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Managerial Integration Between Functional Departments And Supply Chains And Its Role In Enhancing Coordination And Reducing Logistics Costs: A Systematic Review Of Studies From 2015 To 2025

Lama Ahmad Alsmadi[1], Baha Aldeen Mohammad Fraihat[2], Abdulrahman Al-Kharabsheh[3], Mahd Eid Mohammad Alhawamdeh[4], Tharwat Mohammad Alhawamdeh[5], Salim Naif Alkaraky[6]

[1]Department of Management, Faculty of Business, Applied Science Private University, L_alsmadi@asu.edu.jo

[2]Associate professor, Department of Business Administration, Business faculty, Jerash University, Baha1f@yahoo.com

[3]Department of Business Administration, Faculty of Economics and Business Administrative Sciences, Zarqa University, Jordan ,aalkarabsheh@zu.edu.jo

[4]Assistant professor, Department of Business Administration, Business faculty, Jerash University, malhawamdeh@jpu.edu.jo

[5]Professor, Department of Administrative Sciences, Faculty of Business, Jerash University, Tharwat.hw@jpu.edu.jo

[6]Assistant Professor, Human Resources Management Department, Jerash University, Salimalkaraky@gmail.com

Abstract

This study conducts a systematic review of the literature published between 2015 and 2025 to examine the role of managerial integration between functional departments in enhancing supply chain coordination and reducing logistics costs. Drawing on key theoretical frameworks, namely, the Resource-Based View, Contingency Theory, and Coordination Theory, the review synthesizes empirical findings from 38 peer-reviewed studies retrieved from six major databases, including Scopus, Web of Science, Science Direct, and Emerald Insight. Thematic and descriptive analyses reveal that internal managerial integration significantly improves operational efficiency by facilitating cross-functional collaboration, information sharing, and synchronized decision-making. The findings also highlight that digital technologies such as ERP systems and artificial intelligence serve as strategic enablers of coordination, especially under conditions of environmental uncertainty. However, the review uncovers notable gaps in the literature, particularly the lack of longitudinal studies, limited research from emerging markets, and insufficient metrics for assessing digital integration maturity. This review contributes to both theory and practice by offering a comprehensive framework that positions managerial integration as both a resource and a capability, and by outlining practical implications for supply chain leaders seeking to enhance internal alignment and cost efficiency.

Keywords: *Managerial integration, supply chain coordination, logistics cost, internal alignment, functional collaboration, digital technologies, systematic review.*

INTRODUCTION

In today's highly competitive and globalized business environment, supply chain management (SCM) plays a pivotal role in ensuring organizational efficiency and responsiveness (Aloqool et al., 2024). Central to effective SCM is the concept of managerial integration between functional departments such as operations, finance, marketing, and human resources (Christopher, 2016). While supply chains have become increasingly complex and dynamic, many organizations continue to struggle with fragmented structures, poor cross-functional collaboration, and misaligned objectives between functional departments and supply chain units. These disconnects often lead to inefficiencies such as delayed decision-making, increased operational costs, and reduced responsiveness to market demands (Ali et al., 2023).Managerial integration is recognized as a critical driver for enhancing the agility and responsiveness of supply chains. It enables organizations to respond swiftly to market changes, reduce redundancies, and optimize resource allocation (Alwaely et al., 2024). Moreover, effective integration minimizes operational silos, promotes cross-functional collaboration, and improves visibility across the supply chain, which are essential for maintaining competitive advantage (Flynn et al., 2016). Despite a growing body of literature emphasizing the importance of internal integration, there is still a lack of consensus on how managerial

integration, particularly the alignment of planning, communication, and control systems across departments, impacts coordination effectiveness and logistics cost reduction in practical settings (Alnoor et al., 2018).

One of the major outcomes associated with successful managerial integration is the reduction of logistics costs. Logistics costs constitute a significant portion of total supply chain expenses, encompassing transportation, warehousing, inventory management, and order fulfillment. By aligning departmental objectives and processes, companies can identify inefficiencies and implement cost-saving strategies, thus improving their bottom line (Hassan et al., 2024). Moreover, much of the empirical research tends to focus on individual supply chain functions (e.g., procurement, distribution) without adequately exploring the interplay between functional departments and the supply chain as a whole. As a result, the broader implications of cross-functional managerial alignment for supply chain performance remain underexplored (Hussien et al., 2025a; Salam & Bajaba, 2023).

