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Unpacking Logistics Capability: A Qualitative Exploration of 3PL Practices and Pressures in Indonesia

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Abstract

The rapid growth of Indonesia's logistics has intensified the demand for robust logistics capabilities, particularly among third-party logistics (3PL) providers. Despite their strategic role in enabling supply chain performance and customer satisfaction, limited empirical research has investigated how these capabilities are built, maintained, and challenged in emerging market contexts. This study aims to explore the key dimensions of logistics capability within Indonesian 3PL firms. Using a qualitative exploratory design, we applied the Gioia methodology to analyze data from semi-structured interviews with senior managers from five large Indonesian 3PL companies. Our findings reveal six interconnected dimensions of logistics capability: operational logistics, customer orientation, information management, integration, innovation, and green logistics & compliance. These capabilities are underpinned by robust resources, including skilled human capital, advanced IT systems, and logistics infrastructure. However, their development is often constrained by external and internal pressures, including regulatory uncertainty, uneven infrastructure development, digital transformation gaps, workforce shortages, and the fragmented structure of the Indonesian logistics market. This study offers a context-sensitive understanding of logistics capability in practice, shedding light on how firms in emerging economies navigate institutional and operational complexities. This research contributes to logistics and managerial practice, which are valuable for logistics practitioners aiming to enhance performance and policymakers designing frameworks to support capability development in Indonesia's evolving 3PL sector.

Keywords
Logistics capability, 3PL, Qualitative research, Gioia methodology, Dynamic capability.

1. Introduction
Although logistics has an important role, Indonesia faces several challenges. One of them is Indonesia's geographical condition as an archipelagic country with more than 17,000 islands, ranging from large to small and remote islands (CNN Indonesia, 2024). This requires the support of logistics infrastructure that can reach remote areas. Logistics infrastructure is concentrated in Java Island, while eastern Indonesia still needs to catch up regarding transportation access and logistics facilities. The current limitations of inter-island infrastructure cause high logistics costs.

Logistics has emerged as a critical pillar of business strategy in the increasingly globalized and turbulent economic environment. Logistics activities significantly influence environmental outcomes, prompting a need to balance cost efficiency with ecological and social impact (Abbasi & Nilsson, 2016; Dey et al., 2011). The Indonesian government also encourages the implementation of environmentally friendly logistics practices through various regulations, policies, and initiatives aimed at reducing the negative environmental impact of logistics activities. In addition, Indonesia, as one of the countries with the largest Muslim population in the world, has a very large need for a logistics system that meets halal rules. The growing demand for halal products has led to an increasing number of halal certification services in both Muslim and non-Muslim countries.

There is a need to outsource some or all the logistics functions to external service providers; this is where 3PL plays a major role. This evolving behavior has placed significant pressure on logistics firms to upgrade their capabilities. 3PL providers play a crucial role in enabling firms to meet such expectations without having to develop extensive in-house logistics infrastructure. Therefore, understanding and improving logistics capabilities within 3PL companies is critical to achieving high service quality, cost efficiency, and strategic alignment with customer needs (Wong et al., 2011). The role of 3PLs is becoming increasingly important as it helps companies address complex challenges of efficiency, visibility, sustainability, and technology integration in the supply chain. Therefore, understanding and developing logistics capabilities in the 3PL sector is key to success in todays and future competitive logistics industry. Many studies related to logistics capability have been conducted to identify the main constructs and reliable dimensions of logistics capability (Aziz et al., 2020; Gligor & Holcomb, 2012; Joong-Kun Cho et al., 2008; Mandal, 2016; Mentzer et al., 2004; Morash et al., 1996). A small portion of this literature focuses specifically on 3PL providers (Bagais & Aljaaidi, 2020; Evangelista et al., 2012; Kumar & Prashar, 2024; M. Wang et al., 2015, 2018; M. Wang, 2020a), highlighting the relationship between logistics capability and firm performance and resource configuration. However, these studies mostly use quantitative approaches to confirm the impact of logistics capability on firm performance, especially in developed countries. It can also capture the challenges to develop the logistics capability.

