

## The Influence of Digital Supply Chain on Operational Performance in the Food and Beverage Industry in DKI Jakarta

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### ABSTRACT

This study aims to examine the effect of digital supply chains on operational performance. The population used in this study is the food and beverage industry in the DKI Jakarta area. A total of 225 food and beverage industries were sampled. The research data was obtained using an online survey questionnaire via Google Forms. A quantitative approach was used in this study. The data was analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS 4 software. The results of this study prove that the digital supply chain has a significant and positive effect on the three dimensions of operational performance. The application of digital technology has been proven to improve product and service quality, accelerate production and distribution processes, and reduce overall operational costs. These findings reinforce the urgency of digital transformation in the industrial sector, particularly to enhance competitiveness and operational effectiveness. This study provides practical contributions for operational managers in designing integrated and sustainable digital technology-based supply chain management strategies.

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## **INTRODUCTION**

In today's era, technological advancements are influencing every industry to go digital. The increasingly rapid pace of technological development will have a significant impact on various aspects of human life. Technology continues to evolve, creating a new revolution, where previously traditional capabilities are now becoming more digital. According to Büyüközkan & Göçer (2018) Digital technology has significantly transformed the way people communicate and interact with their surroundings. New technologies and personal devices, such as mobile devices, personal computers, driverless cars, smartphones, and smartwatches, are changing the way people access and exchange information. These emerging technologies are impacting every industry, including business growth and supply chain management.

According to Lee, Teong, Alzoubi, Alshurideh, Khatib, & Mo (2024) The introduction of digital technology has had a huge impact on company innovation, notably in supply chain management, where digitalization involves now essential for enhancing additional features. A digital supply chain integrates and connects supply chain activities between suppliers and customers, from raw material procurement to finished product distribution. According to Verhoef et al. (2021) A digital supply chain is defined as a change in a company's efforts to use digital technology to develop new digital business models that help create and deliver more value to the company Saryatmo & Sukhotu (2021) The inability of companies to adapt to the increasingly rapid and intelligent digital technology environment is due to their lack of understanding of the implementation of smart technology in the manufacturing industry.

According to Chains (2020) Several innovations can drive digital supply chain operational performance, such as big data, cloud computing, blockchain, IoT, and robotics. First, big data is strategically crucial and one of a company's most valuable assets. The sheer volume of data has prompted many companies to develop and implement analytical tools to transform data into useful information, improving decision-making and positively impacting supply chain management performance (Stroumpoulis & Kopanaki, 2022). Second, Cloud computing consists of two components: cloud infrastructure and software applications. The first component consists of the hardware resources needed to support the cloud services offered, which typically comprise servers, storage, and networking components. The second component refers to the software applications and computer resources used to execute business applications, which are offered via the internet by an external service provider (Temjanovski & Macedonia, 2022) Cloud computing provides centralized storage and access to data, applications, and resources. With this accessibility, different departments, teams, and supply chain partners can more easily collaborate and share knowledge (Kodrat, 2024). Third, blockchain is a cryptographically secure electronic database system for recording and distributing transactional data. With its electronic record-keeping system, blockchain can increase the visibility and transparency of supply chains (Kim & Shin, 2019) Fourth, IoT (Internet of Things) enables tracking of supply chain activities from product design to end-user, providing accurate and timely data to help businesses adapt to market

changes (Ellis & Morris, 2015). Fifth, robots has the ability to provide businesses with an unlimited workforce at no cost. Robotics improves the efficiency and analysis of supply chain processes by spotting impending difficulties. As a result, robots can be used to automate software portions of supply chain processes, while human intervention may still be necessary. In actuality, robots can move large objects and reach extremely small spaces. This affects how items are manufactured (Merlino & Spro, 2017).

