

# Supply Chain Management: A Review of Approaches, Practices and Impact on Performance

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**Abstract**— The Supply Chain Management (SCM) is a research area that has received a lot of attention from many researchers in different disciplines. The multidisciplinary origin of SCM has led to a variety of definitions and approaches. Despite the vast body of academic literature on the subject, there are few examples of successful SCM implementations. Indeed, the implementation of SCM requires the deployment of a set of practices that the company should establish to ensure its success. The implementation of SCM practices can impact the various components of the company's performance. The aim of this paper is to evaluate the literature on the different definitions and approaches of the SCM, analyze differences and recognize the gaps. The paper also identifies the practices that can be implemented in the companies to help managers to seek a better management of their supply chain. The paper presents a detailed analysis of the various performance measurement and the impact of SCM practices on many aspects of performance from different perspectives and countries and suggest future research directions.

**Keywords**— *Supply chain management, practices, performance, impact.*

## 1. Introduction

Companies around the world face intense competition from customers' demands for a product or service in the right place, at the right time and at the lowest cost. These challenges have led many organizations to recognize that supply chain management (SCM) is the key to build a sustainable competitive advantage for products or services [1]. Business executives recognize that the ultimate success of any business is no longer built around a company's capacity, but on the capacity of a supply

chain [2]. Indeed, the understanding of SCM and its practices has become an essential prerequisite for remaining competitive in the global race and improving performance.

An efficient supply chain management is fundamental to the competitiveness of manufacturing firms as it directly impacts their capability to respond to the market demands in judicious approach [3].

The concept of supply chain management has received special attention since the early 1980s from academics, consultants and business managers, but conceptually the management of the supply chain is not particularly well understood, and many authors highlighted the need for clear definitions and conceptual frameworks for supply chain management [4].

In addition to the different definitions and characterizations of the concept, there is still partial research on the practical implementation of SCM in

organizations and the identification of the practices that constitute this notion [1]. Moreover, improving performance is one of today's major challenges for organizations. This imperative explains the need for the deployment of SCM practices and the development of performance measurement systems.

The ability of an organization to measure the impact of SCM practices on its performance becomes paramount. The ambition of this paper is first to present a literature review of the various definitions and characterizations of SCM, and to highlight the operationalization of this concept and its implementation in companies through its various practices. Then, to provide a general overview of the different models and indicators of performance measurement as well as a review of the different impacts of SCM practices on the overall performance. This article is a proposal to understand and implement the Supply Chain Management in companies and enlighten leaders looking to improve their performance.

## 2. SCM: Definitions and approaches

The supply chain (SC) is defined as a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and / or information from a source to a customer [5].

A normal supply chain basically is a network of services, information and material processing link with the features of demand, transformation and supply. In order to explain the activities related to supply chain, flow of information, control of material, planning, and activities related to logistic, the term, supply chain management is used [6].

Despite the popularity of the term Supply Chain Management (SCM), both in academic and practice fields, there is still a lot of confusion about its meaning. Some authors define SCM in operational terms related to product flows, some consider it to be a management philosophy, and others consider it in terms of process management [4].

The Supply Chain Orientation can be distinguished

from Supply Chain Management. Supply Chain Orientation is a management philosophy defined as an organization's recognition of the systemic strategic implications of the tactical activities involved in managing different flows in a supply chain [5]. It is a systemic approach to visualizing the supply chain as a whole and managing the total flow of products from the supplier to the final customer. It is characterized by a customer focus to create unique and individualized sources of customer value, leading to customer satisfaction [7].

Supply Chain Management is the set of actions undertaken to achieve this philosophy. It is the implementation of supply chain orientation across companies within the supply chain. For this purpose, we retain the definition given by [5]: "Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole."

