

A Systematic Review of Responsive and Efficient Supply Chain: The Proposed Holistic Model

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How to cite this paper: Alkayid, O. A. M. (2025). A Systematic Review of Responsive and Efficient Supply Chain: The Proposed Holistic Model. *Open Journal of Business and Management*, 13, 2670-2688.

<https://doi.org/10.4236/ojbm.2025.134142>

Received: May 2, 2025

Accepted: July 11, 2025

Published: July 14, 2025

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Abstract

The new reality has brought to light many competitive conflicts that the world is witnessing in all sectors, so organizations are now facing a set of challenges within the modern supply chain (SC). As the process of improving and developing SC is based on relying on modern methods of continuity and development by enhancing performance, reducing costs, and minimizing time that affects the quality of services provided at the same time. Accordingly, a sustainable SC is one that fully integrates responsive and efficient SC responsible practices into a competitive and successful holistic model. Therefore, this paper mainly aims to systematically review the relationship between responsive and efficient SC, as well as to propose a holistic model combining responsive SC indicators with efficient SC elements. Responsive SC indicators include cost, quality, flexibility, and delivery speed, while efficient SC relates to elements in terms of cost, including inventory, transportation, warehousing, and customer service. In this paper, a systematic review was followed with inclusion and exclusion criteria, as 10 conference and journal articles were reviewed to analyze the relationship between responsive and efficient SC, incorporating data-derived perspectives. The systematic review results revealed that there is a theoretical possibility to combine responsive SC indicators with efficient SC elements, where integrating SC process and activities can lead to building efficiency and superior responsiveness value, and thus achieving outstanding SC performance. In addition, the results found the effectiveness of the holistic model in alleviating the contradictions between responsive and efficient SC, as this model enhances communication and collaboration between different departments and partners within the SC, including suppliers, manufacturers and distributors. Based on these results, this paper recommends the need to work on enhancing the level of sustainability and flexibility of the SC through partnership and alliance between members of SC and the use of information tech-

nology and production technology to achieve a high degree of integration between responsive and efficient SC in organizations.

Keywords

Responsive SC, Efficient SC, Proposed Holistic Model

1. Introduction

Due to high global competition, organizations are under pressure to explore new strategies that can address different competitive issues (Sharifi, Amin, & Fang, 2024). Generally, every organization has its own strategic SC, which is essential in addressing the goals of the organization efficiently (Wieland, 2021). SC is crucial in determining how fit an organization in terms of achieving strategic goals, as the evaluation of SC performance is analyzed through certain logistical drivers that are; facilities, inventory, transportation, information, sourcing and pricing (Ash et al., 2022). While the profitability in SC is to be evaluated through all SC stages in order to address a strategy in wide scope rather than separate stages (Li, Lee, & Gharehgozli, 2023). SC is essential to company success and customer satisfaction that includes the management of internal and external activities involved in supplier selection, production control, inventory control, distribution and customer service (Shabbir et al., 2019). To address these challenges, there are a number of strategies that range from low to high cost. Implementing appropriate SC strategies is so complicated, where optimizing SC parameters has become the most important factor that impacts on their cost, which is not easy process; as it needs optimization many factors that contradict each other (Wong, Anwar, & Soh, 2024). The main objective is to increase value added by improving the financial and operational performance of SC components, speeding up the sharing and collaboration in the exchange of materials, information, and finance, and lowering operating expenditures (Moadab et al., 2023). For example: the cost vs. response time, cost vs. number of facility, cost vs. product variety, cost vs. product availability and cost vs. order visibility (Waters, 2019). Where building and developing responsive and efficient SC will ultimately lead to improving overall business performance and achieving competitive priorities for operations strategy (Becerra, Mula, & Sanchis, 2024).

Many companies do not set goals for SC departments, but rather ask them to run the existing work better than it was. The problem-solving aspect has been maximized and they have forgotten the importance of developing and upgrading the management as a whole (Rahman et al., 2022). There is no clear vision or understandable standards by which managers, supervisors and employees are judged to ensure that there is real development and increased productivity that supports the company's future directions and SC strategic plans (Ketokivi & Mahoney, 2020). In any SC, efficiency is attained via planning, organization, time manage-

ment, control, and follow-up, while effectiveness is attained with a clear vision, defined goals, and tactics. Visions and objectives are not properly realized when there is efficacy but no efficiency. When efficiency is lacking yet efficacy is present, work is completed but objectives are unclear (Moyano-Fuentes et al., 2021; Olatunji et al., 2019). This paper seeks to fill this gap by proposing a holistic model for SC design to achieve the advantages of both responsive and efficient SC taking into considerations the different types of costs while addressing all customer service component in high level of performance. The proposed holistic model will contribute to improving the SC network, increasing efficiency, enhancing collaboration, reducing waste, and reducing delays. Moreover, this model will be general and suitable for use by existing SC or SC under design. Proposed holistic model helps to better distribute risks, as the impact of problems can be minimized by having alternatives and backup plans, where flexible chain enables companies to adapt to rapidly changing market and economic conditions.

