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The Role of Logistics Capabilities in Driving Digital Transformation: A Case Study of PT Pos Indonesia Persero

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Abstract: PT Pos Indonesia is a state-owned enterprise in Indonesia. which operates in the courier service sector. Currently, PT Pos Indonesia is ranked fourth after JNE, J&T Express, and TIKI. This is the impact of many competitors, resulting in a downward trend in the volume of courier shipments per year. In 2023, PT Pos Indonesia will transform into a logistics company. This research aims to Analysis of the Influence of Logistics Capability Factors on Digital Transformation. The survey was conducted on 132 respondents consisting of the Director, Senior Manager, Manager, Assistant Manager, Lecturer and Entrepreneur levels. The method used in this research is quantitative research. Quantitative research is a methodological approach employed to investigate specific populations or samples by gathering numerical data. This data is subsequently analyzed using statistical techniques to explore and clarify the relationships between various variables. Based on the analysis of the respondents, it can be concluded that a positive and significant influence Core Capability, Customer Satisfaction, Logistics Operation, Supply Chain Visibility, Technology and Innovation on Digital Transformation. However a negative and not significant influence of Infrastructure Capability on Digital Transformation. together contribute positively and significantly to the digital transformation variable by 95.70%. This shows that from an external perspective, Pos Indonesia must make effective improvements and improvements in transforming into a state-owned enterprise's logistics.

Keyword: PT Pos Indonesia, Logistics Capability, Digital Transformation

INTRODUCTION

In a competitive business environment, companies are beginning to realize the critical role of logistics and supply chain management in commercial transaction management that is used to create better value for customers (Muhammad and Anton 2021). One service provider that plays an important role in the supply chain to customers is logistics company. Third-party logistics is an external company that integrates and manages functions to facilitate the handling of company logistics activities(Muhammad and Anton 2021).

PT Pos Indonesia was founded, it was the only company that was given the authority to receive, carry, and deliver letters, postcards, and postal items by charging a fee. This means

that only PT Pos Indonesia (Persero) is allowed to provide letters, postcards, and postal mail delivery services for a fee. In this position, PT Pos Indonesia is the market leader because there are no competitors who can provide letter, postcard, and postal card delivery services with a fee. As time progressed, competitors began to emerge. Competitors implemented a business strategy that considered letters as documents that could not be classified as letters, which became a monopoly for PT Pos Indonesia. This resulted in PT. Pos Indonesia experienced a decline with many competitors as shown in Fig. 1.

