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The Influence of Logistics Cost Efficiency, Information Technology, and Service Quality on Supply Chain Performance in Indonesian Logistics Companies

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Abstract: The influence of Cost Efficiency in Logistics, Information Technology, and Service Quality Impact on Supply Chain Performance. is a scientific article in the literature study within the scope of the field of science. The purpose of this article is to develop a hypothesis about the influence between variables that will be used in future research. The research objects are from online libraries such as Google Scholar, Mendeley, and other academic online platforms. The research method uses library research sourced from e-books and open access e-journals. The analysis used is descriptive qualitative. The results of this article: 1) Cost efficiency in logistics affects supply chain performance .; 2) Information technology affects supply chain performance.; and 3) Service quality affects supply chain performance.

Keyword: Supply chain performance, cost logistics efficiency, information technology, and service quality

INTRODUCTION

Background of the Problem.

The growth of economic activities in Indonesia has led to an increasing demand for sound and efficient logistics systems. In Indonesia, the logistics sector plays a crucial role as it serves as the link between producers, distributors, and consumers. The ability of a supply chain system to operate smoothly depends heavily on how logistics management is well-planned, managed, and integrated. Therefore, it is essential for logistics companies to pay attention to factors that can enhance supply chain performance.

Logistics cost efficiency remains a major challenge within the operational environment of logistics companies in Indonesia. High costs in transportation, storage, and distribution often result in a significant workload, thereby reducing a company's competitiveness. This condition demonstrates that suboptimal logistics cost management can disrupt the smooth delivery of goods and the overall effectiveness of the supply chain. Consequently, logistics cost efficiency must be considered a vital component in improving supply chain performance.

In addition to cost efficiency, the use of information technology in logistics activities is becoming increasingly necessary. Technological advancements enable logistics planning, monitoring, and control processes to be carried out more quickly and accurately. Logistics information systems such as Transportation Management Systems (TMS), Warehouse Management Systems (WMS), and Enterprise Resource Planning (ERP) have been utilized to enhance visibility and coordination among parties in the supply chain. However, the adoption of information technology is not yet uniform across all Indonesian logistics companies; thus, the potential for enhancing supply chain performance through technology has not been fully realized.

On the other hand, the quality of logistics services is an aspect that cannot be overlooked. Good performance is reflected in delivery speed, information accuracy, and the ability to respond to customer needs. Poor service quality can lead to delivery delays, supply instability, and a decline in consumer trust. Therefore, improving logistics service quality is regarded as a strategic way to support the enhancement of supply chain performance.

Based on these conditions, it can be concluded that supply chain performance in logistics companies is influenced by several factors, namely logistics cost efficiency, the use of information technology, and service quality. However, the relationship between these three factors and supply chain performance still requires further investigation, particularly in the context of logistics companies in Indonesia. Hence, this study is conducted to analyze the impact of logistics cost efficiency, information technology, and service quality on Supply Chain Performance.

Real-world experience shows that many students and authors face difficulties in finding articles that support their research, whether as prior studies or relevant literature. Relevant articles are necessary to strengthen the theories being studied, analyze the relationships or influences between variables, and assist in formulating hypotheses. This article discusses the influence of Logistics Cost Efficiency, Information technology, and Service Quality on Supply Chain Performance, as a literature review study in the field.

Based on the background provided, the purpose of this article is to build hypotheses for future research, specifically to formulate: 1) The influence of Logistics Cost Efficiency on Supply Chain Performance; 2) The influence of Information Technology on Supply Chain Performance; and 3) The influence of Service Quality on Supply Chain Performance.

METHOD

The writing of this Literature Review article was conducted using a Library Research approach combined with the Systematic Literature Review (SLR) method. The analysis process was performed qualitatively, utilizing sources obtained from online platforms such as Google Scholar, Mendeley, and other online journal media relevant to the research topic.

The Systematic Literature Review (SLR) method is understood as a systematic series of stages used to identify, evaluate, and interpret all available research findings comprehensively, with the aim of providing answers to specific research questions.

In conducting qualitative analysis, it is essential to maintain consistency in applying the assumptions of the chosen method. The approach used is tailored to the exploratory nature of the research. This allows for a deeper understanding of the phenomena under study, based on findings from relevant literature (Hidayatullah & Tohir, 2025).