In the Indonesian context, 3PLs operate in a complex and rapidly changing environment characterized by dynamic customer expectations, infrastructural limitations, regulatory fragmentation, and increasing competition. While the relevance of logistics capabilities is widely acknowledged, the literature lacks sufficient empirical insight into how these capabilities are interpreted and adjusted by practitioners in everyday operational settings (Sidik et al., 2024; M. Wang et al., 2018). Existing studies often treat logistics capability as a uniform construct, without adequately capturing the localized pressures and context-specific challenges faced by Indonesian 3PL providers.

1.1 Objectives
There remains limited qualitative insight into how logistics capabilities are developed, adapted, and implemented in practice within Indonesian 3PL firms. This creates a theoretical and empirical gap that this research seeks to address. Specifically, the study aims to identify and explore the core dimensions that constitute logistics capability within Indonesian 3PL firms, based on practitioner insights that Indonesian 3PL providers face in building logistics capabilities.

2. Literature Review
Logistics capabilities are high-level capabilities. They are intended to change operational procedures, enable resource reconfiguration, and help firms address market volatility and supply uncertainty quickly and effectively (Gligor & Holcomb, 2012). There are many definitions of logistics capability that have been collected through the literature review process. Mentzer et al. (2004) emphasized more on managing logistics activities efficiently and effectively through expertise, attributes, and specific knowledge within the company. Over time, this concept has evolved to be

more strategic, emphasizing the integration of organizational resources and processes (Gligor & Holcomb, 2012; Joong-Kun Cho et al., 2008). Marjan et al. (2022) show a shift in focus to adapting to a dynamic competitive environment by dealing with unexpected changes quickly and effectively, both internally and with partners. This change reflects the transformation of logistics capability from merely operational efficiency to a strategic tool for survival and excellence in a rapidly changing business environment.

Many studies have proposed various logistics capability frameworks, which encompass several dimensions of logistics capabilities. Demand and supply capability are frequently utilized as foundational dimensions of logistics capability because they represent the core functional requirements for any logistics service provider. At a minimum, a 3PL firm must be able to align its operations with customer requirements (demand capability) while simultaneously ensuring the effective management and provision of logistics resources (supply capability) to deliver consistent service. Some other dimension, which is mostly discussed, is information technology capability (Gligor & Holcomb, 2012; Mentzer et al., 2004; Shang & Marlow, 2005; Song & Wang, 2020), has been widely discussed in the logistics literature due to its growing importance in supporting real-time coordination, visibility, and decision-making. It is particularly critical because it enhances integration capability (Esper et al., 2007; Gligor & Holcomb, 2012; Lyu et al., 2019; Saad & Bahadori, 2020), enabling stronger and more seamless collaboration across internal functions and with external partners in the supply chain. Two emerging dimensions increasingly discussed in the logistics capability literature are halal logistics compliance (Haleem & Khan, 2017; Tieman, 2013) and the environmental impact of sustainability (An et al., 2021; Dey et al., 2011; Namweseza et al., 2024). However, both remain underexplored and lack robust empirical investigation in current studies.

3. Methods

This study adopts a qualitative exploratory design to examine logistics capabilities from the perspectives of Indonesian 3PL companies. The study employs Gioia's Methodology (Magnani & Gioia, 2023), which is well-suited for abductive theorizing and for developing conceptual frameworks based on participants' voices. The use of interviews allowed the researchers to gain rich and in-depth insights into how logistics capabilities are developed and experienced in practice. Participants were recruited using purposive snowball sampling, ensuring each respondent held a managerial position relevant to logistics operations and capability development. Snowball sampling was appropriate due to the sensitivity of organizations in discussing internal capability development and strategic challenges (P. Wang et al., 2024). To explore how logistics capabilities are interpreted and operationalized in the Indonesian 3PL sector, this study involved five respondents from a large 3PL company. To ensure relevance and depth, the inclusion criteria were as follows:

- Employment at a large 3PL company in Indonesia. Large companies are defined based on the World Bank classification, with annual revenue exceeding USD 50 million, ensuring organizational complexity and sufficient resources to support the development of logistics capabilities.
- Holding a senior managerial or operational role (e.g., operations, IT, customer service, compliance, or human resources leadership) with at least two years of experience in the logistics sector.
- Direct involvement or strategic insight into logistics capability development, operational improvement, or response to regulatory/market pressures.
- Willingness to participate in semi-structured interviews in Indonesian and willingness to accept audio recordings and anonymous data reporting.

Based on these criteria, the respondent profile is presented in Table 1. The first participant was identified through the researcher's professional and academic network, and subsequent participants were recruited through referrals to ensure access to information-rich cases (Saikrishna, 2025) in established logistics companies.

Table 1. The respondent's Profile

Respondent	Gender	Age (years)	Duration of work (years)	3PL Provider	Service Provided
1	M	29	4	Logistics A	focuses on domestic freight forwarding and distribution
2	F	41	7	Logistics B	focuses on international freight forwarding and distribution
3	M	49	6	Logistics C	focuses on international freight forwarding and distribution
4	M	35	5	Logistics D	focuses on domestic freight forwarding and distribution
5	M	47	10	Logistics E	focuses on both domestic and international freight forwarding and distribution

All selected respondents held key strategic or operational roles and were actively involved in decision-making related to logistics capability development. The diverse range of domestic and international logistics services ensured a balanced view of the capabilities across various logistics domains. This contrast between domestic and international service focuses allows the study to capture the different capability needs arising from various regulatory, customer, and operational environments, thereby enriching the understanding of logistics capabilities across a range of markets.

4. Data Collection and Analysis

Data analysis in this study used the Gioia methodology, an abductive qualitative approach that allows for iterative interaction between empirical data and theoretical understandings (Gioia et al., 2013). The process began by (Gioia et al., 2013) :

- Open Coding - Identifying first-level codes: The first stage of analysis involved carefully examining the interview transcripts using open coding. Informant quotes were reviewed line by line to identify meaningful phrases, keywords, and descriptions that reflected their lived experiences and understanding of logistics capabilities in their companies. These codes were expressed in informant-centered language, resulting in a set of first-order concepts that reflected the participants' perspectives.
- Axial Coding - grouped into second-level themes: The first-order concepts were examined for similarities, differences, and relational patterns. Through axial coding, these concepts were grouped into second-order themes, reflecting a more research-centered interpretation informed by the theoretical frameworks of logistics capability.
- Aggregate Dimensions: It was developed to synthesize and structure emerging theoretical insights. The analytical process was supported by a coding matrix and the construction of a visual data structure model, which made explicit the relationship between raw data and higher-level constructs. This approach reflects an abductive logic, in which researchers move iteratively between data and theory to formulate plausible explanations and build context-sensitive theoretical contributions.

To ensure the validity of this qualitative study, several strategies were applied in line with Gioia's abductive methodology. The analysis process was carried out systematically, starting from the collection of informant quotes, categorization into first-order concepts, development of second-order themes, and finally building theoretical dimensions. To enhance validity, member checking was conducted by inviting participants to verify the accuracy of the interpretations derived from their interview data (Alessi & Kahn, 2023). Regarding dependability, an audit trail was maintained to transparently document every analytical decision made during the study. The study also used visual data structure drawings to explicitly present the logical flow from raw data (informant quotes) to abstract theory, allowing readers to trace the analytical path and evaluate the trustworthiness of the findings (Gioia et al., 2013). These procedures collectively ensured that the research process was rigorous and transparent, strengthening the quality of theory building in abductive qualitative inquiry.