A competitive organization builds its SC strategy to be either responsive or efficient (Avinash & Joseph, 2024). Efficient SC focuses on reducing cost of different operations regardless of the time required to conduct an operation (Rahman et al., 2022). This strategy entails reducing cost of logistical drivers as they interact in cross-functional fashion (Carter et al., 2009). For example, to reduce the transportation cost, number of facilities should be increased, while to reduce inventory cost, number of facilities should be reduced to aggregate inventory in fewer facilities, which means that cost cannot be reduced to the minimum for all drivers and for all stages in SC (Olatunji et al., 2019). The efficient SC reflects the organization's ability to compete by reducing costs and improving the level of accuracy and speed in performing operations (Maloni et al., 2024). It means the ability to perform tasks as planned and focus on forecasting using the right measures of quantity, quality, and time (Ribeiro & Barbosa-Póvoa, 2023). This information remains at the heart and core of advanced planning and scheduling software, resulting in collaborative decision-making for scheduling production to meet customer demand expectations with outstanding environmental involvement at all levels of SC (Tsao et al., 2021). Therefore, in order to make the SC more efficient, the focus is to reduce waste, increase operating speed and reduce costs, which requires continuous improvement in the SC through various tools, most notably the reliance on advanced technology (Aldrighetti, Battini, & Ivanov, 2023). These benefits are reflected in increased inventory and shorter product development cycles. Improving SC efficiency can also increase production volumes, helping companies achieve economies of scale (Fu et al., 2024). Moreover, improving SC efficiency contributes to companies' environmental sustainability goals (Olatunji et al., 2019). Therefore, it is possible to identify a set of factors that contribute to reducing the logistics cost associated with maintaining the reserve in general (Avinash & Joseph, 2024). This includes identifying locations and access points, the availability of sufficient storage spaces at those locations, and connecting these locations to a transportation network capable of distributing the product to dif-

ferent points (Ketokivi & Mahoney, 2020). The implementation of electronic SC will certainly improve operational efficiencies, raise productivity and marketing performance, and enhance marketing capabilities. Easy access to information allows for more efficient planning of SC activities (Tsao et al., 2021). The purpose of efficient SC is to achieve products that are less expensive and more profitable. Hence, there must be constant coordination between the finance department and the SC department so that they are aware of the available resources that are allocated to spend on its various activities (Wu, Jiang, & Cao, 2023). The finance department must receive complete information about these resources and expenses so that they are taken into account when developing plans in the company (Phuengrod, Wannapiroon, & Nilsook, 2024).

On the other hand, a responsive SC focuses on reducing time of different operations regardless of the cost required to conduct an operation (Nayeri, Sazvar, & Heydari, 2023). Responsiveness is the speed at which the SC delivers products to the customer, where it can be measured by identifying the lead-time, meaning the time taken from receiving the customer's order to the customer receiving the product (Jafari et al., 2023). The main objective of the responsive SC is to acquire the largest number of customers by diversifying the products offered to them. Taking into account their needs and requirements, while satisfying them with the quality of the products and services provided to expand the scope of acquiring these customers, i.e. diversifying the products offered to customers with speed of entry through SC (Olfati & Paydar, 2023). For example, to reduce the time of product or service delivery, more facilities are required to be closer to customers of each stage in SC. In addition, higher inventory level is required for more responsive customer service. This is why high responsive SC incurs more cost (Azaron, Venkatadri, & Farhang Doost, 2021). Furthermore, the responsive SC is designed to ensure a continuous flow of products with an emphasis on speed of delivery, in order to achieve rapid response to consumer demands and high diversification of products and services. This requires that the spare capacity of suppliers and the level of SC inventory be high to ensure speed of delivery (Olfati & Paydar, 2023). In a responsive SC, organizations seek to produce and deliver products to customers more responsively, with improved quality and shorter lead times. This ultimately improves their market position and increases their chances of selling their products in global markets (Goodarzian et al., 2023). Where Biswas and Sarker (2020) indicated that SC responsiveness affects operational performance, because achieving high flexibility is a strategic goal that enables organizations to achieve outstanding company performance and customer satisfaction. This means the ability to deliver customer orders on time without any delay, as well as the ability to distribute and deliver the product in the appropriate quantity (Olfati & Paydar, 2023). Businesses need to rebuild their SCs to become more customer-oriented. More precisely, businesses need to modify their SCs to become more responsive to the ever-changing demands of customers, and strive to ensure that the product meets customer expectations and achieves customer satisfaction. This