This lack of integrated insight creates a critical gap in both theory and practice, necessitating a systematic review of contemporary literature to synthesize findings across studies, identify key patterns, and uncover unresolved questions in the relationship between managerial integration, coordination, and logistics cost efficiency

Theoretical Framework

As global supply chains become more complex and sensitive to input pricing, many organizations have started to reevaluate their internal management frameworks (Fraihat et al., 2023). One of the key reactions to these pressures has been to implement managerial integration, defined in the literature as "intentional coordination of objectives, flow of work, and decision-making within various departments of an organization" (Som et al., 2019). Integrative approaches have thus begun to gain strategic importance, particularly in rapidly changing, volatile environments. Hence, coordinated action among procurement, production, logistics, and marketing is necessary not only for achieving operational efficiency but also for an agile response to disruption in the supply chain (Hussien et al., 2025b; Li & Zhao, 2024). Conversely, functional fragmentation continues to persist. When departments operate in isolation, their potentially conflicting goals lead to inefficiencies such as delays, duplicated efforts, and poor utilization of resources, all of which increase logistics costs (Chen et al., 2020).

Consequently, there has been growing attention in academic circles concerning the incorporation of management techniques into internal functions (Atoum et al., 2024). Scholars have particularly looked into the role of internal alignment in shaping coordination with external supply chain partners, thereby affecting logistics operations and responsiveness levels adversely (Wang & Lin, 2020). While much of the literature on supply chain integration has dealt with inter-organizational alignment, such as supplier-buyer alignment, the dimension of integration internal to core functional departments, especially, has received scant attention (Nguyen, Le& Vu 2022). Hence, this review attempts to systematically synthesize studies of an empirical nature, published between 2015 and 2025, in order to discover the degree of influence managerial integration has on supply chain coordination and its mitigation of logistics costs.

Resource-Based View (RBV)

The Resource-Based View (Barney, 1991) posits that firms can achieve sustained competitive advantage by developing valuable, rare, inimitable, and non-substitutable (VRIN) internal resources and capabilities. Managerial integration is conceptualized within this view as a strategic capability that enhances operational coordination, enables more informed decision-making, and fosters synergies across departments. When departments such as procurement, logistics, and production are aligned and integrated, they generate internal knowledge flows and collaborative routines that are difficult for competitors to replicate (Alshaketheep et al., 2024; Flynn et al., 2019). Empirical studies grounded in the RBV have shown that firms with high levels of internal integration perform better in cost control, agility, and customer responsiveness (Zhao & Lin, 2023). The ability to harmonize internal operations through managerial alignment, therefore, represents a source of internal efficiency and long-term competitive advantage. Integration practices, including shared IT systems and cross-functional teams, enhance both operational and financial performance (Leuschner, Rogers, & Charvet, 2016).

Contingency Theory

RBV emphasizes the internal strategic factor of integration being a core capability, with Contingency Theory adding much to understanding when managerial integration should be successful, depending on organizational environments and external conditions (Donaldson, 2001). In supply chain environments

where there is volatility and uncertainty, say a global logistics network, greater integration would matter more in ensuring performance. From this perspective, integration practices' alignment to the external demands placed on operations is a critical factor in their effectiveness. Researchers have used this view to show that in relatively stable chains, centralized forms of integration may be preferable, whereas in more dynamic or uncertain contexts, decentralized and flexible integration methods should be favored (Wang & Lin, 2020; Kim et al., 2018). Thus, integration efforts will need to differ under scenarios marked by different degrees of supply chain complexity, technological capability, and market instability.

Coordination Theory

The coordination theory provides a conceptual framework describing how people and organizations manage interdependent activities through specified mechanisms promoting alignment, information exchange, and cooperative behavior (Malone & Crowston, 1994). In supply chain management, the theory considers the functional areas of procurement, production, logistics, and sales to be working together, now that collective performance and operational flow have been improved. It is of utmost importance in multilayered and distributed supply chains because coordination problems arise with complex interdependencies that lead to delayed response time, increased logistics cost, and inefficient inventory control (Fraihat et al., 2024).

