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Supply Chain Agility: A Review

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Abstract

The idea of supply chain agility has drawn more attention in recent years as businesses struggle to adapt to a volatile and uncertain business environment. Supply chain agility is the capacity of a business to react swiftly and successfully to changes in demand, supply chain disruptions, and other market circumstances. This study paper aims to examine the techniques and methods that can be used to increase supply chain agility. The paper reviews the body of knowledge on supply chain agility, and characteristics of agility, including

adaptability, responsiveness, and. Supply chain agility can be enhanced by supplier and customer collaboration, technology use to increase visibility and transparency, and lean manufacturing techniques. The paper concludes that increasing supply chain agility is essential for businesses to thrive in a fluid and unpredictable business climate. Companies can improve their capacity to react swiftly and effectively to shifting market conditions and operational disruptions by implementing strategies and practise.

Keywords: Supply Chain Agility, Firm Supply Chain Agility, SMEs

1. Introduction

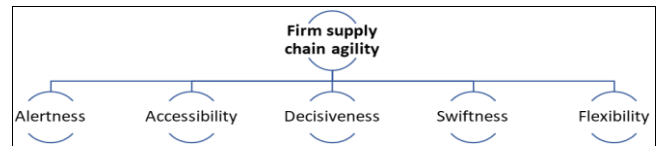
The complexity and uncertainty in the contemporary business environment are constantly rising. Businesses are under tremendous pressure to react swiftly and effectively to shifting consumer demand, supply chain disruptions, and other market circumstances. In these fast-paced and frequently changing market conditions, it has become a necessity for businesses to better position themselves in the marketplace to succeed in the long run. Supply chain agility has become apparent in this context as a crucial skill that businesses must develop to stay competitive. The term "supply chain agility" describes a company's capacity to react swiftly and successfully to market environment changes, such as shifts in consumer demand, supply chain disruptions, and other risks. According to Lee (2004), agility is a fundamental characteristic of an excellent supply chain. An agile supply chain enables businesses to swiftly modify their operations and react to market circumstances, assisting them in enhancing customer satisfaction, cutting expenses, and boosting profitability. Even though supply chain agility is generally acknowledged to be important, more research is still required to pinpoint its primary causes and the tactics that businesses can use to increase their agility. Through the efficient integration of supply chain linkages, supply chain agility is a strategic skill that helps organisations quickly perceive and adapt to internal and external uncertainty. Because these companies do better in responding to unforeseen occurrences, SC agility is often viewed as a crucial factor that influences a firm's competitiveness at the strategic level. Because of the features of the products, SC agility is particularly crucial in some dynamic industries, like the electronics. The products short life cycles create demand unpredictability and make inventory control difficult. The items are also complicated and need a variety of supply materials. The batch size of supply materials is tiny due to the growing significance of product individualization. Each of these three elements poses a challenge to supply chain management and calls for agile supply chain. It has been acknowledged that businesses must align with suppliers and customers to coordinate operations and collectively attain a level of agility above that of rivals in order to gain a competitive advantage in the quickly changing business environment.

The supply chain is frequently the area of a company that is most adversely impacted by changes in a global setting. The company's global supply chain frequently imposes performance restrictions on a number of characteristics typically associated with agility. If a company has operations spread across multiple continents, it could be challenging to change the structure or geographic arrangement of a supply chain to respond to changes in the manufacturing or political environment. In such circumstances, a firm's overall agility may be quickly limited by its supply chain agility. Despite the clear advantages of agility, businesses that operate in complicated environments, such as global markets, have difficulty putting the appropriate safeguards in place. These difficulties result from the cost of the intricate operations and management systems required to support the desired features.

Agility of a firm’s supply chain is determined by the degree to which sourcing, production, and delivery components are set considering its speed and flexibility. As the levels of speed and flexibility increases, the level of supply chain agility increases relatively. If the company is able to make up for this weakness by setting up its inbound logistics or manufacturing activities to be quick or flexible, supply chain agility may be strengthened. Speed and flexibility in production and sourcing could assist make up for the slow outbound transportation since the speed of outbound logistics is rigid. Inventory reduction, more effective market adaptation, quicker customer demand response for businesses, and improved supplier integration all depend on SC agility. In order to manage the risks of disruption and produce higher economic value, companies require agility in their supply chains.

Waller and Fawcett (2013) [11] studied the dimensions of agility such as alertness, accessibility, decisiveness,

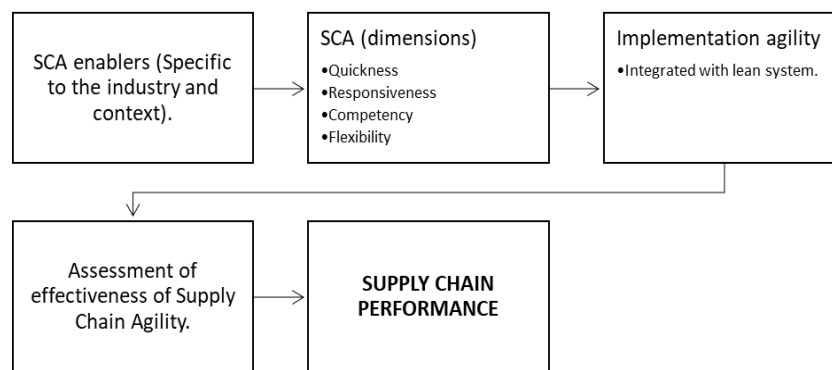
swiftness, and flexibility.



