

**DIGITAL TRANSFORMATION FOR ENHANCING LSP
(LOGISTIC SERVICE PROVIDER) PERFORMANCE****Muhammad Taufani ^{1*}, Anton Wachidin Widjaja ²**¹Faculty of Economy and Business, University of Indonesia²Faculty of Business, President University

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ABSTRACT:

Digital transformation has recently become a way to attain competitive advantages and company differentiation. Digital transformation encompasses an organization's ability to adapt, respond, and position itself for success in the face of rapid technology evolution. However, the implications are of the digitalization of processes for the performance of companies is still unclear as the transition from one process to another is a challenge for everyone involved that impact on firms' performance. This research endeavors to address the question of how to enhance digital transformation for better performance through exploring the relationships among firms' adaptability, resource orchestration and innovation capability. This study used questions formulated using indicator that has been developed on previous study, which enables respondents to display a favorable or unfavorable attitude toward the object of interest. This study was conducted using the survey method. Data were collected using questionnaires sent to 70 middle managers and top-level management of logistics service provider companies that are based in Indonesia. Then the structural equation modeling (SEM) path analysis were adopted to test all hypotheses as developed in this study. This study seeks to contribute to a better understanding of digital transformation by analyzing adaptability, resource orchestration and innovation capability that led companies to adopt new digital transformation and their consequences in terms of performance. The overall impact regarding the digital transformation to logistic firms' performance seems to be moderately positive. The research presented gives an indication of the impact of the adaptability, resource orchestration, and innovation capability being central for Digital Transformation in logistics firms.

Keywords: *Digital Transformation, Adaptability, Resource Orchestration, Innovation Capability, Firm Performance*

1. Introduction

Digital transformation and resultant business model innovation have fundamentally altered consumers' expectations and behaviors, pressured traditional firms, and disrupted numerous markets (Verhoef et al., 2021). Digital transformation is described as a process that required a system that might achieve real-time transparency from suppliers to customers, connected processes, decentralized, and autonomous management (Coskun-Setirek & Tanrikulu, 2021). Some companies actively adapt to this environmental change and uncertainty, seize business opportunities, change business behavior, and start digital transformation, because it can ensure that companies remain competitive in the rapidly changing business environment (Chen & Tian, 2022). Research shows that digital transformation can promote business innovation, enhance customer consumer experience (Zaki, 2019), and improve performance (Ferreira et al., 2019; Martínez-Caro et al., 2020). With the continuous influx of technological innovation, Digital Transformation has

completely changed the business and could offer novel opportunities (Verhoef et al., 2021).

By continuing to develop technology and information, technology can become a force for companies to maintain the life and sustainability of the company, including logistic service providers (LSP) that applies technology in various fields (Cichosz, M et al., 2020). Compared with most other industries such as media, telecommunications, banking, and retail, the fact that logistics lags far behind the digital curve makes this difficult situation worse (Cichosz, M et al., 2020). Digital Transformation is an important tool to establish future and sustainable logistics system that suitable for logistic firms in uncertain situation (Cichosz, M et al., 2020). Traditional logistics companies suffer from underutilization of assets, outdated and inefficient manual processes, and low transparency in the logistics industry exacerbates the already fragmented industry that help reduce response time (Karia, 2018). It requires strategic knowledge resources to maintain its competitive strategy and position in the overall and virtual environment. In general, the company strategically acquires knowledge and technical resources to ensure service and improve their performance (Karia, 2018) which are in the long run will enhance business processes and/or decision making and differentiate them from potential competitors (Karia, 2018).