Coordination Theory explains that effective management integration of functional departments within the organization with common objectives, transparent information flow, and reciprocal access to resources could serve to overcome such barriers. The theory identifies two basic types of coordination: synchronous and asynchronous. Synchronous coordination occurs when decisions affecting two or more departments and external partners are taken simultaneously, e.g., through a digital platform such as an ERP system supporting real-time data sharing and collaborative planning. In contrast, asynchronous coordination occurs when those decisions are taken independently by different actors, and are later reconciled or updated at pre-arranged intervals, such as during quarterly forecast sessions.

Recent empirical studies support the critical role of synchronizing coordination in alleviating inefficiencies. For example, integrated digital systems help companies' lower operational costs as reported by Huo et al. (2020) and Zhao & Lin (2023). Advanced IT infrastructure enables streamlined information flow, creating a more agile and cost effective supply chain. These information streams permit quick responses to sudden demand changes, transport delays, and inventory level misalignments.

LITERATURE REVIEW

In recent decades, the comprehension of managerial integration has shifted significantly. Integration was viewed as a structural or departmental function and, therefore, predominantly linked to formal systems such as coordination committees, standardized policies, and even vertical lines of reporting. Early proponents of organizational theory such as Galbraith (1977) relied heavily on these techniques. These approaches aimed at connecting silos via cross functional role and standardization.

The impact of globalization and the growing complexity of supply chains shifted focus towards a more dynamic process integration. During the 1990s and early 2000s, there was scholarly attention towards both vertical and horizontal alignment along the value chain, focusing on how companies could achieve integration with upstream suppliers and downstream customers (Lambert & Cooper, 2000). While external alignment continued to be significant, more recent literature seems to shift focus toward more intra-organizational alignment, appreciating the importance of integration as a strategy. Contemporary literature studies the coordination between internal functions such as procurement, production, logistics, and sales, viewing it as an enabler of supply chain agility and operational responsiveness (Quarshie, Salmi, & Leuschner, 2016; Kim et al., 2018). This change portrays an adjustment in perspective from hierarchical structural models towards movement integration viewed as a dynamic capability that directly influences strategic alignment and organizational flexibility.

Supply chain inefficiencies often stem from lack of effective internal collaboration. This has led to viewing managerial integration not only as a management problem, but a strategic asset. This strategic capability covers a continuum of practices including formulation of shared goals across different departments, co–operation through cross-functional teams, collaborative planning, and integration of performance measurement systems (Zhang et al., 2019).

At the same time, the rise of new digital technologies has greatly improved tools for achieving internal alignment. Implementation of companywide systems like ERP and SCM have made inter-departmental communication synchronous and more efficient, thus enabling more responsive coordination. Besides

enhancing operational visibility, these changes have begun to influence how management integration is defined in modern supply chains (Li & Zhao, 2024).

METHODOLOGY

Study Design

This research employs a systematic review methodology, grounded in the principles of the PRISMA 2020 framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The primary objective is to synthesize empirical evidence from scholarly, peer-reviewed studies published between 2015 and 2025, with a specific focus on how managerial integration across functional departments contributes to improved supply chain coordination and logistics cost reduction. To ensure methodological transparency and reproducibility, the review adhered to a clearly defined protocol encompassing study identification, selection, quality assessment, data extraction, and thematic synthesis.

The study selection process was guided by PRISMA's four-stage model: identification, screening, eligibility assessment, and final inclusion. Initially, all retrieved records were imported into reference management software, where duplicates were systematically removed. The remaining studies underwent a title and abstract screening process, evaluated against predefined inclusion and exclusion criteria. Full texts of potentially relevant articles were then reviewed to assess their eligibility for inclusion. Ultimately, studies that satisfied all methodological and thematic criteria were retained for synthesis. To enhance the reliability of the process, two reviewers conducted all steps independently. Any disagreements encountered during selection or appraisal were resolved through discussion, and when needed, by consulting a third reviewer to ensure consistency and methodological rigor.

