

The Role of Dynamic Capability toward Knowledge Management, Innovation, Technology Information of 3PL Provider Indonesia

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Abstract— In a highly competitive global economy, every company depends on how much innovation and creativity it has. This study aims to analyze the effect of Knowledge Management, Innovation, Information Technology on Dynamic Capabilities for two groups; the first group is 3PL Provider in Jakarta and group 2 is the 3PL provider from outside Jakarta. The research sample is 200 people. The data analysis technique used Structural Equation Modeling (SEM), with PLS (Partial Least Square) software. The study results prove that Knowledge Management, Innovation, and Information Technology affect the Dynamic Capability of 3PL Providers in Jakarta and outside Jakarta.

Keywords— Knowledge Management, Innovation, Information Technology, Dynamic Capability

1. Introduction

The Logistics industry has grown in recent years and has become a determining factor in the success of supply chain management processes applied to manufacturing and services industries. Countries that have high logistics performance indicators tend to have high economic growth and development quality [1]. The level of competitiveness of these industry players is also getting tighter with the increasingly open concept of borderless inter-country trade due to globalization and the increasing number of foreign players taking part in Indonesia's activities. The government has great attention to the logistics industry, so it is necessary to regulate it in a national policy at a Presidential Regulation or Government Regulation level by involving multi-sectors [2]. The importance of this competitiveness is to provide added value for industry players (3PL) to adapt globally [1].

One of the concerns is the importance of the knowledge base competence of logistics operators (HR), which refers to global logistics industry

standards and their competency standards as a form of expertise that is certified and recognized both nationally, regionally and internationally. According to research conducted by KEN Research, there is an expectation of a significant increment of the Indonesian logistics market by 2021. Knowledge Management is currently a topic of serious study or academic knowledge transfer. Faculty within universities and other learning institutions have been concerned with the processes of knowledge transfer and the creation and application of knowledge for several millennia. Knowledge Management, now in enterprise reality, is, therefore, a new and complex approach. But understanding what Knowledge Management is in an organization is not an easy task, as it crosses almost each of its components.

Increasing competitiveness requires integration in organizational networks, emphasizing logistics and supply chain management [3] and [4]. Industrial Growth Rate in Figure 1, based on data from the BPS - Statistics Indonesia in 2020, recorded growth in the logistics sector in the first quarter of 2020 of 1.27%. Meanwhile, the logistics sector in the first semester of 2019 grew by 5.45%. With this figure, the logistics sector contributed to the GDP in the first quarter of 2020 by 5.17%. The logistics sector includes the sub-sector of warehousing and transportation support services, postal and courier services. The logistics sector also consists of the transportation sub-sector per mode; rail, land, sea, air, also per rivers, lakes, and crossings.

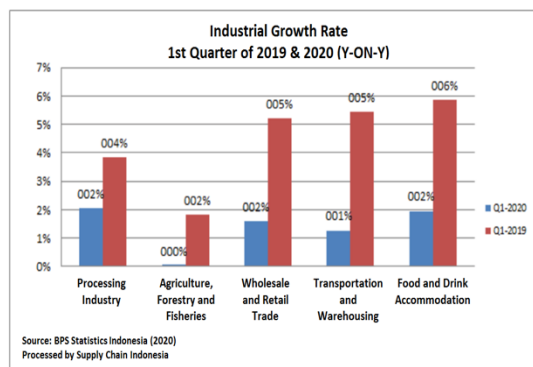


Figure 1. Industrial Growth Rate

The development of Indonesia's Logistics Performance Index (LPI) score and ranking has had its ups and downs. The LPI score scale ranges from 1-5, with the 5th largest scale. In 2010, the scores and rankings experienced a sharp decline to 75th place (2.76 scores). Previously in 2007, the position was in 43rd place (3.01 score). However, the decrease in LPI's score and ranking in 2010 seems to be a momentum for improving Indonesia's logistics performance. In the first quarter of 2020, there was a decline in growth in these sectors, both the manufacturing industry (-1.79%); food and drink accommodation (-3.92%); trade (-3.61%); and agriculture, forestry, and fisheries (-1.80%).