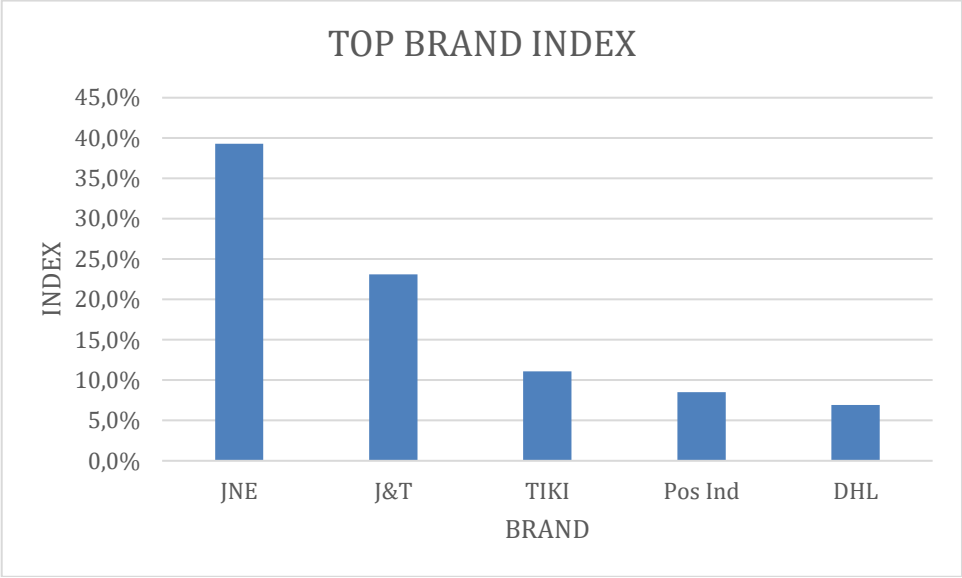

Fig. 1. Top Brand Index of Courier Services in Indonesia 2024

Based on data from top brand index regarding courir service 2024, people using direct delivery services to buyers with online courier services in all provinces in Indonesia, where PT Pos Indonesia is ranked fourth after JNE which is ranked first followed by J&T Express and TIKI. Due to many competitors, PT. Pos Indonesia is experiencing a decreasing trend in the volume of courier shipments per year. Decreasing trend in the volume of courier shipments has become a trigger and demand for PT Pos Indonesia to transform into a logistics company. PT Pos Indonesia is expected to be able to optimize and develop 3PL or 4PL services by considering the services that are most likely to be developed according to PT Pos Indonesia's existing capabilities, as well as the potential for large market generation. The strategy that will be used by POSINDO Logistik Indonesia is to use Global Logistik Indonesia (GLID), namely strategic alignment by making the POSINDO subsidiary a logistics business operation. So, there is no overlap between the businesses run by the parent company and the subsidiary (Djoemadi 2023)

Related to this, it is necessary to measure capabilities to extend the logistics business in PT. Pos Indonesia . According to (Saputra 2021) logistics capabilities are part of a company's resources (including total assets, managerial procedures, company characteristics, information, knowledge, etc.) that make it possible to control and implement plans operations to increase efficiency and effectiveness. Previous research was conducted by (Permanasari 2017) which used qualitative methods with a case study approach carried out at the Postal Processing Center (SPP) Semarang. The research results show that the transformation carried out at SPP Semarang has not been fully implemented. The transformation has not been implemented due to staff employees' ignorance of the transformation.

(Marbun, Satmoko, and Gayatri 2019) conducted transformation analysis research, especially at Metro Branch Offices, to become a reference for the transformation and management strategies carried out by PT Pos Indonesia. The data collection techniques used were interviews, documentation, and observation. The focus of this research is management transformation and the causes of failure in the management transformation of the Metro Branch Office. The latest findings in this research reveal that transformation strategies are not optimal, bureaucracy is too long, centralization of decisions, innovation is not fast, and change is not holistic.

This research aims to analysis of the Influence Logistics Capability of Factors on Digital Transformation in PT Pos Indonesia based on the internal and external perceptions of company employees.

METHOD

This research is quantitative research emphasizes objective measurement and the statistical analysis of data to reveal relationships between variables, often with generalizable results. This research serves to test hypotheses and confirm whether existing theories hold under specific circumstances. Together, these methodologies provide a comprehensive toolkit for researchers across disciplines, enabling them to explore, describe, and verify knowledge within their fields.

The Stages Of Verification Testing:

The stages of Verification Testing according to (Saputra 2021) consist of.

1. Model Research: Defining the relationships between variables.
2. Data Collection: Gathering relevant data for analysis.
3. Measurement Model Evaluation: Assessing the reliability and validity of the constructs.
4. Structural Model Evaluation: Testing the hypothesized relationships and their significance.
5. Interpretation of Results: Analyzing the outcomes to draw conclusions.

Research Model.