Supply chain management is considered as a multidisciplinary concept in the contemporary trade and research to bring organizational efficiency and profitability to manage the business with sustained competitiveness through delivering goods and services to end customers [3]

[2] gives two definitions of SCM. The first definition considers SCM as a global and strategic approach to demand, operations, procurement, and logistics process management. According to the second definition, SCM is a hierarchical and strategic approach for supply and demand planning, sourcing of raw materials and components, manufacturing of products and parts, inventory tracking, order fulfillment and delivery to the customer at the end of the chain

The survey of [8] encompassing 104 members of the CSCMP (Council of Supply Chain Management Professionals) has highlighted practitioners' views on SCM that have been divided into four perspectives. 47% of interviewees think that the SCM includes logistics and all traditional business functions (Unionist). They are followed by 28% who think that SCM and logistics are different

entities with points of intersection, the SCM having a more strategic vision than the logistics (intersectionist). 19% think SCM is a function or subset of logistics (traditionalist). And the 6% think that SCM is only a new name for logistics (re-labeling).

The concept of SCM has been considered from different points of view in different bodies of the literature such as purchasing and supply, logistics management and transportation, operations management, marketing, organizational theory and information management systems [1].

Some researchers conceive the SCM from a purchasing and supply function perspective and define it as the integration of the supply base and all purchasing decisions and activities related to purchasing and supplier management [9]. This approach considers procurement policies, supply management, and supplier development, evaluation and coordination as fundamental elements of the SCM [10].

We consider that the definition of SCM only in terms of a company's involvement in the management of its supplier is a narrow perception as the company interacts with other business partners to achieve supply chain integration. In addition, the importance of other members of the supply chain, such as customers, is in no way inferior to the suppliers [10]. As mentioned by [11], SCM is not a new label for purchasing and integrated supplier management.

A second approach considers SCM from a logistics and transport perspective and defines it as the management of all flows of material, products and information throughout the supply chain [12]. This approach remains partial since it considers the SCM as a concept relating to the logistic function [10].

There are three classifications in terms of macro stages of supply chain management: management of customer relationship: all activities and processes are focused on downstream and interaction among the customers and organizations. management of supply chain internally and management of supplier relationship [6].

Beyond the focus on traditional functions, SCM can be perceived from a process perspective with a

focus on managing and integrating processes across the value chain [13],[14]. This vision was adopted by the Global Supply Chain Forum (GSCF) which defined SCM as follows: “ The integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders” [15]. We note that this definition explicitly emphasizes the notion of management and integration of key processes that is more inclusive than the perspectives related to traditional activities and functions.

By integrating the collaboration aspect between supply chain members into the definition adopted by the Global Supply Chain Forum, we can consider that the SCM is a management philosophy that is based on the integration of a set of key processes providing products, services and information that create value for the customer and other stakeholders through the collaboration of all members of the logistic chain [10].

The Supply Chain Operations Reference (SCOR) model developed in 1996 assumes that the supply chain can be divided into five processes: plan, source, make, delivery and return.

The model requires a committed managerial resource and continuous business process reengineering to affiliate the business with best practices [3].

The goal of the SCM is to integrate and optimize activities within and across organizations for stakeholders' satisfaction. Supply chain consist of manufacturers or service providers receiving inputs from suppliers, processing these inputs, and delivering them to customers [16].

The paradigm of the supply chain has metamorphosed into a nonlinear complex network which allows efficient interactions among suppliers and partners regardless their size, location or number of products [17].

Thus the SCM can also be approached through the networks approach by focusing on the different

forms of linkages between the supply chain partners, namely coordination, integration and collaboration. [18] point out that the supply chain is composed of trading partners that are interconnected by financial, information and

product / service flows. Effective management of these flows requires the creation of synergistic relationships between supply and distribution partners with the goal of maximizing value for the customer and providing a profit for each member of the supply chain.

[19] defines the SCM as the coordination and successful integration of all the activities of the supply chain from the raw material stage to the final customer in order to offer a competitive advantage.

The coordination within a supply chain is a strategic response to the problems caused by inter-organizational dependencies within the chain. With the deployment of the information systems, the mechanisms of coordination between the firms are stronger [17].

In addition to the definitions given above, Table 1 groups a sample of other SCM definitions in the literature. We confirm that SCM definitions encompass aspects of managing different flows within the organization network to create value for companies and the customer.

