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GRADUATION DISSERTATION

To obtain an Academic Master's degree in

SUPPLY CHAIN MANAGEMENT

The impact of the supply chain practices on competitive advantage of pharmaceutical industries

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ABSTRACT

Our research aims to ascertain the impact of the supply chain on competitive advantage within the pharmaceutical sector. Employing a quantitative approach, we distributed a questionnaire among various pharmaceutical companies operating in Algeria, yielding a total of 100 responses. The outcomes, derived from simple and multiple regression tests, alongside a correlation analysis, indicate that supply chain practices, including customer relationship, information sharing, flexibility and responsiveness, cooperation and collaboration, strategic supplier partnerships, all exhibit a positive and significant influence on competitve advantage.

Key words: supply chain, competitive advantage, communication, collaboration, customer relationship, information sharing, strategic partnership

RESUME

Notre recherche vise à déterminer l'impact de la chaîne logistique sur l'avantage concurrentiel au sein du secteur pharmaceutique. En adoptant une approche quantitative, nous avons distribué un questionnaire auprès de diverses entreprises pharmaceutiques opérant en Algérie, obtenant un total de 100 réponses. Les résultats, issus d'analyses de régression simple et multiple, ainsi qu'une analyse de corrélation, indiquent que les pratiques de la chaîne logistique, notamment la relation client, le partage d'informations, la fléxibilité, la coopération et la collaboration, ainsi que les partenariats stratégiques avec les fournisseurs, présentent tous une influence positive et significative sur l'avantage concurrentiel.

Mots clés : la chaine logistique, avantage concurentiel, la relation client, le partage d'information, la qualité d'information, coopération, collaboration, partenariat stratégique.

ملخص

يهدف بحثنا إلى تحديد تأثير سلسلة التوريد على الميزة التنافسية داخل قطاع الصناعات الدوائية. باستخدام منهجية كمية، قمنا بتوزيع استبيان بين مختلف الشركات الدوائية التي تعمل في الجزائر، مما أفضى إلى الحصول على مجموع 100 استجابة. تشير النتائج، المستمدة من اختبارات الانحدار البسيط والمتعدد، جنبًا إلى جنب مع تحليل الترابط، إلى أن ممارسات سلسلة التوريد، بما في ذلك علاقة العملاء، ومشاركة المعلومات، وجودة المعلومات المشتركة، والتعاون ، والشراكات الاستراتيجية مع الموردين، تظهر كلها تأثيرًا إيجابيًا ومعنويًا على الميزة التنافسية

الكلمات المفتاحية: سلسلة التوريد، جودة المعلومات المشتركة، الشراكات إلستراتيجية، ألداء التنظيمي

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LISTE OF ABBREVIATIONS AND ACRONYMS

IT: technology

SC: supply chain

SCP: supply chain practices

SCM: supply chain management

CA: competitive advantage

SPSS: Statistical Package for the Social Sciences

INTRODUCTION

Contexte and theme interest

In the contemporary and rapidly evolving business landscape, effective supply chain management has assumed a pivotal role in conducting operations (Li, 2004) . Its potential to facilitate operational excellence, enhance customer satisfaction, and optimize financial performance, also gain competitive advantage has garnered substantial attention from both scholars and industry experts (Mentzer, 2001).

Supply chain management encompasses culture, vision, strategy, and processes that are aimed at optimizing the flow of monetary value, quality, and other components. It involves sourcing from innovative and reliable suppliers and resources and subsequently delivering high-quality products to customers at a competitive price. In the pharmaceutical industry, the significance of supply chain management has grown, as it is now recognized as a pivotal tool and driving force for pharmaceutical companies striving for success in a fiercely competitive environment. It plays a crucial role in ensuring the seamless operation of the pharmaceutical sector, guaranteeing the safe and efficient delivery of products to those in need (gambardella, 2000)

this complex economic environment, marked by an accelerated competition, and the pursuit of staying competitive, forces companies to explore inventive ways of organizing themselves in order to guarantee the long-term survival and continued functioning of their enterprises. (sifouane, 2018)

Efficient supply chain management presents a significant strategic prospect for establishing a competitive edge. Any company can attain competitive advantage by possessing assets and resources that hold value, rarity, and pose challenges for imitation (barney, 1991)

Furthermore, with the evolution of communication and information technologies, providing and disseminating real-time information has become a challenge as this aspect significantly influences the overall performance of the supply chain. The key factors for success now encompass the reduction of overall costs, strong cooperation, and effective collaboration. Therefore, the notion of efficient information sharing has the potential to enhance supply chain performance and gain a competitive advantage (marinagi, 2014)

Sustaining long-term competitiveness within the manufacturing sector depends on the continuous enhancement of supply chain practices. Companies must strategize to amplify productivity and achieve competitive advantage while satisfying the standards of customer

service. Realizing these goals necessitates a meticulous assessment of supply chain practices (Monczka, 1998)

The objective of the study

many researchers in the field management , focus on studying the competitive advantage of companies since its considered the defining point of a company's success (barney, 1991; noda, 2020), studies mostly approach marketing or financial point of view, How ever in today's environment where competition is highly standing , a company's achievement is no longer confined to it financial performances or marketing strategies (Hani, 2020), alone , but one of the most important criteria is how a company's supply chain practices are being performed in order to maximize its competitive advantage

This leads us to the objective of our research which is to study the supply chain practices and how do they impact the competitiveness of the industries

More Financial :

- The importance of supply chain practices within an industry
- The role of competitiveness within industries
- To investigate the relationship between supply chain and competitiveness

Pertinence of our research

This study aims to investigate the relationship between competitiveness of industries and supply chain management practices, which are regarded as a multi-functional role that interacts with various dimensions within a company and has a significant influence on its achievements.

The scientific relevance of our study is founded upon our comprehensive literature review, which includes all the scientific studies made by researchers in our field of study**.**

Research question

Following the studies **(Li, 2004)** and **(ABDULHAMID, 2012)** on the contribution of supply chain practices on the competitiveness of companies, in order to achieve our objectives, our research question is formulated as follows:

How does the supply chain practices impact the competitive advantage of industries?

Hypothesis's

After digging deep into the literature review (marinagi, 2014), (Abdulhamid, 2012), (Thatte, 2007), (barney, 1991), (houssainii, 2010) , we have decided to study the following variables : supply chain practices , and its different dimensions , competitiveness , operations management , flexibility and responsiveness , cost and efficiency , customer satisfaction , information and technology , sustainability and future prospects

Hypothesis H1: There is a positive and significant correlation between the supply chain and the industry competitiveness.

Hypothesis H2: The supply chain has a positive and significant impact on the industry competitiveness.

Sub-hypothesis's of H2:

H2a: Operations management has a positive and significant impact on the industry competitiveness.

H2b: Flexibility and responsiveness has a positive and significant impact on the industry competitiveness.

H2c: Costs and efficiency has a positive and significant impact on the industry competitiveness.

H2d: Quality and customer satisfaction has a positive and significant impact on the industry competitiveness.

H2e: Sustainability and future outlook has a positive and significant impact on the industry competitiveness.

Research field

In conducting our research, our focus was directed towards undertaking an internship at the « industry medico chirurgic ales alegria », an Algerian industry considered as the national leader in many of its products and for many years, adhering to international standards. This internship aimed to provide a deeper insight into how does the supply chain impact the competitive advantage of this industry

Method

in order to address the research question and to test the hypotheses, a quantitative study will be developed, based on a questionnaire that was inspired from our last literature review, the survey was established based on a sample of …… professionals so they would be more suitable to answer our hypotheses.

Research interest

This study makes a valuable addition to the body of scientific knowledge by emphasizing the significance of cost savings within a company. This significance can be further augmented through the implementation of effective communication, collaboration strategies, and the integration of technology within the supply chain.

Furthermore, a majority of prior research has primarily focused on exploring the concept of cost savings and its multifaceted determinants within the context of the supply chain, often outside the Algerian context. Given the variations in findings across studies conducted in diverse countries, it becomes pertinent to ascertain the comparability of the outcomes of this research with those reported in earlier studies.

CHAPTER 1: STATE OF THE ART

Introduction

This chapter serves as an introduction to the core focus of our study: the impact of the supply chain practices on the competitive advantage of industries. By providing a concise overview of the theoretical framework that underpins our research, delving into essential concepts and models from the fields of supply chain management practices and industries competitiveness, the aim to uncover the intricate relationship between supply chain practices and the ability to achieve a competitive advantage.

Section 1: the literature review

Numerous studies have investigated how supply chain practices affect the competitiveness in companies, (Abdulhamid, 2012) (Hani, 2020) (Lachache, 2020) (Li, 2004) (Thatte, 2007) (barney, 1991) (djedra, 2019) (gambardella, 2000) (houssaini, 2007) (houssainii, 2010) (marinagi, 2014) (mukhtar, 2015) (noda, 2020) (osmanovic, 2018) (pono, 2020) (sifouane, 2018) (Hani, 2020) , has studied the indirect influence of supply chain management (SCM) across its four key dimensions:

- Interactions witz supplier
- Intermédiaires
- Distributeurs
- Customer Relationship.

It seeks to discern how these dimensions impact competitive advantage (CA) in terms of five facets: Cost, Quality, Delivery Time, Flexibility, and Commitment to Creativity. Additionally, the study examines the role of information technology (IT) as a mediator in this process. The research involved distributing 250 questionnaires within Halawani Industrial Company, with 226 questionnaires ultimately analyzed. The hypotheses were tested using the Statistical Package for Social Sciences (SPSS). The findings from the partial analysis indicate that both supplier and customer relationships contribute to the influence of IT, while interactions with intermediaries and distributors do not directly contribute to this impact. However, they do play a supportive role in facilitating the indirect influence of SCM on CA.

The result underscores the importance of regularly and consistently assessing fundamental competencies. This ongoing evaluation is crucial for adapting essential assets, which serve

as the foundation for core competencies. This adaptation includes addressing requisites and conditions related to strategic thinking and leadership competencies. Furthermore, the study not only enhances the collective knowledge about the reality of supply chain management and its role in achieving competitive advantage but also contributes to enriching the academic discourse in international management context.

Also, (pono, 2020) , study explore how the supply chain strategy influences both competitive advantage and company performance. The study was carried out across three distinct regions: Mamou Regency, Marjane Regency, and Polman Regency, encompassing a sample of 210 business units. To analyze the data, both descriptive statistics and Structural Equation Modeling (SEM) were employed. The findings underscored a substantial **impact of the supply chain strategy variable on both competitive advantage and company performance**. Furthermore, the study revealed a significant correlation between competitive advantage and company performance. Moreover, it was evident that the implementation of a supply chain strategy can enhance company performance by leveraging the competitive advantage factor.

(Lachache, 2020) , The objective of this study is to elucidate the significant role played by companies in supply chain management to establish partnerships with suppliers. The approach to managing the supply chain holds considerable significance for economic enterprises, necessitating the consideration of adopting supply chain management practices. Additionally, the significance of suppliers as dynamic components within the supply chain will be demonstrated, underscoring the need to clarify the interplay between supply chain management and suppliers. This involves conducting a field study within a collection of Algerian companies, employing a questionnaire as the analytical tool for the data collected and subsequently processed through the SPSS program. The study's findings highlight that effective supply chain management leads companies to successfully forge partnerships with their suppliers.

According to (djedra, 2019) the acceleration of globalization and heightened competition, companies find it imperative to embrace competitiveness. Globalization drives businesses towards international expansion

The objective of his research is to comprehend the interplay between logistics and competitiveness, decipher the drivers of competitiveness, and unveil the role of logistics at CEVITAL

Additionally, the study aims to establish means to measure competitiveness and ascertain the pivotal role that logistics plays in achieving competitive advantages. CEVITAL attains competitiveness by satisfying various determinants, gaining an edge over rivals and the capacity to withstand mounting foreign competition in the market.

The article primary objective is to explore, dissect, and pinpoint avenues for enhancing the competitive prowess of the focal enterprise. Employing empirical research methodologies such as observation, comparison, measurement, abstraction, analysis, synthesis, induction, and deduction, the study navigates through its analysis

The result of this study showed the important role that plays the supply chain practices in maximizing the industries competitive advantages

The article of (osmanovic, 2018) shows that effective supply chain practices are crucial for achieving a competitive advantage and enhancing a company's performance. These practices play a vital role in fostering strong business relationships with both customers and suppliers. By establishing robust partnership connections, we gather essential insights from customers regarding their desired products from suppliers, as well as the available materials and raw resources for the company.

As a result, companies utilize supply chain management to optimize their operations. This paper demonstrates how the unique attributes of companies within the agricultural food sector impact the implementation of supply chain practices. These practices are assessed using 16 statements, which are then analyzed across four dimensions corresponding to specific aspects of supply chain management. A total of 149 companies participated in the anticipated survey for this study.

The findings from hypothesis testing, conducted through multivariate analysis of variance, reveal significant influences of factors such as employee count, sales revenue, and possession of quality certifications on supply chain practices. These outcomes are further validated through analysis of variance, which explores the correlation between the organization and individual dimensions of supply chain variables.

With the same logic (mukhtar, 2015) study showed that Supply Chain Competitiveness refers to the capacity of a supply chain to provide value to customers in order to gain a competitive advantage. This concept has gained prominence because contemporary competition now revolves around supply chains rather than individual firms.

The method to conduct his research was a theoretical framework that has been constructed by different insights from various sources, including value chain analysis, network theory, customer value theory, and the expectancy disconfirmation paradigm theory. This framework aims to elucidate supply chain competitiveness, particularly from the vantage point of service performance. The central premise is that the interaction of service performance among the entities within a supply chain, including the functions of the focal firm, contributes to the overall competitiveness of the supply chain, ultimately yielding a competitive advantage in the marketplace. The theoretical foundation draws extensively from existing literature and theories.

The study of (sifouane, 2018) facilitated a comprehensive presentation of industrial enterprise competitiveness and a description of supply chain link policies at the company level

The method used to achieve this study was through conducting interviews and accessing pertinent documents. The analytical approach studied was successfully executed

The results showed the effectiveness of supply chain implementation in enhancing enterprise competitiveness. Application of this approach within the industrial enterprise context, exemplified by TONIC INDUTRIE, led to a clear understanding of supply chain link functionality and associated factors. This emphasized the pivotal role of an information system in the successful execution of supply chain implementation, enabling information exchange, coordination, cooperation, and reduction of inconsistencies among supply chain stakeholders. The study underscored that inadequate management of flows (physical, informational, and financial) adversely impacts enterprise competitiveness. Consequently, the adoption of a supply chain approach permits the enterprise to gauge the performance of distinct links, which directly influences overall competitiveness. As a result, recommendations targeting various responsible departments were developed to ensure seamless operations, thus mitigating risks and enhancing competitiveness. However, it should be noted that implementing these solutions places operational demands, particularly

on directors overseeing procurement, inventory management, production, quality assurance, information systems, sales, and logistics.

In (Abdulhamid, 2012) research in shows that in the current competitive business landscape, an increasing number of companies are placing a greater emphasis on delivering enhanced value to their customers. This strategic focus involves offering products and services that outshine those of their competitors. Consequently, this shift compels supply chains to become more agile and establish a distinct competitive edge.

His research delves into the influence of integrating supply chain processes on gaining a competitive advantage. Moreover, the study evaluates the effect of supply chain responsiveness on a firm's ability to maintain a competitive edge. To gather data, a questionnaire was distributed among 400 managers within the manufacturing industry of Malaysia.

The method was conducting a questionnaire while the response rate stood at 62%, with 50% of the received questionnaires deemed usable. The selection of the sample was conducted through a convenience sampling approach. The collected data underwent analysis through measures such as mean, standard deviation, and correlations between both independent and dependent variables. The analytical techniques encompassed reliability and validity tests, along with multiple regression analyses.

The research outcomes substantiated the hypotheses by revealing that supply chain integration has a positive impact on both supply chain responsiveness and competitive advantage. Additionally, the findings indicated a positive correlation between supply chain responsiveness and a firm's competitive advantage.