The model in this study is presented in Figure 2 below

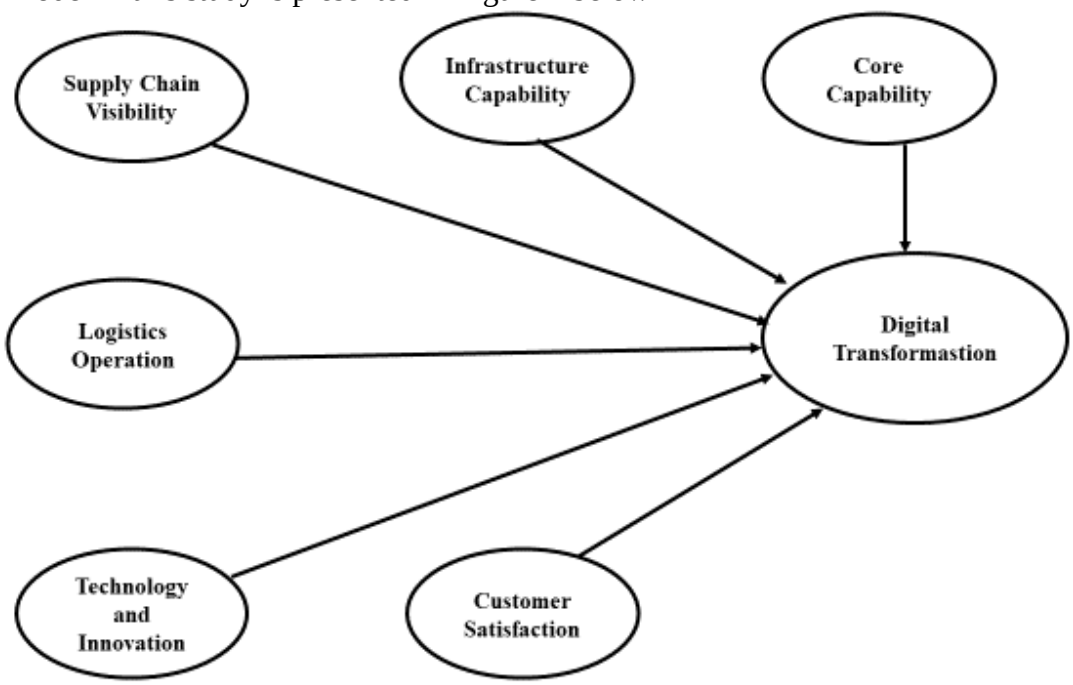

Figure. 2 Research Model

Hypothesis.

The author proposes several hypotheses, namely:

H1: There is a positive and significant influence of Core Capability on digital transformation.

H2: There is a positive and significant influence of Infrastructure Capability on digital transformation.

H3: There is a positive and significant influence of Supply Chain Visibility on digital transformation.

H4: There is a positive and significant influence of Logistics Operation on digital transformation.

H5: There is a positive and significant influence of Technology and Innovation on digital transformation.

H6: There is a positive and significant influence of Customer Satisfaction on digital transformation.

RESULTS AND DISCUSSION

Profile Of Respondent.

Several characteristics of the sample respondents include the number of workers, gender, education, and position. The respondents involved were grouped based on internal and external groups. The purpose of grouping respondents is to differentiate the assessment of the level of capability and maturity of PT Pos Indonesia from internal and external parties. Another objective is to see the extent of the measured capability and maturity levels in order to see the existence of gaps in the answers of the two parties in providing future recommendations for PT Pos Indonesia in its transformation. The final results of the calculation determine whether there is readiness or not, based on the perspective of internal and external parties. This will be used by researchers as a reference for measuring the level of capability and maturity of PT Pos Indonesia in achieving the desired business transformation. The number of respondents in the research consisted of 87 internal parties and 45 external parties (can be seen in Fig. 3). This situation illustrates that the involvement of internal parties is more dominant than external parties.

Figure. 3.The Number of Respondents

Based on the number of internal and external respondents, the gender of each group can be determined using a donut diagram. The number of respondents involved was dominated by men, both internal and external (can be seen in Fig. 4.). This means that workers who are appointed as logistics workers (couriers) are those who understand the company's operational activities and have a large leadership responsibility in making decisions about company operations.

Figure. 4.The Number of Respondent's Gender

Judging from the education level of the respondents, 1 person had a junior high school education, 25 people had a high school/vocational school education, 11 people had a diploma-III, 64 people had a diploma-IV/bachelor degree, 19 people had a master's degree, and 12 people had a doctoral degree (can be seen in Fig. 5.) . Characteristics of respondents based on education level in logistics (courier) companies with strategic levels dominated by Diploma IV/S1 education levels. So, they understand company operations and have authority in making company decisions and policies.