The total supply chain is mostly driven by operational performance, which is typically the combined result of various factors and drivers within the system. Operational performance is a company's ability to reduce costs, lead times, and lead time, increasing the effectiveness of raw material use and production capacity. Ultimately, high operational performance also results in a quality product or service that can improve customer satisfaction, productivity, and product quality (Ou et al., 2010). Performance measures for supply chains should include indicators in operational dimensions, such as cost, time, quality, delivery, and flexibility. Therefore, operational performance can depend on quality, productivity, and cost performance, which can be impacted by a digital supply chain (Lu et al., 2018) Supply chain quality management (SCQM) can improve quality performance, ultimately boosting a company's competitiveness. Companies hope that implementing the same quality procedures throughout the supply chain will improve supplier quality performance. To achieve high performance in supply chain quality management (SCQM), companies need to integrate all members of their supply chain into a comprehensive network of operational performance (Febriana et al., 2022).

According to Büyüközkan & Göçer (2018), The food and beverage industry plays a vital role in the global economy by providing for customers worldwide. Companies in the food and beverage industry face several challenges in ensuring effective operational confidence and maintaining high standards of performance as part of the globalization of the supply chain. The advent of supply chain digitalization technology in recent years has rapidly transformed industries, including the food and beverage industry. This study aims to demonstrate the impact of supply chain digitalization on operational performance in the food and beverage industry. The aforementioned factors have led to increased interest in developing systems for food supply chain traceability. This increased interest directly results in increased customer demands for food quality and safety in food traceability (Å & I, 2008) However, the benefits are categorized as increased customer satisfaction, improved food crisis management, and increased development of food and beverage supply chain competencies for companies, as well as the contribution of technology and data (Bosona & Gebresenbet, 2013).

## LITERATURE REVIEW

### *Digital Supply Chain*

Digital supply chain is a practical component that operates on a digital supply chain platform developed by a digitally oriented company. For example, it covers how a digitally oriented company translates digital assets and infrastructure into practice, such as using data collected on the platform for

decision-making, Internal meetings to share expertise and interact with suppliers and customers, the use of digital metrics to analyze supplier performance, and the use of consumer demand data to affect production planning and control (Ageron et al., 2020). The use of a digital supply chain allows businesses to access and handle enormous amounts of data, facilitating communication and cooperation while enhancing trust, agility, and effectiveness. This helps businesses to efficiently leverage digital technology to boost visibility and collect meaningful data that influences critical supply chain choices such as client purchase patterns, procurement decisions, and inventory management (Yu et al., 2024).

### ***Operational Performance***

Operational performance is an important measure that reflects a company's efficiency and effectiveness in carrying out its business activities. In the context of a digital supply chain, operational performance can be influenced by various factors, including the integration of information and communication technology that enables companies to optimize supply chain processes. A digital supply chain serves to increase collaboration, transparency, and responsiveness, all of which contribute to improved operational performance. With digital technology, companies can utilize data more efficiently to plan, manage, and track product flows, which in turn can reduce costs and improve the quality of products and services (Journal & Mea, 2024) Operational performance encompasses a variety of measures including quality, productivity, and cost performance (Lu et al., 2018).