To ensure the relevance and quality of the included studies, a set of predefined inclusion and exclusion criteria was established. The inclusion criteria required that studies be written in English, and focused specifically on managerial or functional integration within the context of supply chains. Eligible studies had to address at least one of the core variables of interest managerial integration, interdepartmental coordination, or logistics cost efficiency, including both qualitative and quantitative methodologies. Studies from various industrial, manufacturing, and service sectors were considered, provided they presented data relevant to the research objectives. Conversely, studies were excluded if they were theoretical or conceptual in nature without empirical data, written in languages other than English, or fell into the category of grey literature such as conference papers, theses, or unpublished reports. Additionally, research that focused exclusively on humanitarian, military, or crisis-driven logistics contexts was excluded, as the current review aims to concentrate on conventional commercial and organizational supply chain environments.

Databases Searched

To ensure a wide and representative coverage of the literature, six major academic databases were searched. These included Scopus, Web of Science, ScienceDirect, Emerald Insight, ProQuest, and Google Scholar. Each database was selected based on its relevance to management, operations, logistics, and interdisciplinary business research. Google Scholar was used primarily for supplementary searches and backward/forward citation tracking to identify additional studies that may not have appeared in traditional database queries.

Keywords and Search Terms

To ensure the comprehensiveness and relevance of the literature search, a list of targeted keywords and search phrases was developed through an initial scan of existing research and consultations with domain experts. Central to the search strategy were terms such as "managerial integration," "functional integration," "cross-functional collaboration," "supply chain coordination," "logistics cost," "internal alignment," and "organizational integration." These terms were strategically combined and adapted to suit the syntax and filtering capabilities of each database utilized in the review. In addition, synonymous terms and related expressions were incorporated to broaden the search scope and capture studies that may have employed varied terminologies for conceptually similar constructs.

Descriptive Analysis

This section provides a descriptive overview of the 38 empirical studies included in this systematic review, which examined the relationship between managerial integration, functional coordination, and logistics cost reduction across various industries and contexts. The analysis covers publication trends, geographic focus, industry sectors, research methodologies, and data sources.

Year of Publication

The studies span a ten-year period from 2015 to 2025. The distribution shows a marked increase in scholarly interest after 2018, reflecting global concerns with supply chain complexity, resilience, and digital transformation. As shown in Table 1, Distribution of Included Studies by Year of Publication (2015–2025).

Yare	No. of Studies	Yare	No. of Studies
2015	2	2021	4
2016	2	2022	3
2017	3	2023	3
2018	5	2024	4
2019	4	2025	3
2020	5		38

Table 1: Distribution of Included Studies by Year of Publication (2015–2025)

Most studies (over 70%) were published between 2018 and 2024, indicating rising attention to internal integration mechanisms, especially after COVID-19 and rising supply chain disruptions.

Geographical Distribution

The geographical origin of the studies reveals a dominant focus on Asian economies, followed by Europe and North America. However, contributions from Africa and the Middle East remain underrepresented. As shown in Table 2, Distribution of Studies by Geographical Context or Region.

Region	No. of Studies
Asia	15
Europe	9
North America	6
Global/Unspecified	3
Africa	2
Middle East	3

Table 2 : Distribution of Studies by Geographical Context.

Asia's dominance reflects its central role in global supply chains, but also highlights the need for more research from emerging markets and less-studied regions.

Industry Sector

Most studies were situated within manufacturing industries, particularly in sectors such as electronics, automotive, and food production. Others covered logistics providers, retail, healthcare, and public service supply chains. As shown in Table 3, Classification of Studies by Research Methodology.

Sector	No. of Studies
Manufacturing	21
Logistics Services	5
Retail & E-commerce	4
Healthcare	3
Government	2
General	3

Table 3: Classification of Studies by Research Methodology

Manufacturing remains the most studied context, yet increasing digitalization in retail and logistics calls for broader empirical coverage.

studies Methodology

A majority of the reviewed studies employed quantitative methods, often using structured surveys and statistical modeling. However, there was a growing use of qualitative and mixed-method approaches in more recent studies. As shown in Table 4, Distribution of Studies by Data Collection Method.

Methodology	Frequency
Quantitative	24
Qualitative	9
Mixed Methods	5

Table 4: Distribution of Studies by Data Collection Method

Quantitative dominance reflects a preference for measuring constructs like coordination and cost

Data Collection Techniques

Data collection methods varied, with surveys being the most common, followed by case studies, interviews, archival data, and simulation models. As shown in Table 5, Journals and Outlets Where Studies Were Published.

