

MEASURING GROWTH DRIVING SUPPLY CHAIN INTEGRATION (GDSCI) FACTORS USING CONFIRMATORY FACTOR ANALYSIS (CFA) AT THE GRESIK PETROCHEMICAL BULK TERMINAL

Bagusranu Wahyudi Putra, Whidya Utami, Murpin Josua Sembiring Gurky


Universitas Ciputra Surabaya

bwahyudi01@student.ciputra.ac.id, whidya.utami@ciputra.ac.id, murpin.sembiring@ciputra.ac.id

ABSTRACT

The growth of the bulk port industry increasingly demands more effective supply chain integration to enhance competitiveness and operational efficiency. This study examines the growth-driving factors in Growth Driving Supply Chain Integration (GDSCI) at Petrokimia Gresik Bulk Port using Confirmatory Factor Analysis (CFA). The research model evaluates three main dimensions of GDSCI: Collaborative Advantage (CA), System Resilience (SR), and System Stakeholder Satisfaction (SSS). The CFA results indicate that all indicators have loading factors above 0.70, with one indicator still within the acceptable range for convergent validity. The Goodness-of-Fit (GOF) indices demonstrate a solid model fit, with values of GFI = 0.952, CFI = 0.954, and RMSEA = 0.092. These findings confirm that supply chain integration significantly contributes to enhancing logistics efficiency, strengthening collaborative advantage, and improving stakeholder satisfaction. The results align with the Dynamic Capability Theory (DCT), which underscores the importance of organizational adaptability in responding to environmental uncertainty and market change. Practically, the study provides strategic insights for port managers and policymakers to optimize supply chain integration by fostering stakeholder collaboration and leveraging digital technologies to improve logistics system resilience.

Keywords: growth driving supply chain integration; confirmatory factor analysis; supply chain management; dynamic capability theory; bulk port.

This article is licensed under [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/) 

INTRODUCTION

Supply Chain Integration (SCI) is a crucial factor in improving logistics efficiency and business competitiveness (Abdallah et al., 2021; Muafi & Sulistio, 2022; Negi, 2021). Especially in the bulk port sector, effective integration not only plays a role in ensuring the smooth distribution of raw materials and products, but also in improving operational efficiency and stakeholder satisfaction. Petrokimia Gresik Bulk Port, as one of the main distribution centers in the petrochemical industry, faces challenges in managing complex supply chains, where digital transformation and systematic collaboration are key elements in creating a sustainable competitive advantage (Christopher, 2016).

The Growth Driving Supply Chain Integration (GDSCI) approach is becoming an increasingly relevant concept. GDSCI is not just about operational coordination in the supply chain, but focuses on creating added value and sustainable growth capabilities through information integration, resource optimization, and data-driven strategic decision-making (Wang & Wang, 2024). This integration allows bulk ports to optimize material flows, accelerate business cycles, and improve the competitiveness of logistics corridors. However,

in its implementation, there are still challenges in identifying the key factors driving growth in supply chain integration and how the relationships between these factors can form more adaptive and resilient systems (Guangsi et al., 2024).

Based on these problems, this study aims to measure growth driving factors in supply chain integration based on Growth Driving Supply Chain Integration (GDSCI) using the Confirmatory Factor Analysis (CFA) approach. The GDSCI model in this study includes three main dimensions, namely Collaborative Competitive Advantage (CCA), System Resilience (SR), and System Stakeholder Satisfaction (SSS). CCA emphasizes the importance of strategic synergy in increasing the collective competitiveness of bulk ports. SR focuses on the resilience of the system in the face of external disruptions and market fluctuations. Meanwhile, SSS measures the level of fulfillment of stakeholders' expectations in the supply chain ecosystem (Chen & Srinivasan, 2019).

Through this study, it is hoped that a more comprehensive understanding of the structure and influence of key factors in GDSCI can be obtained, so that it can provide recommendations for port management in optimizing their supply chain strategies. In addition to making a theoretical contribution to the development of the concept of Growth Driving Supply Chain Integration (GDSCI), this research also has practical benefits for industry players and stakeholders in the bulk port supply chain system. The results of this study are expected to help the management of the Gresik Petrokimia Bulk Port in implementing a growth and sustainability-based supply chain strategy, as well as becoming a reference for regulators in designing more efficient logistics policies.

