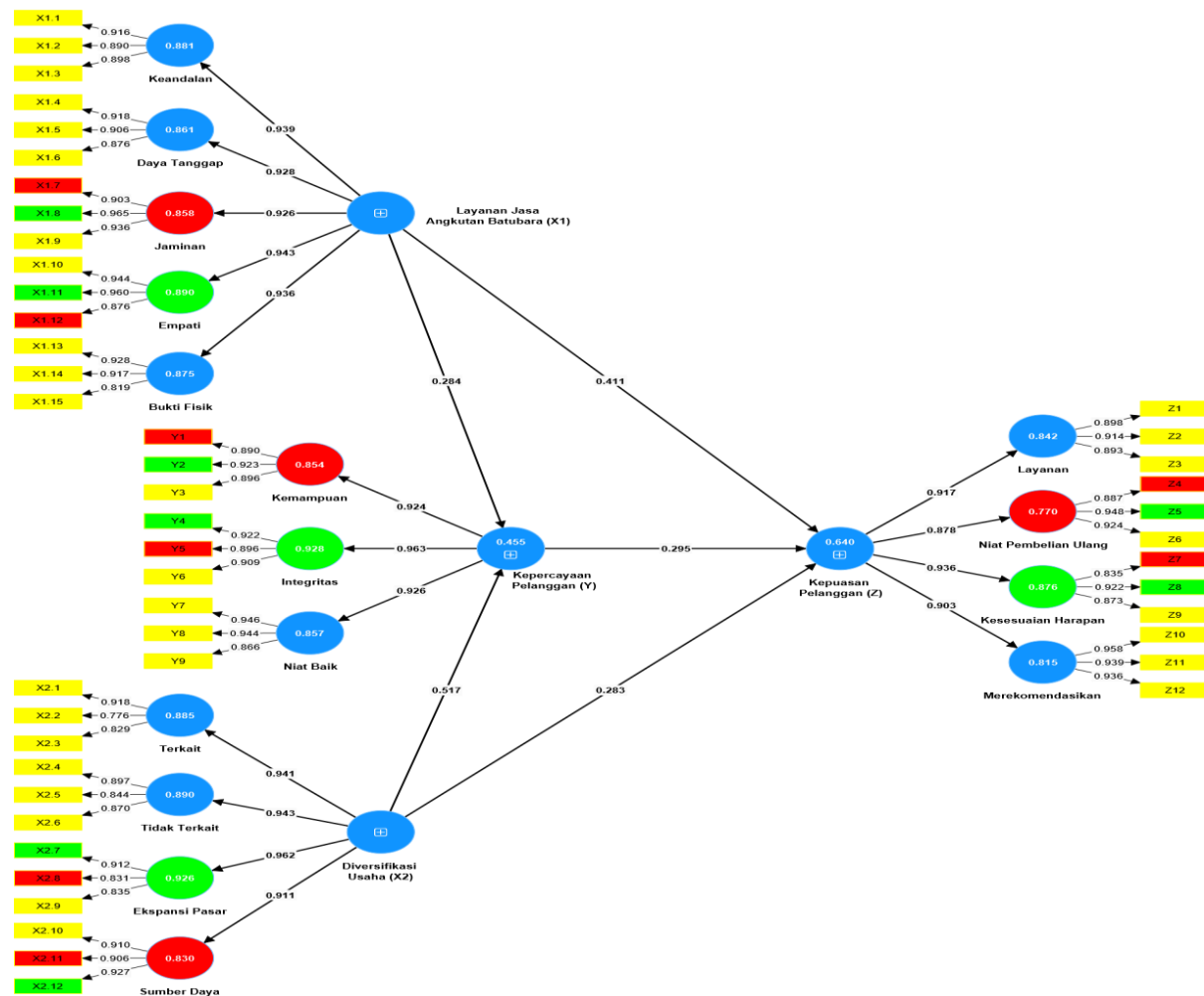


Figure 1 Outer Loading Results

The next stage in assessing convergent validity is to examine the *Average Variance Extracted* (AVE). A construct is considered to have adequate convergent validity when its AVE value is greater than 0.50. The AVE results for all research variables are presented in Table 1.