We notice that there is no consensus on the definition of Supply Chain Management, this is due to the multidisciplinary origin of the concept, its evolution as well as its emerging character in the practice and the academic field [20]. Nevertheless, most definitions have at least one feature in common that lies in the focus on the organization's external environment [21].

We find that SCM approaches differ from a partial vision to a more global vision. Partial approaches summarize SCM in relation to a specific traditional function, such as purchasing or distribution. These approaches remain limited by comparing them to global approaches that address SCM in a broader perspective. Indeed, global approaches represent SCM as an integration of processes involving all members of the supply chain and all activities related to upstream and downstream flows. These approaches are based on the coordination and integration of different stakeholders to create value for them and for the customer, thereby ensuring better performance and competitive advantage.

**Table 1:** Sample of SCM definitions

Definitions
Supply chain management is envisaged as an extended enterprise connecting business in different places and facilitating allies to propel competitive advantage in the era of globalization [22]
Supply chain management encompasses materials/supply management from the supply of basic raw materials to final

product (and possible recycling and re-use). Supply chain management focuses on how firms utilize their suppliers' processes, technology and capability to enhance competitive advantage. It is a management philosophy that extends traditional intra-enterprise activities by bringing trading partners together with the common goal of optimization and efficiency [4]
Network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer [4].
Networks of manufacturing and distribution sites that procure raw materials, transform them into intermediate and finished products, and distribute the finished products to customers [4].
a set of value-added relationships of partially discrete but interdependent units that co-operatively transform raw materials into finished products through sequential, parallel and / or network structures [23].

The SCM practices are proposed to be a multi-dimensional concept including the upstream and downstream part of the supply chain. In this perspective, we retain the following practices: Integration, strategic supplier partnership, customer relationship management and information sharing. The choice of these practices was made in such a way to cover the upstream and downstream aspects of the supply chain and to consider most of the dimensions mentioned in Table 2.

**Table 2:** SCM practices in the literature

SCM practices
Behavioral integration, mutual information sharing, mutual sharing of risks and rewards, co-operation, same goals and same willingness to serve the customer, integration of processes, building and maintaining long-term relationships between partners, leadership [5], [7].
Supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity between partners, just-in-time practices [9], [24].
Focus on core competencies, use of inter-organizational coordination systems (EDI for example), reduction of intermediate stocks by delayed differentiation [14].
Reduced number of suppliers, long-term relationships, communication, existence of inter-functional teams, commitment of suppliers [25].
Strategic partnership with suppliers, customer relationship, level of information sharing, quality of information sharing [1].
Long-term relationships with suppliers, reduction in the number of suppliers, quality of suppliers, involvement of suppliers in the design and production of the offer [26].
Segmentation of customers according to the needs of the service, customization of the logistics network according to the service requirements, assembly of the final product as close as possible to the final market, strategic sourcing management to reduce total cost, develop a broad supply chain technology strategy, adopt performance measures of the supply chain to measure the collective success [27].
Inter-organizational coordination, just-in-time production, delivery practices [28].
Customer relationship management, supplier partnership, information sharing, customer contact development, communication and speed [2].
development of closer partnership with major suppliers, centralized coordination of data [4].

### 3. Supply chain management practices

Adopting a supply chain orientation requires its operationalization through the implementation of a set of practices within the company and through the logistics chain. SCM practices are defined as the set of activities undertaken by an organization to promote effective supply chain management[1]. The literature portrays SCM practices from a variety of perspectives. Table II presents the SCM practices discussed in the literature.

Much of the current theoretical and empirical research of SCM focuses only on the upstream or downstream side of the supply chain, or some aspects and perspectives of SCM[1].

#### 3.1. THE INTEGRATION

The key element of the strategies related to supply chain management is the integration of supply chain. The main objective of managing the supply chain is to integrate both the flow of material and information throughout the supply chain as an effective weapon of supply chain [6].

[29] define the integration of the supply chain as the integration of upstream suppliers and downstream customers as well as horizontal integration which is the integration of different internal functions. The integration of the logistics chain is a relevant coordination mechanism that simplifies internal and external business processes [30].