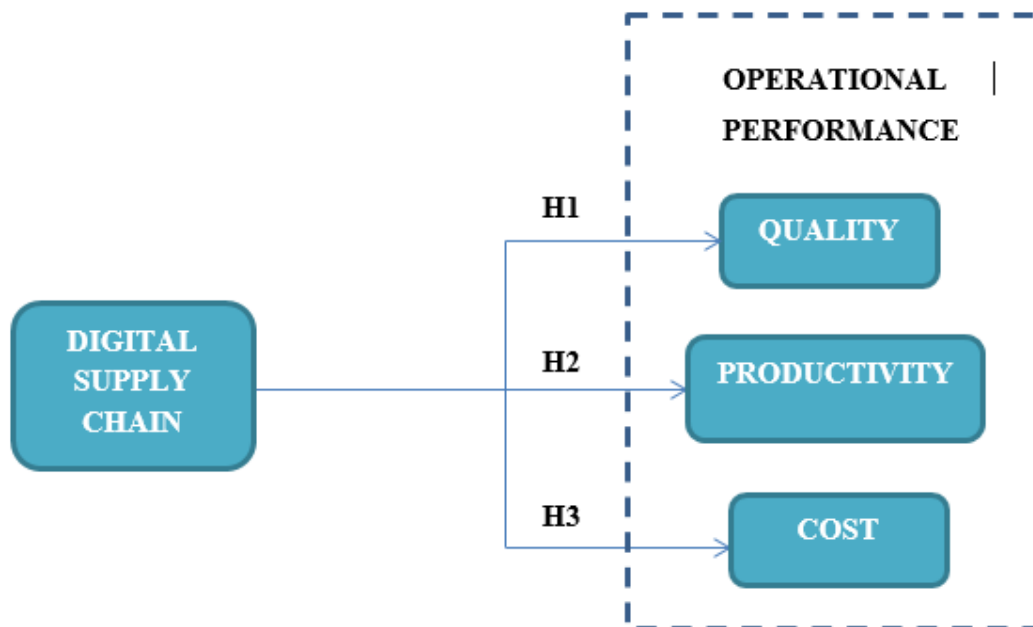


Figure 1. Research Framework

### ***Research Hypothesis***

H1: Digital Supply Chain impacts Quality Performance

H2: Digital Supply Chain impacts Productivity Performance

H3: Digital Supply Chain impacts Cost Reduction Performance

**METHODOLOGY**

This study takes a quantitative approach, with the goal of investigating the impact of the digital supply chain on operational performance in the food and beverage industry in DKI Jakarta. The population is a generalized region consisting of things or individuals with specified features and attributes determined by the researcher to be researched and then concluded (Amelia et al., 2022). Population is a group of people, events, or objects that have certain characteristics and are used as objects of research (Amelia et al., 2022). A sample consists of elements of a group or unit of analysis selected from a predetermined population (Amelia et al., 2022) The technique used was simple random sampling, which was carried out by sending emails to food and beverage industries implementing digital supply chains in the DKI Jakarta area, asking them to fill out Google Forms. To measure the research variables, the researcher chose to use a Likert scale. In this study, the primary data used was to determine the respondents' responses to the questions or statements given. The data came from respondents who were used to determine whether the digital supply chain affected company performance through quality performance, productivity performance, and cost reduction performance. Secondary data can be obtained from various sources, including documents, government publications, industry analysis by the media, websites, and the internet.

**RESEARCH RESULT AND DISCUSSION**

*Descriptive Analysis of Variables*

*Digital Supply Chain Variables*

Table 1. Descriptive Variables of Digital Supply Chain

<b>Variables</b>	<b>Statement</b>	<b>Mean</b>
<i>Digital Supply Chain</i>	Big data (large scale data) is used to improve data quality such as the use of sensors, RFID, and tracking devices.	4.04
	Big data is used to understand market dynamics and improve operational efficiency.	3.82
	Big data is used to monitor customer interactions through real-time data analysis, thereby reducing risks and disruptions and supply chain failures.	3.78
	Cloud computing technology (internet services with data storage and management) improves local processing and storage capabilities such as data integrity and standards that are measurable, reliable, and compliant with regulations.	3.41
	The food and beverage industry can achieve information exchange with cloud computing.	3.55
	Blockchain (advanced data with transparent information) improves the supply chain product traceability system.	3.59
	Exchanging information with customers becomes easier through the implementation of blockchain.	3.68

	IoT (a network of physical devices without human interaction) provides a connection between customers and companies.	3.58
	IoT provides a connection for all devices to the internet related to the production process.	3.61
	IoT is used to monitor the condition of supply chain products.	3.58
	IoT enables data analysis for supply chain optimization.	3.6
	Robotics is used to increase production capacity in digital supply chains.	3.48
	The food and beverage industry uses or plans to use robotics regularly in the future.	3.38
	<b>Total average rating</b>	<b>3.62</b>

From the descriptive assessment of the Digital Supply Chain in table 4.7. above, from 225 respondents, it shows that the highest assessment is the first indicator, namely "Big data (large scale data) is used to improve data quality such as the use of sensors, RFID, and tracking devices", with an average respondent rating of 4.04. This reflects that the application of digital technology in the food and beverage industry supply chain has been actively implemented by respondents. Furthermore, it also shows that respondents are highly aware of the importance of data quality in supply chain management, particularly in supporting decision-making and monitoring supply chain performance.