5. Results and Discussion

Through in-depth interview analysis with five respondents, six overarching dimensions were identified that summarize the dimensions of logistics capability. These dimensions, and their frequency of occurrence among participants, are summarized in Table 2. The complete data structure, following Gioia's methodology, is illustrated in Figure 1.There are six core dimensions that shape logistics capabilities in Indonesian 3PL firms, based on rich practitioner insights. These dimensions—Operational Logistics Capability, Customer Orientation Capability, Information Management Capability, Integration Capability, Innovation Capability, and Green Logistics & Compliance.

Table 2. The Summary of Dimensions and Representative Quotes

Aggregate Dimension	Second-order theme	Frequency (%)	Representative quote
Logistics Capability	Operational Logistics Capability	5/5 (100%)	“Logistics capability in terms of operations is how we can operate units, can use trains, ships, planes to move goods as efficiently as possible.” (R1)
			"Our logistics capabilities focus on effectively managing overseas shipments, from selecting the right carrier to managing container schedules and minimizing shipment delays." (R2)
			"In international distribution, logistics capability means our ability to coordinate cross-border multimodal transportation by combining ocean freight, air cargo, and land trucking, so that goods can be delivered on time." (R3)
			"For us, logistics capability is how we efficiently plan and dispatch vehicles across the Indonesian archipelago. It's not just about owning trucks but about optimizing routes, fuel, and delivery times."(R4)
			"Our operational capabilities must encompass the entire process, from port clearance to last-mile delivery. It's crucial that our systems and human resources are adaptive to handle container- and retail-scale volumes with precision." (R5)
	Customer Orientation Capability	5/5 (100%)	"... one capability in the logistics field is to be able to provide the best service for customers." (R1)
			"Logistics capability means that we can answer our customers' needs if they want to export or import from Indonesia to all destinations in the world." (R2)
			"Our logistics capabilities lie in our ability to tailor our import-export services to meet customer requirements, especially given the ever-changing customs regulations in each country." (R3)
			"In domestic shipping, responsiveness to customers is key." (R4)
			"Our logistics capabilities are measured by how well we translate customer expectations into our operational flows."(R5)
	Information Management Capability	5/5 (100%)	"Our system was adopted from our parent company in Japan. We use IT to automate scheduling and routing based on traffic and delivery zone data." (R1)
			"... the more we are capable on high technology, the more competitive or better our service is,"

		" Transparency is key for international clients, and our digital platform allows them to track every step of the process, from port clearance to last-mile delivery." (R3)
		"The use of real-time data can assist in operational decision-making and the use of IT as a strategic driver." (R4)
		“Our parent company built a centralized logistics information system that we use across all our branches for domestic and international routes." (R5)
Integration Capability	5/5 (100%)	"...We can have integration with our customers. For example, if our customers want to have an interface with our system, we can."(R1)
		"We work in the same company, internally, whether I am in Indonesia or in all other countries, we have the same system and we can check the same things." (R2)
		"We have system integration with our overseas clients, so all import and export documentation is shared automatically. This greatly simplifies obtaining port permits and provides complete shipment visibility." (R3)
		""This integration extends to our customers and all our internal units, such as fleet, warehouse, and finance. This simplifies decision-making because everyone works with the same, up-to-date data." (R4)
		"Because we are part of a global logistics group, our ERP system connects all internal and external operations. This reduces delays and ensures smooth coordination across regions." (R5)
Innovation Capability	4/5 (80%)	"From us, we never stop to see what improvements in the system can speed up the process, make the process more efficient, which ultimately not only reduces costs but also makes it a plus point for customers." (R1)
		“We have started developing our own internal logistics system to reduce our reliance on third parties and innovate according to our customers’ needs.” (R2)
		“Innovation for us means finding better ways to do the same job, such as real-time route optimization tools.” (R4)
		"As a company serving both markets, we must innovate not only in our systems but also in our process design.” (R5)
Green Logistics & Compliance	3/5 (60%)	"In Indonesia, complying with halal logistics is just as important as being environmentally friendly. We are halal certified, but not yet green certified, as there is no obligation from our customers." (R1)
		"Environmentally friendly compliance is no longer optional. From port to port, our documentation now includes emissions reporting, and we have obtained sustainability certification to meet requirements, especially in the European market." (R2)
		"We must comply with international environmental standards and local halal logistics regulations." (R5)