The theoretical basis of this research uses Dynamic Capability Theory (DCT) which states that competitive advantage does not only depend on the resources owned, but also on the ability of the organization to adapt to changes in the environment (Teece, 2018). In the context of Growth Driving Supply Chain Integration (GDSCI) at Petrokimia Gresik Bulk Port, dynamic capabilities allow ports to adapt operations to changes in markets, regulations, and technology (Helfat & Martin, 2019).

Dynamic capabilities consist of Sensing (detecting opportunities), Seizing (harnessing opportunities), and Transforming (adapting business systems) (Wang et al., 2021). The Verhoef et al. (2021) study highlights that this capability is important in optimizing logistics throughput, accelerating decision-making, and improving operational efficiency. In addition, in the logistics industry, Dynamic Capability helps in dealing with external disruptions such as demand fluctuations and regulatory changes (Guangsi et al., 2024).

Meanwhile, Growth Driving Supply Chain Integration (GDSCI) is a strategic approach in supply chain integration that not only focuses on operational coordination, but also on the creation of added value and sustainable growth capabilities through systematic collaboration between bulk ports and all partners in their logistics ecosystem. This integration includes synchronization of information, processes, resources, and strategic decision-making designed to optimize the flow of bulk materials, accelerate the business cycle, develop new

market opportunities, and create long-term competitive advantages (Christopher, 2020; Wang et al., 2021).

The GDSCI model consists of three main dimensions. First, Collaborative Competitive Advantage (CCA), which highlights how supply chain integration can create a collective competitive advantage through stronger competitiveness, increased stakeholder loyalty, and service differentiation compared to alternative logistics channels (Helfat & Martin, 2019). Second, System Resilience (SR), which measures the system's capacity to remain stable and recover quickly from external disruptions, including demand fluctuations, volatile market conditions, and other external factors such as regulations and extreme weather (Verhoef et al., 2021). Third, System Stakeholder Satisfaction (SSS), which focuses on the level of satisfaction and stakeholder engagement in an integrated system, which includes their willingness to continue participation in the supply chain ecosystem, recommend the system to others, as well as their perception of the added value generated (Guangsi et al., 2024).

This study aims to fill that gap by analyzing how e-cigarettes are portrayed through social media content in Indonesia, identifying the presence or absence of age and health warnings, the tone of the messages, and how framing strategies normalize e-cigarette use among adolescents. Using a quantitative content analysis approach, this research examines 200 posts (100 each from YouTube and Instagram), applying Framing Theory to evaluate dominant themes. The novelty of this study lies in its contextual focus on Indonesia and the use of comparative coding to measure platform-specific dynamics of e-cigarette promotion.

The findings reveal that most content portrays e-cigarettes positively or neutrally, with minimal health and age warnings. Influencer-driven promotions frequently highlight aesthetics, lifestyle, and perceived safety, rather than health risks, contributing to the normalization of vaping among youth. This study contributes to public health discourse by providing empirical evidence on how digital media influences youth perception of smoking. The research benefits regulators, educators, and policymakers by offering insights for more targeted and comprehensive policies to limit harmful content exposure and to promote digital media literacy among Indonesian youth.

METHOD

This study uses a quantitative approach with a survey method to measure growth drivers in supply chain integration based on *Growth Driving Supply Chain Integration* (GDSCI) at the Gresik Petrokimia Bulk Port. The research sample consisted of 56 respondents from various stakeholders in the supply chain ecosystem. Data was collected through a closed-ended questionnaire that included *the variables Collaborative Competitive Advantage (CCA), System Resilience (SR), and System Stakeholder Satisfaction (SSS)* using a 5-point Likert scale. The data analysis technique was carried out with *Confirmatory Factor Analysis (CFA)* in Structural Equation Modeling (SEM) to test the validity and reliability of the model.

This research employed a quantitative content analysis approach to investigate how e-cigarette content is framed on social media platforms. The study was conducted between June

1 and September 30, 2023, focusing specifically on content from Indonesia, particularly from YouTube and Instagram, which are among the most popular platforms among Indonesian youth.

The sampling technique used was purposive sampling, a non-probability method chosen to target specific, high-engagement content. On YouTube, the videos selected had the highest number of views, while Instagram posts were filtered using specific hashtags related to e-cigarettes (e.g., #vapeindo, #relxindonesia). This approach ensured that the sample included widely consumed and influential content likely to affect public perception.