On the other hand, robotics technology received a lower average score than other digital components, namely 3.38, indicating that the use of robotics in the food and beverage industry is still relatively limited. It can be concluded that robotics has not yet become a top priority in the application of digital technology in the food and beverage industry due to the still large need for human labor.

**Quality Performance Variable**

Table 2. Descriptive Quality Performance Variables

<b>Variables</b>	<b>Statement</b>	<b>Mean</b>
<i>Quality Performance</i>	The food and beverage industry can consistently create high-quality products with low defect rates.	4.07
	The food and beverage industry conducts regular customer satisfaction surveys to monitor the quality of your products.	3.84
	The food and beverage business can maintain a low level of customer complaints about product quality.	3.63
	The food and beverage business can supply items that meet quality standards (both national and international).	2.91
	The food and beverage industry is able to update the quality of equipment related to the production process.	3.37
	<b>Total average rating</b>	<b>3.56</b>

From descriptive assessment Quality Performance In table 4.8 above, from 225 respondents, it shows that the highest assessment is the first indicator, namely "The food and beverage industry is able to produce consistent product quality with a low defect rate", with an average respondent rating 4.07. This indicates that most respondents felt that their production process was running well in maintaining product quality stability. Therefore, the production system being implemented is sufficiently standardized and well-monitored, thus maintaining consistent results.

Meanwhile, the lowest assessment was for the fourth indicator, namely "The food and beverage industry is able to supply products based on quality conformity (national and international standards)", with an average assessment of respondents 2.91. This score indicates that many food and beverage industries have not fully met or implemented the quality standards set by national and international bodies. It's possible that their infrastructure and production processes are not yet ready to meet formal standards (national and international).

**Productivity Performance Variable**

Table 3. Descriptive Productivity Performance Variables

<b>Variables</b>	<b>Statement</b>	<b>Mean</b>
<i>Productivity Performance</i>	Labor productivity and digital technology performed better than expected capacity.	3.76
	When demand calls for it, the food and beverage industry can boost capacity utilization in your manufacturing operations.	3.72
	The food and beverage industry is able to optimize production defects or waste that does not cause significant harm.	3.56
	The food and beverage business can give short delivery times that meet your clients' needs.	3.12
	<b>Total average rating</b>	<b>3.54</b>

From descriptive assessment Productivity Performance In table 4.9 above, from 225 respondents, it shows that the highest assessment is the first indicator, namely "Workforce productivity and digital technology performed better than expected capacity", with an average respondent rating of 3.76 This indicates that the majority of respondents believe that the combination of workforce skills and digital technology support has had a positive impact on productivity, even exceeding initial expectations. Therefore, the application of technology in the production process has been effective. Meanwhile, the lowest assessment was for the fourth indicator, namely "The food and beverage industry is able to provide short delivery times that are acceptable to your customers", with an average rating of respondents 3.12. This means that product distribution or delivery times still face productivity challenges. These constraints likely stem from limited logistics, infrastructure, or an inefficiently integrated demand planning system. Delays in delivery can directly impact customer satisfaction, particularly in the

food and beverage industry, which demands punctuality to maintain product quality.