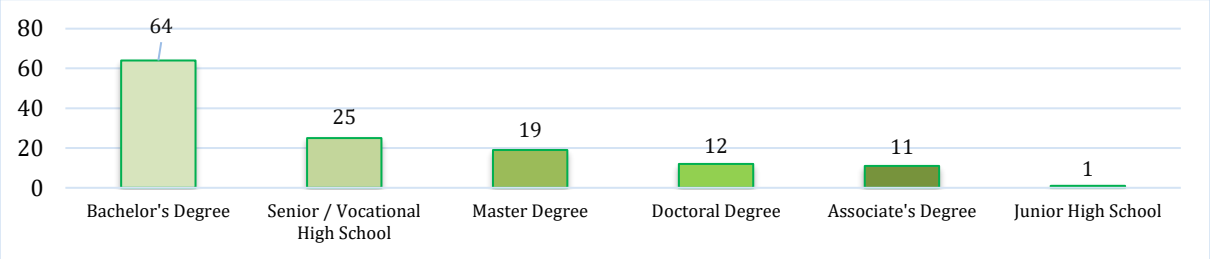

Figure. 5.Respondent's Educational Degree

The position characteristics are focused on the strategic level or people who understand the company's operational activities, where in this research there were 11 people at the director level, 11 senior managers, 49 managers, 9 lecturers, 6 entrepreneurs, and 46 assistant managers (can be seen in Fig. 6). Distribution of questionnaires is prioritized to directors, senior operational managers and operational managers who are deemed capable of making strategic company decisions and company policies, especially related to company operational activities.

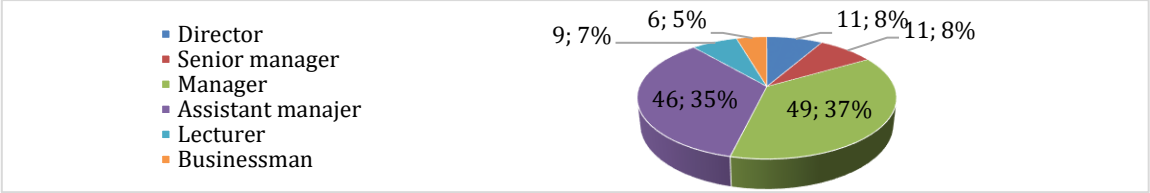

Figure. 6.The Number of Respondent's Position

Results of Questionnaire Quality Testing as a Data Collection Tool

The author used validity and reliability tests as tools to measure the quality of the questionnaire as a data collection instrument for the research.

Validity Test.

The results of the validity test calculations are presented in the table below

Table 1. Validity Test Result

Indicator	Outer Loading	Standard	Decision
CC1	0,841	>0,700	Valid
CC2	0,859	>0,700	Valid
CC3	0,858	>0,700	Valid
CC4	0,825	>0,700	Valid
CC5	0,833	>0,700	Valid
CC6	0,804	>0,700	Valid
CC7	0,781	>0,700	Valid

CS1	0,906	>0,700	Valid
CS2	0,909	>0,700	Valid
CS3	0,735	>0,700	Valid
DT1	0,857	>0,700	Valid
DT2	0,955	>0,700	Valid
DT3	0,838	>0,700	Valid
DT4	0,946	>0,700	Valid
DT5	0,949	>0,700	Valid
DT6	0,954	>0,700	Valid
DT7	0,768	>0,700	Valid
DT8	0,763	>0,700	Valid
IC1	0,801	>0,700	Valid
IC2	0,746	>0,700	Valid
IC3	0,863	>0,700	Valid
IC4	0,883	>0,700	Valid
LO1	0,895	>0,700	Valid
LO2	0,882	>0,700	Valid
LO3	0,803	>0,700	Valid
LO4	0,766	>0,700	Valid
SCV1	0,956	>0,700	Valid
SCV2	0,896	>0,700	Valid
SCV3	0,849	>0,700	Valid
TI1	0,945	>0,700	Valid
TI2	0,876	>0,700	Valid
TI3	0,874	>0,700	Valid

Source: the questionnaire (2024)

(Hasnita 2021) states that an indicator is considered valid if it has a loading factor value > 0.700. From the table above, it can be explained that all indicators have loading factor values greater than 0.700. Considering the loading factor data above and referring to (Hasnita 2021)opinion, it can be explained that all the indicators in this study are declared valid

Reliability Test.