RESULTS AND DISCUSSION

Results

Based on the understanding of the background, research objectives, and the methods employed, the results of this article are presented as follows:

Supply Chain Performance

Supply Chain Performance is the integration of all activities within the supply chain to enhance relationships and gain a competitive advantage. This integration involves a systematic, strategic coordination of traditional business functions and tactics across these functions within a company and throughout the businesses in a supply chain, aiming to improve the long-term capabilities of both the individual company and the supply chain as a whole. Measuring supply chain performance can be achieved using the Supply Chain Operation References (SCOR). The application of the SCOR model can identify supply chain performance indicators by mapping the company's supply chain processes, thus serving as an evaluation tool to enhance performance. (Shoffiyati et al., 2019).

Supply Chain Performance involves various business sectors such as manufacturing, suppliers, transportation, warehousing, retail, and consumers, both directly and through consumption; consumer spending potentially aligns with the concept of the consumption budget line. This is crucial in designing economic policies and understanding economic dynamics.(Apriyani et al., 2018)

To ensure the sustainability of supply chain activities, a comprehensive design of performance indicators is required. The Supply Chain Operations Reference (SCOR) method offers a detailed framework for classifying and evaluating performance indicators based on five main dimensions. This framework helps divide supply chain processes into five primary stages: Plan, Source, Make, Deliver, and Return, covering all activities from suppliers to the hands of consumers. Utilizing this framework can help improve supply chain performance. (Mohamad Fismanda Shabari & Iwan Vanany, 2025)

According to Rainer & Cegielski (2011), as cited in (Apriyani et al., 2018), there are three main indicator components within a supply chain network:

1) Upstream: The source or place where product procurement originates. In this component, supply chain managers have suppliers capable of delivering the company's required goods and services as raw materials for production.
2) Internal Component: Relates to the packaging, assembly, or the production process of converting goods into finished products. This component is also vital for monitoring production capacity and product quality.
3) Downstream: The part concerning product distribution, which is often carried out by external parties. Supply chain managers receive and communicate customer orders, prepare warehouse facilities, organize distribution patterns from producers to end consumers, and manage payment agreements with customers.

Based on the results of the literature synthesis, it can be concluded that these dimensions, indicators, and factors influence supply chain performance. These three factors are interconnected in forming overall supply chain performance and play a critical role in determining the success level of supply chain performance regarding the services provided by logistics companies in Indonesia.

Logistics Cost Efficiency

Logistics operational costs encompass all expenses required to support the movement of goods within the distribution process. Logistics costs impact the final price of a product and include various components, such as transportation costs, loading and unloading fees, storage costs, maintenance costs, and other surcharges imposed on service users. These costs significantly influence competitiveness within the highly competitive logistics industry. This concept is essential for understanding how changes in logistics requirements and costs affect company operations. Rahayu Banurea et al. (2024) emphasize the critical importance of tariff and cost transparency in operations. Companies that maintain a clear cost calculation system and avoid inserting unexpected additional charges tend to be more highly valued by customers. (Apriyanto et al., 2025).

Logistics Cost Efficiency directly influences customer satisfaction, as customers tend to be more satisfied when receiving services at an affordable cost. Cost has a positive and significant influence on customer satisfaction. (Apriyanto et al., 2025).

In general, logistics costs can be classified into three categories: (1) transportation costs, (2) inventory storage costs, and (3) administrative costs. Logistics costs encompass various cost components, including: transportation costs for each mode of transport; storage costs for every warehouse activity; working capital investment costs for inventory; costs for the use and integration of Information and Communication Technology (ICT) systems; logistics management system costs; and costs arising from stock-outs. (Johnson Kennedy, 2019).

According to Kotler and Armstrong in research by (Fajrani, 2024), price consists of several primary dimensions or indicators as follows:

1) Price Affordability: Consumers are able to reach the prices set by the company. Products usually come in several versions under a single brand, with prices ranging from low to high. Prices aligned with consumer reach will encourage more consumers to purchase the product. The indicators for this dimension are affordable price and set price.
2) Price Consistency with Product Quality: Price is often used as an indicator of quality. Consumers frequently choose the higher price between two products due to significant quality differences. The public tends to believe that if the price offered is high, the quality provided is also better. The indicators in this dimension are price commensurate with quality and price meeting expectations.
3) Price Consistency with Benefits: When the perceived benefits of a product are greater than or equal to the amount spent on the purchase, buyers choose to buy it. If the product's benefits are less than the amount spent, buyers will consider the product expensive and will consider not purchasing it again. The indicator in this dimension is that the offered price is consistent with the benefits.
4) Price Aligned with Capability and Competitiveness: Consumers often compare the price of one product with others. In this case, consumers purchase a product by considering whether it is expensive or cheap. The indicators in this dimension are price according to capability and competitive pricing.