Source: Waller & Fawcett (2013)

Fig 1: Dimensions of the firm’s supply chain agility

Patel and Sambasivan (2021) [7] proposed a comprehensive framework, including steps to implement supply chain agility effectively and efficiently. The framework covers four major elements, which are SCA Enablers or drivers, Dimensions (Quickness/Alertness, Responsiveness, Competency, and Flexibility), Implementation (Integrated with lean system), Assessment of its effectiveness. The comprehensive framework is as follows:



Source: Patel and Sambasivan (2021)

Fig 2: A comprehensive framework for Supply Chain Agility

2. Literature Review

Ahmad *et al.* (2018) [1] proposed an integrated model of supply chain agility including flexibility, adaptability, responsiveness, and resilience. The authors assess the model's effectiveness on firm performance.

Sodhi *et al.* (2017) [9] carried out review of the literature that provides an overview of supply chain agility, its components, and supply chain performance indicators. The authors also expressed difficulties in quantifying supply chain adaptability and offer suggestions for future studies.

Kant *et al.* (2017) [4] explored the relationship between supply chain agility, competitiveness, and organisational performance. Supply chain agility component are flexibility, responsiveness, and speed. In the context of Indian manufacturing enterprises, this research study explores the connections between supply chain agility, competitiveness, and organisational success.

Asif *et al.* (2019) [2] explored the moderating effects of environmental dynamism and strategic flexibility on supply chain agility and company success. Supply chain agility has a favourable impact on business performance, which is stronger in dynamic situations and for firms with better strategic flexibility in Pakistani manufacturing companies.

Yin, *et al.* (2019) [12] examines the impact of supply chain agility on firm success in a chaotic corporate climate. The authors conclude that supply chain agility has a favourable

impact on company performance, which is stronger in tumultuous settings, using survey data from Chinese manufacturing enterprises.

Qasim *et al.* (2019) [8] found that supply chain agility has a favourable effect on company performance in the United Arab Emirates.

Evidence from the United Arab Emirates": In the context of the United Arab Emirates,

Li *et al.* (2020) found that supply chain agility has a good impact on innovation, which in turn has a favourable impact on firm performance using survey data from Chinese manufacturing companies.

Li *et al.* (2020) carried out meta-analysis to summarises the findings of earlier studies on supply chain agility and pinpoints the key variables that affect how it affects business performance.

Wang *et al.* (2020) [10] investigated supply chain agility in China's small and medium-sized businesses (SMEs).

Supply chain agility is a crucial element for corporate success in the fast-paced, dynamic environment of today. Flexibility, responsiveness, IT integration, supplier relationships, and process adaptability are all necessary for achieving supply chain agility. Companies that can successfully put these strategies into practice will probably be better at satisfying consumer wants, adapting to market changes, and attaining financial performance.