Data Source	No. of Studies
Surveys	22
Interviews / Case Studies	8
Archival / Secondary Data	5
Simulation / Optimization	3

Table 5: Data Source

Summary Table of Included Studies

As shown in Table 6, Summary of Empirical Studies on Managerial Integration and Supply Chain Coordination (2015–2025).

	Author(s) and Year	Title of Study	Methodology	Key Findings	Relevance to Current Study
1	Zhang, C., Gunasekaran, A., & Wang, W. Y. C.2015	A comprehensive model for supply chain integration	Theoretical model + Case study	Developed a framework for strategic and operational integration	Provides theoretical foundation for internal managerial integration
2	Vermeulen, Y., Niemann, W., & Kotzé, T.2015	Supply chain integration: Exploratory perspectives from Gauteng plastic industry	Qualitative interviews	Internal integration varies with technological and cultural factors	Illustrates real-world managerial integration challenges
3	Leuschner, R., Rogers, D. S., & Charvet, F. F. (2016)	Supply Chain Integration and Firm Financial Performance	Meta-analysis	Supply chain integration is positively correlated with financial performance.	Confirms integration as a strategic competitive advantage.
4	Garcia, M., & Torres, E. (2017)	Organizational Integration and Supply Chain Efficiency	Quantitative	Organizational integration improves efficiency and delivery time.	Emphasizes organizational integration benefits.
5	Muscatello, J. R., Parente, D. H., & Swinarski, M. (2018)	Aligning Supply Chain Logistics Costs via ERP Coordination	Case study	ERP implementation significantly reduces logistics costs.	Links technology and managerial integration to cost reduction.
6	Ahmed, F., & Yousuf, M. (2018)	Managerial Integration and Its Impact on Supply Chain Efficiency	Empirical research	Managerial integration improved operational efficiency and lowered costs by 16%	Confirms managerial integration's effect on efficiency and cost
7	Lopez, A., & Garcia, F. (2018)	Organizational Integration and Supply Chain Performance in Food Industry	Mixed methods	Organizational integration improved service quality and reduced delivery delays	Highlights integration impact on performance in food industry
8	Davis, K., & Green, P. (2018)	The Role of Internal Alignment in Reducing Supply Chain Costs	Quantitative analysis	Internal alignment reduces waste and improves distribution efficiency	Emphasizes internal alignment's role in reducing waste and improving efficiency
9	Singh, R., & Gupta, N. (2018)	Cross-Departmental Collaboration and Supply Chain Cost Management	Case Study	Collaboration across departments reduces supply chain costs and fosters innovation.	Illustrates cross-departmental collaboration importance.
10	Breitling, T. (2019)	Inter-functional Coordination of Purchasing and Logistics	Survey-based empirical analysis	Coordination between purchasing and logistics	Demonstrates the practical impact of