In the other hand (marinagi, 2014) studied the influence of Information Technology (IT) practices on cultivating a competitive advantage throughout the supply chain. A competitive advantage stems from the capabilities that offer an organization the necessary foundation to set itself apart from its rivals. Existing empirical literature highlights price/cost, quality, dependable delivery, product innovation, and time to market as the most pivotal sources of competitive advantage. As economic norms evolve and global competition intensifies, organizations are recognizing the need to reassess their enterprise business models to attain supply chain efficiencies. To effectively tackle these challenges and enhance their

competitive edge, companies must enhance both their internal functions and the exchange of information with supply chain partners. This necessitates the strategic utilization of IT, encompassing enterprise applications like ERP and CRM, along with e-procurement and e-commerce solutions. The method was an Empirical insight derived from a survey involving 76 manufacturing firms in Greece validate the vital role played by IT practices and techniques in establishing a sustainable competitive advantage grounded in Supply Chain Management. The study also explores practical implications for managerial decision-making.

(houssainii, 2010) **,** The Supply Chain Management (SCM) is becoming a crucial factor for competitive success, particularly within a network and inter-organizational context. In today's globalized value chains and the growing prevalence of outsourcing and economic modularization, gaining a competitive edge hinge on effectively engaging with worldwide networks. This necessity is recognized globally, as various nations promote economic openness. However, achieving this integration goes beyond just reaching a suitable level of logistical proficiency; it necessitates a corresponding level of Supply Chain maturity. To fully leverage the competitive advantages offered by the Supply Chain, a reevaluation of the competitiveness concept becomes imperative. Consequently, there is an urgent need for certain middle-income countries, like Morocco, to adopt the SCM philosophy and establish the essential infrastructure—both technological and organizational—to foster its growth

According to (Thatte, 2007) competitiveness has reached unprecedented global heights. Contemporary businesses grapple with abbreviated product life cycles, rapid product launches, and a clientele that is notably knowledgeable. As a result, supply chains face the imperative of heightened responsiveness. Therefore, investigating the responsiveness of supply chains becomes a pertinent area of interest. This study delves into the effects of diverse supply chain management practices operating outside the organization, as well as modular manufacturing practices within it, on the responsiveness of supply chains. Their research also explores the facets of supply chain responsiveness through a comprehensive review of existing literature. In doing so, it formulates a dependable and valid tool to assess the construct of supply chain responsiveness, a valuable asset for practitioners and scholars alike. Furthermore, the study evaluates how supply chain responsiveness impacts the ultimate variable of interest: a firm's competitive advantage. A large-scale web-based survey garnered 294 responses from industry experts within the manufacturing and supply chain sectors. The collected data underwent rigorous statistical scrutiny to validate content,

construct, and criterion-related aspects, along with reliability analyses. Subsequently, a structural equation model was devised to examine the connections between SCM practices, modular manufacturing practices, supply chain responsiveness, and a firm's competitive advantage. Additionally, thorough regression analyses and MANOVA were conducted to scrutinize the impact of various relationships at both the sub-construct and item levels.

The result of this research lend support to several hypotheses: SCM practices positively influence supply chain responsiveness, modularity-based manufacturing practices correlate positively with supply chain responsiveness, heightened supply chain responsiveness positively affects a firm's competitive advantage, and SCM practices are positively tied to a firm's competitive advantage. The study also uncovers specific practices at the item level that contribute to enhanced supply chain responsiveness. Moreover, it identifies distinct SCM practices and supply chain responsiveness criteria that heighten a firm's competitive advantage. For practitioners, this research holds significant implications. It offers pragmatic recommendations to enhance supply chain responsiveness and its dimensions, based on the current status of specific SCM and modular manufacturing practices. Additionally, the study provides actionable insights into amplifying competitive advantage by improving predominant SCM practices and supply chain responsiveness criteria, ultimately enhancing the competitive prowess of organizations.

The study of (Li, 2004) ascertain that efficient management of the supply chain (SCM) has emerged as a potentially valuable strategy for gaining a competitive edge and enhancing overall organizational performance. In today's landscape, competition extends beyond individual organizations and encompasses entire supply chains. This study introduces and defines five key dimensions of SCM practice: strategic supplier partnerships, customer relationships, extent of information sharing, quality of information sharing, and postponement. It then proceeds to examine the connections between SCM practices, competitive advantage, and organizational performance. To conduct the research data from 196 organizations has been collected and employed structural equation modeling to assess the proposed relationships within the framework. The findings reveal that heightened levels of SCM practice can lead to improved competitive advantage and enhanced organizational performance. Furthermore, it's established that competitive advantage directly and positively influences organizational performance.

Section 2: The supply chain management

2.1.History and evolution of supply chain management

From logistics to supply chain management

The word "logistics" originates from military terminology, describing the aspect of the art connected to supply challenges and the movement of armies. In the 1950s, organizations started exploring ways to cut transportation costs, leading to the incorporation of "logistics" into business language during the 1960s. However, its use gradually became limited to the transportation of goods (sifouane, 2018)

In order to elucidate the historical progression of practices within supply chains, table 1, inspired from (Merzouk, 2007) summarizes the various stages of the market evolution

Tableau 1: evolution of the market

	Before 1975	From 1975 to 1990	After 1990
Offers and demans	Demand > offer	Demand = offer	Demand < offer
Custumors needs	Determined	Predictable	Uncertain
Market	National	continental	International
Power dynamics	In the favor of the producer	In the favor of the client	In the favor of the collaborative
Objective	Mass production	Maximizing the quality	Global optimasation

Source (Merzouk, 2007)

As mentionned in **(fouad, 2004)** study, after the sucess of logistics within industries, logistics has extended its sphere of influence to encompass the entire value creation chain, starting from the conception of products and services and reaching all the way to the end consumer. In **1982** The term "Supply Chain Management" was introduced. Indeed, the growing interest in the concept of managing supply chains arises from the globalization of sourcing activities, the significance of competition, and the rise in uncertainty linked to frequent changes in consumer preferences (chibani, 2015) .This leads to the concept of a supply chain or global logistics chain, encompassing all stakeholders/partners (clients,

suppliers, service providers, subcontractors, etc.). The management, tools, synchronization, and optimization of these flows are now collectively referred to as "supply chain management." This evolution can primarily be attributed to the realization among business leaders that a global perspective is imperative for effective flow management. Additionally, the supply chain is now acknowledged as a comprehensive driver of competitiveness, contributing both to enhanced customer service and cost reductions (fouad, 2004)

According to (fouad, 2004) , Within the scope of a traditional management approach, which only acknowledges the internal dimension of a company, if the primary performance lever of cost reduction in manufacturing has reached its limits and the main internal sources of inefficiency have been addressed, achieving further improvements becomes more challenging. As a result, companies have been compelled to seek solutions for growth and enhanced performance beyond their borders. This situation has necessitated the development of a comprehensive managerial approach, which has materialized through the creation and management of "business chains." This is the very essence of Supply Chain Management (SCM), which, through its cross-functional nature, enables the orchestration of a collection of dispersed units while establishing a shared global objective that all partners refer to

2.2.Definition of supply chain management

In seeking definitions related to supply chain mangement , Multiple definitions have been identified in the literature review by all these researchers (Abdulhamid, 2012) (Hani, 2020) (Lachache, 2020) (Li, 2004) ect .

It has been observed that conversations about Supply Chain Management (SCM) frequently employ complex terminology, which in turn restricts the comprehension of the concept by management and hampers its practical applicability (Mentzer, 2001)

so we relied on the significant works of (Mentzer, 2001), which were further enriched by the contributions of (Mahmoudi, 2006). These authors provide a collection of noteworthy definitions found in the literature. We selected four definitions that correspond to various contexts associated with the developments in the global market. Table 1 presents these definitions in ascending chronological order.

Tableau 2 : definitions of the supply chain management

(Monczka, 1998)	**In the realm of Supply Chain Management (SCM), the conventional practice involves consolidating formerly distinct material functions under the supervision of an executive responsible for orchestrating the entirety of the materials process. Additionally, SCM necessitates collaborative associations across multiple supplier tirers . At its core, SCM is a concept that revolves around the core objective of integrating and managing the sourcing, movement, and regulation of materials through a comprehensive system-wide lens, encompassing a multitude of functions and supplier tiers.**
(londe, 1994)	Supply chain strategy encompasses several key components: firstly, the establishment of enduring agreements between two or more companies within a supply chain; secondly, fostering trust and dedication to the partnership; thirdly, the amalgamation of logistics operations, which involves the exchange of demand and sales information; and lastly, the potential for a change in the focal point of control over the logistics process.
(Stevens, 1989)	The aim of supply chain management is to align customer needs with the movement of materials from suppliers, creating a

harmonious equilibrium among seemingly contradictory objectives of delivering excellent customer service, efficient inventory control, and cost-effective production.

Contrasts between supply chain management and traditional materials and manufacturing control can be summarized as follows:

1. A unified perspective characterizes the supply chain, where accountability for its various segments is not compartmentalized into functional domains like manufacturing, procurement, distribution, and sales.

(houlihan, 1988)

2. Supply chain management underscores the necessity for strategic decision-making, with "supply" serving as a shared objective across multiple functions within the chain. Its strategic significance is underscored by its influence on overall costs and market presence.

3. The management of inventories takes on a distinct perspective in supply chain management, wherein they function as a final, rather than initial, balancing mechanism.

4. A novel approach to systems is demanded, emphasizing integration rather than mere interfacing.

Source : made by us inspired from the literature review

2.3.practices of supply chain management:

(Thatte, 2007) defined supply chain practices as the group of activities taken by a company to promote effective management of its suplly chain management researchers (Mahmoudi, 2006) (Lachache, 2020) (Monczka, 1998) (Abdulhamid, 2012) (djedra, 2019) (fouad, 2004) have dedicated attention to classify the diverse practices and functions existing within the domain of the supply chain.

In order to clasify the practices of the supply chain we will explain the diffrent flows within a supply chain adressed by many researchers (chibani, 2015) (Li, 2004) (sifouane, 2018)

2.3.1. diffrent flows of supply chain management

A classical depiction of a supply chain is illustrated in Figure 1. Various entities can be discerned within this framework. The entirety of suppliers, factories, distribution centers, and ultimately customers constitute the links of a single supply chain. (chibani, 2015)

2.3.1.1. Physical flow

Activities linked **to the physical flow** focus on a process that starts with the procurement of raw materials and continues until the sale of the finished product. According to (chibani, 2015) this process consists of five primary functions:

- Procurement
- Production
- Storage
- Distribution and transportation
- Sales

2.3.1.2. Procurement

Procurement aims to fulfill the requirements of an entity for products and/or services. The objective is to provide a resource (warehouse, manufacturing entity, customer) with the right

items at the right time and at the best cost, while ensuring quality to minimize waste. The issue of supplier selection is the most prevalent challenge associated with this activity. (chibani, 2015)

2.3.1.3. Production

Production is the activity that showcases a company's expertise in developing or transforming materials into products or services. In doing so, the company combines various factors to create value. A production process typically involves a sequence of organized tasks while remaining responsive to fluctuating customer demands (houssaini, 2007)

2.3.1.4. Storage

A stock generally encompasses all goods that can be used in production activities. It is distributed among the various links that form the supply chain. The goal is to ensure responsiveness to fluctuations in customer demands in the market by attempting to align delivery and consumption flows to minimize associated costs. Effective management of this aspect is of paramount importance for businesses (chibani, 2015)

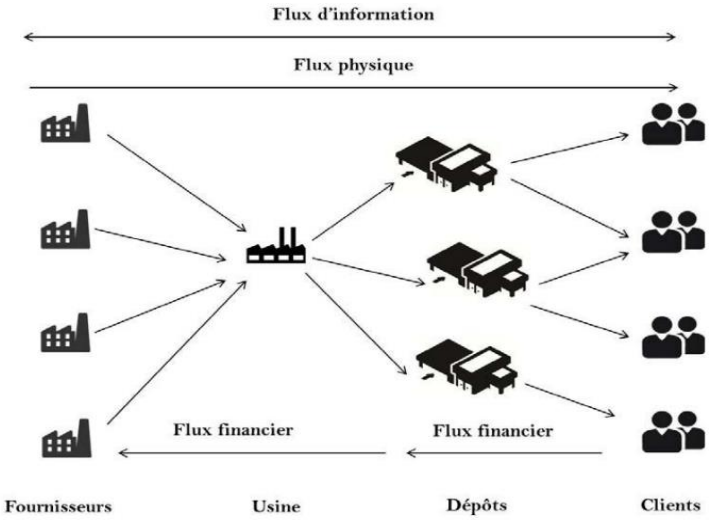
2.3.1.5. Distribtution and transportation

Accodring to (chibani, 2015) distribution occurs at all levels of the supply chain, encompassing warehouses, distribution centers, stores, and more. This activity involves utilizing resources or means of transportation to convey orders from a supplier to a customer. The transportation problem involves finding the most efficient route, for instance, to ensure delivery between multiple collection points. It also involves selecting the best transportation modes and determining optimal product quantities while minimizing transportation costs

2.3.1.6. Sales

The sales operation is often interlinked with other functions within the supply chain. As the final activity in this process, effective optimization of the entire supply chain has a ripple effect on sales outcomes. This is due to the quality of the product or service that becomes available to sales teams. They are then better positioned to engage with customers comfortably, offering attractive prices and personalized services, resulting in a seamless sales process. (Abdulhamid, 2012)

Figure 1: Diffent flow of supply chain



Source : *(Merzouk, 2007)*

2.3.1.7. Informational flow

Activities tied to information flows encompass any data moving from downstream to upstream within the supply chain, with the aim of conveying customer demands in the form of orders or computerized instructions that underscore coordination among the various entities along the chain. (Thatte, 2007)

2.3.1.8. The financial flow

Encompasses activities associated with monetary exchanges between these same entities within the framework of commercialisation within one or more entities. (chibani, 2015)

2.3.2. Practices of supply chain management

When embracing a supply chain management philosophy, companies need to institute management practices that enable them to consistently align their actions with the philosophy (Mentzer, 2001). Consequently, numerous scholars such as (Merzouk, 2007) (Hani, 2020) (Stevens, 1989) (Thatte, 2007) (Mentzer, 2001) **,** have concentrated on the operations that constitute supply chain management practices . These studies have proposed several activities essential for effectively implementing a SCM philosophy.

SCM practices encompass a collection of activities executed within an organization to enhance the efficient management of its supply chain (Li, 2004)

according to the research of (Li, 2004) , as he described the latest evolution of supply chain practices , which include supplier partnership, outsourcing, cycle time compression, continuous process flow, and information technology sharing

while (Mentzer, 2001), described the supply chain practices by mentionning the activities that are showing in the figure below

Figure 2 : Supply chain management practices

Source : made by us

(Mentzer, 2001) and (Li, 2004) argued that to achieve maximum effectiveness in today's competitive landscape, businesses need to broaden their **integrated behavior** to include customers and suppliers. This extension of integration, facilitated by external collaboration, is coined "supply chain management" by Bowersox and Closs. Within this framework, the SCM philosophy translates into the practical application of supply chain management, which entails a collection of actions that operationalize the philosophy. These coordinated activities collectively constitute supply chain management among partners within the supply chain, including suppliers, carriers,

and manufacturers, enabling agile responsiveness to the requirements of the end customer.