Author (s)	Title of the paper	Journal name, Volume	Methodology/Technique	Outcome/Result
Ahmed, <i>et al.</i> (2018) ^[11]	An Integrated Model of Supply Chain Agility: Conceptualization, Operationalization, and Implications for Firm Performance	Journal of Business Research, 84, 340-352.	The authors develop and validate a measurement scale for each dimension and test the model's impact on firm performance.	This research article provides an integrated model of supply chain agility, which includes four dimensions: flexibility, adaptability, responsiveness, and resilience.
Sodhi, <i>et al.</i> (2017) ^[9]	Understanding supply chain agility: A literature review.	International journal of production research, 55(16), 4651-4669.	A secondary review of concepts of supply chain agility, its dimensions and its relationship with other supply chain performance measures.	Discussion of the challenges of measuring supply chain agility and recommendations for future research.
Kant, <i>et al.</i> (2017) ^[4]	Exploring the relationship between supply chain agility, competitiveness and organizational performance.	International Journal of Logistics Systems and management, 26(3), 369-388.	Development and testing of a conceptual model that includes three dimensions of supply chain agility – Flexibility, Responsiveness, and Speed.	Found the relationship between supply chain agility, competitiveness, and organizational performance in context of Indian manufacturing firms.
Asif, <i>et al.</i> (2019) ^[2]	Investigating the impact of supply chain agility on firm performance: The roles of environmental dynamism and strategic flexibility.	International journal of production economics, 209, 226-236.	The authors use survey data from Pakistani manufacturing firms and find that supply chain agility has a positive impact on firm performance, which is stronger in dynamic environments and for firms with higher strategic flexibility	This research article investigates the impact of supply chain agility on firm performance and the moderating roles of environmental dynamism and strategic flexibility
Yin, <i>et al.</i> (2019) ^[12]	The influence of supply chain agility on company performance in a turbulent business environment.	International journal of production research, 57(14), 4511-4528.	The authors use survey data from Chinese manufacturing firms and find that supply chain agility has a positive impact on company performance, which is stronger in turbulent environments.	This research article investigates the influence of supply chain agility on company performance in a turbulent business environment.
Qasim, <i>et al.</i> (2019) ^[8]	The relationship between supply chain agility and firm performance: Evidence from the UAE.	International journal of logistics systems and management, 33(1), 66-85.	Data are collected using survey from industrial companies in the UAE.	The authors discover that supply chain agility has a favourable effect on company performance.
Li, <i>et al.</i> (2020)	Investigating the relationship between supply chain agility and firm performance: The mediating role of innovation.	Journal of Business Research, 118, 275-285.	The author examines the link between supply chain agility and company performance as well as the mediating effect of innovation. The authors find that supply chain agility has a good impact on innovation, which in turn has a favourable impact on firm performance using survey data from Chinese manufacturing companies.	The authors find that supply chain agility has a good impact on innovation, which in turn has a favourable impact on firm performance using survey data from Chinese manufacturing companies.
Li, <i>et al.</i> (2020)	A meta-analysis of supply chain agility research – Past, Present, and Future directions.	International journal of production research, 58(15-16), 4889-4907.	This meta-analysis summarises the findings of earlier studies on supply chain agility and pinpoints the key variables that affect how it affects business performance.	The authors make suggestions for additional studies on supply chain agility.
Wang, <i>et al.</i> (2020) ^[10]	The impact of supply chain agility on the performance of small and medium-sized enterprises: Evidence from China.	Journal of small business management, 58(3), 448-464.	Collection of evidence and information from various articles, and research.	Investigates how China's small and medium-sized businesses (SMEs) do in terms of supply chain agility.

3. Conclusion

The ongoing rise in complexity and uncertainty in the business environment, which puts enormous pressure on companies to respond quickly to changing consumer demand, supply chain disruptions, and other market conditions, among other performance factors. In today's business world, the supply chain agility has acquired high significance. The study demonstrated certain advantages of emphasising supply chain agility, including cost reduction, increased effectiveness, and improvement of overall business performance. To increase the supply chain's agility, however, organisations need cutting-edge technologies, procedures, and organisational structures. Businesses must also concentrate on enhancing their procedures continuously in order to adapt to shifting market conditions. According to

the research, an agile supply chain helps companies to quickly alter their operations and respond to market conditions. At the strategic level, supply chain agility affects a company's competitiveness. Along with its many advantages, the agile supply chain concept also has some drawbacks. For businesses with operations spread across the globe, it may be difficult to alter the structure or geographic arrangements of a supply chain in response to changes in the manufacturing or political environment. In such circumstances, a company's supply chain agility may soon become a constraint on its total agility. The high cost of the complex operations and management system needed to support the desired features is the cause of these worldwide business challenges. This study is based on a review of limited publications due to time and resource constraints.

Future studies should cover a wide range of literature and propose a model. Future studies should also include some empirical investigation of the effect of various dimensions of agility in firm resilience, risk management, performance and competitive advantage.

4. References

1. Ahmed S. An integrated model of supply chain agility: Conceptualization, Operationalization, and implications for firm performance. 2018; 84:340-352.
2. Asif M, *et al.* Investigating the impact of supply chain agility on firm's performance: The roles of environmental dynamism and strategic flexibility. 2019; 209:226-236.
3. Fayezi S, Zutsi A, Loughlin AO. Understanding and development of Supply Chain agility and flexibility: A structured literature review. 2016; 55(16):4651-4669.
4. Kant C, *et al.* Exploring the relationship between supply chain agility, competitiveness and organizational performance. 2017; 26(3):369-388.
5. Li C, *et al.* Investigating the relationship between supply chain agility and firm performance: The mediating role of innovation. 2020; 118:275-285.
6. Li H, *et al.* A meta-analysis of supply chain agility research: Past, present and future directions. 2020; 58(15-16):4889-4907.
7. Patel BS, Sambasivan M. A systematic review of the literature on supply chain agility. 2021; 32(1):76-101.
8. Qasim M, *et al.* The relationship between supply chain agility and firm performance: Evidence from the UAE. 2019, 33(1):66-85.
9. Sodhi MS, *et al.* Understanding supply chain agility: A literature review. 2017; 55(16):4651-4669.
10. Wang Y, *et al.* The impact of supply chain agility on the performance of small and medium-sized enterprises: Evidence from China. 2020; 58(3):448-464.
11. Waller MA, Fawcett SE. Data Science, Predictive Analytics, and Big Data: A Revolution That Will Transform Supply Chain Design and Management. 2013; 34(2):77-84.
12. Yin D, *et al.* The influence of supply chain agility on company performance in a turbulent business environment. 2019; 57(14):4511-4528.
13. Zhang TY, Akhtar P, Macbryde J. Supply chain management: An international journal. 2016; 21(6):1-17.