Two separate codebooks were developed—one for each platform—after conducting a preliminary review of existing studies and current content trends. These instruments included predefined variables such as sponsorship status, age and health warnings, promotional features, and tone (positive, neutral, or negative). A pretest was conducted with 30 randomly selected posts coded independently by two researchers to test inter-coder reliability, resulting in agreement rates above 0.83 across all variables. Discrepancies were discussed and resolved to improve coding consistency.

Data analysis was carried out using Microsoft Excel and SPSS version 26 for descriptive statistics, and intercoder reliability was calculated using Holsti's formula as recommended by Neuendorf (2002). Although structural modeling was not the focus of this study, future research may employ software such as AMOS or NVivo to extend the analytical depth.

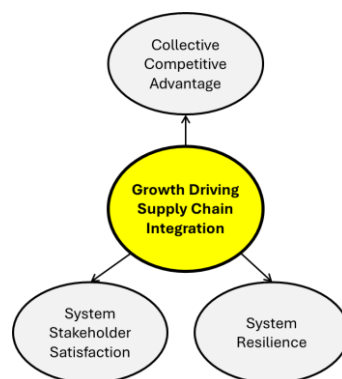


Figure 1. Research Framework

RESULTH AND DISCUSSION

The results of the two-stage data analysis used the Confirmatory Factor Analysis (CFA) method to test the validity and reliability of the constructs used in this study. CFA is part of Structural Equation Modeling (SEM) which aims to confirm the relationship between indicators and latent variables based on a predetermined theoretical framework. This technique allows an evaluation of the extent to which indicators can statistically represent constructs, taking into account various measures of model suitability such as the Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), as well as loading factors. The results of this analysis will be used to assess whether the developed

model has an adequate match with the empirical data collected from the supply chain ecosystem at the Petrokimia Gresik Bulk Port.

Validity and Reliability

Tabel 1. Validity Test Results
Source : Researcher

Var	Rentang Korelasi	Korelasi Tertinggi	Korelasi Terendah	Sign (p-value)
CCA	0,521 - 0,727	X1.3.2 ↔ X1.3.3 (0,727)	X1.3.3 ↔ X1.3.1 (0,521)	< 0,01
SR	0,608 - 0,766	X1.4.1 ↔ X1.4.4 (0,766)	X1.4.2 ↔ X1.4.3 (0,608)	< 0,01
SSS	0,529 - 0,728	X1.5.1 ↔ X1.5.4 (0,728)	X1.5.3 ↔ X1.5.1 (0,529)	< 0,01

From the results of the validity test using Pearson correlation, it was found that all indicators in the GDSCI (*Collaborative Competitive Advantage, Systemic Resilience, and System Stakeholder Satisfaction*) variables had a significant correlation ($p < 0.01$).

The CCA variable has the highest correlation of X1.3.2 ↔ X1.3.3 (0.727) and the lowest X1.3.3 ↔ X1.3.1 (0.521), demonstrating a fairly strong validity in measuring collective competitive advantage in the supply chain.

The SR variable has the highest correlation X1.4.1 ↔ X1.4.4 (0.766) and the lowest X1.4.2 ↔ X1.4.3 (0.608), which indicates that the indicators in this variable validly measure the system's resilience in the face of external interference.

The SSS variable has the highest correlation of X1.5.1 ↔ X1.5.4 (0.728) and the lowest X1.5.3 ↔ X1.5.1 (0.529), which means that the indicators in these variables validly represent stakeholder satisfaction in an integrated supply chain system.

Thus, all constructs in the GDSCI model have good validity and can be used in subsequent analysis. The next step is to conduct a reliability test to ensure internal consistency between indicators in each variable.

Table 2. Reliability Test Results
Source : Researcher

Var	Cronbach's Alpha	Alpha Jika Item Dihapus	Korelasi Item-Total
CCA	0.855	0.794 - 0.833	0.653 - 0.748
SR	0.890	0.838 - 0.885	0.687 - 0.812
SSS	0.864	0.801 - 0.847	0.664 - 0.780

Based on the results of the reliability test using Cronbach's Alpha, all variables in the *Growth Driving Supply Chain Integration* (GDSCI) model show an excellent level of reliability:

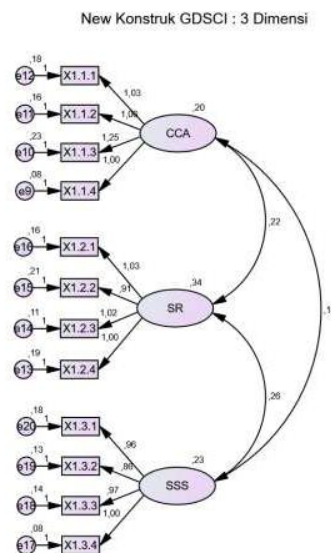
The Collaborative Competitive Advantage (CCA) has Cronbach's Alpha of 0.855, with an item-total correlation of 0.653 – 0.748. All reliability values remain high even if an item is removed (0.794 - 0.833), so this construct is highly reliable.