is done through new partnerships, developing new processes, and activating electronic SC. In fact, many businesses focus on e-supply chain management as a means of enhancing marketing capabilities and reducing shortcomings, thus enhancing the company's marketing capabilities (Madhani, 2020). Transportation plays a major role in determining the quality of service, which will greatly affect the improvement of the mental image of customers dealing with the institution. It is considered one of the main elements determining customer satisfaction with the services and products provided to them, because the bottom line of the production process depends on the delivery of goods and services to customers at the time they request. Transportation management involves choosing the type and service of transportation, determining transportation fees, the party and lines through which transportation is carried out, scheduling trucks, choosing work equipment, determining claims processes, and auditing the pricing process (Goodarzian et al., 2023).

Achieving strategic fit became more complex as product variety increases, product life-cycle decreases, demanding customers' increases, and SC ownership increases. It became a challenge to achieve responsiveness and efficiency in all stages of SC as the logistical drivers' conflict while trying to address low cost and low time concurrently. However, organizations in high competitions, especially in complex SC, require gaining the advantages of both strategies in order to have power of competition over other organizations in achieving minimum cost and time (Zhang et al., 2023). Therefore, achieving a good balance between responsive and efficient SC in organizations requires determining the efficiency of their goals and their ability to implement green SC. This is done by verifying the efficiency of the goals and having the appropriate technologies to implement this concept, in addition to the need to take into account the risks of increasing costs required by the process of radiation disposal and increased waste. Additionally, this balance requires developing plans that focus on the type of technology that will be used in the production of products or the provision of services, as well as determining the types of energy that will be used and planning the process of obtaining all data related to the life cycle of the product from display to reuse. The goal of this entire step is to reduce the negative impacts resulting from the production process (Moadab et al., 2023). Moreover, creating responsive and efficient SC means thoughtful and organized action to re-engineer processes, ensuring the elimination of all sources of waste, so that operations are faster, high quality and at a lower cost (Becerra et al., 2024). In conclusion, work on making more efforts to build cooperative relationships between responsive and efficient SC contributes to a high degree of stability and reliability for companies and improves production performance to better levels. Companies need to improve the speed of response to meet customer needs, which is reflected in improving the efficiency of their operations (Mahdavi, Mahmoudzadeh, & Olsen, 2023).

All optimization models that address SC issues cannot be used to achieve the advantage of both responsiveness and efficiency. Not being able to achieve both

strategies at the same stage in a SC is because of some conflicts that may take a place. For example, to reduce time of transportation, hence be responsive, more facilities are required which will incur higher cost of SC. An organization cannot serve customers by providing all customer service components on high level of performance, as some conflicts occur. The strategies of SC influence customer service components, which are essential in determining SC design (Asamoah et al., 2025). There is a lack in the literature of using such tools of solving similar problems. All models that have been built did not address the problem that is explained as it is considered as a complex and dynamic problem that may not have a generic solution (Avinash & Joseph, 2024). Achieving SC optimization and addressing all customer service components in high level while trying to become both responsive and efficient at the same time becomes a challenge for a SC, however, if an organization can address to together all will acquire high competitive advantages over other competitors (Díaz-Curbelo et al., 2019). This paper proposes achieving all these advantages at the same time with no trade-off of any using the holistic model. The previous research concluded to identify and limit the problems facing companies, which include poor quality, failure to market effectively, hidden defects, the formation of a negative attitude on the part of customers, and the presence of strong competition. In addition, the study concluded that companies did not update the information technology system using research and development on the website, which hinders the generalization of SC management at the corporate level. The study concluded that companies do not rely on a comprehensive system that integrates modern technology systems with warehousing activities in carrying out work and tasks. This affects the failure of these companies to carry out their tasks as required, which hinders the quality of appropriate logistics services. The problem of the spread of the new Corona virus came to cast a very dark shadow on the global economy, as many analysts warned that the disruption of SCs could threaten global growth. The exchange of accurate and timely information is also an important factor in improving performance throughout the SC (Stanton, 2023). Distorted information creates a significant burden in the SC, contributing to increased costs. Information exchanged between SC members must be current, from a reliable source, accurate, timely, and credible. Based on that, the following research questions are addressed:

- 1) *What is the systematic review to the relationship between responsive and efficient SC?*
- 2) *How does proposed holistic model balance the responsive and efficient SC?*

2. Method

A systematic review was conducted after a clear and methodical search strategy with inclusion and exclusion criteria has been implemented. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement's guidelines have been adhered to by the researchers in this regard. The period of

the literature search was 2018-2024. A total of 25 conference and journal articles were reviewed in the three electronic databases analysed that are ScienceDirect, Google Scholar, and Scopus. After reviewing and analyzing all papers, duplicate papers (n = 5) were excluded because they did not meet the applicable inclusion and exclusion criteria. In conclusion, 20 papers in all qualified to be included in the review as depicted in **Table 1**.