The multimodal transport system factor is considered highly effective in improving logistics cost efficiency in Indonesia. The influence of the multimodal system on logistics cost efficiency has been established through government regulations. Ministerial Regulation of Transportation Number 15 of 2010 regarding the Multimodal Transportation Blueprint specifically focuses on the development and construction of multimodal transportation to support the smooth flow of goods and passengers, as well as to strengthen a more effective and efficient national logistics system. (Wibowo & Chairuddin, 2017).

Information Technology

Information Technology (IT) is a type of technology used to process data, including capturing, organizing, storing, and transforming data in various ways. The objective is to produce high-quality information—specifically, information that is meaningful, accurate, and timely. Such information is used for personal, business, and governmental purposes. Furthermore, this information is critical and useful for effective decision-making. (Wawan Wardiana, 2002)

The dimensions, indicators, and synthesized factors influencing Information Technology include the use of computerized systems, which consist of hardware, software, data, procedures, and people as the core components of modern information technology. Information Technology integrates computing with high-speed communications to transmit data, voice, and video. (Nurul et al., 2022).

According to Abdul Kadir (2014: 15) in (Nurul et al., 2022), information technology broadly possesses the following role indicators:

1) Information technology replaces human roles. In this regard, information technology performs automation of a specific task or process.
2) Information technology strengthens human roles, specifically by providing information regarding a task or process.
3) Information technology plays a role in restructuring human roles. In this case, technology functions to implement changes across a set of tasks or processes.

Information technology can facilitate business continuity because obtaining information becomes easier and can be done from anywhere, at any time, and from anyone. Current advancements in information and communication technology have transformed the way people perceive and conduct activities in business, work, and in solving various encountered problems. (Asmawi et al., 2019)

Information Technology has been extensively studied by previous researchers, including (Williams and Sawyer, 2007) and (Muslihudin and Oktafianto, 2016).

Service Quality

Service Quality consists of data and information regarding the level of public satisfaction obtained from quantitative and qualitative measurements of public opinion in receiving services from public service administrators, by comparing their expectations and needs. (Rinaldi, 2012)

Service quality is a critical issue for every company, regardless of the type of product being produced. Simply put, service quality can be defined as a way to measure the extent to which the services provided are able to meet customer expectations. (Kodu, 2007)

Service Quality is the primary factor influencing the survival of a government bureaucratic organization or a company. Good service that aligns with the needs of public service users is essential to achieving customer satisfaction. (Rinaldi, 2012)

In (Rachman & Djumiarti, 2019), service quality is measured through five dimensional indicators, namely:

1) Tangibles Dimension: Refers to the physical evidence, including the condition of facilities, tools and equipment, supporting technology, and the appearance of employees that can be directly observed by customers.
2) Reliability Dimension: Reflects dependability, specifically the company's ability to provide accurate and consistent service as promised to the customers.
3) Responsiveness Dimension: Relates to the willingness to help and promptness, showing the company's availability and speed in providing assistance and responding to customer needs and requests in a timely manner.
4) Assurance Dimension: Refers to guarantees, concerning the level of knowledge, courtesy, and the ability of employees to instill a sense of security and trust in the customers regarding the services provided.
5) Empathy Dimension: Relates to individualized attention, showing the company's concern and care for the customers' specific needs and complaints on a personal level.

Based on the results of the literature synthesis, it can be concluded that these dimensions, indicators, and factors influence supply chain performance. These five dimensions are interconnected in forming a comprehensive supply chain performance and play a vital role in determining the success level of supply chain performance regarding the services provided by logistics companies in Indonesia.