**Variable Cost Reduction Performance**

Table 4. Descriptive Variable Cost Reduction Performance

<b>Variables</b>	<b>Statement</b>	<b>Mean</b>
<b>Cost Reduction Performance</b>	The food and beverage business may provide competitively priced products while still operating profitably.	3.68
	The food and beverage business can make goods with little raw material stocks, lowering production costs.	3.6
	Overall, supply chain management may help you minimize logistical expenses in the food and beverage business (including distribution, transportation, and handling) year after year.	3.7
	The cost reductions achieved were far more valuable than expected.	3.15
	<b>Total average rating</b>	3.53

From descriptive assessment Cost Reduction Performance In table 4 above, from 225 respondents, it is shown that the highest assessment is the third indicator, namely "Overall, supply chain management can cut logistical expenses in the food and beverage business (including distribution, transportation, and handling costs) year after year".with an average respondent rating of 3.7 This indicates that most respondents feel that logistics efficiency has begun to be achieved and is showing a positive trend from year to year, possibly due to optimization of delivery routes or better distribution management.

Meanwhile, the lowest assessment was for the fourth indicator, namely "The cost reductions achieved were far more valuable than expected", with the average respondent rating 3.15. This indicates that most respondents have not yet fully exceeded their initial targets or expectations. This means that although there have been cost reductions, they are still within reasonable limits and are not yet considered a major achievement. In conclusion, the data reflects that cost reduction efforts in the food and beverage industry have shown progress, particularly in logistics and production efficiency, but have not yet fully yielded an impact that exceeds expectations. Innovation in raw material management and the use of digital technology in cost management may be needed to improve efficiency.

**Model Evaluation**

**Measurement Model (Outer Model)**

The measurement model evaluation was tested using several indicators, including convergent validity, discriminant validity, and reliability testing. The measurement model was calculated using the PLS-SEM algorithm.

*Convergent Validity*

Table 5. Convergent Validity Test

<b>Variables</b>	<b>Items</b>	<b>Loading Factor</b>	<b>AVE</b>	<b>Information</b>
Digital Supply Chain (DSC)	DSC1	0.976	0.750	Valid
	DSC2	0.882		Valid
	DSC3	0.886		Valid
	DSC4	0.818		Valid
	DSC5	0.836		Valid
	DSC6	0.840		Valid
	DSC7	0.863		Valid
	DSC8	0.858		Valid
	DSC9	0.864		Valid
	DSC10	0.819		Valid
	DSC11	0.864		Valid
	DSC12	0.853		Valid
	DSC13	0.887		Valid
Quality Performance (QP)	QP1	0.967	0.787	Valid
	QP2	0.881		Valid
	QP3	0.853		Valid
	QP4	0.827		Valid
	QP5	0.901		Valid
Productivity Performance (PP)	PP1	0.907	0.748	Valid
	PP2	0.863		Valid
	PP3	0.850		Valid
	PP4	0.838		Valid
Cost Reduction Performance (CP)	CP1	0.896	0.746	Valid
	CP2	0.853		Valid
	CP3	0.860		Valid
	CP4	0.845		Valid

According to Table 5, each indication generates a loading factor value larger than 0.7, and the AVE value is greater than 0.5. As a result, these indicators are recognized as valid/acceptable measures of latent variables.

*Discriminant Validity*

Table 6. Fornell-Larcker Criterion Value

Variables	Cost Reduction Performance	Digital Supply Chain	Productivity Performance	Quality Performance
Cost Reduction Performance	<b>0.864</b>			
Digital Supply Chain	0.850	<b>0.866</b>		
Productivity Performance	0.841	0.844	<b>0.865</b>	
Quality Performance	0.829	0.838	0.830	<b>0.887</b>