Table 1. Characteristics of included systematic reviews (n = 10).

No.	Research Paper Title	Author(s) and Year	Objective(s)	Methods	Variables Studied in the Article	Outcomes
1.	Integrating accounting models with supply chain management in the aerospace industry: A strategic approach to enhancing efficiency and reducing costs in the US	Orijji and Joel (2024)	To investigate the role of SC accounting models in enhancing efficiency in the aerospace industry	A thorough approach to combining SC procedures with accounting principles	Efficient s SC	According to the suggested model in the American aircraft industry, an effective SC's characteristics and procedures have a significant impact on company performance The study results demonstrated the importance of digital technologies in transforming healthcare SC services. Key elements include improved communication, data-driven decision-making, flexible responses to changing demands, and technology integration, efficiency, transparency, and responsiveness
2.	Reimagining healthcare supply chains: a systematic review on digital transformation with specific focus on efficiency, transparency and responsiveness	Avinash and Joseph (2024)	To comprehend how digital technologies improve these intricate logistical systems' responsiveness, efficiency, and transparency in healthcare SC	A systematic review	SC Efficiency and Effectiveness	The findings illustrated the capacity to manage hybrid ambiguity and offer trade-offs between different goals
3.	Designing a sustainable, resilient, and responsive wheat supply chain under mixed uncertainty: A multi-objective approach	Sharifi et al. (2024)	To integrate how agri-food SC can be designed to respond to operating under uncertain conditions	The Best-Worst Method (BWM) and the interactive fuzzy programming approach developed by Torabi and Hassini (TH)	Responsive SC	Organizations can increase their capacity to anticipate disruptions, allocate resources optimally, and react quickly to issues that arise in real time by utilizing AI
4.	Enhancing supply chain resilience through artificial intelligence: Analyzing problem-solving approaches in logistics management	Attah et al. (2024)	To investigate the ways in which artificial intelligence (AI) can address particular supply chain issues, such as supplier relationship, inventory optimization, and transportation inefficiencies	A systematic review	Efficient SC	The results demonstrate how resilient strategies can greatly improve social, environmental, and economic aspects and are highly effective. It has been found that combining the recommended resilience, responsiveness, and sustainable strategies yields the best SC outcomes
5.	Sustainable-resilient-responsive supply chain with demand prediction: An interval type-2 robust programming approach	Mondal et al. (2024)	To optimize sustainable, robust, and responsive measures all at once, this study sets up a novel multi-objective, three-stage supply chain network	Interval type-2 fuzzy robust possibilistic programming approach	Responsive SC	