Given the benefits of digital technology, can be identified, including consumer sensitivity, as well as low capacity and security (Herold et al., 2021), increased productivity (on-time delivery), cost reduction and innovation, where LSP can remain competitive and cultivate their performances' (Coskun-Setirek & Tanrikulu, 2021). Moreover, logistic-Service Provider performances reflects the performance of an organization to its ability to deliver goods and services in precise quantities and precise times required by customers (Burroughs & Burroughs, 2020; Herold et al., 2021). Technology and logistics systems cannot be avoided to become a unit in balancing changes in the era of globalization. From a management and technical point of view, there are many obstacles to the implementation of digital transformation (Büyükoğkan & Göçer, 2018). On the other hand, there are many key disturbances that are challenging the livelihood and durability of logistics companies in digital era, as many studies have highlighted firms' challenges in seizing opportunities and performance provided by digital technologies, whereas digital capacity build up should not only consider information and communication technology (ICT) and technology dissemination, but also consider the overall management optimization of the enterprise, including strategy, organization, technology, business process, structure, and operating mode (Chirumalla, 2021).

For the time being, technical resources are necessary to improve logistics performances, but the adoption rate of advanced technological systems is low due to high technical investment costs, lack of IT professionals, and lack of improvement in operational efficiency (Karia, 2018). Therefore, the increasing interest of the academicians relating to the subject reflect on this empirical trend, although it has long been believed that technology is changing the nature of competition (Ritter, 2020), leading to a "new paradigm" within the Logistic industry and for LSP itself despite the evolutionary nature of competitive changes as it reflected in different stages (Mathauer & Hofmann, 2019). However, successful transformation is a problem faced by both academia and industry. Most research mainly focuses on the particular development. As we try to develop a configuration framework and propose digital transformation does not depend on a singular extent, but on the interaction between environmental uncertainty, resource orchestration (Chen & Tian, 2022), innovation capability (Ferreira et al., 2019) and adaptability (Weigelt & Sarkar, 2012). Both academia and industry recognize that performance and new business model are some criteria for reflecting the results of digital transformation. Moreover, the field of digital transformation research is complicated and there are even problems in the structure and relationship of various research topics; there is a lack of comprehensive and accurate understanding of the factors involved (Chen & Tian, 2022).

The slower rate of digital adoption brings huge risks, and if these risks are ignored, even the largest established companies in the industry can be catastrophic, as LSP needs a new source of competitive advantage (Mathauer & Hofmann, 2019) whereas technology can help improve LSP's competitive position by helping service innovation or improving existing logistics solutions (Mathauer & Hofmann, 2019). To avoid missing the latest developments, the company must constantly review its technological level and then develop solutions based on those identified needs (Burroughs, 2020). In addition, there is a lack of a development framework that provides guidance for digital adoption in the context of clear guidelines and roadmaps (Büyükoğkan & Göçer, 2018). The development of technology in LSP systems' is still far enough to be implemented, but it does not rule out the possibility of a stimulus / encouragement in the use of technology in the logistics system. With this background, this research will focus on the following questions: (1) Does digital transformation affect to logistic firms and its performance? And (2) Does adaptability, resource orchestration, and innovation capability enhance digital transformation in logistic

firms?

In this study, we connect the enablers in firm's digital transformation, such as firm's adaptability, resource orchestration, and innovation capability to orchestrate the resource for logistic service providers digital performance. As the purpose of this research is to see the application of the concept of digital transformation in the process of performance enhancement in logistic firms. Our study enriches the theoretical contribution in strategic management study, focusing on the importance of digital transformation to achieve better firms' performance through adaptability process, resource orchestration and innovation capability of the LSP. From managerial point of view, the framework can be used by firms which have plan to develop digital transformation as a key factor for better firm's performance. Thus, this section provides a few observations regarding the applicability of Digital Transformation in logistic industry and identify the gaps in the literature with respect to the potential of Digital Transformation in LSP in helping address performance and benefits for LSP. Despite the recent interest in the digital transformation trend due to its colossal potential and disruptive nature, studies that address digital transformation for LSP's benefit and challenges are still in the early stages.

2. Literature Review

Further developments in technology continue to increase the important role of technology in logistics activities and bring the concept of logistics to be more sophisticated and established in its application (Büyüközkan & Göçer, 2018). Logistics Industry in a further level is based on synchronizing various organizational activities in the supply chain and sharing real-time information among supply chain participants (Büyüközkan & Göçer, 2018). The integration of all functions and tasks involved in the logistics chain has become an important basis for achieving performance goals (Mathauer & Hofmann, 2019).