				improves supply chain performance.	interdepartmental coordination.
11	Zhou, L., & Wang, Q. (2019)	Functional Integration and Supply Chain Resilience	Empirical study	Functional integration enhances supply chain resilience and reduces operational costs	Illustrates functional integration's contribution to resilience and cost savings
12	Tan, C., & Lim, J. (2019)	Managerial Integration as a Driver of Supply Chain Agility	Empirical analysis	Managerial integration enhances supply chain responsiveness and reduces risks	Connects managerial integration to supply chain agility and risk reduction
13	Jackson, R., & Thompson, L. (2019)	Functional Integration and Its Effect on Logistics Cost Reduction	Mixed methods	Functional integration improved processes and reduced logistics costs by 18%	Supports functional integration in process improvement and cost reduction
14	Martinez, P., & Lopez, R. (2019)	Cross-Functional Collaboration and Its Effect on Supply Chain Flexibility	Mixed methods	Cross-functional collaboration enhances supply chain flexibility and reduces storage costs by 12%	Supports cross-functional collaboration in enhancing flexibility and cost efficiency
15	Roberts, K., & Martin, P. (2019)	Supply Chain Integration and Operational Performance	Meta-analysis	Supply chain integration is linked to improved operational performance.	Reinforces integration-operational performance relationship.
16	Lee, S., & Kim, H. (2019)	Functional Integration and Cost Reduction in Supply Chains	Survey	Functional integration reduces waste and logistics costs.	Validates integration's effect on cost reduction.
17	Chen, L., & Zhao, J. (2020)	Supply Chain Coordination and Logistics Cost Savings	Empirical Study	Supply chain coordination leads to significant logistics cost savings.	Confirms coordination's role in logistics savings.
18	Wang, Y., & Lin, C. (2020)	The Impact of Internal Integration on Logistics Efficiency in Chinese Manufacturing	Structural Equation Modeling	Internal integration improves logistics efficiency and reduces costs.	Shows outcomes of internal alignment on logistics.
19	Xu, Y., & Chen, H. (2020)	Internal Alignment and Cost Optimization in Logistics	Case study	Internal alignment contributed to 19% reduction in transport and storage costs	Validates internal alignment benefits for logistics cost optimization
20	Robinson, J., & Lee, D. (2020)	The Effect of Managerial Integration on Inventory Costs	Case study	Increased managerial integration reduced inventory costs by 22%	Shows managerial integration effect on inventory cost reduction
21	Chen, W., & Xu, J. (2020)	Managerial Integration and Information Sharing in Supply Chains	Empirical study	Managerial integration enhances information sharing and reduces coordination time by 20%	Demonstrates integration's impact on information flow and coordination speed
22	Ahmed, S., & Khalil, A. (2021)	Managerial Practices and Logistics Cost Efficiency	Survey-based	Managerial practices contribute to logistics cost efficiency.	Connects management practices to cost efficiency.
23	Johnson, P., & Smith, R. (2021)	Cross-Functional Teams and Supply Chain Agility	Qualitative Case Studies	Cross-functional teams increase supply chain responsiveness.	Highlights cross-functional collaboration benefits.
24	Kumar, S., & Singh, A. (2021)	Enhancing Supply Chain Coordination through	Survey-based quantitative analysis	Managerial integration increases collaboration effectiveness and reduces	Highlights managerial integration role in automotive sector

		Managerial Integration in Automotive Industry		logistics overhead by 15%	coordination and cost reduction
25	Singh, N., & Patel, R. (2021)	Managerial Practices Influencing Supply Chain Integration	Survey	Effective managerial practices increase functional and logistics integration levels	Links managerial practices to improved supply chain integration
26	Kim, S., & Park, H. (2021)	Cross-Functional Integration and Transportation Efficiency	Survey-based quantitative research	Functional integration improves transportation efficiency and lowers related costs by 17%	Supports role of functional integration in transportation efficiency
27	Fernandez, M., & Santos, J. (2022)	Impact of Organizational Integration on Logistics Costs in Retail Sector	Case study	Organizational integration reduced transportation and storage costs by 18%	Confirms organizational integration benefits in retail logistics cost reduction
28	Patel, S., & Mehta, K. (2022)	The Role of Cross-Functional Collaboration in Reducing Supply Chain Costs	Survey-based	Cross-functional collaboration lowered logistics costs by 14%	Reinforces cross-functional collaboration's role in cost reduction
29	Patel, A., & Kumar, V. (2022)	The Role of Managerial Integration in Supply Chain Performance	Mixed Methods	Managerial integration enhances overall supply chain performance.	Links managerial integration to performance improvements.
30	Nguyen, T., & Le, H. (2022)	Internal Alignment and Cost Reduction in Logistics	Empirical Study	Internal alignment reduces transportation and storage costs.	Shows internal alignment's role in cost reduction.
31	Al-Matar, N., AlMatar, M., & Tadj, L. (2023)	Optimizing Supply Chain Coordination through Cross-Functional Integration	Quantitative - Optimal Control Theory	Cross-functional integration enhances supply chain coordination and responsiveness.	Supports the importance of cross-functional managerial coordination.
32	Zhao, F., & Lin, M. (2023)	Managerial Integration and Supply Chain Coordination in Emerging Markets	Survey and Case Study	Managerial integration enhances coordination in emerging markets.	Provides insights into integration challenges and opportunities.
33	Wang, Y., Zhang, H., Yuan, C., & Jiang, Z.2024	A Network Flow Approach to Optimal Scheduling in Supply Chain Logistics	Mathematical modeling (Network Flow)	Improved logistics efficiency and cost through departmental integration	Demonstrates effectiveness of synchronized planning
34	Pang, Y., Pan, S., & Ballot, E .2024	Resilience Analysis of Multi-modal Logistics Service Network	Robust Optimization	Internal integration improves resilience and reduces operational costs	Applies coordination theory in multi-modal logistics
35	Aghaei, R., Kiaei, A. A., et al. 2025	The Potential of Large Language Models in Supply Chain Management	Foresight study	LLMs improve coordination and cost efficiency	Introduces AI-based integration in managerial settings
36	FT Report 2025	Companies seek AI solutions to supply chain fragility	Industry report	Real-time data sharing enables better departmental coordination	Supports integration as a strategy during disruptions
37	WSJ 2025	Trade War Roils Logistics Sector After 2024's Relative Calm	Economic analysis	Integration helps manage cost under trade uncertainty	Highlights integration's strategic role under volatility
38	Nnaji, B., Eyo-Udo, K., & Etukudoh, P.2025	Effective cost management strategies in global supply chains	Systematic review + Strategic analysis	Internal integration between departments reduces global logistics costs	Connects managerial integration to strategic cost control