Continued

6.	Energy supply chain efficiency in the digital era: Evidence from China's listed companies	Fu et al. (2024)	To look at the relationship between energy SC efficiency and enterprise digital transformation	A bidirectional fixed-effects framework was applied on 112 energy-related listed firms between 2011 and 2019	Efficient SC	Effective planning for the digital transformation is directly and positively linked to the efficiency of energy SC
7.	Efficient vs. Responsive supplier selection for functional and innovative products: A quantitative study	Mahdavi et al. (2023)	To explore, based on comprehensive A quantitative study, the effect of supplier selection on SC efficiency and effectiveness	A quantitative study	SC Responsiveness and efficiency	The results showed that choosing appropriate supplier facilitates responsiveness and efficiency in some stages of the SC, however it remains a major challenge
8.	The effect of supply chain responsiveness, flexibility, & quality on customer development	Paramitha and Santosa (2023)	To understand the extent to which a company's ability to attract, satisfy, and retain customers is affected by the responsiveness, flexibility, and quality of its SC	Survey-based method	Responsive SC	The results showed that the impact of SC flexibility, quality, supplier network responsiveness, and operational system responsiveness on customer development is partly related to the responsiveness of logistics operations
9.	Designing a sustainable-resilient-responsive supply chain network considering uncertainty in the COVID-19 era	Moadab et al. (2023)	To address the challenges of building a successful supply chain for essential products during the pandemic, by proposing a model for a sustainable, resilient, and responsive SC network	Scenario-based approach with stochastic programming	SC Responsiveness and efficiency	The proposed strategy takes into account three important sustainability factors and uses a mathematical model to minimize overall costs, negative social impacts, and carbon footprint
10.	The effects of supply chain flexibility on customer responsiveness: the moderating role of innovation orientation	Jafari et al. (2023)	To investigate the link between supply chain (SC) flexibility and responsiveness	Data from 225 Swedish manufacturers	Responsive SC	The results demonstrated the importance of adopting a robust programming approach to achieving a sustainable and responsive SC
11.	Role of flexibility, agility and responsiveness for sustainable supply chain resilience during COVID-19	Kazancoglu et al. (2022)	To concentrate on resilience in SCs in order to prevent disruptions from pandemics like COVID-19	Quantitative method	SC Efficiency and Effectiveness	The results showed that SC resilience directly impacts its response speed. Furthermore, the response speed of a global SC is directly influenced by its agility and adaptability
12.	A responsiveness view of logistics and supply chain management	Richey et al. (2022)	To shed light on the response to logistics services in SC	Systematic Review	Responsive SC	The results showed that the response helps advance the investigation of how supply chains successfully compete in the face of disruption and change
13.	Supply chain efficiency framework to improve business performance in a competitive era	Negi (2021)	To design a SC efficiency framework to enhance business performance and productivity	Systematic Review	Efficient SC	The results showed that SC efficiency improvement framework has a positive impact on overall business performance and productivity
14.	Designing an eco-efficient supply chain network considering carbon trade and trade-credit: A robust fuzzy optimization approach	Tsao et al. (2021)	To explore the role of assets or components and service cost in improving SC efficiency	A robust fuzzy optimization model	Efficient SC	The robust fuzzy optimization model strategy has shown to be a successful way to enhance SC performance and strategies

Continued

15.	Achieving supply chain efficiency and resilience by using multi-level commons	Chopra, Sodhi, & Lücker (2021)	To explore the cost impact of companies implementing tactics to enhance supply chain resilience	Systematic Review	SC Efficiency and Effectiveness	The findings provide a framework for considering concerns regarding different levels of shared resources and the low cost of flexibility resulting from shared resources
16.	Designing profitable and responsive supply chains under uncertainty	Azaron et al. (2021)	To look into how agile SC may improve the external SC responsiveness	ϵ -constraint method	Responsive SC	The direct and indirect relation through structural equation modeling appears significant and positive
17.	Incorporating analytical hierarchy process and goal programming to design responsive and efficient supply chains	Al-Husain and Khorramshahgol (2020)	To present a new approach to SC design to achieve the desired level of responsiveness and efficiency	Analytical hierarchy process (AHP) with weighted binary goal programming (GP)	SC Responsiveness and efficiency	AHP helps companies use their resources effectively and organize their SC engines to reach the necessary level of responsiveness and efficiency
18.	The role of customer responsiveness in improving the external performance of an agile supply chain	Jermisittiparsert et al. (2019)	To examine how customer responsiveness affects the relationship between agile SC and outbound SC performance of Indonesian firms	A quantitative study	SC Responsiveness and efficiency	The study's conclusions support the theoretical foundations of the current research. Using structural equation modeling, the direct and indirect relationships appear substantial and favorable
19.	Environmental scanning, supply chain integration, responsiveness, and operational performance: An integrative framework from an organizational information processing theory perspective	Yu et al. (2019)	To examine how environmental scanning impacts operational SC responsiveness and performance	The scanning - interpretation - action - performance (SIAP) model	SC Responsiveness and efficiency	According to the results, environmental scanning significantly improves both SC integration and SC responsiveness
20.	A multi-objective approach to design strategic supply chains and develop responsiveness-efficiency frontiers	Al-Husain and Khorramshahgol (2018)	To design an appropriate SC that takes into consideration both responsiveness and efficiency	A multi-objective binary integer programming model	SC Responsiveness and efficiency	The results showed that achieving strategic alignment in the SC is more complex as product diversity increases and customer demands increase

3. The Proposed Holistic Model

Based on the systematic review, the proposed holistic model was built based on the top-down strategy, RDT, Lean Six Sigma, and TQM. As shown in **Figure 1**, this proposed holistic model consists of three basic variables. The first relates to responsive SC in terms of priorities of cost, quality, flexibility, and delivery speed. While the second is efficient SC represented by four main logistics costs that are inventory, transportation, warehousing, and customer service. Finally, the third revolves around SCM levels, which include strategic, tactical, and operational. The proposed holistic model differs from others in that it provides a long-term relationship to benefit from knowledge sharing, trust, and mutual resources within the framework of this relationship. Building a partnership based on mutual understanding and trust is an essential step for collaborative work in SC. Encourag-

ing cooperation, information sharing, interdependence, and cooperative behavior among partners in SC are key enablers that facilitate frequent exchange of information and awareness of partners' behaviors and attitudes.