Table 1. Average Variance Extracted (AVE) Values of the Research Model

Variable	Average Variance Extracted (AVE)	Requirement	Conclusion
Coal Transportation Services (X1)	0.724	≥ 0.50	Valid
Business Diversification (X2)	0.670	≥ 0.50	Valid
Customer Trust (Y)	0.729	≥ 0.50	Valid
Customer Satisfaction (Z)	0.683	≥ 0.50	Valid

As shown in Table 1 the AVE values for all research variables are greater than 0.50. Specifically, Coal Transportation Services has an AVE value of 0.724, Business Diversification has an AVE value of 0.670, Customer Trust has an AVE value of 0.729, and Customer Satisfaction has an AVE value of 0.683. Therefore, all constructs meet the recommended AVE criterion and demonstrate adequate convergent validity.

Discriminant Validity Test

Discriminant validity is assessed to determine whether a latent construct is empirically distinct from other constructs in the research model. One approach is to examine the *cross-loading* values of indicators. An indicator is considered to demonstrate adequate discriminant validity when its loading on its associated construct is higher than its loading on other

constructs. This indicates that the construct explains its own indicators better than the indicators of other constructs (Yusuf & Sartika, 2021).

Another commonly used approach is the *Fornell–Larcker criterion*. This method compares the square root of the AVE of each latent variable with the correlations between that variable and other latent variables. A construct is considered to have adequate discriminant validity when the square root of its AVE is greater than its correlations with other constructs in the model (Hair et al., 2021). The results of the *Fornell–Larcker criterion* are presented in Table 2.

Table 2 Fornell–Larcker Criterion Values of the Research Variables

Variable	Business Diversification (X2)	Customer Trust (Y)	Customer Satisfaction (Z)	Coal Transportation Services (X1)
Business Diversification (X2)	0.818			
Customer Trust (Y)	0.621	0.854		
Customer Satisfaction (Z)	0.617	0.665	0.827	
Coal Transportation Services (X1)	0.365	0.473	0.654	0.851

Based on Table 2, the square root of the AVE for each construct, represented by the diagonal values, is greater than the correlations between the respective construct and the other constructs. Business Diversification has a value of 0.818, Customer Trust has a value of 0.854, Customer Satisfaction has a value of 0.827, and Coal Transportation Services has a value of 0.851. Each of these values is higher than the corresponding inter-construct correlations. Therefore, the results demonstrate that all constructs meet the *Fornell–Larcker criterion* and possess adequate discriminant validity.

The next assessment of discriminant validity is conducted using the *Heterotrait–Monotrait Ratio* (HTMT). The HTMT criterion is generally considered acceptable when the ratio is below 0.90, indicating that the constructs are sufficiently distinct from one another (Hair et al., 2021).

Table 3. Heterotrait–Monotrait Ratio (HTMT) Values of the Research Variables

Variable	Business Diversification (X2)	Customer Trust (Y)	Customer Satisfaction (Z)	Coal Transportation Services (X1)
Business Diversification (X2)	—			
Customer Trust (Y)	0.650	—		
Customer Satisfaction (Z)	0.642	0.695	—	
Coal Transportation Services (X1)	0.376	0.490	0.677	—

Based on the HTMT results presented in Table 3, all HTMT values are below the recommended threshold of 0.90. The highest HTMT value is 0.695, observed between Customer Trust and Customer Satisfaction. Since all HTMT values are substantially below 0.90, there is no indication of a lack of discriminant validity among the constructs.

Therefore, based on the results of both *convergent validity* and *discriminant validity* assessments, the measurement model demonstrates adequate validity. All indicators and constructs satisfy the required validity criteria and can consequently be used for further structural model and hypothesis testing.

Reliability Test

The reliability test is conducted to determine whether the measurement instruments used in the study are reliable and consistent and can therefore be appropriately used for research purposes (Kasmir, 2022). In PLS-SEM, reliability is commonly assessed using *Cronbach's alpha* and *composite reliability* for each block of indicators. A construct is considered reliable when its Cronbach's alpha value is greater than 0.60, while the recommended threshold for composite reliability is greater than 0.70, although values of 0.60 may still be considered acceptable in certain circumstances (Yusuf & Sartika, 2021).