5.1 Logistics Capability: Dimension

Operational Logistics Capability emerges as a foundational dimension, encompassing a firm's ability to efficiently operate transportation assets (e.g., trucks, trains, ships, planes) and ensure the timely and reliable delivery of goods. This was repeatedly echoed by informants from all respondents, which is in line with existing literature that emphasizes the role of logistics execution as the core of service performance (Morash et al., 1996; M. Wang et al., 2015). Furthermore, most respondents also highlighted that this involves shipping across domestic and international supply chains but also focuses on strategic objectives such as shipping efficiency through route and delivery time optimization.

Customer Orientation Capability refers to the company's ability to understand and respond to customer needs with customized logistics solutions. All respondents emphasized prioritizing customer satisfaction through service customization, problem-solving, and adherence to service standards. Domestic service providers emphasized responsiveness in local delivery and scheduling, while international and dual-market service providers emphasized the importance of global reach and adaptability to diverse client demands across borders. This suggests that a shift has indeed occurred from transactional logistics to relationship-based service delivery.

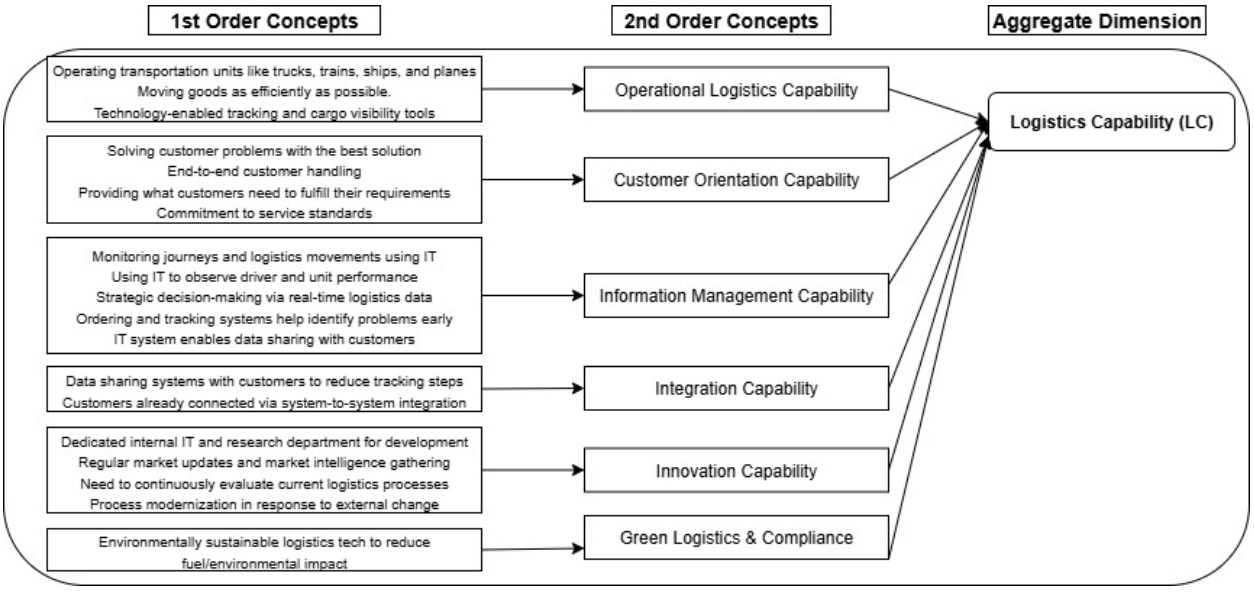

Figure 1. Data structure (Gioia methodology)