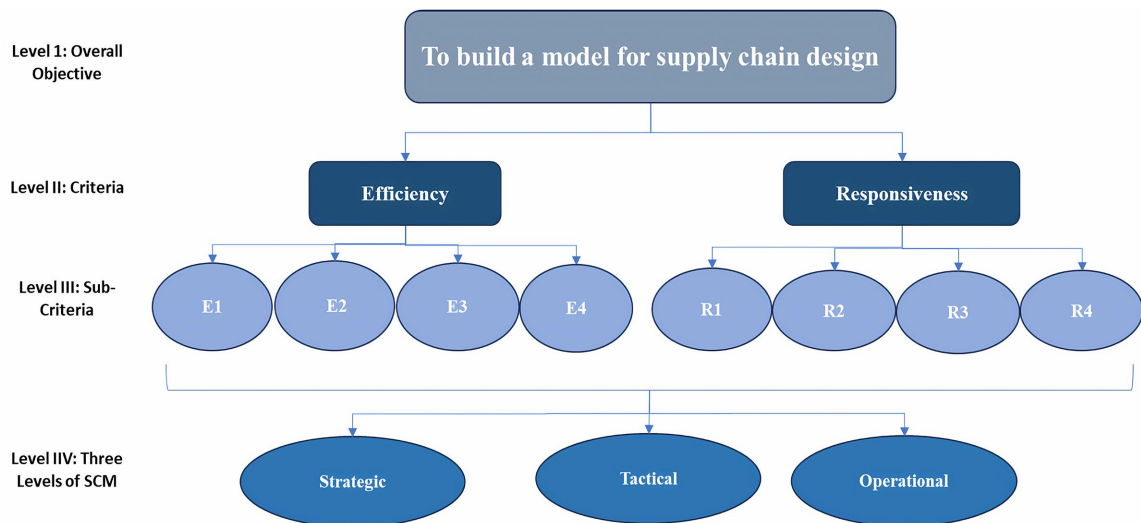


Figure 1. The proposed holistic model.

Top-down strategy is consistent with the proposed holistic model in its view of the strategic management functions and tasks adopted by companies in terms of internal and external analysis and related elements, strategic alternatives and short- and long-term goals, and communication between different departments and divisions (Tuna & Swinney, 2023; Swanson & Suzuki, 2020). This strategy can lead to overall company growth and tight budget control, but it can also de-motivate lower management and invite outside interference. Top-down strategy is a method used in SCM in which the time, cost and required resources are estimated primarily by dividing the project as a whole into small, detailed parts, and then estimating the elements of each part. These parts represent the tasks, activities and steps that make up the SC structure, and then these estimates are combined to obtain the overall evaluation of the SC (Butt, 2021). Top-down strategy provides the possibility of obtaining an accurate estimate of the SC elements: time, cost and resources, and therefore these elements overlap with each other, for example, the time required depends on the amount of availability of the resources required for the project and so on (Ho et al., 2022). Moreover, the proposed holistic model adopts the RDT idea in that this theory focuses on issues of contribution to the goals and strategy of the organization, as well as for supply managers to determine how to invest in the opportunities that are on the horizon. This is to contribute to increasing the organization's income, managing assets, and reducing expenses (Acero, Saenz, & Luzzini, 2022). RDT is essential for understanding how organizations navigate complex relationships with suppliers, customers, competitors, and regulators to access critical resources and reduce exposure to external disruptions. In SCM, RDT informs SC decisions by considering dependencies on sup-

pliers and logistics partners (Chand & Tarei, 2021). According to RDT, the evaluation of the relationship with suppliers depends on their speed and commitment to providing orders. Where the relationship with suppliers who are committed to speed and quality of delivery is documented and companies seek to link them to achieve integration with the SC. In this regard, companies must have an inventory management system capable of responding quickly to changes in market demand and adapting to changes in the external environment (Acero et al., 2022).