Systemic Resilience (SR) has the highest Cronbach's Alpha of 0.890, with an item-total correlation of 0.687 – 0.812. If any of the items are removed, the alpha is still in the range of 0.838 – 0.885, which indicates that this variable has excellent reliability in measuring the resilience of supply chain systems.

System Stakeholder Satisfaction (SSS) has Cronbach's Alpha of 0.864, with an item-total correlation in the range of 0.664 - 0.780. Reliability remained stable despite item deletions (0.801 - 0.847), which suggests that this variable is quite stable in measuring stakeholder satisfaction in an integrated supply chain system.

Confirmatory Factor Analysis (CFA)

The results of the Confirmatory Factor Analysis (CFA) in this study were carried out to confirm the validity of the construct of the Growth Driving Supply Chain Integration (GDSCI) model, which consists of three main dimensions: Collaborative Competitive Advantage (CCA), Systemic Resilience (SR), and System Stakeholder Satisfaction (SSS). The CFA test aims to find out how well the indicators that have been designed are able to represent latent constructs statistically.



Gambar 2. Construct GDSCI
 Source : Researcher

Figure 2 above shows the Confirmatory Factor Analysis (CFA) model of the Growth Driving Supply Chain Integration (GDSCI) construct which consists of three main dimensions, namely Collaborative Competitive Advantage (CCA), Systemic Resilience (SR), and System Stakeholder Satisfaction (SSS). Each latent construct is represented in an oval shape, while an indicator measuring it is displayed in a box (X1.1.1 – X1.3.4). The causal relationship between constructs and indicators is indicated by a one-way arrow, while the correlation between constructs is represented by a two-way curved arrow. The results of the CFA show that all

indicators have a standardized factor loading above 0.70, indicating that these indicators are valid in representing each construct. The CCA construct is measured by four indicators with a loading factor between 1.00 to 1.25, indicating the indicator's strong contribution. The SR construct has a loading factor ranging from 1.00 to 1.03, which means that the model is quite stable in measuring the resilience of the system. Meanwhile, SSS has a loading factor between 0.96 to 1.00, which indicates that stakeholder satisfaction is greatly influenced by an integrated supply chain system. Correlation between constructs showed that SR had the strongest influence on stakeholder satisfaction (0.26), followed by the relationship between CCA and SR (0.22), as well as CCA and SSS (0.19). Overall, the CFA model shows that the factor structure in the GDSCI model is well confirmed, so it can be used for further analysis, such as Structural Equation Modeling (SEM) testing to test causal relationships in the context of supply chain integration at bulk ports.

Table 3. Results of the Construct Validity Test

Source : Researcher

Konstruk	Indikator	Standardized Loading	Ket
CCA	X1.3.1	0,735	Valid
	X1.3.2	0,762	Valid
	X1.3.3	0,761	Valid
	X1.3.4	0,843	Valid
SR	X1.4.1	0,831	Valid
	X1.4.2	0,756	Valid
	X1.4.3	0,873	Valid
	X1.4.4	0,797	Valid
SSS	X1.5.1	0,739	Valid
	X1.5.2	0,748	Valid
	X1.5.3	0,785	Valid
	X1.5.4	0,864	Valid

Based on the results of this CFA test, all indicators in the three constructs were statistically valid, because they had a standardized loading factor ≥ 0.70 , which means that they met the convergent validity criteria. This indicates that each indicator is indeed measuring the construct in question. Therefore, the CCA, SR, and SSS constructs in the *Growth Driving Supply Chain Integration* (GDSCI) model can be used for advanced testing.