2.3.2.1. Information sharing

Information sharing comprises two dimensions: quantity and quality. Both dimensions hold significance for SCM practices and have been regarded as distinct constructs in previous SCM research (Mentzer, 2001) (fouad, 2004)

According to (Li, 2004)The level (quantity aspect) of **information sharing** pertains to the degree of communication of critical and proprietary information to one's supply chain partner. The shared information can encompass a range from strategic to tactical, spanning logistics details to broader market and customer insights (Mentzer, 2001). Numerous scholars have indicated that the foundation for a seamless supply chain lies in providing current marketing data to every node within the supply chain (Merzouk, 2007). Through leveraging available data and sharing it among supply chain participants, information can be harnessed as a competitive advantage source

(londe, 1994) identifies information sharing as one of five foundational elements characterizing a robust supply chain relationship. While (Li, 2004) and (Mentzer, 2001)propose that supply chain partners who regularly exchange information can function as a unified entity. This synergy enables them to better comprehend the end customer's requirements, thereby facilitating swift responses to market changes and gain a competitive advantage

Successful SCM also mandates **the mutual sharing of risks and rewards**, which in turn yields a competitive edge (Hani, 2020)and (Mentzer, 2001)This sharing of risks and rewards should span the long term .This mutual exchange is crucial for fostering enduring concentration and collaboration among the constituents of the supply chain

2.3.2.2. Cooperation and collaboration

Cooperation and collaboration efforts among supply chain participants are imperative for the successful implementation of SCM (Mentzer, 2001) Cooperation encompasses parallel or complementary activities executed by firms within a business relationship, aimed at achieving superior mutual or expected individual outcomes over an extended period (Li, 2004). Cooperation transcends immediate transactional needs and extends across various

managerial tiers (including both senior and operational managers), encompassing cross-functional alignment throughout the supply chain functions (Mentzer, 2001)

In (Li, 2004) research its confirmed that cooperation initiates with collaborative planning and culminates in collective control measures that assess the performance of individual supply chain members and the entire chain as a whole

Beyond planning and control, cooperation plays a role in diminishing supply chain inventories and pursuing cost efficiencies across the entire supply chain (Mentzer, 2001) .Furthermore, collaboration is necessary for joint efforts in new product development and decisions related to the product portfolio (Monczka, 1998). Ultimately, cooperative actions also extend to designing quality control mechanisms and delivery systems.

2.3.2.3. Share same goal and same focus

(Mentzer, 2001) and (londe, 1994) asserted that a supply chain attains success when all its members **shared same goal and same focus** and exhibit a uniform **commitment to customer service**. Achieving uniform goals and a shared **customer-centric focus** across supply chain participants represents a facet of policy integration.

2.3.2.4. Customer relationship

(Li, 2004) consider **customer relationship** management as an important component of SCM practices. committed relationships are the most sustainable advantage because of their inherent barriers to competition. The growth of mass customization and personalized service is leading to an era in which relationship management with customers is becoming crucial for corporate survival . Good relationships with supplychain members, including customers, are needed for successful implementation of SCM programs (Mentzer, 2001)

2.3.2.5. The integration of process

The execution of SCM necessitates **the integration of processes** spanning sourcing, manufacturing, and distribution across the entire supply chain (Mentzer, 2001)

(londe, 1994) categorized **supply chain integration** into four developmental stages and analyzed the planning and operational ramifications for each phase:

Stage 1 Serves as the foundational scenario. The supply chain mirrors fragmented operations within the individual company and is marked by staged inventories, self-contained and non-compatible control systems and protocols, and functional isolation.

Stage 2 Commences the journey toward internal integration, characterized by prioritizing cost reduction over performance enhancement. Notably, buffer inventory is prominent, preliminary assessments of internal trade-offs occur, and reactive customer service takes precedence.

In Stage 3, there is a movement towards internal corporate integration, which is defined by comprehensive insight spanning from purchasing to distribution. This phase involves medium-term planning, a shift towards tactical prioritization instead of a strategic approach, a heightened emphasis on efficiency, expanded utilization of electronic support for interconnections, and a persistent tendency towards reactive customer interaction.

In Stage 4, the supply chain integration is attained by broadening the scope of integration beyond the company itself to encompass both suppliers and customers.

2.3.2.6. Build and maintain long terms relationships

Effective SCM is built upon a sequence of partnerships, necessitating collaborating parties to **establish and sustain enduring relationships** (Abdulhamid, 2012) (Li, 2004) (Mahmoudi, 2006)

According to (Mentzer, 2001) the duration of these relationships extends beyond the contract's lifespan possibly indefinitely and simultaneously, the optimal approach involves maintaining a limited number of partners to facilitate heightened cooperation.

(Li, 2004) contend that it's not typical for a single company to carry out all primary activities within a chain such as inbound and outbound logistics, operations, marketing, sales, and service to maximize customer value. Hence, cultivating strategic alliances with supply chain partners, whether they be suppliers, customers, or intermediaries (like transportation and/or warehousing services), offers a competitive edge through the creation of customer value

2.4.Levels of decision making in a supply chain

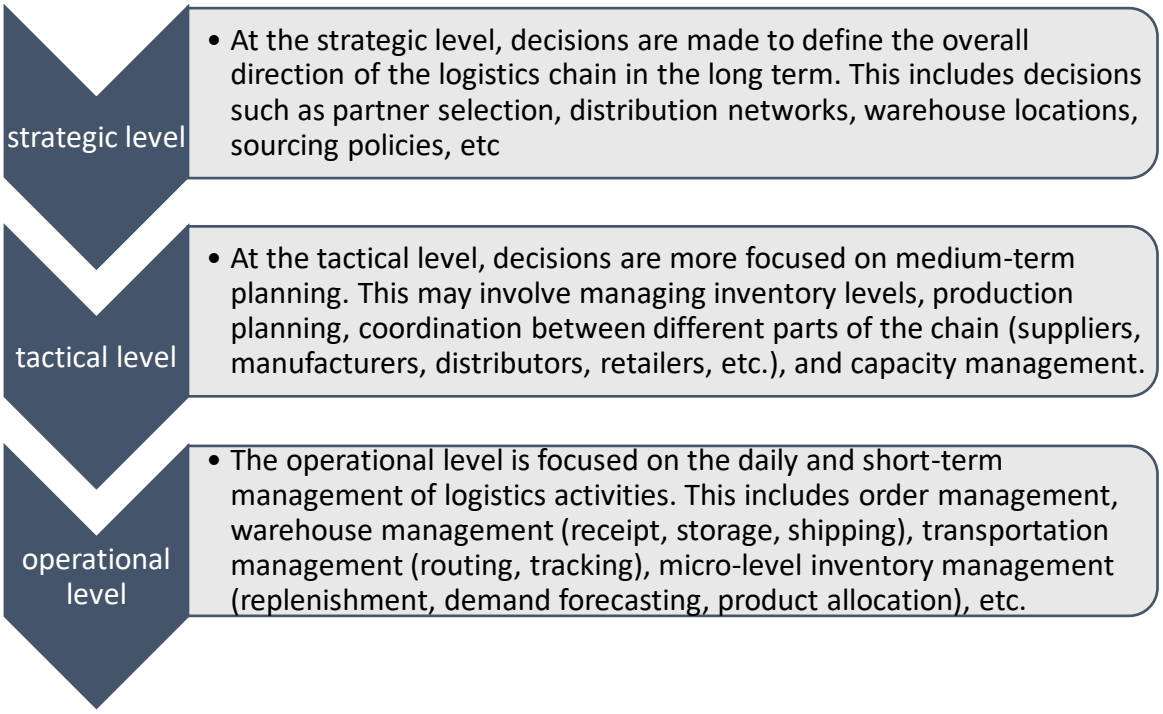
According to the study of (chibani, 2015) and (Mahmoudi, 2006) and many other researchers in the field of logistics and supply chain management , there are three levels related to decision-making for different activities in a supply chain

The strategic level encompasses decisions made for the long term, typically spanning between 4 and 5 years.

At a lower level **tactical decisions** are made in the medium term within a time interval that can range from 6 months to 2 years.

Lastly, **the operational level** pertains to the most urgent decisions to be handled in terms of time and are most often executed within the week or even the day.

Figure 3 : levels of decision planning in supply chains



Source : *(chibani, 2015)*

2.5. The challenges of supply chain management

Evaluating the performance of a supply chain allows for the recognition of challenges and possibilities. To comprehensively comprehend and manage your supply chain, it's imperative to establish a the correct strategy (bala, 2014) **,**

Moreover ,Several challenges in direct and/or indirect relation to the uncertain nature of the supply chain environment according to (chibani, 2015) , these challenges can be classified into four groups:

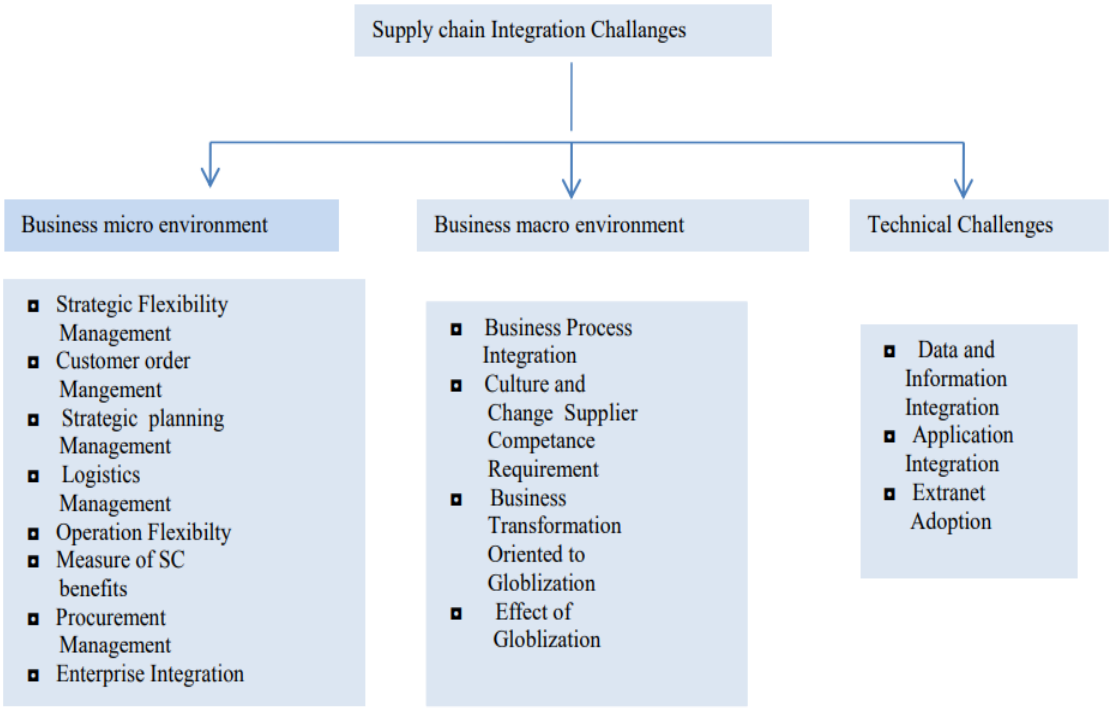
- **Natural and enviromental issues** The reduction of greenhouse gas emissions and the sustainability of resources. According to (bala, 2014) achieving sustainable supply chain

management requires collaboration among the supply actors to implement environmentally responsible practices at all levels of the supply chain

- **Major incidents** these incidents can lead to disruptions in the production, distribution, and delivery processes, causing delays, increased costs, and potential loss of revenue. Major incidents might include events such as factory fires, transportation accidents, labor strikes, geopolitical conflicts (bala, 2014)
- **informational issues** in the study of (bala, 2014) , its found that sharing information within a supply chain encounters multiple obstacles. The primary and most significant hurdle is the need to align incentives among various partners. It would be unrealistic for a partner to assume that sharing information and collaborating would inherently boost their own profits. In reality, each partner is cautious about the potential for other partners to misuse the shared information and gain an unfair advantage from it.

  Aslo , (chibani, 2015) study acertain that ensuring the availability of information stands as a critical concern. The uncertainty linked to data creates a challenge for supply chain decision-makers. As a result, ensuring information is accessible and shared becomes an indispensable phase within an optimization process aimed at identifying appropriate solutions.
- **integration issues** In many industries, there is a prevailing consensus that competition has intensified, and the conditions under which businesses operate have become more turbulent (chibani, 2015). Numerous studies (bala, 2014) (Mahmoudi, 2006) (Stevens, 1989) have discussed a way to categorize challenges related to the integration of supply chains. These challenges within supply chain integration can be organized based on the intricacies of system relationships. The supply chain management (SCM) system comprises two primary types of relationships: those among sub-systems and those linking the SCM system to business strategies. This categorization highlights the technical hurdles that arise from the interplay between the SCM system and internal business strategies. Unfortunately, this classification overlooks the difficulties that companies might confront due to the external business environment. As described in figure 4

Figure 4 : supply chain integrated challenges



Source : *(bala, 2014)*

2.6.The consequences of a successfull supply chain management strategy

A survey conducted by (morana, 2003) across 18 countries, involving companies recognized as leaders in their respective fields of activity, revealed three guiding principles of successful supply chain strategies . These principles encompass the cultivation of partnership relationships, process enhancement, and the reduction of lead times and inventory levels. The interplay between these strategies is just as crucial as the strategies themselves, highlighting that success hinges not only on formulating the right approaches, but also on their effective interconnection. Not only of each strategy but also, and more importantly, of the synchronization of formulating and implementing all three strategies simultaneously.

According to (Mentzer, 2001) and (Monczka, 1998) The primary purpose behind establishing a supply chain arrangement is to enhance the competitive advantage of the supply chain . (Abdulhamid, 2012) identifies two forms of competitive advantage: cost leadership and differentiation ,he also suggests that enhancing a company's competitive advantage and profitability through Supply Chain Management (SCM) can be achieved by improving overall customer satisfaction. Likewise, (londe, 1994) asserts that SCM strives to deliver improved customer service and economic value by efficiently managing the flow of physical goods and related information from sourcing to consumption

According to (Mentzer, 2001) perspective, competitive advantage primarily emerges from the value a company provides to its customers, aiming to establish a profitable and sustainable position against competitive industry forces. Therefore, the implementation of SCM is proposed to enhance customer value and satisfaction, leading to an elevated competitive advantage for both the supply chain as a whole and its individual member firms. Ultimately, this contributes to enhancing the profitability of the supply chain and its constituents.

Various researchers propose specific objectives to boost the profitability, competitive advantage, customer value, and satisfaction of a supply chain and its participants. For instance, one significant SCM objective is to reduce the costs associated with delivering the required level of customer service to a particular segment (Mentzer, 2001) (Stevens, 1989) (houlihan, 1988) , Another key objective involves enhancing customer service by increasing stock availability and shortening order cycle times

Achieving customer service goals is also facilitated by creating a customer-focused supply system that develops innovative solutions and synchronizes the flow of products, services, and information to create distinctive, personalized sources of customer service value (Mentzer, 2001) , Ultimately, both cost-efficient and differentiated services contribute to building a competitive advantage for the supply chain (londe, 1994)As such, SCM addresses the improvement of both efficiency (cost reduction) and effectiveness (customer service) within a strategic framework (creating customer value and satisfaction through integrated supply chain management) to attain competitive advantage and, ultimately, profitability.

When we differentiate between the operational function of customer service and the resulting goal of customer value and satisfaction, this discussion leads us to the conclusion that the outcomes of SCM include reduced costs and enhanced customer value and satisfaction, all the cosequences aimed at achieving a competitive advantage many of researchers support this point of view (Li, 2004) (Mentzer, 2001) (Monczka, 1998) (Stevens, 1989)

Section 3: Competitive advantage

The issue of competitiveness is certainly not a relatively recent concern; it has been looming over economies and organizations for decades and stands as an inherent concept within competitive play (houssaini, 2007)

In today's highly competitive business landscape, the concept of competitive advantage has been extensively discussed in the realm of business strategy (Abdulhamid, 2012) .Various scholars have offered their definitions and their diffrent prespectives of competitive advantage. (Hani, 2020) (Li, 2004) (Thatte, 2007) (barney, 1991)

It is within these perspectives that a reflection on competitiveness should be undertaken

3.1. definition of competitve advantage

The concept of competitiveness is a central focus for all types of companies regarding heir field of operation. The heightened level of competition and the increasing presence of uncertainty , demand that companies prioritize a comprehensive form of competitiveness one that encompasses both cost-related factors and those beyond cost. To possess competitiveness implies having the capability to perform effectively in these aspects (djedra, 2019)

Many researches have been conduced to clarify the concept of competitve advantage and their definitions has been numerous and diffrent. For instance (Li, 2004) propose that competitive advantage refers to an organization's capability to establish and uphold a defensible position ahead of its competitors. Similarly, (barney, 1991) suggests that a firm gains competitive advantage when its actions within a specific industry or market generate economic value and when few competing firms are pursuing comparable strategies. Additionally, (houssaini, 2007)contend that competitive advantage encompasses unique competencies that distinguish an organization from its rivals, consequently granting it a distinct edge in the market (Thatte, 2007).