Table 4. Reliability Values of the Research Model

Variable	Cronbach's Alpha	Composite Reliability	Requirement	Conclusion
Coal Transportation Services (X1)	0.973	0.973	$\geq 0.60 / \geq 0.70$	Reliable
Business Diversification (X2)	0.955	0.956	$\geq 0.60 / \geq 0.70$	Reliable
Customer Trust (Y)	0.953	0.954	$\geq 0.60 / \geq 0.70$	Reliable
Customer Satisfaction (Z)	0.958	0.958	$\geq 0.60 / \geq 0.70$	Reliable

Based on Table 4, all research variables have Cronbach's alpha values greater than 0.60. The lowest value is 0.953 for Customer Trust (Y), while the highest value is 0.973 for Coal Transportation Services (X1). These results indicate that all constructs satisfy the recommended Cronbach's alpha criterion.

The composite reliability results also demonstrate that all constructs have values greater than 0.70. The lowest composite reliability value is 0.954 for Customer Trust (Y), while the highest value is 0.973 for Coal Transportation Services (X1). Therefore, all constructs meet the recommended composite reliability criterion.

Overall, the reliability assessment indicates that the research model satisfies both the Cronbach's alpha and composite reliability criteria. Thus, all constructs are considered reliable, and the measurement instruments can be regarded as consistent and dependable for subsequent structural model and hypothesis testing.

Structural Model Assessment (Inner Model)

The structural model, or *inner model*, is used to assess the strength of relationships among latent variables. In this study, the structural model assessment begins by examining the *R-square* value, followed by *Q-square predictive relevance*, and the significance of relationships among constructs as indicated by the *path coefficients*.

Coefficient of Determination / R-Square (R^2)

The *R-square* (R^2) value is used to assess the extent to which endogenous variables can be explained by exogenous variables. The R^2 value for each endogenous latent variable indicates the proportion of variance explained by the exogenous variables contributing to it. A higher R^2 value indicates a greater explanatory contribution of the exogenous variables to the endogenous variable. According to Ghazali and Latan (2021), R^2 values of 0.75, 0.50, and 0.25 can generally be interpreted as strong, moderate, and weak, respectively.

Table 5. R-Square (R^2) Values of the Research Model

Variable	R-square	Criteria
Customer Trust (Y)	0.455	Weak
Customer Satisfaction (Z)	0.640	Moderate

Based on Table 5 the R^2 value for Customer Trust (Y) is 0.455. This indicates that 45.5% of the variance in Customer Trust can be explained by Coal Transportation Services (X1) and Business Diversification (X2), while the remaining 54.5% is explained by other variables outside the research model. Based on the R^2 criterion, this value falls within the weak category.

Meanwhile, Customer Satisfaction (Z) has an R^2 value of 0.640, indicating that 64.0% of the variance in Customer Satisfaction can be explained by Coal Transportation Services (X1), Business Diversification (X2), and Customer Trust (Y), while the remaining 36.0% is explained by other variables outside the research model. This R^2 value falls within the moderate category.

Predictive Relevance (Q^2)

The Q^2 value is used to assess the predictive relevance of the structural model, particularly its ability to predict endogenous variables.

Table 6. Q^2 Predictive Relevance Values

Construct	Q-square (Q^2)	Criteria
Customer Trust (Y)	0.326	Moderate
Customer Satisfaction (Z)	0.432	Moderate

Based on Table 6, Customer Trust (Y) has a Q^2 value of 0.326, which falls within the moderate category. Customer Satisfaction (Z) has a Q^2 value of 0.432, which is also categorized as moderate. These results indicate that the structural model has relevant predictive capability and is sufficiently adequate for subsequent hypothesis testing.

Hypothesis Testing

The hypothesis testing results obtained using SmartPLS 4.0 are presented in Figure 4.3.

Table 7. The hypothesis testing results

Hypothesis	Effect	Original Sample (O)	T Statistics (O/STDEV)	P Values	Conclusion
H1	Coal Transportation Services (X1) → Customer Trust (Y)	0,284	2,324	0,010	Significant
H2	Business Diversification (X2) → Customer Trust (Y)	0,517	4,442	0,000	Significant
H3	Coal Transportation Services (X1) → Customer Satisfaction (Z)	0,411	2,387	0,009	Significant
H4	Business Diversification (X2) → Customer Satisfaction (Z)	0,283	2,523	0,006	Significant
H5	Customer Trust (Y) → Customer Satisfaction (Z)	0,295	2,110	0,018	Significant
H6	Coal Transportation Services (X1) → Customer Trust (Y) → Customer Satisfaction (Z)	0,084	1,868	0,031	Significant
H7	Business Diversification (X2) → Customer Trust (Y) → Customer Satisfaction (Z)	0,153	1,821	0,035	Significant