The aim is to create a transparent and fully integrated supply chain involving both upstream and downstream information and material flows [31]. Firms with an integrative behavior tend to integrate their suppliers and customers [5]. The integration of the supply chain involves manufacturers' collaboration, strategic partnerships, collaborative management and cross-organizational processes.

There are two types of integration: internal integration and external integration.

The internal integration refers to a transversal strategy system and the responsibility for inter-functional collaboration. This integration involves collaborative product design, purchasing, production, marketing and distribution to meet customer needs at the lowest cost. The efforts made for internal integration contribute to overcome the barriers of functional silos and to promote capabilities between essential functions through communication [32].

External integration involves integrating suppliers and customers through a set of practices including

information sharing, supplier involvement in decision making, collection of customer information and its use for products improvement and service innovation [32]. Customer integration involves cooperation with key customers and supplier integration involves coordination with key suppliers [33].

### 3.2. STRATEGIC SUPPLIER PARTNERSHIP

The strategic partnership with suppliers is defined as a long-term relationship between the organization and its suppliers. This type of relationship is designed to take advantage of the strategic and operational capabilities of individual organizations to help them achieve significant benefits [1]. Building and maintaining long-term relationships through the strategic alliances with supply chain partners such as suppliers, customers or intermediate (e.g transportation and / or storage services) provides competitive advantage through the creation of customer value[5]. In addition, a long-term perspective between the buyer and the supplier increases the intensity of coordination between the two parties and will allow the supplier to have a lasting effect on the competitiveness of the entire supply chain [25].

Purchasers team up with suppliers to guarantee that input materials meet quality requirements. Great information sources, furnished at the ideal time with the required amount, causes firm to stay away from downtime occurrences, to decrease change in processes and the rate of harmed materials [34].

A strategic partnership allows companies to reduce the number of suppliers in order to work more effectively with a limited number of suppliers who are willing to share responsibility for product success[1], [25] . This change in attitude allows for closer relationships with key suppliers and implement joint and coordinated actions based on sharing objectives, risks and benefits [4], [5].

Reducing the supplier base has several benefits such as reducing the costs of inventory management, reducing lead times due to dedicated capacity, reducing logistic costs, etc

The involvement of suppliers in the design and production of the offer can have different levels, ranging from minor design suggestions to being responsible for the complete development, design and engineering of a part [25].

The suppliers who participate at the beginning of the product design process can offer more cost-effective

design choices, help select the best components and technologies, and assist in design evaluation.

Strategically aligned organizations can work closely together and eliminate wasteful time and reduce efforts [1].

Firm's ability to establish long-term relationships with their key suppliers enable them to manage their raw material supplies on time and in required quantity and quality to gain competitive advantage [35].

### 3.3. Customer relationship management

Customer relationship management is an important element of SCM practices that can affect the success of the supply chain and its performance [9], [36]. It includes all the practices used to manage customer complaints, establish long-term customer relationships, and improve customer satisfaction [1]. The growth of personalized production is leading companies to develop their ability to listen and understand customers' expectations in order to respond in a personalized, fast and adapted way to their demands [37] . Customer orientation involves the integration of downstream customers and a common agreement in terms of visions and objectives to serve them [5], [36].

To operationalize the practices of the customer relationship, seven elements of customer service were identified namely: the evaluation of customer complaints, the follow-up with the customers for the feedback, the improvement of the customer support, predicting the key factors influencing customer relationships, predicting future customer expectations, interacting with customers to set standards, and measuring customer satisfaction [9], [36].

The performance of a company taking these dimensions into account is an indicator of whether it is aware of the importance of customer satisfaction and its dual role as a buyer and supplier in the value chain. When a customer-focused vision is implemented within the company, a competitive advantage can be created through increased productivity, inventory reduction and cycle time, customer satisfaction and increase in market share and profits [36].