Table 7. Cross Loadings Value

Variable/Item	Digital Supply Chain	Quality Performance	Productivity Performance	Cost Reduction Performance
DSC1	<b>0.976</b>	0.832	0.833	0.845
DSC2	<b>0.882</b>	0.721	0.734	0.738
DSC3	<b>0.886</b>	0.743	0.757	0.766
DSC4	<b>0.818</b>	0.683	0.675	0.673
DSC5	<b>0.836</b>	0.697	0.698	0.713
DSC6	<b>0.840</b>	0.715	0.715	0.714
DSC7	<b>0.863</b>	0.719	0.747	0.732
DSC8	<b>0.858</b>	0.730	0.719	0.746
DSC9	<b>0.864</b>	0.706	0.708	0.740
DSC10	<b>0.819</b>	0.673	0.695	0.689
DSC11	<b>0.864</b>	0.719	0.739	0.731
DSC12	<b>0.853</b>	0.739	0.709	0.715
DSC13	<b>0.887</b>	0.749	0.755	0.758
QP1	0.822	<b>0.967</b>	0.809	0.830
QP2	0.726	<b>0.881</b>	0.721	0.709
QP3	0.733	<b>0.853</b>	0.721	0.735
QP4	0.693	<b>0.827</b>	0.671	0.645
QP5	0.739	<b>0.901</b>	0.752	0.746
PP1	0.755	0.734	<b>0.907</b>	0.732
PP2	0.728	0.691	<b>0.863</b>	0.700
PP3	0.717	0.706	<b>0.850</b>	0.721
PP4	0.718	0.741	<b>0.838</b>	0.757
CP1	0.748	0.723	0.715	<b>0.896</b>
CP2	0.737	0.680	0.725	<b>0.853</b>
CP3	0.723	0.732	0.727	<b>0.860</b>
CP4	0.730	0.728	0.738	<b>0.845</b>

Based on tables 6 and 7, the value cross loadings each variable/item has a value greater than 0.7 and each variable/item has the greatest value when connected to its own latent construct, compared to when connected to other latent constructs. This indicates that each variable in this study has been able to explain its latent variable and is able to prove that it has good discriminant validity or that all variables are valid.

**Reliability Test**

Table 8. Reliability Test

Variables	Cronbach's Alpha	Composite Reliability
Digital Supply Chain	0.972	0.975
Quality Performance	0.932	0.949
Productivity Performance	0.888	0.922
Cost Reduction Performance	0.886	0.922

Table 8 demonstrates that Cronbach's Alpha All research variables have a Composite Reliability of more than 0.7. These findings show that each variable met the Cronbach's Alpha and Composite Reliability standards, implying that all variables are very reliable. The quality of fit of the model and the inner model can then be examined and evaluated for further analysis.