The Concept of Digital Transformation

The concept of digital transformation supports technology-based business transformation or organizational transformation supported by technology-based information system management (Heilig et al., 2017). The term "Digital Transformation" is defined as applying digital technology to the wider social and organizational environment in socio-technical processes (Tilson et al., 2010). Furthermore, Heilig et al (2017) examines the concept of digital transformation referring to a broader process in the transformation of organizations and deep systems/networks at various levels (e.g., strategy, governance, leadership, culture, resources, technology, etc.). By using digital technology concepts, operating systems in today's organizations such as new Information Technology delivery models (e.g., cloud/fog computing), internet of things, cyber-physical systems, mobile computing, blockchain, tools to support (real-time) data science (e.g., big data, machine learning), and systems that assist in decision making in the digital era (Heilig et al., 2017).

Academic research on digital transformation increases with its actual implementation, so it can provide necessary guidance for enterprises (Chen & Tian, 2022). Burroughs & Burroughs, (2020); Büyüközkan & Göçer, (2018) revealed that digital transformation has changed the way we communicate and interact with the environment. Innovations such as mobile devices, personal computers, mobile self-driving, drones, advanced television equipment, hand-ware, smartphones, and smartwatches, are changing the way people access and exchange information. In recent years, rapid innovation in information technology (IT) has moved rapidly in the development of new systems, namely the development of software applications to support and assist business activities that are ready for global technological changes (Heilig et al., 2017). Digital Transformation (specifically in logistics system) implies the need for speed in operational activities with ease in adapting to changing circumstances (Büyüközkan & Göçer, 2018) as those competencies would be the key for success factors of the LSP implementation for Digital Transformation and enacting LSP performance to more comprehensive (Chienwattanasook, K., et al., 2019). On the other hand, digital transformation can provide excellent information sharing, collaboration, and communication across digital platforms, thereby increasing reliability, adaptability, and effectiveness (Büyüközkan & Göçer, 2018).

Adaptability

Adaptability can be defined as the company's ability to identify and take advantage of emerging markets and technological opportunities (Weigelt & Sarkar, 2012), which in turn means changes in the company's strategic posture (Oktemgil and Greenley, 1997). Adaptability emphasizes the extent to which a company can use various organizational capabilities (Weigelt & Sarkar, 2012). Recent empirical evidence has shown that adaptability is the source of sustainable competitive advantage and commercialization success (Hurley

& Hult, 1998; Vorhies et al., 1999). The higher the complexity of the environment a company can handle, the higher its level of adaptability and the greater the chance of long-term survival (Oktemgil & Greenley, 1997). A networked digital resource system can be adaptable (a system that external participants can change through, for example, a graphical user interface), or it can be adaptive (it can modify itself in response to changes in the perceived environment (such as user input or system input changes in internal composition system) (Weigelt & Sarkar, 2012). For example, smart receptacles or smart boxes are suitable for tracking and tracking with different sensors. Furthermore, adaptability is described as a system's ability to connect, integrate, and share data, equipment, systems, and any process near or real time in the digital logistic system (Weigelt & Sarkar, 2012).

Resource Orchestration

Today, most organizations are undergoing digital transformation. At the same time, the severity of environmental issues has put sustainability and performance at the top of the corporate agenda. For this reason, information systems, especially business operations, are being emphasized as an important driving factor for accelerating the transformation of the system (Kristoffersen et al., 2021). However, effectively managing this joint transformation is a challenge. Companies strive to determine which organizational resources they should target and how to use these resources to achieve company-wide business analysis capabilities for a circular economy (Kristoffersen et al., 2021). For creating new values and improving the system while facing digital transformation, firms are required to design and organize their resources (Chen & Tian, 2022). Amit and Han (2017) proposed that enterprises' resource orchestration decisions should focus on obtaining resources controlled by value co-creators, and proposed a digitally supported resource orchestration process, including continuous testing, resource crowdsourcing, classification, mining, grafting, and streamlining. Existing research shows that companies can gain a competitive advantage through active resource coordination (Sirmon, Hitt, Ireland, and Gilbert, 2015).