Information Management Capability is another important dimension, reflecting the increasing reliance on IT systems to monitor, track, and share logistics data to produce an efficient system, especially from human error, according to respondent 4. Respondent 3 added that IT can increase the competitiveness of the company. Respondent 4 explained the development of internal logistics systems, the use of real-time data to improve operational decision-making, and the use of IT as a strategic driver. Based on the analysis results, all respondents have well-established IT because they all use the same derivative system as the original company. For example, Respondent 1 from Logistics A, the IT system uses an adaptation from the parent company in Japan, which was developed according to the needs of the company in Indonesia. "*Our own system that we developed, or indeed, we adopted from the parent company in Japan. That makes us have the technology to track trucks and shipments with GPS. Then, we also have tools to monitor trips other than GPS, with alert systems and so on. How do we have a system and relationship with drivers? Yes, I think systems like that are needed in the logistics world.*" The same thing was stated by Respondent 2 from Logistics B, which has a parent company in Korea that already has well-established technology. Respondent 2 also highlighted, "*We have one information system to update in our system, what information we get locally. What information do we get from the market or from customers?*" This shows that simply adopting IT systems is not enough without the ability to strategically manage and utilize information across the supply chain. Thus, information management, which includes data collection, analysis, and dissemination, plays a more important role than IT alone in enabling effective integration and improving firm performance. This finding adds to the insights of Shang & Marlow (2005) and Gligor & Holcomb (2012) on the strategic role of IT in logistics.

Integration Capability captures how 3PLs facilitate seamless data exchange with customers and internal systems, reducing friction in the logistics process. Respondents reported system-to-system integration, especially with major customers, which allows for real-time updates and collaboration. Respondent 1 integrates with customers using their already robust IT, *"...We can have integration with our customers. For example, if our customers want to have an interface with our system, we can*." In addition, respondent 2 mentioned internal integration within logistics B company or with the parent company, which is also supported by IT, "*We work in the same company, internally, whether I am in Indonesia or in all other countries, we have the same system and we can check the same things*." This reflects the increasing importance of integration as a logistics capability to be dynamic in handling complex supply chains (Esper et al., 2007). Integration Capability captures how 3PLs facilitate seamless data exchange with customers and internal systems, reducing friction in the logistics process. Respondents 3, 4 and 5 reported system-to-system integration, especially with major customers, which allows for real-time updates and collaboration.

Innovation Capability is a forward-looking dimension where 3PLs invest in modernizing logistics processes using IT, building internal R&D units, and adapting to external changes through continuous improvement. Basically, Respondent 1 said, "*From us, we never stop to see what improvements in the system can speed up the process, make the process more efficient, which ultimately not only reduces costs but also makes it a plus point for customers*." The emphasis on innovation is not far from the role of technology in responding to market volatility, consistent with the view of dynamic capabilities (Teece et al., 1997).

Finally, Green Logistics & Compliance was identified as a context-specific but increasingly relevant dimension. Practitioners cited the incorporation of environmentally friendly, sustainable technologies and compliance with halal logistics standards as a response to market and regulatory demands. Although under-explored in previous capability literature, this dimension demonstrates how logistics capabilities in Indonesia are shaped by institutional expectations (An et al., 2021). There are 3 3PL companies that mentioned green logistics and compliance. Mostly 3PL companies that serve international distribution because many countries require international environmental standards. Even though Respondent 1, as a domestic forwarder, stated that they have applied the green standard through their process, they have not yet been certified. Respondent 1 further notes that the need for certification largely depends on the market. In the Indonesian market, most customers rarely ask about environmental standards.