Traditionally, the pursuit of competitive advantage involved making deliberate decisions about the markets in which a firm would operate. This decision depended on the firm's market share within clearly defined segments, utilizing factors like price and product performance attributes (Thatte, 2007) .

Another definition by (Li, 2004) Competitive advantage can be described as the level to which an organization is capable of establishing a defendable position superior to its competitor . This advantage is built upon capabilities that enable an organization to distinguish itself from its rivals and results from strategic decisions made by management . The empirical body of work consistently identifies key competitive capabilities, including price/cost, quality, delivery, flexibility, and more recently, time-based competition (Li,

2004). Research conducted by (houssaini, 2007) underscores the increasing importance of time as a new source of competitive advantage.

In accordance with existing literature, (barney, 1991) outline a comprehensive research framework for competitive capabilities, highlighting five essential dimensions: **competitive pricing, premium pricing, value-to-customer quality, dependable delivery, and production innovation**. These dimensions are also reaffirmed by (Li, 2004). Thus, the dimensions that constitute the competitive advantage construct in this study encompass price/cost, quality, dependable delivery, product innovation, and time to market

3.2. The determinants of competitiveness

3.2.1. The demand for competitiveness for a company

In order for a company to secure its existence, it needs to identify strategies that enhance its efficiency, particularly within a fiercely competitive environment. To attain a substantial market share, the company must lower its production and marketing expenses in comparison to its rivals (sifouane, 2018)

The company's competitiveness can be defined by its "magic square," encompassing productivity, quality, flexibility, and innovation

Figure 5 : the square of competitiveness

Source: designed by us (inspired from the litterature review)

3.2.2. The determinants of competitiveness

3.2.2.1. Productivity

According to the littérature review (Abdulhamid, 2012) (Hani, 2020) Productivity can be defined as the relationship between a production result and the amount of resources utilized to achieve it.

The research of (sifouane, 2018) found that the importance of productivity lies in effectively managing production factors within a company, including technical equipment, infrastructure, and work organization. This management approach aims to lower production costs and subsequently reduce prices. By increasing productivity, a company can improve its price competitiveness.

3.2.2.2. Cost

(Hani, 2020) observes that cost pertains to the company's capability to efficiently attain manufacturing costs, encompassing various factors like overhead, product range, and innovative value. The primary strategies to achieve cost leadership involve reducing manufacturing expenses through the standardization and successful execution of production processes with minimal errors. Moreover, there's a cost-effective alternative approach to address the challenges of estimating dimensional information, which allows for generating more impactful determinative data crucial in the engineering of manufactured components (Hani, 2020)

Furthermore, (Abdulhamid, 2012)observe that the low-cost service business model embodies an innovation with significant potential, as it considers not only financial gains but also social outcomes in its income assessment

3.2.2.3. Quality

Organizations aim to provide superior products that surpass offerings from other entities. Quality is defined by the alignment of product design attributes with their intended functions, ensuring suitability for use and fulfillment of customer requirements (Hani, 2020). Recent research by (Abdulhamid, 2012) emphasizes that businesses capable of making rapid decisions and responding promptly are better positionned to address evolving customer needs. This agility enables them to minimize lead times across all operational aspects, enhancing customer value and optimizing business processes, which in turn contributes to

gaining a Competitive Advantage (CA). Moreover, the significance of maintaining high quality lies in its foundational role in achieving diverse dimensions of CA, encompassing cost management, distribution efficiency, cycle time reduction, and flexibility enhancement. Effective quality management leads to improved performance by minimizing the necessity for process adjustments, resulting in decreased waste and the need for rework, as underscored by the findings of (Hani, 2020)

3.2.2.4. Delivery time

Over the last twenty years, time has established itself as a key driver of competitive advantage (Hani, 2020). Acquiring a time advantage involves a company taking proactive measures before its competitors and achieving a more favorable delivery time .

The delivery time significantly contributes to achieving Competitive Advantage (CA) (houssaini, 2007). This importance is largely attributed to the increased levels of competence and efficiency that customers can experience. Emerging technologies empower businesses to monitor and assess their product delivery times, ensuring a consistent and efficient sequence of services. This capability allows for the evaluation of CA based on delivery time, as explained by (Hani, 2020) .

Furthermore, (Hani, 2020)highlighted the strategic significance of efficient delivery times in the online sales channel of the Supply Chain (SC). This practice serves as a marketing approach to attract customer requests and acknowledges the role of delivery time as a component of overall performance.

3.2.2.5. Flexibility

Accodring to the researchers (Hani, 2020) (Abdulhamid, 2012) (sifouane, 2018) ,flexibility serves as the cornerstone in the pursuit of an organization's Competitive Advantage (CA), achieved through swift adaptation to changes that may arise in work design and to meet customer demands. Furthermore, flexibility showcases an organization's capacity to shift its processes towards alternative approaches. This adaptation can encompass adjustments in process performance, as well as alterations in the timing and methods of operations. (Hani, 2020)

(Hani, 2020) observes that Meeting four essential requirements for clients involves:

1. **Product Flexibility**: This entails the capability of processes to accommodate new product introductions.
2. **Mix Flexibility**: Referring to the ability of processes to generate a diverse mix of products.
3. **Scale Flexibility**: Denoting the processes' capacity to adjust production levels to accommodate varying product sizes or quantities.
4. **Innovation Flexibility**: Involving the use of information technology to harness knowledge for enhancing flexibility in product innovation.

Furthermore, organizations often embrace exploratory product innovations to enhance market performance through increased flexibility, as highlighted by (Hani, 2020)In addition, (houssaini, 2007) observed that in the context of manufacturing organizations, flexibility is regarded as a pivotal element of industrial competence. This competence encompasses the flexibility to adjust capacity and production levels at minimal cost, incorporating short manufacturing series times and rapid new product development cycles.

3.2.2.6. Innovation

According to the study of (djedra, 2019) The need for innovation reflects the intention to introduce new elements (economic, commercial, technological) with the aim of securing a competitive edge. Various forms of innovation exist (product innovation, process innovation, and innovation concerning work organization) that result in increased productivity and reduced costs, consequently leading to price reductions.

(sifouane, 2018) states that innovation is seen as a crucial capability for the competitiveness of tomorrow's companies, and close collaboration across the entire value chain with strategic suppliers allows highly performing businesses to capture this innovation in an anticipatory and cost-effective manner,

Innovation represents a progressive Competitive Advantage (CA), signifying an organization's capacity to persistently refine and enhance production processes for existing products, as well as to innovate and extend production processes for new products. (Hani, 2020) underscore that environmental concerns can act as an inspiration for innovative procedures and stimulate creativity.

However, the moderating influence of creative elements in the connection between information technology (IT) adoption and service innovation, as well as between IT adoption and CA, holds significant relevance across all organizations (Hani, 2020) .

The study of (marinagi, 2014) showed that in recent times, time and innovation have emerged as the upcoming component of competitive advantage. How ever since the 1970s, the technological dimension and innovation, which held a significant position in the research of (houssaini, 2007), were somewhat overshadowed by an approach that favored product-market dimensions. Since the early 1990s, technology has been reintegrated as a major source of competitive advantage. Consequently, several authors (Hani, 2020) (marinagi, 2014) have shifted towards an approach focused on technological strategies at the company level.

3.3.The types of competitiveness

In fact, a firm's competitive capability reflects its ability to effectively manage the evolution of the price/quality relationship (djedra, 2019) .

After reviewing the scientifical articles we came to distingish according to many authors (Hani, 2020) (houssaini, 2007) (sifouane, 2018) that their are two diffrent types of competitiveness : price competitiveness, and non-price competitiveness.

3.3.1. Price competitiveness

(sifouane, 2018) defined price competitiveness as the ability to manufacture goods and provide services at a lower cost compared to other competitors offering the same quality. Its objective is grounded in the capability to produce and offer products at prices lower than those sustained by other businesses in the same sector. In some cases, it may consider and rely on a lower unit margin if costs are similar across other companies. It depends on:

- The relative levels of production costs
- Producer margins
- Exchange rate levels for exporting companies

In the same perception (djedra, 2019) defined the price competitiveness as the capacity to offer products in the market at prices lower than those set by competitors. A country's business competitiveness relates to the appeal of the goods and services its companies

manufacture for foreign enterprises or consumers. It signifies the country's ability to export, which is one form of competitiveness that a company can opt to employ for increased sales.

According to (houssaini, 2007) This approach relies on reducing the prices of the goods or services it produces, enabling faster and smoother sales.the competitiveness of prices relies on export pricing, which is generally determined by many researchers (sifouane, 2018) (houssaini, 2007) (djedra, 2019) as :

- Production costs, influenced by labor costs (wages), capital costs (interest rates), and productivity measured by the quantity produced relative to the number of hours used for production.
- Competition: Fewer competitors allow companies to set prices above their production costs.
- Expenses related to transportation, tariffs, and regulations.
- Exchange rate, indicating the relative value of the national currency compared to other currencies.

(houssaini, 2007) highlitghted that competition and transportation costs are shared by all exporting companies, thus the primary influencers are the exchange rate and production costs. The central bank can impact the exchange rate based on its monetary policy. Production costs, beyond labor and capital expenses, hinge on productivityand multiple factors can influence these productivities, shaping the companie’s competitiveness:

- Infrastructure (roads, telecommunications network)
- Proximity to partners (suppliers, service providers)
- Employee qualifications
- Ability to efficiently or innovatively organize production
- Technological advancement integrated into physical assets (machinery)

  Regenerate

  By (djedra, 2019).

3.3.2. Non price competitiveness

According to (sifouane, 2018) Non-price competitiveness, often referred to as structural competitiveness, pertains to the capacity to promote products or services regardless of their price, encompassing factors such as quality, innovation, post-sales support, brand reputation, delivery timelines, and adaptability to varying demands. This form of competitiveness is

established over the long term, as it consists on how loyal customers perceive the offering based on their past satisfaction. Furthermore, (houssaini, 2007) highlight that it necessitates significant investments to cultivate and sustain the distinctiveness of the offering. It is composed of: quality , innovation and reputation

Also following the same logic (djedra, 2019) defined it as the ability to establish one's products independently of their price, considering aspects such as quality, services, adaptability to diverse demands be it preferences or income levels, leading to different product ranges. Non-price competitiveness, which sets certain products apart from competing ones, must ensure that the latter are less substitutable.

(houssaini, 2007) and (Thatte, 2007) argued that price competitiveness contributes to explaining short-term market share changes. In this context, non-price competitiveness refers to structural explanations of performance. This pertains to investments in research and development.

Non-price competitiveness is primarily part of a company's strategy. It depends on the product's reliability and innovation. The economic, fiscal, social, or regulatory environment heavily influences these strategies for businesses (houssaini, 2007)

(djedra, 2019) mentioned that Governments have several tools at their disposal to promote these strategies:

- Support for technical and commercial innovation and professional training
- Encouragement to adopt upscale strategies
- Assistance in forming competitive clusters

3.4.The strategies of competitiveness

Many researchers have (houssaini, 2007) (djedra, 2019) (sifouane, 2018) discussed the strategies that companies rely on in order to maximize their competitive advantages and we came to identify three important strategies :

- **The Global Cost Leadership Strategy:** The global cost leadership strategy is a strategy in which the company seeks to establish a cost advantage over all its competitors. Large production volumes often lead to lower costs, and cost strategies are frequently associated with volume. (houssaini, 2007) .

- **Differentiation:** The differentiation strategy aims to build the company's competitive advantage on the unique qualities of its offering, other than price. These distinctive attributes are valued by the market or at least a significant portion of it. Through an original offering, the company escapes direct price competition (sifouane, 2018) .
- **Concentration:** This strategy is quite distinct from the other two, as competition centers on targeting a narrow audience. The firm that adopts a concentration strategy selects a segment or a group of segments within the sector and tailors its strategy to serve them exclusively, excluding all others. By optimizing its approach to the target segment, the firm aims to achieve a superior advantage within that segment (djedra, 2019) .

Section 4 : the relationship between supply chain and competitiveness

4.1. Introduction

Several studies have demonstrated that effective management of the supply chain can have a significant impact on the competitiveness of a company . For instance, (Abdulhamid, 2012) (Hani, 2020) (houssaini, 2007) , observed that companies that succeed in enhancing the performance of their logistics chain can reduce costs, improve product and service quality, and increase their market share , and gain an important competitve advantage, Similarly, (sifouane, 2018) revealed that companies employing advanced logistics management practices are more profitable and experience higher customer satisfaction.

4.2. The supply chain competitiveness

Enhancing profitability through supply chain aims to support business organization in the current context, where supply chain management plays a pivotal role in gaining competitiveness and driving increased profitability, consequently enhancing overall performance. (djedra, 2019)

Since the supply chain plays a pivotal role in adding value to a company, it holds significant cost implications and plays a crucial role in establishing a competitive edge. According to (mukhtar, 2015) perspective, supply chain management offers ample opportunities to gain a competitive edge through innovation. To succeed in a competitive business landscape, decision-makers must adopt a fresh mindset to comprehend the intricacies of their logistical and communication networks.

Moreover, (houssaini, 2007) described the supply chain as a link between diverse collaborators and stakeholders within the value chain. It facilitates the seamless exchange of information, thereby promoting effective coordination and synchronization. This is where collaborative supplier management emerges as a wellspring of competitive advantage. By fostering the development of distinct skills that are hard for rivals to replicate, it contributes to enhancing the company's competitiveness across cost efficiency, quality, and responsiveness. Ultimately, this approach serves as a means to meet the demands of end customers.

To grasp the concept of supply chain competitiveness, it's imperative to first define what we mean by competitiveness. Competitiveness refers to the relative strength of an entity, necessary for engaging in competition against both direct and indirect rivals (Hani, 2020) ,This notion can be categorized into three levels focusing on different units: national competitiveness, firm competitiveness, and industry competitiveness.

(Hani, 2020) introduced a comprehensive definition of supply chain competitiveness while clarifying the distinction between competitiveness and competitive advantage. This distinction is particularly valuable because the existing definitions of competitiveness in literature lack clarity and coherence. Competitiveness represents the preparatory phase for entering a competitive arena. During this stage, companies work towards building competence, efficiency, and effectiveness to offer valuable propositions to their customers. Competitiveness involves creating the capabilities and capacities needed to engage in competition. In contrast, competitive advantage is the subsequent stage that a company achieves after entering the competition.

According to (djedra, 2019), Competitive advantage could result from the preceding phase of competitiveness when a company starts competing. It's important to note that even though a company fosters competitiveness through efficient and effective supply chain activities, it doesn't necessarily mean it will outperform competitors in the actual competition, thus gaining a competitive advantage. While preparing the supply chain for delivering superior value enhances the potential for gaining a competitive advantage, it remains possible that competitors might offer more value and possess a more superior supply chain performance.**The competitive advantage of a supply chain stems** from its ability to deliver superior value to customers by efficiently managing the flow of materials from suppliers to

end customers, achieved through the development and maintenance of relationships with supply chain partners. This involves both upstream and downstream relationships.

The overall supplychain strategy must integrate supply chain objectives, processes, and management commitment. Coordinating, synergizing, and collaborating to unify these dimensions is key to achieving supply chain competitive advantage. This strategy should align with the broader business strategy (Hani, 2020) .