In the digital era, firms must carefully orchestrate digital resources, use digital resource orchestration to create digital business models (Amit & Han, 2017), innovate in the logic of value creation, and promote sustainability to attract and collect more digital resources that can be further coordinated and organized (Celtekliligil & Adiguzel, 2019). Whereas logistics companies are working hard to understand how they use and reconfigure their knowledge and technical resources that affect competitive advantage (Karia, 2018). For decades, the literature has recognized that technological resources are valuable resources for gaining competitive advantage; however, the findings of the survey are contradictory (Heilig et al., 2017). Therefore, resource orchestration can effectively promote digital transformation. Therefore, when analyzing corporate digital transformation and strategic changes, it is necessary to combine digitization and resource orchestration theory (Amit & Han, 2017).

However, Sirmon et al (2011) synthesize resource management with asset orchestration (e.g., search, selection, configuration, deployment) to develop a framework of resource orchestration, which has provided theoretical anchors for subsequent empirical studies that examine how resources could be managed better internally to enhance firm performance (Kristoffersen et al., 2021; Amit & Han, 2017).

Innovation Capability

Organizational innovation is manifested as the beginning of new products, new processes, and new systems. In other words, organizational innovation is the application of a new organizational concept as an indicator of the diffusion of different organizational practices to the enterprise (Celtekliligil & Adiguzel, 2019). Moreover, Lawson and Samson (2001) define innovation capability as the ability to transform knowledge and ideas into new products, processes, and systems to achieve effective performance. Innovation capability involves knowledge, it synthesizes two operating paradigms: managing mainstream activities and creating new stream innovation. Innovation enables the company to determine and control changes in the external environment, which is important for the company's long-term competitiveness (Celtekliligil & Adiguzel, 2019). Responding a competitive dynamic environment, it is vital to develop firm's innovation capability (Ferreira et al., 2019) for sustainable competitive advantage. Innovation is a determining factor in the performance of LSP where resources with extensive knowledge are needed to maintain strategic and competitive positions in the overall and virtual environment (Ferreira et al., 2019). This is consistent with previous studies, which mentioned that innovation capabilities are an important part of corporate capabilities, and corporate capabilities are developed from specialized R&D with expertise in technical or commercial capabilities (Ferreira et al., 2019).

In 2019, Cichosz, M et al concluded that innovations carried out resulted in increased efficiency in

operational activities, increased customer satisfaction by being more agile, flexible, and responsive. Real-time collaboration and knowledge sharing between internal and external innovation teams are increased as the consequences of advancement from digital collaborative technology (Soto-Acosta, 2020). In fact, digitalization provides organizations with numerous opportunities to generate value creation within firm by transforming internal operations and real-time information sharing and collaboration with suppliers, customers, and business partners (Soto-Acosta, 2020). Therefore, the literature believes that the digital sector is a strategic tool that can not only generate innovation, but also transfer knowledge and technology (Ferreira et al., 2019). The digitization of company internal processes provides new disruptive market opportunities for companies seeking to develop and launch innovations based on entrepreneurial ideas (Ferreira et al., 2019).

Digital Transformation towards Firms' Performance

The research on corporate performance has a long history and is based on many disciplines such as economics, sociology, and organizational behavior. Many researchers try to explain why certain companies perform better than others by linking various elements of the organization to performance measures (Joong-Kun Cho et al., 2008). The relationship between digitalization and performance has been a controversial issue for decades (Martínez-Caro et al., 2020). Although there has been a lot of research on this topic, the research results are still ambiguous and inconsistent. The digital age raises new questions about how technology can improve organizational performance (Eller et al., 2020). Eller et al (2020) explain the benefits of digitalization for firms: better access to skills and talents, more market entry, wider access to financing, better collaboration and communication, and more access to technology and applications.