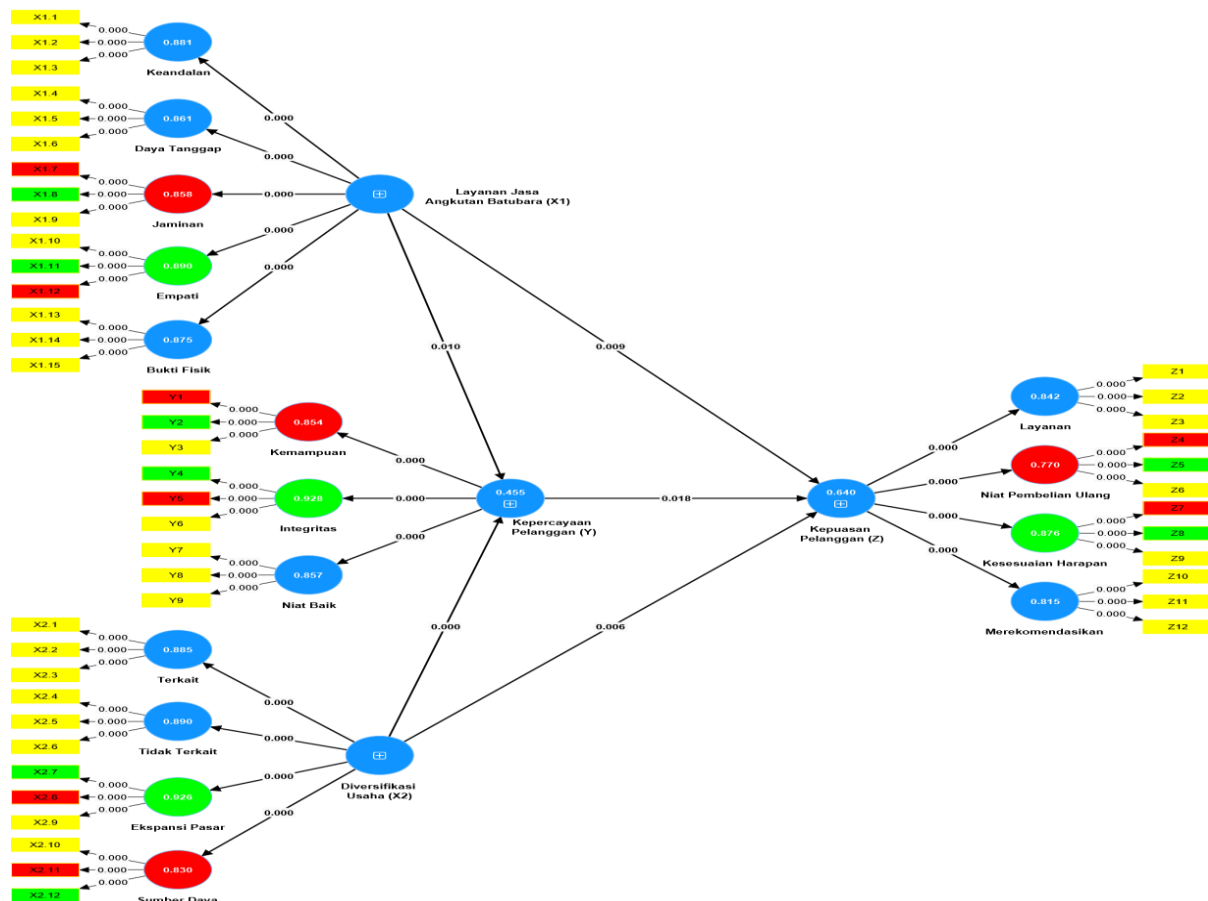


Figure 2. Path Coefficient Results (Bootstrapping)

Discussion

The Effect of Coal Transportation Services on Customer Trust

SmartPLS results show that Coal Transportation Services positively and significantly affect Customer Trust ($\beta = 0.284$; $t = 2.324$; $p = 0.010$), so H1 is accepted. This indicates that timely delivery, cargo safety, professionalism, and responsiveness strengthen customer confidence in PT Andhika Lines. Empathy and Integrity are the dominant dimensions of service and trust. The key indicators are understanding customers' specific needs and fulfilling agreed promises. This finding is supported by Arif et al. (2025), Arifiani et al. (2025), Surapati et al. (2025), Yuliantini et al. (2022), Yang et al. (2023), and Musalem et al. (2016), who emphasize service quality and customer experience in building trust.