Managing a company from a knowledge point of view means aligning behavior and cooperation directed at the organization's shared goals and values as a whole [5]. Several previous studies related to knowledge management that affect Dynamic Capability are [6] and [7] research. Meanwhile, research by [8], [9], and [10] states that Innovation affects Dynamics Capability. Research related to information technology has an impact on Dynamic Capability conducted by [11].

This study aimed to analyze the effect of Knowledge Management, Innovation, and Information Technology on Dynamic Capabilities for two groups; 3PL providers in Jakarta and outside Jakarta. The results of this study were to provide benefits to the development of Management theory, information to companies and government agencies regarding Knowledge Management, Innovation and Information Technology on Dynamic Capability. So later, it can be used as material for consideration in formulating policies and strategies related to Human Resource Development and Logistics Management.

2. Literature Review

Dynamic Capability represents the company's ability to create new manufacturing processes and products/services to respond quickly to environmental changes. Reliable Dynamic Capability for the form of knowledge that can create value for the company both with innovation and transformation from input to output to obtain a sustainable competitive advantage [12] and [13]. The benchmark of Dynamic Capability is the company's adaptability in responding to changes and demands of its industry, improving the performance of the chemical manufacturing industry sector in facing global competition and the free market.

Information Technology is a means or tool used in anticipating the development of needs influenced by the digitization of the information process to accelerate the internal improvement process and increase the organization's ability to obtain the convenience and expedite the process in raising competitive advantage [14].

Innovation can improve organizational ability to create differentiation in utilizing knowledge to increase competitive advantage and organizational performance [15] and [16].

Knowledge Management is the process of creating, sharing, using and managing the knowledge and information of an organization. It refers to a multidisciplinary approach to contribute to achieving organizational goals by utilizing knowledge to the fullest. Furthermore, [17] said Knowledge management is concerned with exploiting and developing an organization's knowledge assets to advance organizational goals. Managing the knowledge includes both explicit, documented knowledge and tacit also subjective knowledge. Management requires all processes related to the identification, sharing and creation of knowledge.

3. Research Methods and Samples

This study uses a questionnaire to identify problems related to 3PL providers in Jakarta and 3PL providers outside Jakarta. The questionnaire used the Likert scale starting from strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The analysis method used the Structural Equation Modeling Partial Least Square (SEM PLS) to determine Knowledge Management, innovation, information technology on the Dynamic Capability of 3PL providers outside Jakarta.

4. Analysis and Discussion

4.1. Analysis

4.1.1. Convergent validity test

Table 1 Convergent Validity Test Results

Variable	Indicator	Group 1		Group 2	
		Outer Loading	Information	Outer Loading	Information
Knowledge Management (X1)	X1.1	0,935	Valid	0,857	Valid
	X1.2	0,902	Valid	0,826	Valid
	X1.3	0,868	Valid	0,861	Valid
	X1.4	0,606	Valid	0,590	Valid
	X1.5	0,932	Valid	0,867	Valid
Innovation (X2)	X2.1	0,930	Valid	0,896	Valid
	X2.2	0,906	Valid	0,897	Valid
Information Technology (X3)	X3.1	0,926	Valid	0,890	Valid
	X3.2	0,962	Valid	0,929	Valid
	X3.3	0,931	Valid	0,928	Valid
Dynamic Capability (Y1)	Y1.1	0,921	Valid	0,880	Valid
	Y1.2	0,912	Valid	0,777	Valid
	Y1.3	0,889	Valid	0,815	Valid
	Y1.4	0,928	Valid	0,886	Valid
	Y1.5	0,821	Valid	0,834	Valid

Source: Primary Data Processed (2021)

4.1.2. Reliability Test

Table 2. Value of Average Variance Extracted (AVE), Cronbach's Alpha (CA) and Composite