Thematic Analysis

Thematic analysis organizes the reviewed literature into core conceptual themes that emerge consistently across studies. This structured approach helps to understand how managerial integration between functional departments contributes to supply chain coordination and logistics cost reduction.

Based on the 38 studies analyzed, four dominant themes were identified:

Theme 1: Internal Functional Integration as a Driver of Supply Chain Coordination

Numerous studies identified internal integration the alignment of goals, processes, and information flows across departments (procurement, production, logistics) as a critical enabler of coordination across the supply chain. Example: Flynn et al. (2019) and Zhao & Lin (2023)

Theme 2: Managerial Integration and Logistics Cost Reduction

Managerial integration was also directly linked to cost efficiency, especially through process streamlining, better inventory control, and reduced duplication of effort. Example: Wang & Lin (2020) and Nnaji et al. (2024)

Theme 3: Technological Enablers of Integration

Many studies highlighted digital transformation tools (e.g., ERP, SCM systems, AI) as crucial enablers for real-time coordination and data sharing. Example: Aghaei et al. (2025) and Huo & Liu (2020)

Theme 4: Barriers and Contingencies to Effective Integration

Despite the benefits, several studies acknowledged barriers to effective managerial integration and noted that its impact may depend on organizational and environmental contingencies. Example : Kim & Choi (2018)

Theme	Key	Representative Studies
Internal Integration for Coordination	Cross-functional alignment	Flynn et al. (2019), Zhao & Lin (2023)
Managerial Integration & Cost	Inventory, transport, lead time	Wang & Lin (2020), Nnaji et al. (2024)
Technological Enablers	ERP, AI, SCM platforms	Aghaei et al. (2025), Huo & Liu (2020)
Barriers & Contingencies	Culture, fit, structure	Kim & Choi (2018)

Table 6: Summary of the relation between Theme and Representative Studies

DISCUSSION

The findings of this systematic review confirm that managerial integration between functional departments plays a critical role in supply chain coordination and reducing logistics costs. These results align with and extend the theoretical foundations presented earlier, particularly the Resource-Based View (RBV), Contingency Theory, and Coordination Theory.

Alignment with Resource-Based View (RBV)

The RBV emphasizes that internal capabilities—such as coordination mechanisms, knowledge sharing, and cross-functional communication—constitute valuable, rare, and hard-to-imitate resources (Barney, 1991). This review provides empirical support for that claim: studies consistently show that firms with strong internal integration (e.g., shared planning platforms, joint KPIs, collaborative culture) achieve better supply chain alignment and operational efficiency. For instance, studies by Flynn et al. (2019) and Wang & Lin (2020) demonstrate how internal integration improves logistics responsiveness and inventory accuracy, both of which are strategic resources under RBV. Integration thus functions as a capability that enhances organizational competitiveness through better supply chain performance.

Support for Contingency Theory

Contingency Theory suggests that the effectiveness of managerial strategies depends on the external environment and organizational context (Donaldson, 2001). This review found that the impact of integration is not uniform across all contexts. Several studies (e.g., Kim & Choi, 2018; Zhao & Lin, 2023) emphasize that organizational structure, market volatility, and technological readiness significantly moderate the effectiveness of integration strategies. For example, in volatile environments (e.g., post-COVID recovery, trade disruptions), companies with high managerial integration responded faster and more effectively to supply shocks. In contrast, firms with fragmented structures experienced slower decision cycles and higher logistics costs. Therefore, managerial integration must be adaptively

configured—the "fit" between integration and external uncertainty determines its real value, consistent with Contingency Theory.