In order to fully tap the potential of digitalization and improve operational performance, companies should continue to accumulate digital experience, continue to invest in the digital field, and improve digital management capabilities and skills (Wang et al., 2020). Through the continuous application of digital technology, companies can promote the automation and intelligence of internal operations, significantly reduce costs, improve operational efficiency and management quality, achieve business process changes and business model innovation, and ultimately optimize customer experience (Wang et al., 2020). Firms using more digitally embedded business processes to obtain higher performance benefits from their IT capabilities (Nwankpa & Datta, 2017). Digital integration among suppliers and value chain partners can reduce coordination cost (Eller et al., 2020) transaction cost (Martínez-Caro et al., 2020) and agent cost through increased communication, transparency, and monitoring (Soto-Acosta, 2020). Performance is a multifaceted theme where the important performance theme is efficiency and effectiveness. Given the output level. On the other hand, effectiveness is related to determining revenue-maximizing strategies at certain input levels. In the case of effective use of resources, this method seeks the most effective use of resources (Wang et al., 2020). Gronroos and Ojasalo (2004) also believe that performance has two aspects: efficiency (cost-effective use of resources) and effectiveness (revenue-generating ability).

In the digital age, customers increasingly expect products, even products from traditional participants, which are related to their digital daily lives (Hanelt et al., 2020). For example, preliminary research on GM's OnStar service (Yoo, 2010) shows that digital innovation can successfully retain the attractiveness of the core products of existing companies in the industry in the digital age, thereby ensuring a source of income from physical devices and creating new Revenue from sources other than equipment sales through other layers of the layered modular architecture.

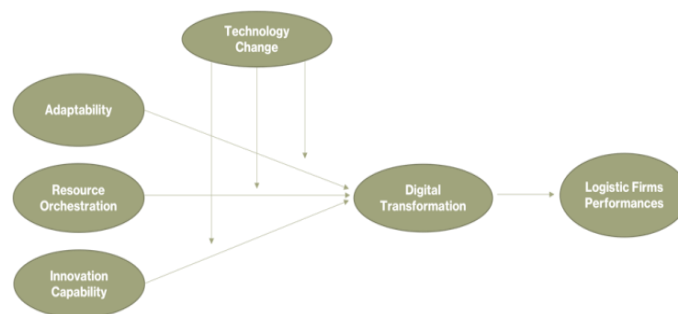


Figure 1. Research Framework
(Source: Multiple Sources, 2021)

Figure 1 shows the overall model and assumptions. A total of four hypotheses were proposed, linking technology turbulence with three “driving factors”: adaptability, resource orchestration and innovation capability. Then, continue to see the effect of digital transformation to logistics firm performance. From the preceding discussion, it is hypothesized that:

H1: Adaptability will have a positive effect on Digital Transformation implementation when moderated by Technology Turbulence.

H2: Resource Orchestration will have a positive effect on Digital Transformation implementation when moderated by Technology Turbulence.

H3: Innovation Capability will have a positive effect on Digital Transformation implementation when moderated by Technology Turbulence.

H4: There is a positive relationship between a digital transformation and LSP performance

3. Research Method

Sample and Data Collection Method

The data were collected using online survey systems and collected between August and October of 2021. For the purpose of this research, a questionnaire-based survey method was used to allow the universality and reproducibility of the results, and to facilitate the simultaneous investigation of several factors (Kristoffersen et al., 2021). Respondents were selected using purposive sampling method. Respondents were from various logistics/courier/transportation companies in Indonesia. The lists were developed by selecting organizations that were classified in one of these segments: freight forwarders, transportation, 3PLs (general definition), warehousing, distribution, and custom brokers. The questionnaire started by giving a brief description about the nature of the study and it also sought information-related firm and respondents regarding the job profile of the respondents, years of experience in logistics service and position qualification. The questionnaire adopted a seven-point Likert scale with options ranging from 1 (“strongly disagree”) to 7 (“strongly agree”) to measure the items.

Measurement

Validated measures from extant empirical studies on Digital Transformation were adapted to measure information integration from Westerman, Bonnet, and McAfee (2014); Hennelly et al., (2020), Firm Performance from Gruber et al (2010); Rai & Tang (2010), Jaworski and Kohli (1993) were adopted to elaborate the concept of technology turbulence, Resource Orchestration by using study from Choi et al., (2020); Sirmon et al., (2011); Wang et al., (2020), Innovation capability from Srivastava, P., Iyer, K. N., & Rawwas, M. Y., (2017).