(Hasnita 2021) explains that the reliability of a variable can be tested using 4 (four) reliability tests, namely: Cronbach's Alpha Test, Rho A Test, Composite Reliability Test and Average Variance ExtractedTest. According to (Hasnita 2021), a variable is considered reliable if it has a Cronbach's Alpha Test value > 0.700, Rho A Test value > 0.700, Composite Reliability Test Value > 0,700 and Average Variance ExtractedTest value > 0.500. The results of the reliability test are presented in the table below.

Table 2. Reliability Test Result

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	Decision
Core Capability	0,925	0,936	0,939	0,687	Reliable
Customer Satisfaction	0,809	0,818	0,889	0,729	Reliable
Digital Transformation	0,958	0,963	0,965	0,778	Reliable
InfrastructureCapability	0,851	0,892	0,895	0,681	Reliable
Logistics Operation	0,858	0,865	0,904	0,703	Reliable

Supply Chain Visibility	0,884	0,897	0,929	0,813	Reliable
Technology and Innovation	0,881	0,886	0,927	0,808	Reliable

Source : Questionnaire (2024).

The table above explains that the variables in this study have a Cronbach's Alpha Test value > 0.700, a Rho A Test value > 0.700, a Composite Reliability Test value > 0.700, and an Average Variance Extracted Test value > 0.500. Considering the data in the table above and referring to (Hasnita 2021) opinion, it can be explained that the variables in the study are declared reliable. Given that the data in the study is stated to be valid and reliable, it can be explained that the questionnaire used to collect data is a quality questionnaire that meets the requirements for a data collection tool from respondents. Since the questionnaire meets the criteria as a data collection tool, the data in this study is suitable for processing using the SMART PLS application."

Description Test.

The results of the descriptive test calculations are presented in the table below

Table 3. Result Of The Descriptive Test

Variable	Indicators	Mean
Core Capability	CC1-CC7	2,856-3,098
Infrastructure Capability	IC1-IC4	2,773-2,864
Supply Chain Visibility	SCV1-SCV3	2,765-2,902
Logistics Operation	LO1-LO4	2,750-2,894
Technology and Innovation	TI1-TI3	2,780-2,894
Customer Satisfaction	CS1-CS3	2,780-2,894
Digital Transformation	DT1-DT8	2,765-2,902

Source : Questionnaire (2024)

Considering the information in the table above, it can be explained that the mean value of each of the variables is below 3.400. (Waskito 2023)explains that variables that are worth researching are those with values below 3.400 (fairly good), thus providing researchers the opportunity to identify the causes and allowing the author to make improvements regarding the issues. Considering that the mean value is below 3.400 and referring to (Waskito 2023) opinion, it can be explained that the indicators of each variable are suitable for research because they have fairly good values, thus providing an opportunity for improvement

Hyphothesis Test Result

In quantitative research, adherence to scientific rigor necessitates a thorough examination of the proposed hypotheses. This process not only involves validating the hypotheses but also documenting the outcomes, whether they confirm or refute the initial assertions. To align with the standards of scientific research, the author meticulously conducted hypothesis testing on the formulated hypotheses.During this hypothesis testing phase, crucial statistical data were generated, specifically the calculated t-value and the p-value. According to (Waskito 2023), a calculated t-value that surpasses the critical threshold indicated by the table t-value serves as evidence that the hypothesis holds true, illustrating a positive correlation between the exogenous and endogenous variables. Additionally, the p-value plays a pivotal role in determining significance. A p-value less than 0.05 signifies that the influence of the exogenous variable on the endogenous variable is statistically significant.When both conditions are met—where the calculated t-value exceeds the table t-value and the p-value falls below the 0.05 threshold—researchers can confidently assert a positive and significant relationship between the variables in question. Conversely, if the calculated t-value is less than the table t-value, this indicates a lack of influence from the exogenous variable on the

endogenous variable. Moreover, a p-value exceeding 0.05 further reinforces the conclusion that no positive impact exists.The findings from this rigorous testing process are summarized in the following table, providing a clear overview of the results obtained during the hypothesis testing phase.