**Structural Model (Inner Model)**

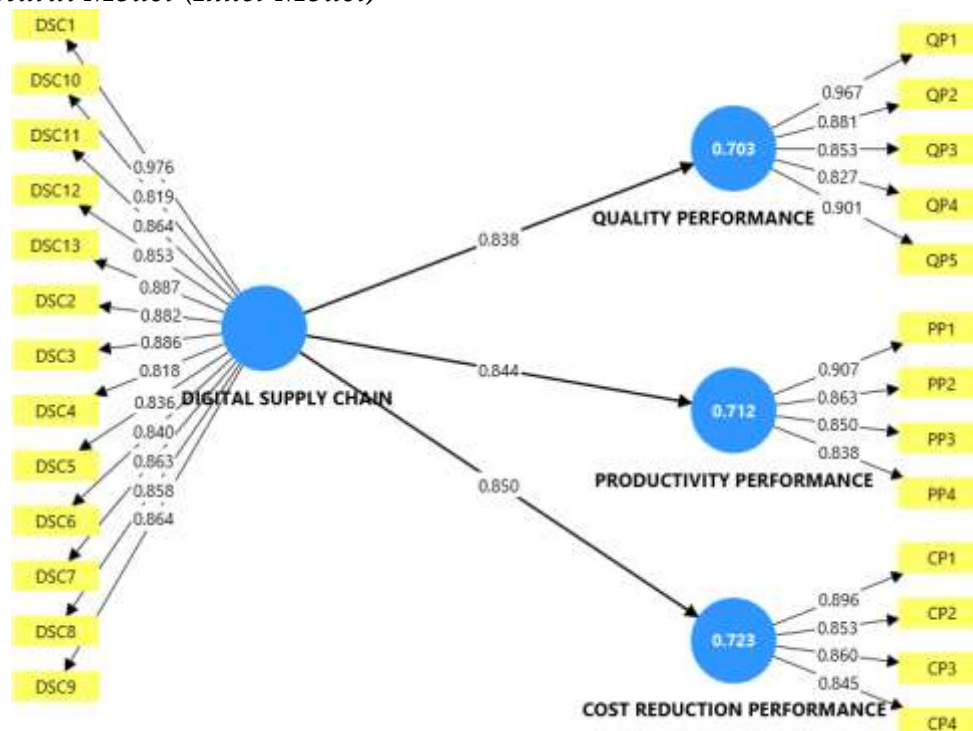


Figure 2. Structural Model

The R-square of each dependent latent variable is examined first when evaluating the PLS-SEM structural model. Table 4.15 displays the estimated R-squared values obtained with PLS-SEM.

**R-Square Test**

Table 9. R-Square Test Results

Variables	R-Square	R-Square Adjusted
Quality Performance	0.703	0.702
Productivity Performance	0.712	0.711
Cost Reduction Performance	0.723	0.722

Based on table 9 above, the following can be seen:

- a) R-Square value of variable Quality Performance is as big as 0.703. This value explains that the strength of the Digital Supply Chain variable, Productivity Performance, and Cost Reduction Performance in predicting Quality Performance is 70.3%.
- b) R-Square value of variable Productivity Performance is as big as 0.712. This value explains that the strength of the Digital Supply Chain variable, Quality Performance, and Cost Reduction Performance in predicting Productivity Performance is 71.2%.
- c) R-Square value of variable Cost Reduction Performance is as big as 0.723. This value explains that the strength of the Digital Supply Chain variable, Quality Performance, and Productivity Performance in predicting Cost Reduction Performance is 72.3%.

Thus, the result of the value R-Square shows that this research model has the strength of the structural model criteria in PLS-SEM analysis.

**Predictive Relevance (Q-Square)**

Table 10. Predictive Relevance (Q-Square)

Variables	Q <sup>2</sup>
Quality Performance	0.701
Productivity Performance	0.711
Cost Reduction Performance	0.722

Based on the data shown in table 10, it is clear that the Q-Square value for the dependent variable exceeds zero. As a result, we may conclude that this study has a high observation value because the Q-Square value is greater than zero.

**Hypothesis Testing Results**

Table 11. Hypothesis Testing

Variable Relationship	Original sample (O)	T statistics ( O/STDEV )	P values	Decision
Digital Supply Chain→Quality Performance	0.838	35,973	0.000	Accepted
Digital Supply Chain→Productivity Performance	0.844	36,152	0.000	Accepted
Digital Supply Chain→Cost Reduction Performance	0.850	36,338	0.000	Accepted

Based on table 11, the relationship between variables can be explained as follows:

- a) The value of the influence of the variable Digital Supply Chain towards Quality Performance with P-values of 0.000. Where the P-value is  $0.000 < 0.05$  so the hypothesis is accepted.
- b) The value of the influence of the variable Digital Supply Chain on Productivity Performance with P-values of 0.000. Where the P-value is  $0.000 < 0.05$  so the hypothesis is accepted.
- c) The value of the influence of the variable Digital Supply Chain on Cost Reduction Performance with P-values of 0.000. Where the P-value is  $0.000 < 0.05$  so the hypothesis is accepted.

## DISCUSSION

### *The Impact of Digital Supply Chain on Quality Performance*

The results of the first hypothesis test reveal that the Digital Supply Chain significantly affects Quality Performance, with a coefficient value of 0.838, a p-value of 0.000 (which is less than 0.05), and a t-statistic of 35.973 (which exceeds 1.960). These findings confirm that the Digital Supply Chain has a positive and significant impact on Quality Performance, thereby supporting the hypothesis.