Goodness of Fit (GOF)

Tabel 4. Hasil Uji GOF

Source : Researcher

Indeks Fit	Nilai	Batas Ideal	Keterangan
Chi-square / df	2,438	< 3	Baik
RMSEA	0,092	< 0,08 (ideal); < 0,10 (cukup)	Cukup Baik
GFI	0,952	> 0,90	Baik
CFI	0,954	> 0,90	Baik
TLI	0,911	> 0,90	Baik

NFI	0,981	> 0,90	Baik
Hoelter (0,05)	31	> 200	Ukuran Sampel Kecil

Some indicators of Goodness of Fit (GOF) indicate that the model is close to a good fit level with empirical data. Chi-square/df = 2.438 indicates that the model is still within the acceptable range because it is below the ideal limit of <3. RMSEA = 0.092, which while still slightly above the ideal threshold <0.08, remains in the fairly good category (<0.10), indicating that the model's error rate in approaching the data is still within reasonable limits.** In addition, GFI = 0.952, CFI = 0.954, and TLI = 0.911, all exceed the ideal limit >0.90, which means that the model has an excellent degree of match with the empirical data. NFI = 0.981, which is also above 0.90, further corroborates that the model can be said to be fit. However, Hoelter (0.05) = 31, which is still well below the minimum limit of 200, suggests that the sample size used is still too small, which may affect the stability of the model in parameter estimation. Overall, although the sample size still needs to be improved, these results suggest that the model already has a good fit level and can be used for advanced analysis with minimal modifications.

The results of this study provide strong empirical support for the validity of the Growth Driving Supply Chain Integration (GDSCI) construct through Confirmatory Factor Analysis (CFA). The results of the CFA test confirm that GDSCI is a multidimensional construct consisting of three main dimensions: Collaborative Competitive Advantage (CCA), Systemic Resilience (SR), and System Stakeholder Satisfaction (SSS). Each dimension shows a significant contribution to the overall concept of supply chain integration, with high reliability and validity scores as demonstrated by the CFA fit model index. This research contributes to the supply chain literature by strengthening the Dynamic Capability Theory (Teece, 2018), which states that companies can achieve a competitive advantage through flexible and hard-to-replicate capabilities. In this context, supply chain integration at bulk ports plays a strategic asset that allows stakeholders to improve distribution efficiency, strengthen collective competitiveness, and increase stakeholder satisfaction.

In addition, a significant correlation between Systemic Resilience (SR) and System Stakeholder Satisfaction (SSS) shows that supply chains that have high resistance to external disruptions are better able to maintain service stability and increase user satisfaction. These findings are in line with previous research that emphasized the importance of system resilience in the face of market volatility and external factors such as logistical disruptions and changes in demand (Manders et al., 2017; Dubey et al., 2021). The positive correlation between Collaborative Competitive Advantage (CCA) and SR also indicates that the collective competitive advantage built through cooperation between stakeholders contributes to the overall resilience of the system. This supports the finding that collaboration in the supply chain can strengthen adaptability to changing business environments and improve operational efficiency (Kwak et al., 2018).

From a practical perspective, this research provides insights that can be applied by stakeholders in the port and supply chain sectors. First, companies need to strengthen collaboration between stakeholders in the bulk port ecosystem to improve distribution efficiency and overall supply chain competitiveness. This can be achieved through the use of integrated information technology, better coordination in logistics flows, and strategic cooperation agreements between ports, distributors, and end customers (Gunasekaran et al., 2019). Second, it is important for port management to improve system resilience by adopting risk mitigation strategies, operational flexibility, and real-time performance monitoring to deal with changing market conditions and external challenges such as extreme weather and geopolitical uncertainty (Ivanov & Dolgui, 2020). Third, companies in the supply chain ecosystem must adopt a stakeholder-oriented approach, by increasing operational transparency, ensuring smooth distribution flows, and providing added value through more reliable services (Wieland, 2021).

Although this research makes an important contribution, there are some limitations that need to be considered. First, the sample size in this study is still relatively small ($n = 31$), so the generalization of these findings is still limited. Further research is suggested to use a larger and more diverse sample, including different types of ports and related industry sectors, to improve the external validity of the model (Hair et al., 2019). Second, although this study confirms the relationship between supply chain integration and system performance, future studies may explore moderation variables such as digitalization, regulatory policies, and market dynamics to gain a more comprehensive understanding of the factors that affect the effectiveness of supply chain integration (Dubey et al., 2021). Third, the results of the CFA test show that there is still room to improve the measurement model. Therefore, further research can use the Structural Equation Modeling (SEM) approach with multi-group analysis to further test the relationships between variables and strengthen the validation of GDSCI constructs (Hair et al., 2019).