Moreover, this study identifies six interrelated dimensions of logistics capability among Indonesian 3PL firms, which are shaped by both internal resources and external pressures. While this study identifies six core logistics capabilities, it also reveals interdependencies that shape their development. Operational logistics capability emerges as a foundational dimension, reflecting the ability of 3PLs to manage multimodal assets (e.g., trucks, trains, ships) and efficiently move goods. Firms supplement this with customer orientation capability, emphasizing customized services and responsiveness. Both dimensions reflect the firm's day-to-day execution and agility in addressing dynamic logistics needs. Moreover, information management and integration capabilities highlight the digital backbone that enables these operational functions. Real-time visibility, IT-enabled tracking, and system-to-system integration are essential for streamlining communication, minimizing errors, and facilitating informed decision-making. However, these capabilities do not stand alone. Based on the data, robust information systems are essential enablers of innovation, seamless integration, and customer responsiveness. For example, sharing live data with clients enhances trust while internally facilitating process synchronization. Despite these strengths, innovation capability and green logistics & compliance remain underdeveloped. Innovation efforts are often incremental rather than transformative, driven by customer demands rather than proactive research and development initiatives. Meanwhile, green practices and compliance are more reactively implemented where required but not deeply embedded into strategic agendas. Cost, regulatory ambiguity, and limited pressure from domestic clients appear to constrain further progress. Overall, the findings recognize that these cross-capability linkages provide a more holistic understanding of how 3PL firms develop resilience in emerging markets.

The findings of this study also reveal that firm resources, especially organizational resources, human resources, and physical assets, are important drivers in developing logistics capabilities in Indonesian 3PL companies. Organizational resources, such as wide geographic service coverage and price flexibility, are considered differentiators by Respondent 2 from its competitors. Continuing, Respondent 2 believes that the wider the reach, the more flexible the price. However, for that, the company also needs a lot of assets. *"..in my opinion, the bigger the service coverage we want to achieve, the more assets we need*." This has been shown to improve operational and customer-oriented capabilities, which support responsiveness to market demand (Bagais & Aljaaidi, 2020; M. Wang et al., 2015). Human resources,

including skilled personnel and logistics managers, play a crucial role in facilitating information flow, coordination, and adaptive innovation, which aligns with the argument that human resource strength is essential for logistics service differentiation (Evangelista et al., 2012; M. Wang, 2020b). In this area, Respondent 1 also places drivers as skilled personnel who require training. Additionally, physical assets, such as transportation equipment, terminals, and IT infrastructure, are identified as strategic enablers that support service visibility, integration, and scalability (Kumar & Prashar, 2024; Mandal, 2016).

In addition to confirming existing theories, this study provides new insights by highlighting emerging capability dimensions that are specific to the Indonesian logistics context. Information management-related capabilities become critical for efficiency improvement in the face of challenges. Capabilities such as green logistics and halal compliance, although under-explored in previous literature, are increasingly relevant and reflect external pressures. Their emergence suggests that the logistics capability framework should be expanded to include socio-cultural and regulatory responsiveness, thereby offering a contextual enrichment in developing countries, such as Indonesia. In particular, the integration of technological and regulatory dimensions, such as halal compliance and IT-enabled connectivity, highlights how market factors shape the capability development journey in 3PL firms. Thus, the visual data structure provides a transparent and logical trail from empirical data to theory, strengthening the theoretical foundation of the study findings

6. Conclusion

This study has provided valuable insights into how Indonesian 3PL companies develop and perceive logistics capabilities in practice. Using a practitioner's perspective, the Gioia methodology identifies six core capability dimensions: operational logistics, customer orientation, information management, integration, innovation, and green logistics & compliance. In addition, the findings highlight key pressures and challenges, both internal and external, that influence capability development, such as regulatory demands, digital readiness gaps, and infrastructure constraints. These insights directly address the research questions by revealing (1) critical logistics capability components as perceived and practiced by 3PL companies, and (2) key contextual pressures and structural challenges they face in strengthening these capabilities.

While making contributions, this study is not without limitations. The analysis is based on five large 3PL companies operating in Indonesia, which may limit the generalizability of the findings to firms in other regions or at different scales. Future research could extend this work by conducting comparative studies across countries to explore institutional influences or by combining qualitative insights with quantitative modeling to validate and extend the framework. Such an approach will enrich theoretical understanding and provide more comprehensive guidance for the development of logistics capabilities in various operational environments.

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