### 3.4. Information sharing

The Global Logistics Research Team at Michigan State University defines information sharing as the willingness to make strategic and tactical data available to other members of the supply chain [5]. Information sharing is considered one of the five building blocks that characterize a strong relationship of the supply chain [38]. The information exchanged is characterized by a quantitative aspect and a qualitative aspect.

Quantitative aspect refers to the intensity of shared information that refers to the extent to which essential and exclusive information is shared with supply chain partners [1]. Open sharing of information such as inventory levels, forecasts, sales promotion strategies and marketing strategies reduces uncertainty between partners and improves performance [5]. The regular exchange of information in a formal or informal way allows partners to better understand the customers' needs and to adapt quickly to the market. In addition, it ensures better coordination and planification of the chain [7].

The qualitative aspect refers to the quality of sharing of information that refers to the accuracy, timeliness, relevance and credibility of the information exchanged [1].

The quality of shared information is critical to effective SCM as organizations are increasingly reluctant to disclose more than a minimum of information, which can be perceived as a loss of power [1]. Indeed, each partner is wary of the possibility that other partners will misuse the information and reap the full benefits of sharing. Such mistrust should not prevent organizations from ensuring data flow with minimal distortion. The sharing and visibility of information throughout the chain is above all the key to an integrated and efficient supply chain [39].

## 4. Measure of the performance

We conducted a review of key performance measures used in the academic and practical fields.

The performance measurement system consists of collecting, measuring and comparing a measure to a standard against a specific criterion [40].

An effective measure of performance of the supply chain should provide a better understanding of the system and provide information to the chain members and all stakeholders [41].

It was found that several companies did not conduct performance measurement for the entire supply chain. And those who have such measures often do not monitor them regularly or have measurement systems that are directly related to customer satisfaction. [42].

Several classification work of performance measures of the supply chain can be identified in the existing literature. Approaches can be perceived in two categories: either qualitative measures that cannot be described numerically (e.g customer satisfaction), or quantitative measures that are numeric (e.g., cost-based measures) [10].

The performance measurement has been linked primarily to the financial indicators that have served as a tool for comparing organizations and assessing their behavior over time [1]. However, they do not allow to apprehend the overall performance of the organization. In fact, financial indicators do not systematically reflect the impact of managerial actions and do not consider intangible assets such as innovation and customer satisfaction [43]. This partial approach to performance measurement has led to the emergence of new theoretical developments using non-financial indicators such as quality, customer satisfaction or level of service. In this perspective, the emergence of the Balanced Scorecard (Norton and Kaplan) allows the combination of financial and non-financial measures in a balanced vision [44]. The Balanced scorecards are means of performance assessment based on four main perspectives: learning, processes, customers and finances. In order to increase the financial performance and satisfy the shareholders (financial perspective), the company must satisfy the customer through the creation of value (customer perspective). This implies the establishment of internal quality

processes (process perspective) through a set of practices including the development and improvement of the partnership with suppliers, the development of the relationship with customers and the collaborative sharing of information. Hence the need for motivated employees and good resources management (learning perspective) [44]. The balanced scorecards have been explored by several authors in the SCM area to analyze supply chain performance, establish a set of measures, study strategic partnerships and achieve SCM integration [45].

To meet the needs of a balanced approach of performance measurement, [46] developed a

framework for measuring performance at strategic, tactical and operational levels and presented a list of key performance measures. Their review also showed the evolution of the importance of the performance measure from a traditional cost accounting method to a technique that takes into account the cost of activities and its impact on other functions such as: customer service, asset utilization, productivity and quality to encompass and enhance the overall performance of the supply chain.

[9] identified six performance measures in the supply chain: On-time delivery, eligible materials, number of suppliers, supplier certification, single-source items, and total cost of parts purchased.

In addition, [47] suggests three major performance measures based on resources yield (e.g distribution costs, manufacturing costs, inventory and return on investment), production (e.g fill rate, order pending, inventory, customer response time and manufacturing time) and flexibility (e.g volume flexibility, delivery flexibility, mix flexibility, and flexibility of new products).

[48] encourages companies to track supply chain performance in four key dimensions: service, assets, efficiency, and speed.