Measurement of Firm Performance

There is not much consensus on which measurement tool is most suitable, although some use marketing-based measurements (Alexander & Buchholz, 1978 in Lin et al., 2020), others suggest accounting-based measurements (Cochran & Wood, 1984; Waddock & Graves, 1997 in Lin et al., 2020), and in some studies, both was adopted (McGuire, Sundgren, & Schneeweis, 1988 in Lin et al., 2020). Companies in the logistic industry are increasingly characterized by time-based competition, which requires companies to respond quickly to customers demand and market changes (Rai & Tang, 2010). We adapted the project of in Lin et al (2020), Gruber et al (2010) and Rai & Tang (2010) Assess the company's customer service level and ability to respond to changing environments, compared with the main competitors in the past three years, as a proxy for company performance, these measures have been used in previous studies.

Respondents were asked to evaluate how well their company has improved in different organizational performance areas over the past five years. The question is measured using a likert seven-point scale (1- Completely Disagree; 7- Completely Agree).

Measurement of Adaptability

Adaptive structures are implemented through the use of previous measurement items conducted by Weigelt & Sarkar, (2012), such as technology deployment models (Anttila et al., 1995), customer intimacy and competitor focus (Moller and Anttila, 1987), structural arrangements and management systems (Aiken and Hage, 1968; Jaworski and Kohli, 1993; Menon et al., 1997 in Weigelt & Sarkar, 2012), combined with variables developed for this survey (Tuominen, 1997). All items are measured using the likert seven-point scale.

Measurement of Innovation Capability

Innovative projects assess the extent to which companies are (1) successful in research and development, (2) the quantity and quality of technological innovation, (3) accelerated product development, and (4) the development and capabilities of marketing opportunities that all explained in study from Srivastava et al (2017) (e.g., Moorman, 1995; Baker & Sinkula, 1999). All items are scored using a likert seven-point system, ranging from disagree to agree. The four judgmental performance items collectively reflect the overall innovation of the business.

Measurement of Digital Transformation

In this study, the digital transformation was measured using five tools adopted by Westerman, Bonnet, and McAfee (2014). This structure encapsulates two dimensions: digital components embedded in physical products and digital capabilities embedded in operational processes. The digital two-dimensional structure is measured using a likert seven-point system, ranging from disagree to agree.

Methods of Data Analysis

Data analysis is used as the foundation upon respondent data to be statistically shown. The conceptual research model will be analyzed and tested by using two-steps approach: analyzing measurement model analysis and structural model analysis (Wijanto, 2008). There are five processes for data analysis in this study: 1) Analyzing measurement model; 2) Analyzing structural model to analyze the relationship among all latent variables; and 3) Analyzing each hypothesis and structural model. The data processing technique uses the SEM method based on Smart Partial Least Square (SmartPLS). Data analysis and processing was carried out using partial least squares (PLS) with the help of SmartPLS 3.0 software. It will be carried out in two tests, namely reflective construct testing and formative construct testing.

4. Result and Discussion

Convergent Validity

1. Adaptability, it shows the loading factor value is above 0.70 so that all indicators on the adaptability variable can be used.
2. Resource Orchestration, it shows the loading factor value is above 0.70 so that all indicators on the adaptability variable can be used.
3. Innovation, it shows the loading factor value is above 0.70 so that all indicators on the adaptability variable can be used.
4. Technology Turbulence, it shows that there is a loading factor value below 0.70. Therefore, the modification of the model is done by removing indicators that have a loading factor value below 0.70. The Outer Loadings Variable Technology removed from the model are: TECH1.
5. Digital Transformation, it shows the loading factor value is above 0.70 so that all indicators on the adaptability variable can be used.
6. Firm Performance, it shows the loading factor value is above 0.70 so that all indicators on the adaptability variable can be used.