The Effect of Business Diversification on Customer Trust

Business Diversification positively and significantly affects Customer Trust ($\beta = 0.517$; $t = 4.442$; $p = 0.000$), so H2 is accepted. The stronger coefficient indicates that service-area expansion, operational capacity, technology, and human resources strengthen perceptions of company stability and readiness. Market Expansion is dominant in Business Diversification, while Integrity dominates Customer Trust. The key indicator is expanding service distribution areas. This result is consistent with Arifiani et al. (2025), Barataa et al. (2023), Lutfi (2025), Surapati et al. (2025), Wu and Dahlan (2023), and Qiu et al. (2024), who link service development, efficiency, and innovation with stronger customer trust.

The Effect of Coal Transportation Services on Customer Satisfaction

SmartPLS results show that Coal Transportation Services positively and significantly affect Customer Satisfaction ($\beta = 0.411$; $t = 2.387$; $p = 0.009$), so H3 is accepted. Better service quality, including timely delivery, cargo safety, professionalism, accurate information, and responsiveness, increases customer satisfaction. Empathy and Expectation

Conformity are the dominant dimensions. Understanding customer needs and providing accurate information are key to satisfaction. This is supported by Arifiani et al. (2025), Saputra et al. (2024), Yang et al. (2023), Yuliantini et al. (2022), Qiu et al. (2024), and Musalem et al. (2016).

The Effect of Business Diversification on Customer Satisfaction

Business Diversification positively and significantly affects Customer Satisfaction ($\beta = 0.283$; $t = 2.523$; $p = 0.006$), so H4 is accepted. Broader service coverage, operational capacity, technology, and human resources improve customers' perceptions of the company's flexibility and service capability. Market Expansion and Expectation Conformity are dominant. Expanding service areas and providing accurate information are important to customers. This finding is supported by Qiu et al. (2024), Arifiani et al. (2025), Barataa et al. (2023), Lutfi (2025), Surapati et al. (2025), and Wu and Dahlan (2023).

The Effect of Customer Trust on Customer Satisfaction

SmartPLS results show that Customer Trust positively and significantly affects Customer Satisfaction ($\beta = 0.295$; $t = 2.110$; $p = 0.018$), so H5 is accepted. Greater confidence in the company's capability, integrity, and responsibility is associated with higher customer satisfaction. Integrity and Expectation Conformity are dominant. Fulfilling promises and providing accurate information are central to satisfaction. The finding is supported by Pambudi et al. (2023), Wu and Dahlan (2023), Surapati et al. (2025), Arif et al. (2025), Qiu et al. (2024), and Kwartama et al. (2019), who emphasize trust and relationship quality.

The Effect of Coal Transportation Services on Customer Satisfaction through Customer Trust

Coal Transportation Services have a positive and significant indirect effect on Customer Satisfaction through Customer Trust ($\beta = 0.084$; $t = 1.868$; $p = 0.031$), so H6 is accepted. This indicates that better service quality increases satisfaction partly by strengthening customer trust. The dominant dimensions are Empathy, Integrity, and Expectation Conformity. Understanding customer needs, fulfilling promises, and providing accurate information show that service quality builds trust, which then increases satisfaction. This is supported by Surapati et al. (2025), Arifiani et al. (2025), Wu and Dahlan (2023), Yuliantini et al. (2022), Musalem et al. (2016), and Pambudi et al. (2023).

The Effect of Business Diversification on Customer Satisfaction through Customer Trust

Business Diversification has a positive and significant indirect effect on Customer Satisfaction through Customer Trust ($\beta = 0.153$; $t = 1.821$; $p = 0.035$), so H7 is accepted. This indicates that diversification increases satisfaction partly through stronger customer trust. Market Expansion, Integrity, and Expectation Conformity are dominant. Broader service distribution, fulfilled promises, and accurate information help convert diversification into satisfaction through trust. This is supported by Qiu et al. (2024), Barataa et al. (2023), Surapati et al. (2025), Wu and Dahlan (2023), Arifiani et al. (2025), and Lutfi (2025). Thus, Customer Trust mediates the relationship between Business Diversification and Customer Satisfaction.