In the same vision of performance monitoring, [49] use three individual survey items: product quality, competitive position and customer service.

In addition, [32] used financial indicators to measure the organization's performance, including: sales growth, profit growth, market share growth, return on investment growth, and sales

performance growth.

In another perspective, [43] combined the financial and non-financial indicators in the spirit of the Balanced Scorecard to assess performance. Financial indicators are primarily based on profitability, sales growth, average profit and improved cash flow. Non-financial indicators have been divided into seven categories: social performance, cost control, innovation capacity, efficiency and timeliness, responsiveness and adaptability, product quality and services and customer satisfaction.

The critical review of [50] found that nearly two-thirds of the 33 reviewed articles assess performance by comparing it to past performance (several years ago) or the performance of major competitors. [50] gives the example of [25] where financial performance is measured using items that indicate the extent of changes in ROI, profits as a percentage of sales, and net profit before tax in the last 3 years.

As well as the example of [29], which measure customer service compared to the main competitors and in terms of five elements: product support, pre-sales service, customer responsiveness, delivery speed and reliability of delivery.

However, some perceptual measures to evaluate performance may not be related to past performance or major competitors, notably the example of [51] who asked the reference firm to assess the current level of service and quality it provides to its external customers in terms of fast delivery of products / services and flexibility to meet the changing needs of customers [50].

Most authors use subjective assessment methods of performance based on respondents' perception of the survey using, for example, Likert scales [50].

The use of perceptual measures improves the overall return rate of surveys by overcoming the reluctance of respondents to provide objective performance information including financial data [52]. Perceptual measurements are a viable option in large sample studies, provided that rigorous validity test is performed [53].

In addition, several studies have demonstrated a correlation between perceptual measures and

objective performance measures [43].

A minority of reviewed articles include objective metrics such as percentage of on time deliveries and return on investment (ROI) [50].

In some cases, key performance indicators (KPIs) in the form of balanced scorecards have been agreed and monitored between the supply chain partners. Customer-oriented measures have been balanced against internal priorities. The predominant method of measuring performance was the use of key performance indicators (KPIs) that cascaded from strategic objectives into a series of functional measures across the organization [20].

## 5. Impact of SCM practices on the performance

The impact of SCM practices on business results has been confirmed by concrete examples. According to a survey, the organizations that are best at SCM have a 40% to 65% advantage in their cash cycle time over average organizations and realize between 50% and 85% less inventory than their competitors [1].

Although there are several research models studying the practical relationship of SCM and performance, they differ in terms of research and analytical

method. Among previous empirical studies of SCM-performance models, four modeling approaches have been identified [10]:

The first modeling approach aims to examine the relationship between an individual SCM practice and a particular aspect of the company's performance. While this approach provides a general model of the relationship between SCM practices and performance, it does not address the interactions between SCM practices and their collective impact on performance.

The second approach focuses on the effect not only of an individual practice, but also on the aggregated practices of SCM on the performance of the company. Indeed, all practices are combined and constitute an integrating factor influencing various aspects of performance. While this approach provides additional information on the collective impact of SCM practices on

performance, it does not take into account the comparative utility of practices.

The third approach is to study the relative strength of the impact of each SCM practice on a particular aspect of the company performance.

The fourth modeling approach establishes a conceptual model that specifies the interrelationships of various SCM practices and their impacts on company performance.

Many studies have examined the link between SCM practices and company performance directly or indirectly [54]

The critical review of 33 articles shows that most investigations examined the effect of SCM on a combination of global measures, operational cost measures, and customer service measures [50].

The survey conducted by [1] among 196 US organizations found that companies with high levels of SCM practice have high levels of organizational performance. Indeed, the implementation of SCM practices can directly improve the financial and market performance of the organization. SCM practices have a statistically significant impact on organizational performance both directly and through competitive advantage (value, quality, delivery reliability, product innovation and time to market).