Variable	Group 1			Group 2		
	Cronbach's Alpha	Composite Reliability	AVE	Cronbach's Alpha	Composite Reliability	AVE
Knowledge Management (X1)	0,864	0,902	0,651	0,905	0,931	0,735
Innovation (X2)	0,755	0,891	0,803	0,815	0,915	0,843
Information Technology (X3)	0,904	0,940	0,839	0,934	0,958	0,883
Dynamic Capability (Y1)	0,895	0,922	0,705	0,937	0,953	0,801

Source: Primary Data Processed (2021)

The population of this research is the 3PL providers in Jakarta and 3PL outside Jakarta, with a total sample of 200 people.

4.1.3. Evaluation of the Structural Model (Inner Model)

The Goodness of Fit Index (GoF) test is to validate the combined performance of the measurement

model (outer model) and structural model (inner model).

Table 3. GoF Result Test and Q2 Group 1, Group 2

Measurement Type	Group 1		Group 2	
	GoF	Q2	GoF	Q2
The calculation results	0,695	0,644	0,730	0,654
Interpretation	Big	Good	Big	Good

Source: Data processed by researchers (2020)

Table 3 shows the Goodness of Fit Index (GoF) of Group 1 with the value of 0.695.

The results of the calculation of the Goodness of Fit Index (GoF) Group 2 show a value of 0.730.

Based on these results, the conclusion is that the combined performance of the measurement model (outer model) and structural model (inner model) is a strong GoF because the Goodness of Fit Index (GoF) value is more than 0.36 (large-scale GoF).

4.1.4. Hypotesis Test

Calculate SmartPLS version 3.0 bootstrapping is used to evaluate the path coefficient values. The results show the path coefficient, which describes the strength of the relationship or influence between constructs/variables.

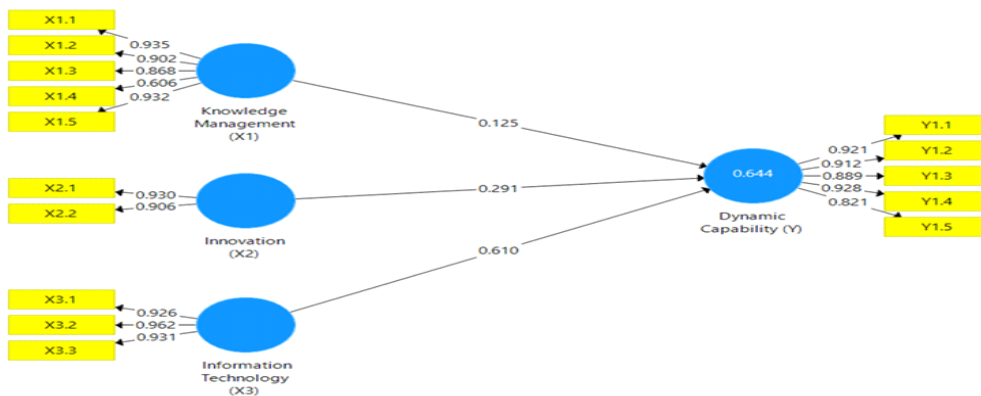


Figure 2. Calculation Results of Path coefficient Measurement Model (Inner Model) Group 1