In the same logic (Abdulhamid, 2012) highlighted that supply chain competitiveness has become crucial for companies. It demands strategic focus, necessitating alliances, operational changes, and strategic development. This focus is essential for survival in a hyper-competitive market environment. Achieving supply chain competitiveness entails integrating and coordinating different components of the supply chain, forging a unified alliance with a common purpose involving manufacturers, suppliers, and distributors. Supply Chain Competitiveness (SCC) encompasses three components: "supplier competitiveness," "manufacturer competitiveness," and "distributor competitiveness." It can be attained through efficient delivery, customer satisfaction, product quality, profitability, responsiveness, reduced lead times, demand fulfillment, and optimal facility utilization.

(houssaini, 2007) proposed a conceptual framework for supply chain competitiveness. It involves certain input elements, which lead to specific outcomes. Agility, coordination, collaboration, cooperation, synergy among partners, mass customization, customer orientation, process orientation, demand management, and strategic alliances are input elements. These contribute to outcomes like customer value, customer satisfaction, quick response to changes, innovation, improvement, profitability, and, ultimately, competitive advantage. The global competitive environment, influenced by socio-economic forces, cultural dynamics, customer requirements, financial factors, government policies, and behavioral aspects, also plays a role in shaping supply chain competitiveness.

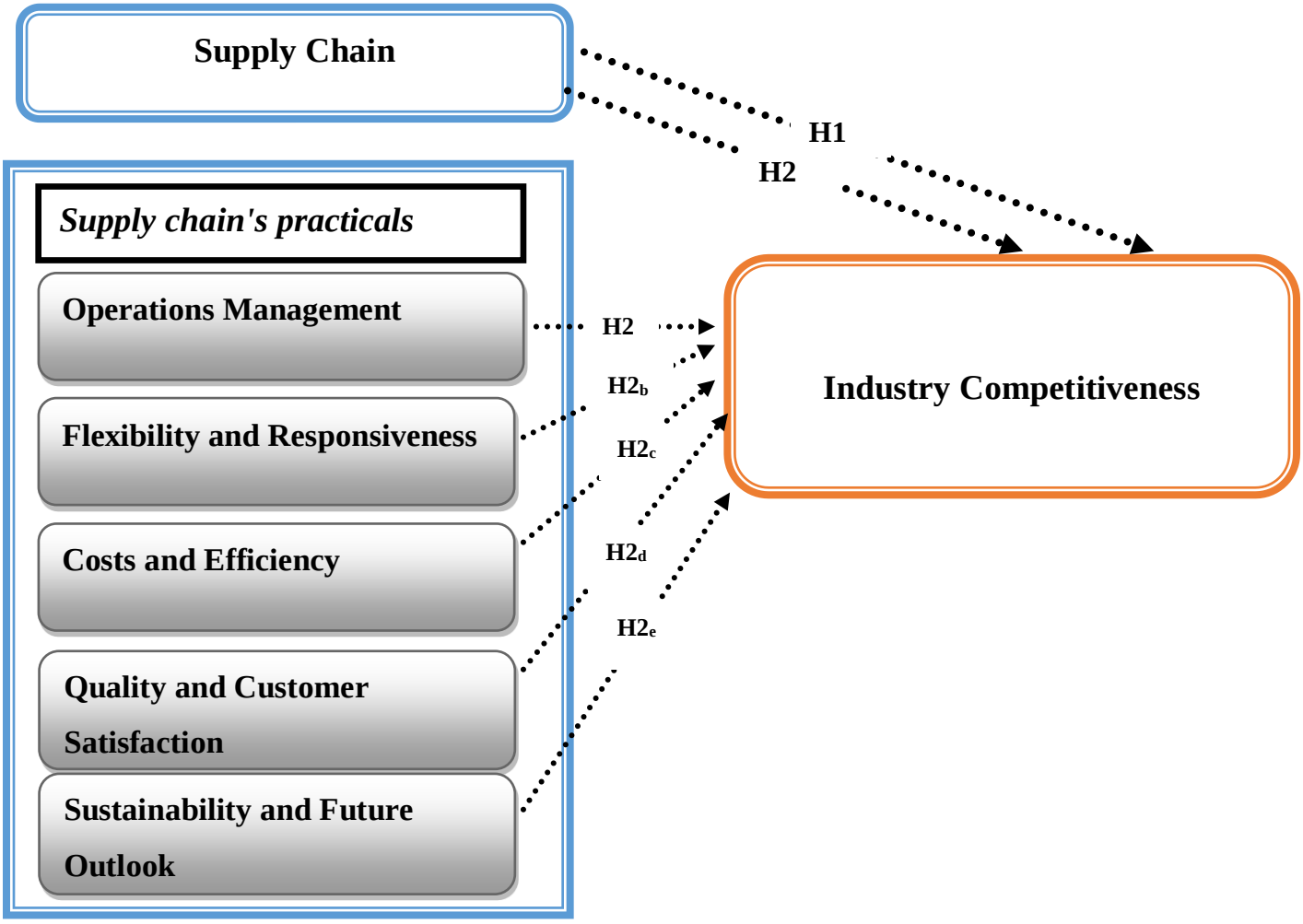
Different researchers have explored supply chain competitiveness from various angles. (Hani, 2020)focused on mass customization, (londe, 1994) emphasized improved communication and information sharing .

Supply chain competitiveness also hinges on collaboration and synergy among supply chain members through information sharing, joint decision-making, and incentive-sharing. Achieving unified objectives and competitiveness demands collaboration and resource integration across organizational boundaries (Abdulhamid, 2012) (Hani, 2020) (houssaini,

2007) ,Collaboration involves strategic and cultural elements such as corporate focus, openness, communication, mutuality, trust, and commitment to gain competitive advantage. It encompasses joint decision-making, process alignment, cross-functional activities, and sharing supply chain practices.

Numerous studies delve into supply chain practices, competitiveness, and performance, often considering Quality Management constructs like customer satisfaction, leadership, management support, continuous improvement, and more. The management of flow within the supply chain, not just the product itself, is pivotal for achieving competitive advantage (Mentzer, 2001) .

Figure 6 the conceptual model



Source : made by us

4.3. Conclusion

The aim of this chapter is to conduct a thorough analysis of the terms and concepts related to supply chain and competitive advantage , In the end, the (SC) is considered a relevant means of developing a competitive advantage through the collaborative management of relationships within the value chain and coordination among different actors in the logistics chain (from initial supplier to final customer) (djedra, 2019). In the following chapter, we will present the methodological framework.

CHAPTER 2 : METHODOLOGICAL FRAME WORK

In this chapter, we will define the methodological approach adopted for our study, our research method and data collection instruments, our data analysis tools, as well as the sampling and measurement scales chosen for our study.

1. Data and method

There are two primary research approaches: qualitative and quantitative. The quantitative approach involves collecting and analyzing numerical data to identify correlations between variables and to confirm or refute research hypotheses (babbie, 1998). This method utilizes a large number of participants for data collection but does not provide detailed information about individual participants (babbie, 1998). Impersonal data collection is carried out within the quantitative method to condense the data (Khothari, 2004). Given that the study aims to collect and analyze a large dataset, and drawing from previous studies by (marinagi, 2014) **,** (Abdulhamid, 2012)**,** (Hani, 2020) **and** (Li, 2004), the research method employed is quantitative.

There are also two types of research: exploratory and explanatory. Explanatory research is important as it verifies or refutes theories that have been deeply examined in the study (Khothari, 2004) .It provides a detailed explanation of the phenomenon under study, evaluates variables representing people's behavior and actions, and examines the conditions under which they might be influenced (babbie, 1998). Since the study aims to confirm a theory, it employs explanatory research as the research type.

To conduct our quantitative study, we reached out to ;;;;;; individuals through ;;;;;;;;;;;;;;;; , totaling :::::::::: individuals contacted.

2. The questionnaire design

We established a data collection process that includes a questionnaire. Our questionnaire is based on the works of and (Li, 2004) and (Yahaya, 2012), consisting of three sections:

2.1. General Information

This section encompasses queries pertaining to the profiles and qualifications of the participants. Specifically, it includes inquiries concerning gender, industry sector, company size, legal status, years of company experience, and the respondent's professional role

2.2. Supply Chain Practices

The second section holds questions related to supply chain factors studied by us to show if they are important to our sample and how they work on them and is devised into five dimensions :

- operations management
- flexibility and responsiveness
- costs and efficiency
- quality and customer satisfaction
- sustainability and future prospects

Each dimension comprise 4 questions rated on a Likert scale 0.5 . This scale has been validated in contexts like : (Yahaya, 2012)**'s** study to those present in our study .

2.3. Competitiveness

The questionnaire was developed by adapting established scales from the competitiveness and Supply Chain Management literature. These scales were used to measure various competitive advantage determinents, methods, as well as Supply Chain practices. and the competitive advantage section comprise 10 questions which has been validated in the works of (Li, 2004) and (Yahaya, 2012)**.**

To comprehensively encompass the dimensions of competitive advantage within Supply Chain Management practices, our construct was formulated based on various criteria that have been conceptualized and employed in earlier empirical studies (Li, 2004) .

3. The measurment variables:

In alignment with the hypotheses advanced earlier, a set of variables is discerned. The dependent variable is centered on "competitivity" while the independent variables pertain to the supply chain practices that this study explores and their impact on competitivity.

3.1. Dependent Variable: "competitivity"

The significance of the dependent variable "competitivity is underscored by (Abdulhamid, 2012)**,** (Li, 2004), (Thatte, 2007) and (Yahaya, 2012)It stands as an important component and the ultimate goal of any company. The prime objective of supply chain management

practices revolves around making the right product at the right time with a low price and a high quality which aims to staying competitive and gaining market parts. This importance is particularly accentuated within the context of our study sample.

An inherent advantage of supply chain management lies in its ability to gain a competitive advantage. This pursuit is facilitated through the analysis and augmentation of a company's supply chain efficiency and creativity. Consequentially, innovative methodologies are crucial to overhead expenditures (Abdulhamid, 2012) .

3.2. Independent Variables : "supply chain practices"

Our independent variaables relies on the supply chain practices of a company ,Pertinent authors such as (Abdulhamid, 2012), (Li, 2004) , (Thatte, 2007) and (Yahaya, 2012) , have deliberated upon the facets of communication, quality and customer satisfaction, collaboration, innovation , responsiveness ,technology ,costs and effeciency elucidating their role in facilitating the competitive challenge that can companies face .

4. The sample

In order to ensure that the sample is representative we have selected pharmaceutical sector for this study because its known as the sector who relies basically on the supply chain management and the success of a company in this sector refers to an effective management of their supply chain , given the continuous economic and competitive pressures these companies face. This situation mandates improvements in operational efficiency and the optimization of supply chain practices. Notably, Algeria holds around 196 pharmaceutical enterprises.

To gather professionals' contact information, we utilized the LinkedIn platform as a comprehensive database. Our respondent selection criteria were based on their specific roles, affiliations with companies, and their expertise.

Study population	**More than 100 algerian and multinational pharmaceutical companies**
Sample size	100
Sampling method	Simple random

Data collection tools	Questionnaire
Data analysing tools	Spss , excel

5. Conception of the research

For data collection, we employed a questionnaire. The research questionnaire was developed using Google Forms and was disseminated online through email and the professional networking platform, LinkedIn. The questionnaire primarily consists of closed-ended questions employing the Likert scale 5.0

The formulation of questions, the design of scales, and the various components of the questionnaire were derived from an exhaustive literature review and input from domain experts. The questions are categorized into three sections, resulting in a total of three distinct segments. Respondents are expected to allocate approximately 10 to 14 minutes for completing the questionnaire, based on feedback received during the pilot phase. Our efforts garnered a total of 60 (till now) valid responses. Our study analysis was bidimensional with a spearman correlation and multidimensional with a multiple regression method .

The collected data is subjected to statistical analysis using Excel and the SPSS program (Statistical Package for the Social Sciences: version 25)

Conclusion

In this second chapter, we elaborate on the methodology selected to conduct our study, along with the rationale behind choosing the specific sector. This approach has afforded us a comprehensive comprehension of the processes, facilitated by the diverse data collection tools employed.

CHAPTER 3 : RESULTS AND DISCUSSION

Introduction

The third chapter constitutes the practical part of our research, following the examination of key theoretical concepts related to our subject in the two previous chapters. It is divided into two sections that present and discuss the obtained results in detail.

Section 1 : Presentation and analysis of the results

1- Demographic characteristics of the respondents: The selected sample size was The One-hundred (100) participants.

Tableau 3 demographic caracteristics of the sample

Variable			
Gender	**Gender**	**Frequency**	**Percentage**
	Male	72	72%
	Female	28	28%
	Total	**100**	**100%**
	Range	**Frequency**	**Percentage**
Age	25 to 34 years	33	33%
	35 to 44 years	59	59%
	45 to 54 years	08	08%
	Total	**100**	**100%**
	Legal status	**Frequency**	**Percentage**
Legal status of the company	LLC	48	48%
	Sole Proprietorship	28	28%
	Corporation	08	08%

	Partnership	16	16%
	Total	**100**	**100%**
	Nature	**Frequency**	**Percentage**
Legal nature of the company	Public	24	24%
	Private	76	76%
	Total	**100**	**100%**
	Size	**Frequency**	**Percentage**
The size of the company	Small	13	13%
	Medium	54	54%
	Large	33	33%
	Total	**100**	**100%**
	Number	**Frequency**	**Percentage**
Number of employees in the company	Less than 50 employees	13	13%
	51 and 100 employees	54	54%
	More than 100	33	33%
	Total	**100**	**100%**

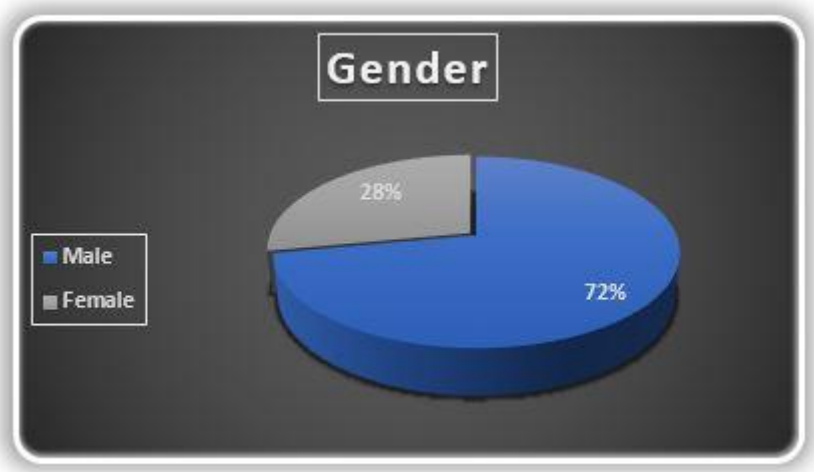
The amount of the company's share capital	**Capital amount**	**Frequency**	**Percentage**
	Less than1 million Da	47	47%
	From 1 -5 Million Da	37	37%
	More than 5 Million Da	16	16%
	Total	**100**	**100%**
How long has the company been in operation	**Years**	**Frequency**	**Percentage**
	01 to 05 years	30	30%
	06 to 10 years	41	41%
	Mora than 10 years	29	29%
	Total	**100**	**100%**
The role in the company	**Role**	**Frequency**	**Percentage**
	Director	21	21%
	Manager	41	41%
	Project Manager	08	08%
	Employee	30	30%
	Total	**100**	**100%**

Source: elaborated by SPSS

Graphical representation of demographic characteristics of the sample :

a- Gender :