Table 4.Hyphothesis Test Results

	T Statistics	P Values
Core Capability -> Digital Transformation	3,714	0,000
Customer Satisfaction -> Digital Transformation	0,922	0,357
InfrastructureCapability -> Digital Transformation	0,163	0,870
Logistics Operation -> Digital Transformation	2,272	0,023
Supply Chain Visibility -> Digital Transformation	13,799	0,000
Technology and Innovation -> Digital Transformation	2,833	0,005

Source ; Questionnaire (2024)

The table t-value according to (Waskito 2023) is 0.676. Using the information in the table above and referring to (Waskito 2023) opinion, it can be explained that it is proven that: There is a positive and significant influence of Core Capability on Digital Transformation because the calculated t-value is 3.714 > 0.676 and the p-value is 0.000 < 0.050.

1. There is a positive but not significant influence of Customer Satisfaction on Digital Transformation because the calculated t-value is 0.922 > 0.676 and the p-value is 0.357 > 0.050.
2. There is a negative but not significant influence of Infrastructure Capability on Digital Transformation because the calculated t-value is 0.163 < 0.676 and the p-value is 0.870 > 0.050.
3. There is a positive and significant influence of Logistics Operations on Digital Transformation because the calculated t-value is 2.272 > 0.676 and the p-value is 0.023 < 0.050.
4. There is a positive and significant influence of Supply Chain Visibility on Digital Transformation because the calculated t-value is 13.799 > 0.676 and the p-value is 0.000 < 0.050.
5. There is a positive and significant influence of Technology and Innovation on Digital Transformation because the calculated t-value is 2.833 > 0.676 and the p-value is 0.005 < 0.050."

Coefficient Of Determination Test

Table 5.R Square

	R Square	R Square Adjusted
Digital Transformation	0,957	0,955

Source : Questionnaire (2024)

The information in the table above explains that the R Square value from this research is 0.957. The meaning of the R Square value = 0.957 is that the coefficient of determination from the research is 0.957 x 100% = 95.70%. The meaning of the coefficient of determination value of 95.70% is that the exogenous variables, which consist of factors related to logistics capability (Core Capability, Customer Satisfaction, Infrastructure Capability, Logistics Operation, Supply Chain Visibility, Technology and Innovation), together contribute positively

and significantly to the digital transformation variable by 95.70%. The remaining 100% - 95.70% = 4.30% is influenced by internal and external variables that were not examined in this study. Internal variables suspected to also influence the digital transformation variable include leadership style, organizational culture, employee motivation, company compensation given to employees, and commitment. External variables considered in this research, which are suspected to influence digital transformation, include changes in politics, economy, social, culture, technology, information, consumer behavior, and public health.

CONCLUSION

The indicators for all the variables studied have average values of less than 3.400 and can be categorized as indicators of variables that are fairly good but not yet satisfactory, thus qualifying them for further research

The research results have proven that

1. There is a positive and significant influence of Core Capability on Digital Transformation because the calculated t-value is 3.714 > 0.676 and the p-value is 0.000 < 0.050.
2. There is a positive but not significant influence of Customer Satisfaction on Digital Transformation because the calculated t-value is 0.922 > 0.676 and the p-value is 0.357 > 0.050.
3. There is a negative but not significant influence of Infrastructure Capability on Digital Transformation because the calculated t-value is 0.163 < 0.676 and the p-value is 0.870 > 0.050.
4. There is a positive and significant influence of Logistics Operations on Digital Transformation because the calculated t-value is 2.272 > 0.676 and the p-value is 0.023 < 0.050.
5. There is a positive and significant influence of Supply Chain Visibility on Digital Transformation because the calculated t-value is 13.799 > 0.676 and the p-value is 0.000 < 0.050.
6. There is a positive and significant influence of Technology and Innovation on Digital Transformation because the calculated t-value is 2.833 > 0.676 and the p-value is 0.005 < 0.050."

The coefficient of determination value of 95.70% means that all the exogenous variables in this study collectively influence digital transformation, with a positive effect of 95.70%. The remaining 4.30% is influenced by internal and external variables that are not discussed in this study.

Recommendations

Considering the research results that indicate the average values of the indicators for all variables are fairly good but not optimal, the author recommends that all indicators across all variables in this study should be improved simultaneously. However, taking into account the resource limitations of PT Pos Indonesia, priority should be given to improving the indicators related to customer satisfaction and infrastructure capability. Detailed improvements have been explained in the discussion section.

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