Also, the proposed holistic model is consistent with Lean Six Sigma in that there is a need for an integrated organizational system capable of exchanging information, materials, and services in the SC, and provides competitive advantage among companies that use electronic information and communication networks (Orji & U-Dominic, 2022). According to the proposed holistic model idea, Lean Six Sigma is considered a strategy followed by organizations to continuously improve their basic production processes (Tay & Loh, 2021). This leads to building a high reputation for companies and their services, which benefits users, customers and shareholders. In addition, the proposed holistic model is consistent with the primary goal of TQM system, which is to simplify the production process, reduce production cycle time, improve the efficiency of logistics and purchasing, reduce inventory costs, and improve customer service. This leads to gaining customer satisfaction, achieving their expectations, and increasing the company's competitive ability (Bui et al., 2024; Agyabeng-Mensah et al., 2021). TQM system builds and develops a technology strategy across the entire SC to integrate the capabilities of this chain in the short, medium and long term (Mahdikhani, 2023). Moreover, the proposed holistic model agrees with TQM in analyzing various efficient SC management practices and typical manufacturing practices within the organization, in addition to diagnosing the dimensions of SC responsiveness through an extensive review of SC operations (Maloni, Golar, & Lowman, 2021). According to TQM, most software and technologies have been able to provide solutions to many of the problems facing institutions in managing their SCs and the problems they face such as high costs, imbalance between supply and demand, lack of information and asymmetry, lack of transparency and other problems. On this basis, the use of software can play a role in enhancing companies' activities in terms of facing various competitive challenges and pressures and adding more flexibility and transparency, which coincided with a positive relationship with competitive advantage (Avinash & Joseph, 2024). This is confirmed by Olfati and Paydar (2023), which illustrated that joint planning builds bridges of coordination and cooperation between all SC partners, on a solid foundation of joint cooperation. By sharing information over the Internet, and providing the organization with the opportunity to access data across its SC, to enable it to manage business processes effectively and efficiently, leading to achieving the required balance between responsive and efficient SC.

The proposed holistic approach helps logistics companies improve the revenues achieved by maximizing the use of those companies for the fixed resources needed

for supply that is related to places of demand, shipping forms and energy staging. It also includes marketing, inventory control, transport orders, customer services, finance and human resources. This model seeks to integrate and interact with all operational activities, starting with better forecasting, flexible inventory management, effective planning and scheduling, and efficient planning of project resources. Hence, efficient SC necessarily means reducing costs, and as a result, maximizing the project's profitability, but this will only be achieved by integrating all value-added activities. For example, efficient SC has an important impact on improving the delivery advantage in its three dimensions, including delivery speed, production lead-time, and delivery reliability. Whatever the criteria on which the means of transport is chosen, the logistics companies must adopt their policy in this field based on a balance between the factors of cost, speed and regularity. It is important to note in this regard that achieving such a balance must be done in light of looking at transport as just one of several elements included in the logistics system. In order to achieve efficiency and effectiveness in the use of means of transport, shippers, in practice, use more than one means. However, there are some problems facing this entrance, which are mainly caused by the loading and unloading operations at the locations or stations where the means of transport stops. These problems do not only lead to an increase in the cost of logistical work, but companies may be exposed to tangible losses as a result of the organized damage or theft that the goods are exposed to at the various loading and unloading sites. From another angle, proposed holistic approach supports continuous inventory over time in order to know the levels of goods in it is extremely important, because it helps maintain the appropriate quantities of goods in warehouses and meet customers' desires. It also prevents the accumulation of goods in quantities exceeding orders, which causes an increase in storage costs. In addition, the accumulation of goods without proper drainage may cause damage to a large part of them. On the other hand, this model emphasizes gaining the trust of wholesalers, by meeting their desires with the required quantities and times to reduce inventory levels in warehouses. Therefore, this will reduce the cost of inventory, which will certainly reflect positively on the speed of arrival of goods to retailers, and thus the speed of product dispensing.

4. Discussion

It is concluded that the integration between responsive and efficient SC has an impact on operational performance. It has been shown that mutual trust and cooperation in finding solutions to SC problems are the basis for reaching a partnership relationship. It has also been shown that strategic SC integration is the key to a company's long-term success. SC is a key component of business success and sustainability, and balancing costs, efficiency and rapid response is an ongoing challenge. By following best practices and adopting innovative and integrated strategies, companies can achieve competitive advantage and meet customer expectations in a rapidly changing world. For SC to be responsive and efficient, it is

necessary to focus on reducing costs and paying attention to providing logistics services in an integrated and comprehensive manner due to their ability to improve the mental image. This includes focusing on the important role through which the mental image mediates the relationship between the integration of logistics management services and customer satisfaction. The company must work to provide integrated logistics services with high quality, low costs and in record time. When SCs begin to improve their members' capabilities to respond quickly and leverage their own SC strengths, this paves the way for a shift in focus toward improving cost efficiency. Therefore, companies should seek to increase the degree of integration in the SC, which leads to a quick response to events, opportunities or threats in the external environment, and thus enhances their competitive capabilities. To enhance the integration between responsive and efficient SC from a comprehensive perspective, there must be strong cooperation between companies in the same SC. Today, competition is not between producers, but competition between SCs. Through opportunities for rapid action by integrating supplier and customer through information sharing and focusing on demand and supply processes to make each partner in the chain responsible for adding value. Hence, the response to customer needs is faster through the easy flow of materials, products and information in line with demand.