Figure 7 distribution of respondents by gender

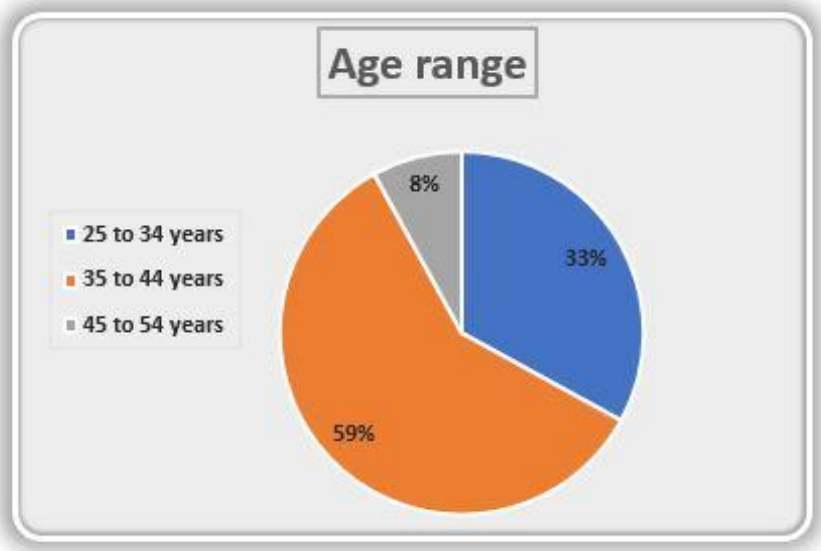


Source: elaborated by SPSS

The figure below shows the demographic characteristics of the respondents according to their gender , it can be deduced that males constituted 72% of the respondents while 28% of them are females.

b- Age:

Figure 8 distribution of respondents by age

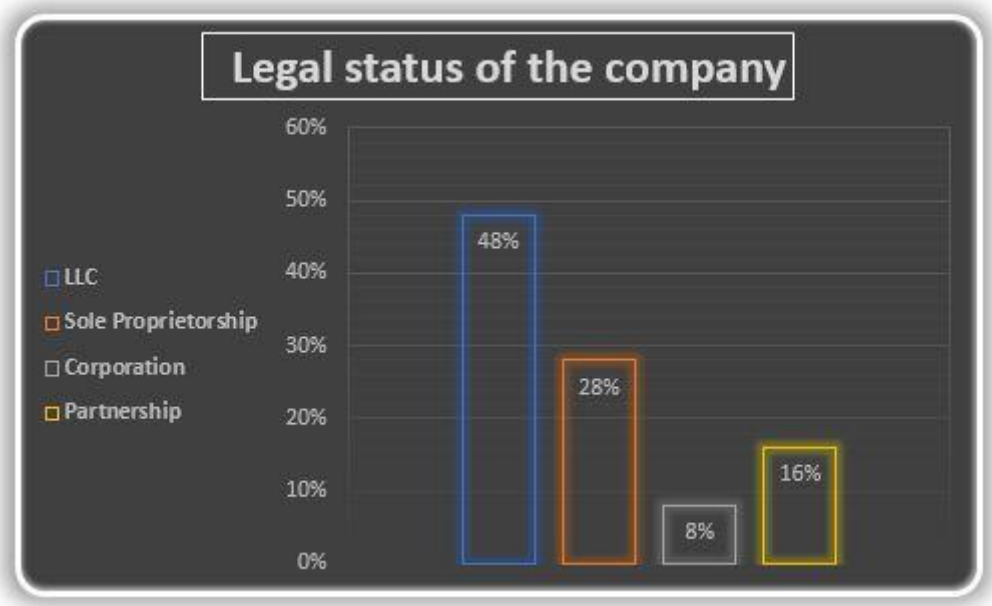


Source: elaborated by SPSS

From the table above it can be deduced that those within the age range of 35- 44 years constituted the highest percentage of 59% of the total respondents, Those within the range of 25-34 years constituted of 33%, while 08% is the percentage for those within age of 45-54 years old.

c- Legal status of the company :

Figure 9 distribution of respondents by legal status of the company

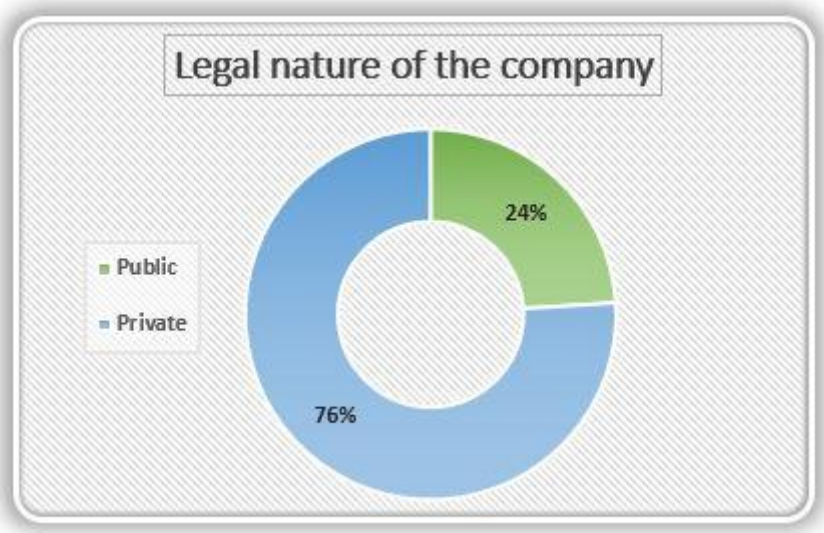


Source: elaborated by SPSS

In terms of legal status, we found that LLC (Limited Liability Company) accounted for 48% of all respondents, Sole Proprietorship for 28%, Partnership for 16%,and finaly Corporation for 08%.

d- Legal nature of the company :

Figure 10 distribution of respondents by legal nature of the company

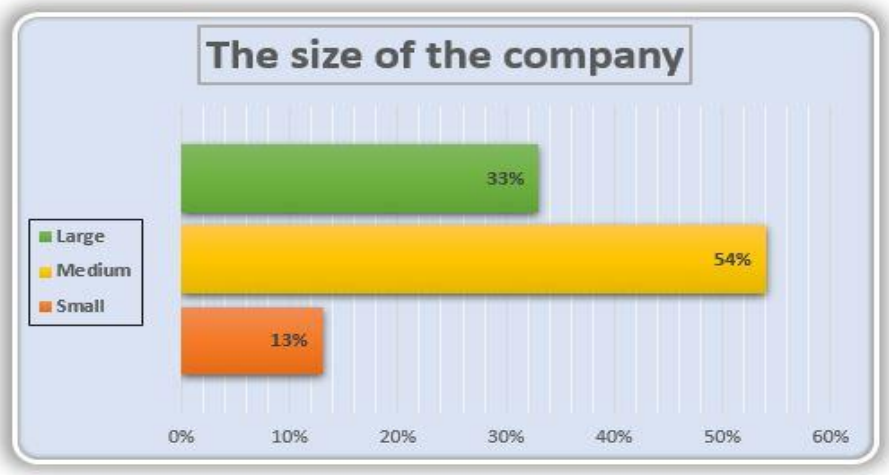


Source: elaborated by SPSS

With regard to the legal nature of the respondents' company, we note that 76% represents the private sector, 24% the public sector.

e- The size of the company :

Figure 11 distribution of respondents by the size of the company

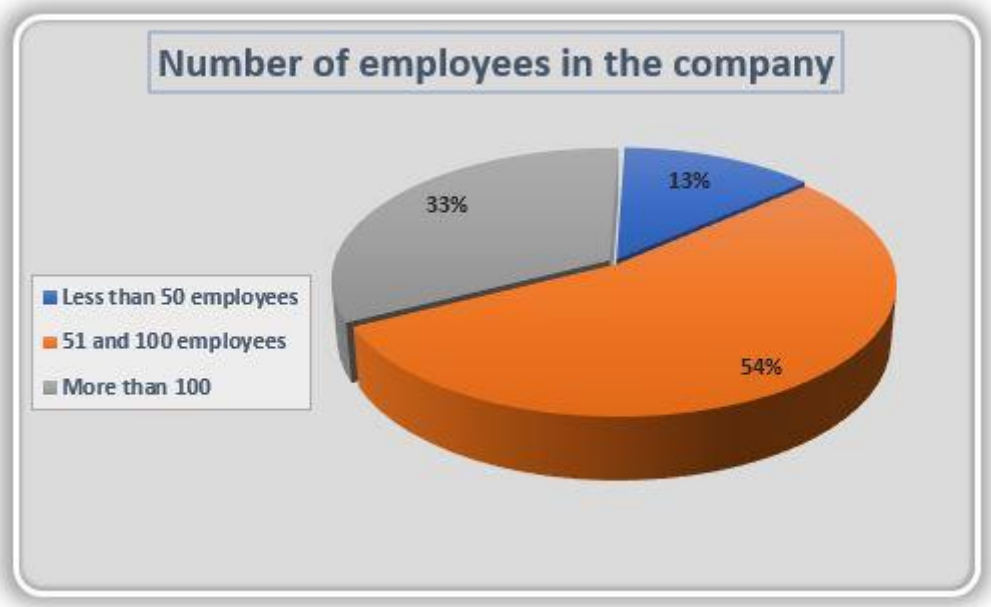


Source: elaborated by SPSS

The results above reveals the size of respondents' companies: 54% is the percentage representing medium size, 33% represents large size and towards the end 13% represents small size.

f- Number of employees in the company :

Figure 12 distibution of respondents by number of employees in the company

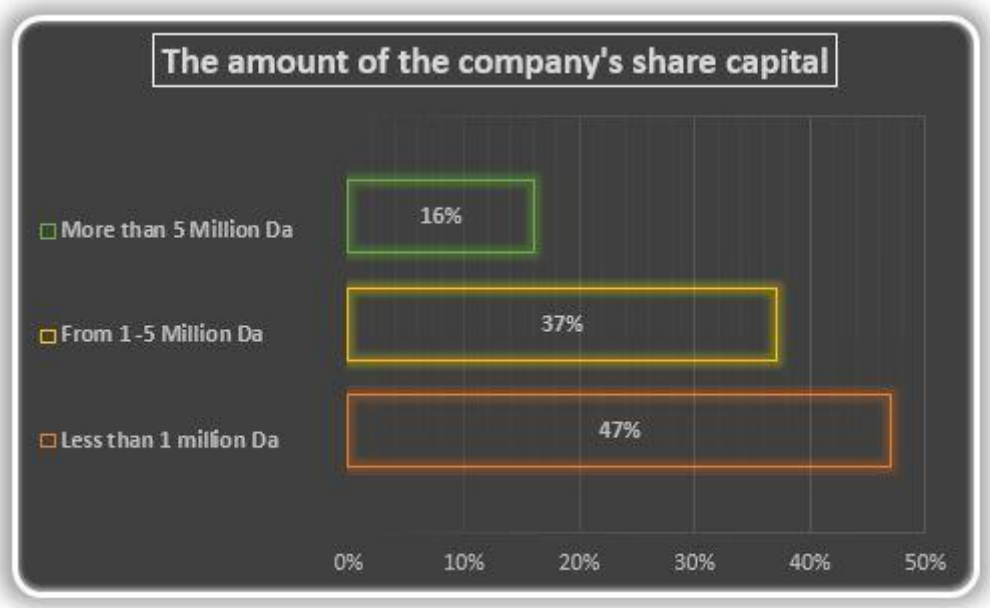


Source: elaborated by SPSS

The number of employees in the company is divided into three parts starting with 51 and 100 employees are represented by a percentage of 54%, more than 100 employees are represented by a percentage of 33% then less than 50 employees are represented by a percentage of 13%.

g- The amount of the company's share capital

Figure 13 distribution of respondents by the amount of the company's share capital

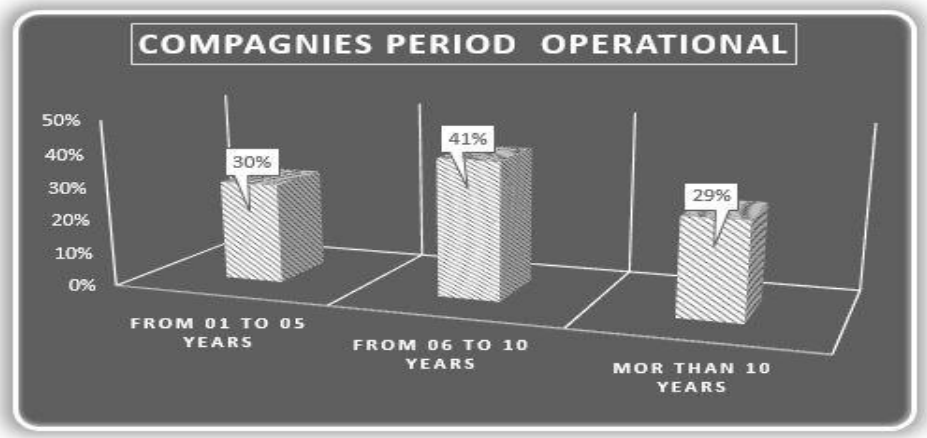


Source: elaborated by SPSS

What we found out about the amount of the respondents' company capital: 47% represents less than 01 million dinars, 37% represents from 01-05 millions dinars and 16% represents more than 05 million dinars.

h- The operational company period :

Figure 14 distribution of respondents by the operational company period

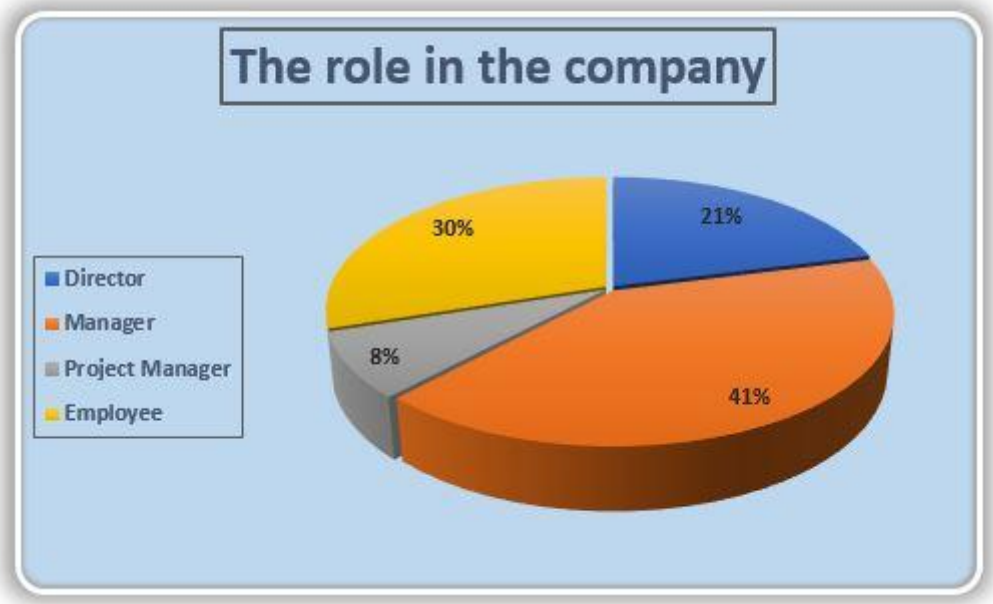


Source: elaborated by SPSS

Turning to how long has the company been in operation, we note that 41% have been in business from 06 to 10 years, 30% from 01 to 05 years and 29% for more than 10 years.

i- The role in the company:

Figure 15 distribution of respondets by their role in the company



Source: elaborated by SPSS

Regarding the respondents' role in the company, we have noted that 41% represents are managers, 30% is the percentage representing the role of employee, 21% represents are directors and finally 08% of them are project managers.

2- Fiability mesures:

2-1 Fiability of the whole mesure:

Tableau 4 observation treatment

Observations		**N**	**%**
	Valid	100	100%
	Excluded	0	,0
	Total	100	100%

Source: elaborated by SPSS

The Alpha Cronbach's test for reliability was a full dimension without any data excluded.

Tableau 5 fiability statistics

Fiability statistics	
Alpha Cronbach	Number of items
,914	30

Source: elaborated by SPSS

According to the results of Table N°03 the value of Cronbach's Alpha of all the mesure was 0.914 which is excellent. The level of significant reliability required is 0.70 which is recommended by (Nunnally, 1978) .