Review of Relevant Articles

Reviewing relevant articles serves as the basis for establishing research hypotheses by explaining previous research findings and clarifying the similarities and differences with the current research plan. The relevant previous studies are summarized in Table 1 below:

Table 1: Relevant Research Results

No	Author (Year)	Prior Research Results	Similarities with This Article	Differences with This Article	H
1	(Apriyanto et al., 2025).	Logistics Cost Efficiency has a positive and significant impact on competitiveness within the competitive logistics industry.	Both analyze the influence of logistics cost efficiency.	Previous research utilized quantitative methods.	H1
2	(Wibowo & Chairuddin, 2017)	Logistics Cost Efficiency and service quality have a positive and significant impact on Supply Chain Performance.	The same logistics cost efficiency variable.	Logistics cost efficiency serves as the dependent variable.	H1
3	(Wawan Wardiana, 2002)	The development of Information Technology has a positive and significant impact on Supply Chain Performance.	Both discuss the development of Information Technology in Indonesia and its influence.	The research object is limited to the development of information technology in Indonesia.	H2
4	(Asmawi et al., 2019)	The advancement of Information Technology has a positive and significant impact on business continuity.	Analyzing the influence of Information Technology on Supply Chain Performance, which subsequently impacts business continuity.	The previous research utilized field research methods and had a different research object.	H2
5	(Rinaldi, 2012)	Service Quality is a primary factor that has a significant impact on corporate sustainability and service user satisfaction.	Analyzes the same service quality variable.	The previous research utilized an associative explanatory research method and focused on a different research object.	H3
6	(Rachman & Djumiarti, 2019)	Service Quality has a positive and significant impact on service user satisfaction.	Utilizes the same indicators and principles for the Service Quality variable.	The research object.	H3

Discussion

Based on the theoretical framework, the discussion in this literature review involves analyzing relevant articles and examining the inter-variable relationships, specifically the impact of logistics cost efficiency, information technology, and service quality on supply chain performance within logistics companies in Indonesia.

Each variable is discussed with reference to theoretical concepts and relevant findings from prior research, which serve as the foundation for developing the research hypotheses:

The Impact of Logistics Cost Efficiency on Supply Chain Performance

Logistics cost efficiency is the ability of a company or organization to optimally manage and reduce logistics-related costs ranging from procurement, storage, and transportation to distribution without compromising service quality, speed, or delivery reliability.

The principles of logistics cost efficiency can be achieved by optimizing transportation routes, leveraging information technology, managing inventory effectively, selecting appropriate modes of transport, and maintaining robust communication and cooperation among supply chain partners. This ensures that the costs incurred are balanced or even lower than the benefits and value gained.

The results of this article review demonstrate the extent of the influence of logistics efficiency on supply chain performance. The indicators for logistics cost efficiency include price affordability, price-to-quality alignment, price-to-benefit alignment, price suitability to capability, and competitiveness. Meanwhile, the indicators for supply chain performance consist of upstream, internal components, and downstream. When logistics cost efficiency is carefully managed, supply chain performance will improve. This is evidenced by seamless goods delivery, delivery time accuracy, reduced operational costs, as well as increased customer satisfaction and the company's competitive resilience.

Factors influencing Logistics Cost Efficiency include the management of transportation, inventory, warehousing, and the appropriate utilization of information technology. Management can foster collaboration among supply chain stakeholders, manage shipping scales, and oversee labor quality, while infrastructure availability also affects logistics costs. By managing these factors effectively, operational costs can be reduced, the delivery process becomes smoother, delivery times become more precise, and overall supply chain performance can be enhanced.

Logistics cost efficiency has a significant impact on supply chain performance. This is consistent with research conducted by: (Apriyanto et al., 2025), (Fajrani, 2024), (Johnson Kennedy, 2019), (Wibowo & Chairuddin, 2017).

The Impact of Information Technology on Supply Chain Performance

Information technology is the use of computer-based systems and communication networks to manage data and information. Its primary objective is to produce accurate, integrated, and timely accessible information.

The principles of information technology include system integration, more efficient and cost-effective work processes, data protection, ease of information access, and the system's ability to adapt to various operational activities.

The results of this article review indicate that information technology is closely linked to and highly influential toward supply chain performance. If Information Technology is perceived effectively, Supply Chain Performance will improve, as evidenced by a seamless flow of information, delivery time accuracy, enhanced coordination between parties, operational efficiency, and increased customer satisfaction.