Composite Reliability

In testing the reliability of the construct used two measurements, namely the composite reliability and Cronbach alpha. Construct reliability, both composite reliability and Cronbach's alpha, was measured to vary from 0 to 1, with 1 being a perfect estimate of reliability, but the construct was declared reliable if the composite reliability and Cronbach's alpha values were greater than 0.7. The following in table 1, the reliability of the studied variable construct is presented.

The coefficient of determination (R-square) of the three equations, it is known that the Digital Transformation model which is influenced by three variables namely Adaptability, Resource Orchestration and Innovation Capability has a coefficient of determination of 0.737. This means that 73.7% Digital is influenced by the three independent variables. Thus, this model is "good" in explaining the size of the Digital. The value of the coefficient of determination (R-square) of the three equations, it is known that the performance model is influenced by the variable, namely the Digital transformation of the coefficient of determination of 0.522. This means that 52.2% of LSP is influenced by the independent variable. Thus, this model is "sufficient" in explaining LSP.

Table 1. Composite Reliability dan Cronbach Alpha

Variable Latent	Composite Reliability	Value	Cronbach's Alpha	Value	Notes
Adaptability	0.886		0.841		Reliable
Digital	0.941		0.921		Reliable
Innovation	0.937		0.91		Reliable
Performance	0.928		0.897		Reliable
Moderating Effect 1 Adaptability	1	0.7	1	0.7	Reliable
Moderating Effect 2 Innovation	1		1		Reliable
Moderating Effect 3 Resource	1		1		Reliable
Resource	0.942		0.922		Reliable
TechnologyTurbulence	0.7		0.7		Reliable

Source: SmartPLS 3.0 Calculation

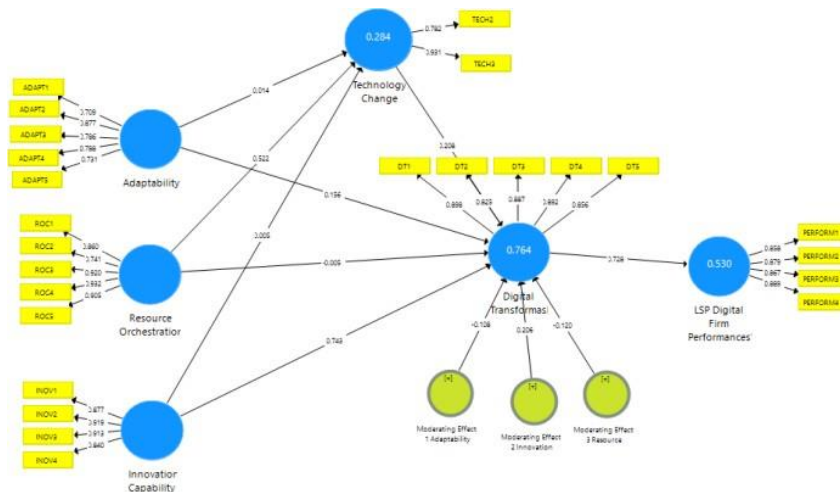


Figure 2. Model after Re-Modification

Inner Model Testing

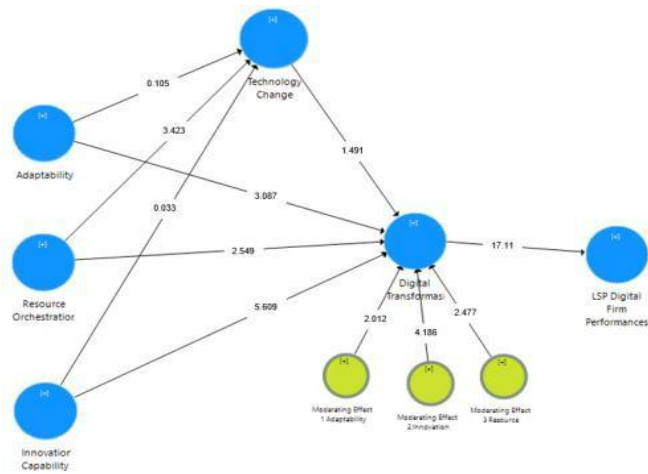
Table 2. R-Square

	R Square	R Square Adjusted
DT	0.769	0.737
FP	0.530	0.522

Source: SmartPLS 3.0 Calculation, 2021

Testing Hypothesis

Hypothesis testing is a procedure that will result in a decision (accept/reject the hypothesis). Hypothesis is an important part of research, because with a hypothesis, research will be directed. Therefore, the hypothesis must be tested for truth through statistical tests. In this study, after all indicators are valid and reliable, digital, resources and innovation will be tested on digital transformants moderated by technology variables and the influence of digital informants on digital LSP as shown in the following figure.