CONCLUSION

This study proves that the Growth Driving Supply Chain Integration (GDSCI) model consisting of CCA, SR, and SSS is valid and reliable to measure the effectiveness of supply chain integration at bulk ports. The CFA results show that the model has a good match, although the sample size is still a limitation. GDSCI reinforces the concept of dynamic capability in creating a sustainable competitive advantage. As a suggestion, supply chain actors need to increase collaboration, build system resilience, and focus on stakeholder satisfaction. Future research suggests enlarging the sample size and considering moderation variables such as digitalization and regulation to broaden the understanding of the GDSCI model.

As a recommendation, policymakers should adopt stricter content regulations on digital platforms by requiring mandatory health and age warnings on all e-cigarette-related content—regardless of whether it is paid or organic. Enforcement mechanisms must also include algorithmic accountability from social media companies to limit the visibility of such content to underage users. Future research should explore cross-platform comparisons, longitudinal effects of repeated exposure, and adolescent perceptions of e-cigarette content framed in various tones. In addition, public health campaigns should prioritize media literacy education

to help youth critically engage with persuasive content online and counter the glamorization of harmful products.

REFERENCES

- Abdallah, A. B., Rawadiah, O. M., Al-Byati, W., & Alhyari, S. (2021). Supply chain integration and export performance: the mediating role of supply chain performance. *International Journal of Productivity and Performance Management*, 70(7), 1907–1929.
- Muafi, M., & Sulistio, J. (2022). A nexus between green intellectual capital, supply chain integration, digital supply chain, supply chain agility, and business performance. *Journal of Industrial Engineering and Management*, 15(2), 275–295.
- Negi, S. (2021). Supply chain efficiency framework to improve business performance in a competitive era. *Management Research Review*, 44(3), 477–508.
- Chen, W., & Srinivasan, S. (2019). Going digital: Implications for firm value and performance. *Journal of Business Logistics*.
- Christopher, M. (2016). *Logistics & Supply Chain Management*. Pearson UK.
- Dubey, R., Bryde, D. J., Blome, C., Roubaud, D., & Giannakis, M. (2021). Facilitating artificial intelligence-enabled supply chain analytics through alliance management during the pandemic crises: An empirical investigation. *International Journal of Production Economics*, 231, 107921.
- Guangsi, Z., Xuehe, W., Jiaping, X., & Qiang, H. (2024). A mechanistic study of enterprise digital intelligence transformation, innovation resilience, and firm performance. *Journal of Business Research*.
- Gunasekaran, A., Subramanian, N., & Papadopoulos, T. (2019). Information technology for competitive advantage within logistics and supply chains: A review. *Transportation Research Part E: Logistics and Transportation Review*, 122, 102–121.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.)*. Sage Publications.
- Helfat, C. E., & Martin, J. A. (2019). Dynamic managerial capabilities: Review and assessment of managerial impact on strategic change. *Journal of Management*, 45(8), 2338–2368. <https://doi.org/10.1177/0149206318811566>
- Ivanov, D., & Dolgui, A. (2020). Viability of intertwined supply networks: Extending the supply chain resilience angles towards survivability. *International Journal of Production Research*, 58(10), 2904–2915.
- Kwak, D. W., Seo, Y. J., & Mason, R. (2018). Investigating the relationship between supply chain innovation, risk management capabilities and competitive advantage in global supply chains. *International Journal of Operations & Production Management*, 38(1), 2–21.
- Manders, J. T., Caniëls, M. C., & Ghijssen, P. W. (2017). Supply chain flexibility: A systematic literature review and research agenda. *International Journal of Supply Chain Management*, 22(3), 234–258.
- Teece, D. J. (2018). *Dynamic capabilities and strategic management: Organizing for innovation and growth*. Oxford University Press.
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research

agenda. *Journal of Business Research*, 122, 889–901.
<https://doi.org/10.1016/j.jbusres.2019.09.022>

Wang, T., & Wang, Q. (2024). The impact of digital transformation on enterprise performance: An empirical analysis based on China's manufacturing export enterprises. *Journal of Business Research*.

Wang, Y., Liu, X., & Zhang, X. (2021). Supply chain digitalization and resilience: The role of dynamic capabilities in uncertain environments. *International Journal of Logistics Management*, 32(2), 437–459. <https://doi.org/10.1108/IJLM-09-2020-0372>

Wieland, A. (2021). Dancing the supply chain: Toward transformative Supply Chain Management. *Journal of Supply Chain Management*, 57(1), 58–73.