This outcome aligns with earlier studies, such as Fawcett et al. (2009), which highlighted that integrating digital technologies into the supply chain enhances various performance aspects, including flexibility, process efficiency, product quality, and inventory management. Technologies like the Internet of Things (IoT) enable real-time tracking of products throughout the supply chain, improving visibility and traceability. IoT tools monitor key variables such as temperature, humidity, and location, ensuring that perishable items are kept under optimal conditions. This helps reduce waste, maintain product quality, and promote food safety, as also noted by Lee et al. (2024).

### *The Impact of Digital Supply Chain on Productivity Performance*

The results of this study are supported by previous research that has been carried out by the results of testing the second hypothesis, namely the influence Digital Supply Chain To Productivity Performance shows a coefficient value of 0.844 value P-values as big as  $0.000 < 0.05$  and T-statistics of  $36.152 > 1.960$ . These results indicate that Digital Supply Chain Influential on Productivity Performance. So the hypothesis that states that "Digital Supply Chain Has a Positive and Significant Influence on Productivity Performance" accepted.

The results of this study are supported by previous research conducted by Saryatmo & Sukhotu (2021) This shows that companies that integrate advanced technologies such as the Internet of Things (IoT) and big data can significantly increase productivity. Furthermore, workforce training and development also play a crucial role in increasing productivity, as a skilled and well-trained workforce tends to be more efficient in carrying out their tasks. Productivity performance is measured by reflecting on routine tasks such as order processing, inventory management, and shipment tracking, freeing up time and resources to focus on more important tasks such as customer service and product development (Rizkiawan et al., 2023).

### ***The Impact of Digital Supply Chain on Cost Reduction Performance***

The results of testing the third hypothesis, namely the influence Digital Supply Chain Regarding Cost Reduction Performance, it shows a coefficient value of 0.850 value P-values as big as  $0.000 < 0.05$  and T-statistics of  $36.338 > 1.960$ . These results indicate that Digital Supply Chain Influences Cost Reduction Performance. Therefore, the hypothesis stating that "Digital Supply Chain Has a Positive and Significant Influence on Cost Reduction Performance" is accepted.

The results of this study are supported by previous research conducted by Akter et al. (2016) Digital supply chain significantly impacts cost reduction performance because big data benefits companies by reducing waste and improving safety. Cost reduction performance is a company's ability to reduce costs in production and distribution without sacrificing product quality. In the digital era, companies that use technology-based solutions can leverage big data to identify areas for improvement and optimize resource utilization (Saryatmo & Tarumanagara, 2022).

## **CONCLUSIONS AND RECOMMENDATIONS**

### ***Conclusion***

Based on the results of the research conducted above, it can be concluded that:

1. The results of the hypothesis testing show that there is a positive and significant influence of the digital supply chain variable on the quality performance of the food and beverage industry in DKI Jakarta.
2. The results of the hypothesis testing show that there is a positive and significant influence of the digital supply chain variable on the productivity performance of the food and beverage industry in DKI Jakarta.
3. The results of the hypothesis testing show that there is a positive and significant influence of the digital supply chain variable on the cost reduction performance of the food and beverage industry in DKI Jakarta.

### ***Recommendation***

The suggestions that can be given to food and beverage industry managers in DKI Jakarta are as follows:

1. The conclusion was that the digital supply chain impacts the quality performance of the food and beverage industry in DKI Jakarta. Therefore, the authors recommend that companies enhance collaboration between suppliers and customers through digital platforms to improve communication and transparency in quality performance.
2. The conclusion is that the digital supply chain impacts the productivity performance of the food and beverage industry in DKI Jakarta. Therefore, the authors recommend that companies increase visibility and control over their supply chains through production and service output by utilizing digital technology to further enhance productivity performance.
3. The conclusion was that the digital supply chain impacts the cost reduction performance of the food and beverage industry in Jakarta. Therefore, the authors recommend that companies improve routine equipment and asset

maintenance and optimize the use of digital technology-based resources to further enhance cost reduction performance.

### ADVANCED RESEARCH

For future researchers conducting study on comparable topics, it is hoped that they will use a different industry than the food and beverage industry, so that the results of this study can be generalized more widely.

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