The survey of 72 furniture manufacturers located in China shows that the practices (production and delivery strategy, inventory, forecasting and enterprise software, as well as the integration aspects related to interactions and communications with

customers and suppliers) have no direct effect on market performance (a combination of the annual sales growth, improved profitability and improved market share). However, the impact of practices on market performance is mediated through the importance and performance of the four factors: value, speed, flexibility and innovation [55].

In addition, [56] found through a study of 57 North American manufacturers that the impact of practices on market performance was influenced by efficiency and flexibility.

[57] showed from a survey of North American manufacturers, distributors and retailers that SCM

practices tended to improve internal collaboration, which had a positive impact on the performance of logistics services.

It should be emphasized that the highest level of information sharing is associated with the lowest total cost and the shortest cycle time [58]. The development of the information infrastructure was considered essential for the management of the supply chain, which would help to achieve the manufacturing objectives [2].

Effective use of communication systems and information technologies can replace inventory and improve organizational performance [54].

In the same context, based on 667 questionnaires sent to US companies, [59] confirmed that information technology can directly improve sales and SCM contributes to directly improve profitability.

Similarly, information technology has an indirect effect on performance by facilitating communication and the flow of knowledge exchange and thus generating a competitive advantage [60].

Moreover, [61] conducted a study of 182 Chinese companies and concluded that the implementation of information technologies has no direct impact on performance but contributes to the integration of the chain which in turn significantly improves performance of the supply chain.

Inter-organizational communication can be considered as a relational competence that provides a strategic advantage to collaborating companies. [60] study shows that building collaborative communication skills can have direct and positive effects on the results of supply chain partners. Effective and efficient communication between supply chain partners reduces product and performance errors, improves customer quality, time and responsiveness. For buying companies, communication seems to function as a partial



mediator of the relationship between information technology and performance.

In a survey of 76 retail companies in New Zealand, [62] found that information sharing significantly affected satisfaction (delivery time, accuracy, fill rate) and inventory performance, and had only a moderate impact on

responsiveness.

Furthermore, a survey of 450 French companies revealed that sharing and exchanging information directly impact the quality of products and services and indirectly impact financial performance. In addition, the quality of information has a direct effect on responsiveness and innovation capacity [45].

By sharing information on product sourcing and design, buyers and suppliers can improve product quality, reduce customer response time, and improve operational efficiency [60]. The intensity of exchange and the quality of information can reduce the risks of opportunistic behavior, to promote transparency and facilitate the management of flows.

These results confirm that information sharing with suppliers significantly affects the performance of the supply chain and reduces costs [63].

In the same line, [64] used data from the United States, Europe, and New Zealand to examine the multi-dimensionality of an organization's information-sharing capacity in terms of integration of its information / decision systems and business processes with those of its supply chain partners. They found positive relationships between information sharing capacity, buyer-supplier relationships and performance.

It is undeniable that integration has largely contributed to the practical and academic aspects of the supply chain's performance at both strategic and operational levels. High supply chain performance can only be achieved when companies integrate their operations with suppliers or customers [32].

In a global sample of 322 manufacturers, [65] found that companies with a high degree of integration with suppliers and customers showed improved performance in terms of market share, profitability, productivity (cost and time) as well as customer service.

[66] conducted a survey of 152 members of the CSCMP (Council of Supply Chain Management Professionals) through which they demonstrated that internal and downstream integration improves the logistics performance and thus the financial

performance of the company.

In addition, managers in Taiwan consider the characteristics of the supply chain, the integration and management of customer services, as the main factors in achieving a significant improvement in the performance of the company [2].

A high level of integration allows manufacturers to respond more flexibly to the individual needs of customers and thus reduce lead times and inventory and increase the efficiency of the supply chain. In addition, a high degree of integration improves quality and operational performance [32].

A direct relationship between integration and business performance has been demonstrated in 480 companies in the electronics industry in Taiwan [32]. This is due to the fact that internal and external integration facilitates the coordination of supply chain partners and the flow of information and thus helps to respond to rapid changes in the market. Moreover, the combination of a high degree of integration and competitive capabilities can act more effectively on the company's performance.