3-The correlation matrix:

Tableau 6 spearman's matrix correlation

		Operations Management	**Flexibility and Responsiveness**	**Costs and Efficiency**	**Quality and Customer Satisfaction**	**Sustainability and Future Outlook**	**Industry Competitiveness**
Operations Management	**Corrélation Spearman**	**1**	**,958****	**,954****	**,342****	**,317****	**,618****
	Sig	**/**	**,000**	**,000**	**,000**	**,001**	**,000**
	N	100	100	100	100	100	100
Flexibility and Responsiveness	**CorrélationSpearman**	**,958****	**1**	**,997****	**,372****	**,345****	**,621****
	Sig	**,000**	**/**	**,000**	**,000**	**,000**	**,000**
	N	100	100	100	100	100	100

Costs and Efficiency	**CorrélationSpearman**	**,954****	**,997****	**1**	**,359****	**,334****	**,613****
	Sig	**,000**	**,000**	**/**	**,000**	**,001**	**,000**
	N	100	100	100	100	100	100
Quality and Customer Satisfaction	**CorrélationSpearman**	**,342****	**,372****	**,359****	**1**	**,938****	**,823****
	Sig	**,000**	**,000**	**,000**	**/**	**,000**	**,000**
	N	100	100	100	100	100	100
Sustainability and Future Outlook	**CorrélationSpearman**	**,317****	**,345****	**,334****	**,938****	**1**	**,765****
	Sig	**,001**	**,000**	**,001**	**,000**	**/**	**,000**
	N	100	100	100	100	100	100
Industry Competitiveness	**CorrélationSpearman**	**,618****	**,621****	**,613****	**,823****	**,765****	**1**
	Sig	**,000**	**,000**	**,000**	**,000**	**,000**	**/**
	N	100	100	100	100	100	100

**** Correlation is significant at 0.01 (01%) level**

Source: elaborated by SPSS

According to the results on the table above, we can deduce that all variables are significantly correlated with each other. Quality and customer satisfaction correlated very strongly with industry competitiveness ($p<0.01$, $r=0.823$). Operations management**,** Flexibility and responsiveness**,** Costs and efficiency and sustainability and future outlook correlated strongly with industry competitiveness ($p<0.01$, $0.6<r<0.8$) .therefore there is a correlation between the variables explaining their connectivity, which indicates the

existence of a positive influence and a relationship between the variables, so we continue our analysis without omitting any variables.

4- Correlation between items and their variables:

4-1 Correlation between items of the supply chain:

4-1-1 Correlation between items of Spearman correlations of Operations Management:

Tableau 7 inter items operations management spearman correlations according to the total score of this variable

Items	**Correlation**	**Operations Management Score**
1. Effective management of supply chain operations allows us to achieve our business objectives.	Spearman Correlation	**,604****
	Sig.(bilateral)	**,000**
	N	100
2. The supply chain contributes to optimizing our operational processes.	Spearman Correlation	,**841****
	Sig.(bilateral)	**,000**
	N	100
3. The supply chain is responsible for coordinating activities throughout our supply chain.	Spearman Correlation	**,534****
	Sig.(bilateral)	,**000**
	N	100
4. We regularly assess the performance of our supply chain using key indicators.	Spearman Correlation	**,712****
	Sig.(bilateral)	,**000**
	N	100

**. Correlation is significant at the 0.01 (1%) level

Source: elaborated by SPSS

Regarding the correlation between operations management's items and the total score for this practice, the data in Table N°05 indicate that the linear correlation (r) is strongly correlated for items numbers (01,02 and 04) ($p<0.01$, $0.6<r<0.8$) and moderately correlated for item number (03) ($0.5<r<0.7$), with correlation coefficients significantly different from zero at a 1% risk of error.

4-1-2 Correlation between items of Spearman correlations of Flexibility and Responsiveness:

Tableau 8 inter items flexibility and responsiveness spearman correlations according to the total score of this variable

Items	Correlation	Flexibility and Responsiveness Score
5. Our supply chain is capable of quickly adapting to market demand fluctuations.	Spearman Correlation	**,363****
	Sig.(bilateral)	**,000**
	N	100
6. The supply chain plays a key role in our ability to swiftly respond to changes in business conditions	Spearman Correlation	**,825****
	Sig.(bilateral)	**,000**
	N	100
7. The flexibility of our supply chain enables us to quickly address the changing needs of our customers.	Spearman Correlation	**,579****
	Sig.(bilateral)	**,000**
	N	100
8. We have implemented mechanisms to address unforeseen events and disruptions in our supply chain	Spearman Correlation	**,731****
	Sig.(bilateral)	**,000**
	N	100

**. Correlation is significant at the 0.01 (1%) level

Source: elaborated by SPSS

Concerning the correlation between flexibility and responsiveness's items and the total score for this practice, the data in Table 8 shows that the linear correlation (r) is high strongly correlated for item number (06) ($p<0.01$, $r>0.8$), strongly correlated for items numbers(07,08) and moderately correlated for item number (05) with correlation coefficients significantly different from zero at a 1% risk of error.

4-1-3 Correlation between items of Spearman correlations of Costs and Efficiency:

Tableau 9 inter items costs and efficiency spearman correlations according to the total score of this variale

Items	**Correlation**	**Costs and Efficiency Score**
9. The supply chain contributes to the reduction of our operating costs.	Spearman Correlation	**,818****
	Sig.(bilateral)	**,000**
	N	100
10. Effective supply chain strategies help us save resources and minimize costs.	Spearman Correlation	,**727****
	Sig.(bilateral)	**,000**
	N	100
11. We regularly assess the costs of our supply chain to identify optimization opportunities.	Spearman Correlation	**,397****
	Sig.(bilateral)	,**000**
	N	100
12. We regularly evaluate the efficiency of our supply chain to identify potential areas forimprovement.	Spearman Correlation	**,580****
	Sig.(bilateral)	,**000**
	N	100

**. Correlation is significant at the 0.01 (1%) level

Source: elaborated by SPSS

Regarding the correlation between costs and efficiency's items and the total score for this practice, the data in Table 9 indicate that the linear correlation (r) is high strongly correlated for item number (09) ($p<0.01$, $r>0.8$), strongly correlated for items number (10,12) and moderately correlated for item number (11) with correlation coefficients significantly different from zero at a 1% risk of error.

4-1-4 Correlation between items of Spearman correlations of Quality and Customer Satisfaction:

Tableau 10 inter items quality and customer satisfaction spearman correlations according to the total score of this variable

Items	Correlation	Quality and Customer Satisfaction Score
13. The supply chain plays a role in maintaining and improving the quality of our products or services	Spearman Correlation	**,586****
	Sig.(bilateral)	**,000**
	N	100
14. A well-managed supply chain contributes to customer satisfaction.	Spearman Correlation	,**823****
	Sig.(bilateral)	**,000**
	N	100
15. We monitor the quality of our supply chain to ensure a positive customer experience	Spearman Correlation	**,808****
	Sig.(bilateral)	,**000**
	N	100
16. We encourage innovation in our supply chain to remain competitive in the market.	Spearman Correlation	**,823****
	Sig.(bilateral)	,**000**
	N	100

**. Correlation is significant at the 0.01 (1%) level

Source: elaborated by SPSS

Regarding the correlation between quality and customer satisfaction's items and the total score for this practice, the data in Table N°08 indicate that the linear correlation (r) is high strongly correlated for items numbers (14,15 and 16) ($p<0.01$, $r>0.8$) and moderately correlated for item number (13) with correlation coefficients significantly different from zero at a 1% risk of error.

4-1-5 Correlation between items of Spearman correlations of Sustainability and Future Outlook:

Tableau 11 inter items sustainability and future outlook spearman correlations according to the total score of this variable

Items	Correlation	Sustainability and Future Outlook Score
17. We integrate sustainable development practices into our supply chain to meet the expectations of stakeholders and customers.	Spearman Correlation	**,498****
	Sig.(bilateral)	**,000**
	N	100
18. The supply chain contributes to promoting responsible and ethical business practices within our company.	Spearman Correlation	,**758****
	Sig.(bilateral)	**,000**
	N	100
19. We anticipate that the supply chain will play an increasingly strategic role in our company in the future.	Spearman Correlation	**,777****
	Sig.(bilateral)	,**000**
	N	100
20. We are aware of the importance of continuing to invest in the development and	Spearman Correlation	**,678****
	Sig.(bilateral)	,**000**
	N	100

improvement of our supply chain		

**. Correlation is significant at the 0.01 (1%) level

Source: elaborated by SPSS

Regarding the correlation between sustainability and future outlook's items and the total score for this practice, the data in Table N°09 indicate that the linear correlation (r) is strongly correlated for items numbers (18,19 and 20) ($p<0.01$, $0.5< r<0.8$) and moderately correlated for item number (17) with correlation coefficients significantly different from zero at a 1% risk of error.

4-2 Correlation between items of the Industry Competitiveness

Tableau 12 inter items industry competitiveness spearman correlations according to the total score of this variable

Items	Correlation	Industry Competitiveness Score
21. Our industry is proactive in adopting new technologies and practices to remain competitive.	Spearman Correlation	**,202***
	Sig.(bilateral)	**,044**
	N	100
22. Our industry quickly adapts to market changes to maintain its competitive advantage.	Spearman Correlation	,**424****
	Sig.(bilateral)	**,000**
	N	100
23. Our industry implements strict quality control standards to enhance its competitiveness.	Spearman Correlation	**,298****
	Sig.(bilateral)	,**003**
	N	100
24. Our industry collaborates closely with key partners to	Spearman Correlation	**,432****
	Sig.(bilateral)	,**000**

strengthen its competitiveness.	N	100
25. Our industry invests in employee training and skill development to stay competitive.	Spearman Correlation	**,228***
	Sig.(bilateral)	**,022**
	N	100
26. We consider skill development as a means to enhance our competitive advantage.	Spearman Correlation	**,404****
	Sig.(bilateral)	**,000**
	N	100
27. Our industry employs a competitive pricing strategy to position itself favorably in the market.	Spearman Correlation	**,510****
	Sig.(bilateral)	**,000**
	N	100
28. Our industry implements effective marketing strategies to increase its competitiveness.	Spearman Correlation	**,728****
	Sig.(bilateral)	**,000**
	N	100
29. A strong brand image isa crucial asset for our industry in a competitive environment.	Spearman Correlation	**,621****
	Sig.(bilateral)	**,000**
	N	100
30. Access to innovation and research is a crucial factor in optimizing our industry's competitiveness.	Spearman Correlation	**,728****
	Sig.(bilateral)	**,000**
	N	100

****. Correlation is significant at the 0.01 (1%) level**

***. Correlation is significant at the 0.05 (5%) level**

Source: elaborated by SPSS

Regarding the correlation between industry competitiveness's items and the total score for this variable, the data in Table N°10 indicate that the linear correlation (r) is strongly correlated for items numbers (27,28,29 and 30) ($p<0.01$, $0.5< r<0.8$) and moderately correlated for items numbers (22,23,24 and 26) with correlation coefficients significantly different from zero at a 1% risk of error, the table indicate also a weakly correlated for items numbers (21 and 25) with correlation coefficients significantly different from zero at a 1% risk of error.

5-Descriptive analysis of study variables:

5-1 Descriptive analysis of the supply chain:

5-1-1 Descriptive analysis of Operations Management:

Tableau 13 mean and standard deviation of the operations management items

Items	**Mean**	**Std.**
1) Effective management of supply chain operations allows us to achieve our business objectives.	4,03	0,502
2) The supply chain contributes to optimizing our operational processes.	3,92	0,748
3) The supply chain is responsible for coordinating activities throughout our supply chain.	4,10	0,628
4) We regularly assess the performance of our supply chain using key indicators.	3,94	0,633
Operations Management	3,99	0,443

Source: elaborated by SPSS

We have established a new variable (Compute variable) that aggregates the four (04) items of the operations management to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this section reveals:

- Item N°03, " The supply chain is responsible for coordinating activities throughout our supply chain" had the highest mean value with (4.10), indicating that the respondents agreed confirming the responsibility for coordinating activities throughout their supply chain.
- With an overall mean value of (3.99), respondents generally agreed with the items related to the operations management.
- The standard deviation value for this variable is (0.443), indicating that the respondents' responses were not widely dispersed.

5-1-2 Descriptive analysis of Flexibility and Responsiveness:

Tableau 14 mean and standard deviation of the flexibility and responsiveness items

Items	**Mean**	**Std.**
5) Our supply chain is capable of quickly adapting to market demand fluctuations.	3,91	0,351
6) The supply chain plays a key role in our ability to swiftly respond to changes in business conditions	3,94	0,736
7) The flexibility of our supply chain enables us to quickly address the changing needs of our customers.	4,10	0,628
8) We have implemented mechanisms to address unforeseen events and disruptions in our supply chain	3,94	0,633
Flexibility and Responsiveness	3,97	0,403

Source: elaborated by SPSS

We have introduced a new variable (Compute variable) that regroups the four (04) items of the flexibility and responsiveness to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this section shows:

- Item N°07, " The flexibility of our supply chain enables us to quickly address the changing needs of our customers " had the highest mean value with (4.10), indicating that the respondents agreed confirming that the quickly changing needs of their customers due to the flexibility of their supply chain.
- With an overall mean value of (3.97), respondents generally agreed with the items related to the flexibility and responsiveness .
- The standard deviation value for this variable is (0.403), indicating that the respondents' responses were not widely dispersed.

5-1-3 Descriptive analysis of Costs and Efficiency:

Tableau 15 mean and standard deviation of the costs and efficiency items

Items	**Mean**	**Std.**
9) The supply chain contributes to the reduction of our operating costs.	3,98	0,651
10) Effective supply chain strategies help us save resources and minimize costs.	3,97	0,559
11) We regularly assess the costs of our supply chain to identify optimization opportunities.	3,91	0,351
12) We regularly evaluate the efficiency of our supply chain to identify potential areas for improvement.	4,11	0,601
Costs and Efficiency	3,99	0,370

Source: elaborated by SPSS

We have introduced a new variable (Compute variable) that regroups the four (04) items of the costs and efficiency to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this section reveals:

- Item N°12, " We regularly evaluate the efficiency of our supply chain to identify potential areas for improvement " had the highest mean value with (4.11), This statement refers to how smoothly and cost-effectively the supply chain operates..
- With an overall mean value of (3.99), respondents generally agreed with the items related to the costs and efficiency.
- The standard deviation value for this variable is (0.370), indicating that the respondents' responses were not widely dispersed.

5-1-4 Descriptive analysis of Quality and Customer Satisfaction:

Tableau 16 mean and standard deviation of the quality and customer satisfaction items

Items	**Mean**	**Std.**
13) The supply chain plays a role in maintaining and improving the quality of our products or services	4,14	0,652
14) A well-managed supply chain contributes to customer satisfaction.	3,95	0,672
15) We monitor the quality of our supply chain to ensure a positive customer experience	3,65	0,914
16) We encourage innovation in our supply chain to remain competitive in the market.	3,95	0,672
Quality and Customer Satisfaction	3,92	0,574

Source: elaborated by SPSS

We have established a new variable (Compute variable) that aggregates the four (04) items of the quality and customer satisfaction to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this section reveals:

- Item N°13, " The supply chain plays a role in maintaining and improving the quality of our products or services " had the highest mean value with (4.14), indicating that the respondents agreed. This part of the statement emphasizes that the supply chain is not just about moving products from one place to another; it also has a direct impact on maintaining and enhancing quality.
- With an overall mean value of (3.92), respondents generally agreed with the items related to the quality and customer satisfaction.
- The standard deviation value for this variable is (0.574), indicating that the respondents' responses were not widely dispersed.