CONCLUSION

The results show that Coal Transportation Services have a positive and significant effect on Customer Trust. The Empathy dimension, with a factor loading of 0.943, makes the largest contribution to the Coal Transportation Services variable, as reflected in the highest indicator, X1.10 (0.944), which states that the company understands customers' specific needs. Meanwhile, the lowest indicator within this dimension is X1.12 (0.876), concerning the company's understanding of customers' wants and expectations. For Customer Trust (Y), the most dominant dimension is Integrity (0.963), with Y4 (0.922) as the highest indicator, indicating that the company consistently fulfills its commitments to customers, while Y5

(0.896), concerning honesty in providing service information, is the lowest indicator. Hypothesis testing produced a t-statistic of 2.324, which is greater than the t-table value of 1.64, with a path coefficient of 0.284, indicating an effect contribution of 28.4%. This means that the better the quality of coal transportation services provided by the company, the higher the level of customer trust in PT Andhika Lines. Similarly, Business Diversification has a positive and significant effect on Customer Trust. The Market Expansion dimension, with a factor loading of 0.962, is the most dominant dimension, reflected in the highest indicator X2.7 (0.912), namely the company's ability to expand its service distribution areas, while X2.8 (0.831), concerning the ability to enter new market segments, is the lowest indicator. The hypothesis test resulted in a t-statistic of 4.442, greater than 1.64, with a path coefficient of 0.517, representing an effect contribution of 51.7%. Thus, better business diversification strengthens customers' trust in the company's capabilities and professionalism.

Furthermore, Coal Transportation Services have a positive and significant effect on Customer Satisfaction. The Empathy dimension, with a loading factor of 0.943, is the most dominant dimension, with X1.10 (0.944) as the highest indicator, reflecting the company's ability to understand customers' specific needs, while X1.12 (0.876) is the lowest indicator. In the Customer Satisfaction variable (Z), the dominant dimension is Expectation Conformity (0.936), with Z8 (0.922) as the highest indicator, reflecting that the information provided is consistent with the actual service conditions, while Z7 (0.835), concerning delivery performance in relation to customer expectations, is the lowest indicator. The hypothesis test generated a t-statistic of 2.387, greater than 1.64, with a path coefficient of 0.411, indicating an effect contribution of 41.1%. In addition, Business Diversification has a positive and significant effect on Customer Satisfaction, with Market Expansion (0.962) being the most dominant dimension and X2.7 (0.912) as the highest indicator. The hypothesis test resulted in a t-statistic of 2.523 and a path coefficient of 0.283, representing an effect contribution of 28.3%. These findings indicate that improvements in business diversification contribute to higher customer satisfaction with the services provided by PT Andhika Lines. Customer Trust also has a positive and significant effect on Customer Satisfaction, as demonstrated by the t-statistic of 2.110, which exceeds 1.64, and a path coefficient of 0.295, equivalent to an effect contribution of 29.5%. The dominant dimensions remain Integrity (0.963) for Customer Trust and Expectation Conformity (0.936) for Customer Satisfaction. This finding indicates that higher customer trust, particularly trust based on the company's ability to fulfill its commitments and provide honest service information, contributes to higher customer satisfaction.

Finally, the results demonstrate that Coal Transportation Services have a positive and significant effect on Customer Satisfaction through Customer Trust. The indirect effect test produced a t-statistic of 1.868, greater than the t-table value of 1.64, with an indirect path coefficient of 0.084, indicating an effect contribution of 8.4%. This finding suggests that improvements in service quality increase customer satisfaction partly by strengthening customer trust in the company. Likewise, Business Diversification has a positive and significant effect on Customer Satisfaction through Customer Trust, as shown by a t-statistic of 1.821, which exceeds 1.64, and an indirect path coefficient of 0.153, representing an effect contribution of 15.3%. The findings confirm that business diversification, particularly through market expansion, can enhance customer satisfaction when accompanied by stronger customer trust. Overall, the results indicate that Customer Trust plays an important mediating role in the relationship between Coal Transportation Services and Business Diversification and Customer Satisfaction. Therefore, PT Andhika Lines should continuously improve service quality, understand customers' specific needs, fulfill commitments consistently, provide accurate information, and expand its market and service distribution capabilities to strengthen customer trust and ultimately improve customer satisfaction.

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