The proposed holistic model helps to plan for customers and manage the flow of raw materials and achieve more accurate demand forecasting, effective inventory planning and production schedules. From another angle, proposed holistic model supports continuous inventory over time in order to know the levels of goods in it is extremely important, because it helps maintain the appropriate quantities of goods in warehouses and meet customers' desires. It also prevents the accumulation of goods in quantities exceeding orders, which causes an increase in storage costs. In addition, the accumulation of goods without proper drainage may cause damage to a large part of them. On the other hand, this model emphasizes gaining the trust of wholesalers, by meeting their desires with the required quantities and times to reduce inventory levels in warehouses. Therefore, this will reduce the cost of inventory, which will certainly reflect positively on the speed of arrival of goods to retailers, and thus the speed of product dispensing. Furthermore, this model supports customer relations, which consist of all the methods used to monitor and manage customer complaints. Customer relationship management is an important element of strategic cost management and achieves good benefits. Developing customer expectations when managing customer relations is important for the survival and continuity of the organization. On the other hand, good relations with members of SC, including customers, are important for successful strategic cost management. This indicates the distinction of the products provided to them compared to competitors, which creates a competitive advantage.

Based on the above, it can be said that process improvement strategies aim to reduce production costs and reach competitive prices that enhance the product's

competitive advantage in the market. In addition, it contributes to improving the quality of design and the quality of the final product. By reducing the time required to produce the product or service and deliver it to the consumer, time is one of the important competitive priorities. On the other hand, we find design flexibility and volume flexibility, i.e. the company's ability to offer new products and respond to the quantity of production. Institutions also seek to satisfy the needs and desires of the consumer by offering new products, which also entails developing production processes to reduce costs and improve quality. In addition, the senior management support is one of the vital elements that help the success of this proposed holistic model. As senior management support for SC model consists of working to implement all its requirements and providing tools for its implementation.

5. Conclusion

The rapid changes in the business environment have embodied vital challenges in the context of the quest to create and generate innovative, efficient and rational SC that can achieve and enhance the performance of operations by entrusting best practices that lead towards reducing costs, ensuring competitive advantage and improving the performance of operations. Thus, this paper provided feedback on the concept of SC, its importance and elements, as it shed light on responsive and efficient SCs and how to create harmony between them in light of companies' goals. To achieve this goal, the proposed holistic model has been proposed, which was designed after reviewing many previous theories and models such as top-down strategy, RDT, lean six sigma, and TQM. Where, the proposed holistic model emphasizes the relationship between responsive and efficient SC has gained prominence in recent years, both theoretically and practically. Applying the proposed holistic model will help accurately complete budgets and financial reports, reduce financial errors, improve employee performance, and achieve customer satisfaction. When adopting the holistic model in this sector, it helps in the process of linking research and development with business operations, and it also provides the vital inputs needed to respond to ever-changing customer requirements.

This research has some limitations. Even though systematic reviews are good at producing accurate results because they allow for the review of studies published on a given topic over a long period of time and from a variety of sources, they are ineffective if the study population is not homogeneous or if the information and data gathered are insufficient. Therefore, this paper suggests using other methods, such as the quantitative approach, the qualitative approach, or the case study approach, in order to compare their results with this study. In addition, this paper recommends the need to work on enhancing the level of sustainability and flexibility of the SC through partnership and alliance between members of the SC and the use of information technology and production technology to achieve a high degree of integration between responsive and efficient SC in organizations. The

management of companies should seriously seek to modernize production and information technology with a long-term perspective, all of which are determining factors for the efficiency and responsiveness of SC to market requirements. Furthermore, this paper recommends companies to use data analytics and artificial intelligence techniques to understand trends and patterns and predict future needs, which helps in making smarter decisions and balancing efficiency and effectiveness in the SC. Potential risks that could impact the SC must be identified and plans developed to address these risks. Risks to consider may include supplier disruptions, changes in demand, and transportation disruptions. Communication and collaboration between different departments and partners within the SC including suppliers, manufacturers and distributors, should be enhanced. The use of online communication and collaboration systems facilitates faster and more effective communication and information exchange.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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