On the one hand, [67] found significant direct relationships between the external integration of both suppliers and customers, and the overall performance of the company. On the other hand, [29] found that customer service (responsiveness, speed and reliability of delivery, etc.) plays a mediating role between the integration of the supply chain and financial performance (return on assets, investment and sales) for 57 US leading automotive suppliers.

In Tanzania, an empirical study of the public health sector based on data provided by 166 procurement managers, showed that buyer-supplier integration has a strong and positive effect on the logistics performance of suppliers [68].

To achieve sustainable improvements in multiple aspects of performance, management must invest in coordination with upstream and downstream partners in the supply chain. Based on transaction cost theory and 243 questionnaires from 17 countries, [69] demonstrated that investing in the supplier and customer relationship reduces lead time and increases reliability and speed of delivery.

In addition, successful customer-supplier

collaborative relationships are known to produce significant benefits, such as reduced inventory, improved quality, improved deliveries, reduced costs, faster delivery times, faster time to market, increased flexibility, greater responsiveness to market demands and customer service, and increased

market share [70].

Nevertheless, through data collected from 374 companies in 11 European countries, [70] have shown that if separate collaboration efforts with suppliers or with customers bring only minor performance improvements, collaboration with suppliers and customers at the same time allows greater improvement rates, especially for the exchange of information.

[9] demonstrated through a survey of 313 US companies that the use of supplier knowledge and skills, product and process certification by suppliers, regular supplier visits, confidential information sharing and using product teams to set suppliers' goals are all positively correlated with asset performance, growth in market share and sales. Practices such as improved customer support, prediction of future customer expectations and prediction of key factors influencing customer relationship have generated the highest correlation with performance metrics.

In the same perspective, strategic partnership with suppliers can produce specific benefits for the organization in terms of performance. It has also been shown that customer relationship practices lead to a significant improvement in organizational performance [1], [9].

These results are consistent with the contributions of [71] according to which the partnership with suppliers has a positive impact on the quality of delivery, on time delivery and customer satisfaction. Also, customer relationship management can contribute to the creation of a reputation related to the customer's prescription action and thus increase the volume of business and performance on the long term [72]. This relationship offers the company the opportunity to better understand the market behavior and anticipate expectations.

In a continuation of previous contributions, [73] developed a multivariate regression model based

on the survey of 122 US manufacturing firms to measure the effect of supplier relationships and customer relationships on the supply chain performance indicators. They found that supplier relationships had a positive effect on the cost and the reliability of supply chain partners.

In Indonesia, it has been demonstrated that customer relationship management has major contribution to promote logistic customer satisfaction [74].

[75] also proved through 63 textile companies in Egypt that upstream (supplier) and downstream

(customer) links and information sharing were positively related to the performance of the supply chain and the export performance.

Supplier partnership and customer orientation have a positive influence on financial performance and non-financial performance such as social performance, cost control, efficiency and timeliness, responsiveness and customer satisfaction [45].

## 6. Conclusion

In this paper, we have been able to identify and analyze the difference between the definitions and approaches of SCM as well as the practices that constitute it. We have selected four practices that present a balanced view of SCM, namely: integration, strategic supplier partnership, customer relationship management and information sharing. We also examined the various performance metrics used in the literature and demonstrated through a deep review of articles that the overall performance can be enhanced by SCM practices in different degrees and directly or indirectly.

Therefore, based on the present review and analysis of the articles, some suggestions for future research can be considered. Indeed, we have noticed an absence of studies that link the SCM

practices and performance in the Moroccan context.

Thus, we suggest to identify the practices of SCM in the Moroccan companies and study the impact of these practices on the overall performance.

Supply chain members do not implement SCM practices to the same degree, they will apply

practices that match the product/service characteristics they provide. There may be different perceptions from country to country about how to effectively manage a supply chain. Therefore, future research can study potential influence of the social and cultural context on the SCM practices and their impact on the global performance.

Finally, this paper may support researchers to understand the gaps in the literature and suggest future research opportunities and provide further attention into developing the field research of the relationships between the SCM practices and performance in different sectors.

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