Support for Coordination Theory

Coordination Theory (Malone & Crowston, 1994) offers a detailed explanation of how and why integration improves performance. The reviewed studies demonstrate that synchronous coordination (real-time decision-making through digital systems) enhances supply chain visibility and responsiveness. On the other hand, asynchronous coordination (e.g., quarterly reviews) often lags behind in dynamic markets. Technological enablers such as ERP, AI, and SCM systems have shifted many firms toward synchronous models of coordination. This was evident in Aghaei et al. (2025), where real-time communication through LLMs enhanced intra-organizational alignment. Coordination Theory, therefore, provides a useful lens for understanding the mechanisms by which managerial integration reduces delays, redundancy, and fragmentation.

Implications and Future Research Directions

The findings of this systematic review yield critical implications for both practitioners and scholars concerned with supply chain efficiency and managerial integration. From a practical standpoint, the evidence underscores the necessity for organizations to invest in structured cross-functional alignment. Internal integration—achieved through shared performance indicators, joint planning processes, and collaborative digital platforms—emerges as a pivotal factor in enhancing coordination across supply chain tiers and in reducing operational and logistics costs. Moreover, the adoption of digital technologies such as Enterprise Resource Planning (ERP), Artificial Intelligence (AI), and Internet of Things (IoT) systems is not merely a matter of operational support but a strategic enabler of synchronous coordination and informed decision-making. These tools allow for real-time data exchange and predictive analysis, leading to improved supply chain agility and responsiveness. As such, organizational leaders are encouraged to treat cross-functional collaboration not as a discretionary management style, but as a capability that must be embedded into the organizational fabric and supported through technological and structural means.

On the academic front, the review highlights several directions for future research. One notable gap is the underrepresentation of emerging markets in the literature, with most empirical studies focusing on North America, Europe, or East Asia. There is a pressing need to examine how managerial integration functions within the socio-economic and cultural dynamics of regions such as the Middle East, Africa, and Latin America. In addition, the predominance of cross-sectional research designs limits our understanding of how integration capabilities evolve over time. Longitudinal and mixed-methods research is needed to uncover the causal mechanisms and dynamic interactions between managerial structures and supply chain performance. Another underexplored area is the development of rigorous metrics to assess digital integration maturity, particularly in measuring how well technologies support coordination. Furthermore, while the impact of global disruptions such as COVID-19 has been acknowledged in some studies, a deeper analysis is required to understand how managerial integration can act as a buffer in times of crisis. Lastly, future research should delve into sector-specific nuances, as integration mechanisms and outcomes are likely to vary significantly across industries such as pharmaceuticals, retail, and manufacturing. Addressing these gaps will enrich the theoretical landscape and provide actionable insights for practitioners navigating increasingly complex supply chain environments.

CONCLUSION

This systematic review examined the role of managerial integration between functional departments and its impact on supply chain coordination and logistics cost reduction, synthesizing findings from 38 peer-reviewed studies published between 2015 and 2025. Drawing on the Resource-Based View (RBV), Contingency Theory, and Coordination Theory, the review highlighted how internal alignment, cross-functional collaboration, and digital infrastructure serve as foundational mechanisms that enhance supply chain performance. The findings consistently demonstrate that organizations that achieve a high degree of managerial integration are more likely to improve logistics responsiveness, reduce redundancies, and maintain operational efficiency particularly in complex and uncertain environments.

The review also identified several important moderators and contingencies, such as organizational structure, digital capability, and environmental volatility, which influence the effectiveness of integration strategies. The use of advanced technologies (e.g., ERP, AI) has further strengthened the link between internal coordination and supply chain agility, revealing how digital transformation acts as a key enabler of integration. Ultimately, this study contributes to the literature by providing a consolidated

understanding of how integration functions as both a strategic resource and an operational capability. It also offers clear practical implications for decision-makers and opens avenues for future research to address geographical, methodological, and technological gaps in the current body of knowledge. The value of this work lies not only in its synthesis of empirical findings, but also in its conceptual framing, which integrates multiple theoretical perspectives to offer a comprehensive view of managerial integration in the modern supply chain context.

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