Information technology is influenced by several factors, such as the availability of technological infrastructure, workforce capability, management support, the level of system integration, as well as data security and the alignment of technology with operational needs. The utilization of information technology facilitates a smooth flow of information, improves coordination and collaboration among supply chain stakeholders, and accelerates decision-making processes. Maximizing the use of information technology can enhance work efficiency, accelerate goods distribution, and ultimately improve the overall performance within the supply chain.

Information technology influences the efficiency and success of supply chain performance. This is consistent with the findings of researchers such as: (Asmawi et al., 2019), (Wawan Wardiana, 2002), dan (Nurul et al., 2022).

The Impact of Service Quality on Supply Chain Performance

Service Quality is understood as the service provider's ability to deliver services that meet or exceed user expectations.

The principles of Service Quality can be identified through several key indicators, such as service reliability, the ability to respond quickly to customer needs (responsiveness), providing assurance and a sense of security, demonstrating empathy during service delivery, and the availability of adequate physical evidence (tangibles).

The results of the article review indicate that service quality is closely linked to and highly influential toward supply chain performance. By implementing sound service quality principles, companies can foster customer satisfaction and trust, streamline service processes, and improve operational performance. In the context of the supply chain, high-quality service significantly contributes to enhancing punctuality, distribution reliability, and overall supply chain performance.

Factors influencing Service Quality include human resource competency, speed and accuracy in service delivery, clarity of work systems and procedures, and the availability of supporting facilities and infrastructure. Furthermore, effective communication with customers, management support, and the strategic use of technology also play a vital role in shaping service quality. By managing these factors effectively, reliable and responsive services can be achieved, thereby increasing customer satisfaction and enabling supply chain performance to function more optimally.

Service quality has a significant impact on supply chain performance. This is consistent with research conducted by: (Rachman & Djumiarti, 2019), (Rinaldi, 2012) dan (Kodu, 2007).

Conceptual Framework

Based on the problem formulation, relevant literature, and the preceding discussion, the conceptual framework for this article is developed as illustrated in Figure 1.

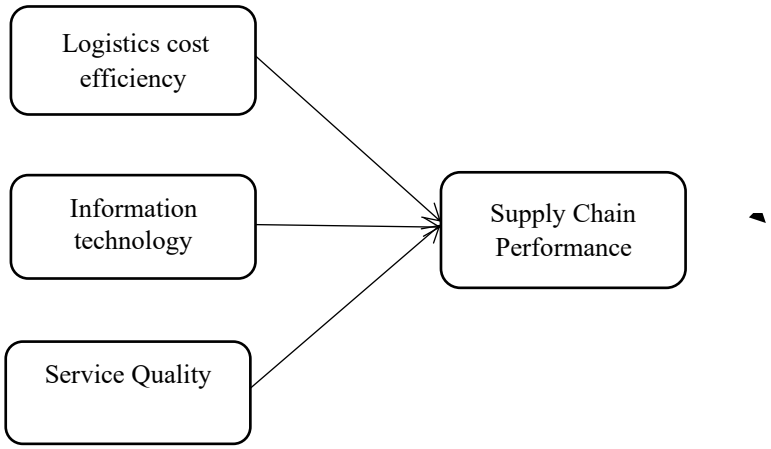

Figure 1: Conceptual Framework

Based on the conceptual framework above, it can be concluded that Logistics Cost Efficiency, Information Technology, and Service Quality influence Supply Chain Performance in Indonesian logistics companies. Aside from these three exogenous variables, there are several other variables that also impact Supply Chain Performance, including:

1) Trust: (Fauzan et al., 2024)
2) Level of Imformation Sharing: (Vali Y., 2018)
3) Inventory Management: (Fauzan et al., 2024)

CONCLUSION

Based on the objectives, results, and discussion, the conclusion of this article is to formulate the following hypotheses for future research:

1) Logistics Cost Efficiency influences Supply Chain Performance Effective management of logistics costs can enhance operational efficiency, accelerate goods distribution, and ensure timely delivery.
2) Information Technology influences Supply Chain Performance The proficient use of information technology facilitates data integration, ensures a seamless flow of information, and strengthens collaboration among stakeholders within the supply chain.
3) Service Quality influences Supply Chain Performance This is reflected in increased service reliability, enhanced customer satisfaction, and the long-term sustainability of relationships throughout the supply chain process.

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