(Source: SmartPLS 3.0 Calculation, 2021)

Hypothesis testing is carried out through the T Statistics value and the Probability value (P Value) of the influence between the variables by looking at the parameter coefficient values contained in Table 3 below.

Table 3. Path Coefficient

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Adaptability -> Digital	0.156	0.156	0.106	3.087	0.002
Digital -> LSP	0.728	0.738	0.043	17.110	0.000
Innovation -> Digital	0.743	0.709	0.133	5.609	0.000
Moderating Effect 1					
Adaptability -> Digital	-0.108	-0.111	0.101	2.012	0.045
Moderating Effect 2					
Innovation -> Digital	0.206	0.152	0.180	4.186	0.000
Moderating Effect 3					
Resource -> Digital	-0.120	-0.081	0.156	2.477	0.014
Resource -> Digital	-0.005	0.026	0.138	2.549	0.011

Source: SmartPLS 3.0 Calculation, 2021

From the results of the Path Coefficient above, it shows the influence of direct variables as follows:

1. Adaptability to Digital Transformation

Based on the table above, the p value of Moderating Effect 1 is $0.045 < 0.05$, which means that adaptability has an influence on digital transformation when moderated by technology turbulence.

2. Innovation towards Digital Transformation

Based on the table above, the p value of Moderating Effect 2 is $0.000 < 0.05$, which means that the ability of innovation has an influence on digital transformation when moderated by technology turbulence.

3. Resources Orchestration towards Digital Transformation

Based on the table above, the p value of Moderating Effect 3 is $0.014 < 0.05$, which means that resource orchestration has an influence on digital transformation when moderated by technology turbulence.

4. Digital against Logistics Firms Performance

Digital Transformation effects on logistic firms' performance has a path coefficient of 0.728 and the effect is significant, because the p value is $0.000 < 0.05$. Therefore, the hypothesis that digital transformation has a

direct positive effect on logistic firm performance is rejected.

5. Discussion and Implications

The overall impact regarding the digital transformation to logistic firms' performance seems to be moderately positive. The research presented gives an indication of the impact of the adaptability, resource orchestration, and innovation capability being central for Digital Transformation in logistics firms. This study explored the impact of digital transformation in logistics firms' performance and answered what are the digital transformation enablers from innovation, orchestration of firm's resources and innovation capability. The most existing literatures pointed out how the adoption of digital transformation supports the logistics firm performance and which benefits have been obtained through digitalization. Therefore, this study represents how digital transformation in logistics has still not reached the peak level, as it is still in an early phase and many variables and construct to explore. For this reason, digital implications can be improved and changed over the years with the maturity level of logistic industry. However, this paper has a few limitations. The following areas summarize these potential limitations, considering the dimensions of all variables, there is one variable that not covered based on the factor loading calculation that may open to discuss the suitable dimensions for technology turbulence variable. Another area to improve, are how to interpret the variable to make the participants are understand about the purpose of the study.

This research also contributes to the existing research since it shows the alignment between adaptability, resource orchestration, and innovation capability for supporting digital transformation. This research certainly gives another insight about the alignment between digital transformation and firm performance. However, future studies are welcomed to be conducted to find a framework to capture those three concepts in one map. Also, another study that can be conducted is to determine the performance indicators for the alignment framework. Therefore, the current review and framework can provide insights for the application of academicians and practitioners about digital transformation of the logistics industry. As far as the future research of this study is concerned, the three main driving factors of digital transformation are integrated into the development framework in order to seek better corporate performance improvement. Further research is needed to evaluate and evaluate the relative importance of the framework stages for implementation and verification in logistic industry.

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