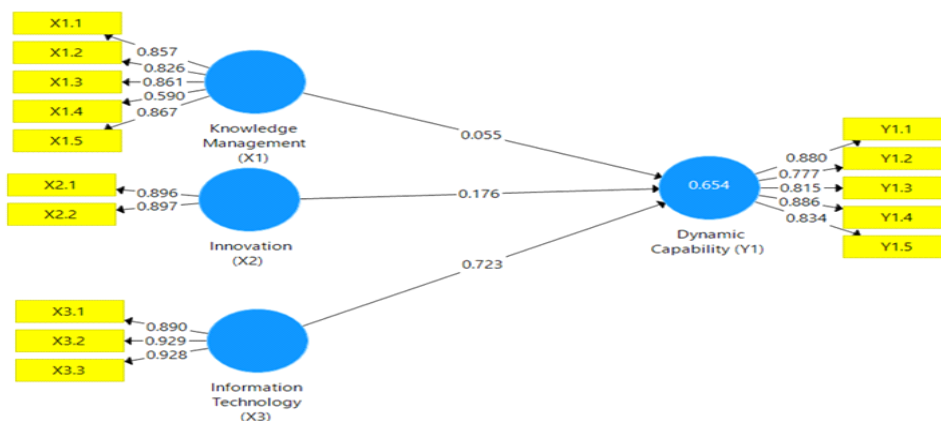


Figure 3. Calculation Results of Path coefficient Measurement Model (Inner Model) Group 2

B

combined performance of the measurement model (outer model) and structural model (inner model) is a large GoF because the Goodness of Fit Index (GoF) value is more than 0.36 (large-scale GoF).

The structural model tested nine hypotheses of the relationship between variables (direct effect). Table 4 shows the full testing results of the relationship between research variables.

Table 4. Research Hypothesis Testing Results (Direct Effect)

Hypothesis	Relationship between Variables	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Information
Group 1						
H1	Knowledge Management (X1) -> Dynamic Capability (Y)	0,125	0,006	22,559	0,002	Significant
H2	Innovation (X2) -> Dynamic Capability (Y)	0,291	0,006	51,038	0,000	Significant
H3	Information Technology (X3) -> Dynamic Capability (Y)	0,610	0,019	32,041	0,001	Significant
Group 2						
H1	Knowledge Management (X1) -> Dynamic Capability (Y)	0,055	0,001	37,070	0,001	Significant
H2	Innovation (X2) -> Dynamic Capability (Y)	0,176	0,020	8,730	0,013	Significant
H3	Information Technology (X3) -> Dynamic Capability (Y)	0,723	0,012	61,574	0,000	Significant

p-value < 0,05 = significant at .05 level

Source: Primary data processed (2021).

4.2. Discussion

Hypothesis 1: Knowledge Management affects Dynamic Capability

Research proves in Group A and Group B that Knowledge Management has a positive and significant effect on Dynamic Capability. This indicates that the better Knowledge Management, the higher the Dynamic Capability. In Group A, the most influencing indicator is gathering and acquiring knowledge according to the organization's needs. In contrast, the most influencing indicator in group B is Method and Access for each member to download the required knowledge.

Hypothesis 2: Innovation affects Dynamic Capability

The test results state that Innovation has a significant effect on Dynamic Capability. The positive coefficient indicates that the higher the Innovation, the higher the Dynamic Capability. In Group A, the most influencing indicator is the innovation of existing products/services, while in

group B the indicator that most influences is distribution system innovation.

Hypothesis 3: Information Technology affects Dynamic Capability

This study states that Information Technology has a significant effect on Dynamic Capability.

The positive coefficient indicates that the higher the Information Technology, the higher the Dynamic Capability.

For Information technology variables in Groups A and B, the most influencing indicator is IT that is integrated into the business unit structure. The Dynamic Capability indicator variable affects the adaptation in managing the business model.

5. Conclusions and Suggestions

This research proves that Knowledge Management, Innovation, Information Technology increase Dynamic Capability for two groups of 3PL providers in Jakarta and outside Jakarta. Another result of this study suggests that dynamic capabilities are an essential intermediary organizational mechanism through which the benefits of KM capabilities are transformed into performance effects at the enterprise level. That is, KM capabilities increase the dynamic capabilities of the organization. In contrast, dynamic capabilities, in turn, improve organizational performance and provide a competitive advantage.

Suggestions for further research are to develop other variables that affect Dynamic Capability. Evaluation needs to extend to improve the services provided to create maximum customer satisfaction. So far, there has been no particular assessment method to evaluate the company's 3PL performance.

Acknowledgments

The authors would like to thank :

1. Ministry of Research and Higher Education of the Republic Indonesia that funded this research
2. Mercu Buana University Jakarta Indonesia
3. 3PL organization in Indonesia

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