5-1-5 Descriptive analysis of Sustainability and Future Outlook:

Tableau 17 mean and standard deviation of the quality and sustainability and future outlook items

Items	Mean	Std.
17) We integrate sustainable development practices into our supply chain to meet the expectations of stakeholders and customers.	4,21	0,671
18) The supply chain contributes to promoting responsible and ethical business practices within our company.	3,98	0,710
19) We anticipate that the supply chain will play an increasingly strategic role in our company in the future.	3,65	0,914
20) We are aware of the importance of continuing to invest in the development and improvement of our supply chain	4,02	0,752
Sustainability and Future Outlook	3,965	0,544

Source: elaborated by SPSS

We have established a new variable (Compute variable) that aggregates the four (04) items of the sustainability and future outlook to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this section reveals:

- Item N°17, " We integrate sustainable development practices into our supply chain to meet the expectations of stakeholders and customers " had the highest mean value with (4.21), indicating that the respondents strongly agreed. This part specifies that these sustainable practices are not limited to the company's core operations but are being extended throughout its entire supply chain.
- With an overall mean value of (3.96), respondents generally agreed with the items related to the sustainability and future outlook.
- The standard deviation value for this variable is (0.544), indicating that the respondents' responses were not widely dispersed.

5-Descriptive analysis of Industry Competitiveness:

Tableau 18 mean and standard deviation of the industry competitiveness items

Items	**Mean**	**Std.**
21) Our industry is proactive in adopting new technologies and practices to remain competitive.	4,11	0,490
22) Our industry quickly adapts to market changes to maintain its competitive advantage.	4,10	0,611
23) Our industry implements strict quality control standards to enhance its competitiveness.	4,18	0,479
24) Our industry collaborates closely with key partners to strengthen its competitiveness.	4,03	0,559

25) Our industry invests in employee training and skill development to stay competitive.	3,91	0,726
26) We consider skill development as a means to enhance our competitive advantage.	3,99	0,689
27) Our industry employs a competitive pricing strategy to position itself favorably in the market	4,14	0,652
28) Our industry implements effective marketing strategies to increase its competitiveness.	3,95	0,672
29) A strong brand image is a crucial asset for our industry in a competitive environment.	3,65	0,914
30) Access to innovation and research is a crucial factor in optimizing our industry's competitiveness.	3,95	0,672
Industry Competitiveness	4,00	0,321

Source: elaborated by SPSS

We have established a new variable (Compute variable) that aggregates the ten (10) items of the industry competitiveness to calculate the overall arithmetic mean and measure where agreement or disagreement stems from.

The descriptive analysis of this variable reveals:

- Item N°23 " Our industry implements strict quality control standards to enhance its competitiveness " had the highest mean value with (4.18), indicating that the respondents strongly agreed. This part indicates that the industry has put in place a set of stringent rules, guidelines, or procedures designed to monitor and ensure the quality of its products or services.
- With an overall mean value of (4.00), respondents generally agreed with the items related to the industry competitiveness.
- The standard deviation value for this variable is (0.321), indicating that the respondents' responses were not widely dispersed.

6- Hypothesis test:

Hypothesis H1:

There is a positive and significant correlation between the supply chain and the industry competitiveness.

We will measure the existence of a positive and significant relationship between the supply chain and the industry competitiveness using Spearman's correlation test between the two variables.

-Null hypothesis H_{10}: there is no significant positive correlation between supply chain and the industry competitiveness.

-Alternative hypothesis H_{11}: there is a positive and significant correlation between the supply chain and the industry competitiveness.

Tableau 19 spearman correlation relationship test between the supply chain and the companie's competitiveness

Spearman correlation		**The supply chain**	**The industry competitiveness**
The supply chain	**Spearman correlation coefficient**	1.000	**0,895****
	Sig. (bilateral)	/	**0.000**
	N	100	100
The industry competitiveness	**Spearman correlation coefficient**	**0,895****	1.000
	Sig. (bilateral)	**0.000**	/
	N	100	100
****. Correlation is significant at the 0.01 (1%) level**			

Source: elaborated by SPSS

The results observed from the above table confirm the H1 hypothesis "there is a positive and significant correlation between supply chain and the industry competitiveness ". This is due to the fact that the statistical significance value is equal to (0.000) and is less than 1%. ($p < 0,01$). The calculated correlation coefficient (0.895) indicates a very strong, positive relationship between supply chain and the industry competitiveness (89.5%).

Consequently, we reject the null hypothesis H_{01} and confirm the alternative hypothesis H_{11}, i.e. there is a positive and significant correlation between supply chain and the industry competitiveness.

Hypothesis H2 : The supply chain has a positive and significant impact on the industry competitiveness .
We'll test the Sub-hypothesis's of H2 then test the hypothesis H2 :

$H2_a$: Operations management has a positive and significant impact on the industry competitiveness.

$H2_b$: Flexibility and responsiveness has a positive and significant impact on the industry competitiveness .

$H2_c$: Costs and efficiency has a positive and significant impact on the industry competitiveness .

$H2_d$: Quality and customer satisfaction has a positive and significant impact on the industry competitiveness .

$H2_e$: Sustainability and future outlook has a positive and significant impact on the industry competitiveness .

We will implement the linear regression model to determine the impact of the independent variable on the dependent one.

Test of H2 (a): Operations management has a positive and significant impact on the industry competitiveness.

The simple linear regression model for this hypothesis has been release the following outputs:

Tableau 20 model 1 overview of H2 (a)

Model	R	R^2	R^2 adjusted	Erreur standard deviation
1	0,673	0,452	**0,447**	0,238

Source: elaborated by SPSS

Tableau 21 significance test of R2 of H2 (a)

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	4,619	1	80,966	**0,000**
Residual	5,591	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 22 regression coefficients of H2 (a)

	Unstandardized Coefficients	**Standardized Coefficients**	**Sig.**
Constant (β_0)	2,052	/	0,000
Operations management **(β_{01})**	**0,487**	0,673	**0,000**

Source: elaborated by SPSS

The results of the simple linear regression of model (1) (Table N°18) highlight the fact that the operations management explains moderately the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is average with (44.7%) (adjusted $R^2 = 0.447$), we also note that there is an average correlation of (67.3%) between the two variables ,In addition, the simple linear regression is significant (Sig = 0.000 (<0.05))

We can say that there is a positive and significant impact of operations management on the industry competitiveness. therefore our hypothesis is confirmed.

The general form of the simple linear regression model for this hypothesis, using non-standardized coefficients, is as follows:

$$\mathbf{Y=Constant+(\beta_{01}*X)}$$

Y: dependent variable , β_{01} **:** Regression coefficient , **X :** independent variable

IC: Industry Competitiveness

Om: Operations management

$$\mathbf{IC=2.052+(0.487*Mo)}$$

Test of H2 (b): Flexibility and responsiveness has a positive and significant impact on the industry competitiveness.

The simple linear regression model for this hypothesis has been release the following outputs:

Tableau 23 model 1 overview of H2 (b)

Model	**R**	**R^2**	**R^2 adjusted**	**Erreur standard deviation**
1	0,667	0,458	**0,452**	0,237

Source: elaborated by SPSS

Tableau 24 significance test of R2 of H2 (b)

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	4,674	1	82,735	**0,000**
Residual	5,536	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 25 regression coefficients of H2 (b)

	Unstandardized Coefficients	**Standardized Coefficients**	**Sig.**
Constant (β_0)	1,861	/	0,000
Flexibility and responsiveness (β_{02})	**0,539**	0,677	**0,000**

Source: elaborated by SPSS

The results of the simple linear regression of model (1) (Table 23) reveals the fact that the flexibility and responsiveness explains moderately the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is average with (45.2%) (adjusted $R^2 = 0.452$), we also note that there is an average correlation of (67.7%) between the two variables ,In addition, the simple linear regression is significant (Sig = 0.000 (<0.05))

We can say that there is a positive and significant impact of flexibility and responsiveness on the industry competitiveness. therefore our hypothesis is confirmed.

The general form of the simple linear regression model for this hypothesis, using non-standardized coefficients, is as follows:

IC: Industry Competitiveness

Fr: flexibility and responsiveness

IC=1.861+ (0.539*Fr)

Test of H2 (c): Costs and efficiency has a positive and significant impact on the industry competitiveness.

The simple linear regression model for this hypothesis has been release the following outputs:

Tableau 26 model 1 overview of H2 (c)

Model	**R**	**R^2**	**R^2 adjusted**	**Erreur standard deviation**
1	0,650	0,423	**0,417**	0,245

Source: elaborated by SPSS

Tableau 27 significance test of R2 of H2 (c)

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	4,318	1	71,812	**0,000**
Residual	5,892	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 28 regression coefficients of H2 (c)

	Unstandardized Coefficients	Standardized Coefficients	Sig.
Constant (β_0)	1,748	/	0,000
Costs and efficiency (β_{03})	**0,564**	0,650	**0,000**

Source: elaborated by SPSS

The results of the simple linear regression of model (1) (Table N°24) reveals the fact that the costs and efficiency explains moderately the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is average with (41.7%) (adjusted $R^2 = 0.417$), we also note that there is an average correlation of (65%) between the two variables ,In addition, the simple linear regression is significant (Sig = 0.000 (<0.05))

We can say that there is a positive and significant impact of costs and efficiency on the industry competitiveness. therefore our hypothesis is confirmed.

The general form of the simple linear regression model for this hypothesis, using non-standardized coefficients, is as follows

IC: Industry Competitiveness

Ce: Costs and efficiency

IC=1.748+(0.564*Ce)

Test of H2 (e): Quality and customer satisfaction has a positive and significant impact on the industry competitiveness.

The simple linear regression model for this hypothesis has been release the following outputs:

Tableau 29 model 1 overview of H2 (e)

Model	R	R^2	R^2 adjusted	Erreur standard deviation
1	0,829	0,688	**0,685**	0,130

Source: elaborated by SPSS

Tableau 30 significance test of R2 of H2 (e)

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	7,024	1	216,029	**0,000**
Residual	3,186	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 31 regression coeficients of H2 (e)

	Unstandardized Coefficients	**Standardized Coefficients**	**Sig.**
Constant (β_0)	2,183	/	0,000
Quality and customer satisfaction **(β_{04})**	**0,463**	0,829	**0,000**

Source: elaborated by SPSS

The results of the simple linear regression of model (1) (Table 29) reveals the fact that the quality and customer satisfaction explains strongly the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is strong with (68.5%) (adjusted $R^2 = 0.685$), we also note that there is an string correlation of (82.9%) between the two variables ,In addition, the simple linear regression is significant (Sig = 0.000 (<0.05)) .

We can say that there is a positive and significant impact of quality and customer satisfaction on the industry competitiveness. therefore our hypothesis is confirmed.

The general form of the simple linear regression model for this hypothesis, using non-standardized coefficients, is as follows:

IC: Industry Competitiveness

IC=2.183+(0.463*Qcs)

Qcs: Quality and customer satisfaction

Test of H2 (f): Sustainability and future outlook has a positive and significant impact on the industry competitiveness.

The simple linear regression model for this hypothesis has been release the following outputs:

Tableau 32 model 1 overview of H2 (f)

Model	**R**	**R^2**	**R^2 adjusted**	**Erreur standard deviation**
1	0,783	0,612	**0,608**	0,200

Source: elaborated by SPSS

Tableau 33 significance test of R2 of H2 (f)

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	6,253	1	154,867	**0,000**
Residual	3,957	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 34 regression coefficients of H2 (f)

	Unstandardized Coefficients	**Standardized Coefficients**	**Sig.**
Constant (β_0)	2,172	/	0,000
Sustainability and future outlook **(β_{05})**	**0,461**	0,783	**0,000**

Source: elaborated by SPSS

The results of the simple linear regression of model (1) (Table N°30) reveals the fact that the sustainability and future outlook explains strongly the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is strong with (60.8%) (adjusted $R^2 = 0.608$), we also note that there is an string correlation of (78.3%) between the two variables ,In addition, the simple linear regression is significant (Sig = 0.000 (<0.05)) .

We can say that there is a positive and significant impact of sustainability and future outlook on the industry competitiveness. therefore our hypothesis is confirmed.

The general form of the simple linear regression model for this hypothesis, using non-standardized coefficients, is as follows:

IC: Industry Competitiveness

Sfo: Sustainability and future outlook

IC=2.172+(0.461*Sfo)

Test of Hypothesis H2 : The supply chain has a positive and significant impact on the industry competitiveness.

The multiple linear regression model for this hypothesis has been release the following outputs:

Tableau 35 model 1 overview of H2

Model	R	R^2	R^2 adjusted	Erreur standard deviation
1	0,914	0,836	**0,827**	0,133

Source: elaborated by SPSS

Tableau 36 significance test of R2 of H2

ANOVA				
	Sum of squares	**DDL**	**F**	**Sig.**
Regression	8,536	1	95,856	**0,000**
Residual	1,674	98	/	**/**
Total	10,210	99	/	**/**

Source: elaborated by SPSS

Tableau 37 regression coefficients of H2

	Unstandardized Coefficients	**Standardized Coefficients**	**Sig.**	**Signification**
Constant (β_0)	1,199	/	0,000	/
Operations management **(β_a)**	**0,314**	0,433	**0,015**	**Significant (<0,05)**
Quality and customer satisfaction **(β_d)**	**0,324**	0,579	**0,000**	**Significant (<0,05)**

Source: elaborated by SPSS

The results of the multiple linear regression of model (1) (Table 35) highlight the fact that the supply chain with its combined practices (Operations management and quality &

customer satisfaction) strongly explains the variance in the industry competitiveness. In fact, the predictive value of the model (adjusted R^2) is strong with (82.7%) (adjusted R^2 = 0.827), we also note that there is a very strong correlation of (91.4%) between the two variables ,In addition, the multiple linear regression is significant (Sig = 0.000 (<0.05)).

We can say that there is a positive and significant impact of the supply chain on the industry competitiveness.

The general form of the multiple linear regression model for this hypothesis, using non-standardized coefficients, is as follows:

$$\mathbf{Y = \beta_0 + \beta_a X_1 + \beta_d X_2}$$

Y: The dependent variable (Industry competitiveness) (IC)

X_1: The independent variable 1 (Operations management) (Om)

X_2: The independent variable 2 (Quality & customer satisfaction) (Qcs)

β_0 : The constante

β_1 : Regression coefficient of operations management

β_2 : Regression coefficient of quality & customer satisfaction

So our model is :

$$\mathbf{IC = 1.199 + (3.14 * Om) + (0.324 * Qcs)}$$

Section 2 : Discussion of the results

This study addresses the perspectives of the literature review concerning the impact of the supply chain practices on the competitiveness of companies . The main objective of our research approach is to acertain if the practices of the supply chain (partnerships with

suppliers , customer satisfaction , collaboration and cooperation , information sharing , innovation) , are the key factors to gain a competitive advantage (Abdulhamid, 2012), (Hani, 2020), (Li, 2004), (Thatte, 2007), (houssaini, 2007), (Li, 2004), (Yahaya, 2012), (gambardella, 2000) .

In our study, we realised a quantitative analysis to validate the hypotheses stated earlier in the introduction. To achieve our objectives, we employed three distinct types of analyses: descriptive analysis, bidimensional analysis, and multidimentional analysis. These analyses allowed us to gain a comprehensive understanding of the collected data and assess the relationships between the studied variables from various perspectives.

Through descriptive analysis, we gathered general information about the respondents profiles and the companies included in our sample. It's noteworthy that our sample primarily consists of companies in the primary sector, specifically in the pharmaceutical industry. These findings provide us with an overview of the characteristics of the studied companies and a better understanding of the context in which our research is situated.

The companies in our sample are primarily characterized by their longevity, we note that 41% have been in business from 06 to 10 years, 30% from 01 to 05 years and 29% for more than 10 years .These companies are mainly medium to large-sized, with more than 51 to100 employees that are represented by a percentage of 54%, more than 100 employees are represented by a percentage of 33% then less than 50 employees are represented by a percentage of 13%. Regarding their legal status, our sample consists of 76% private companies and 24% public and mixed companies. An interesting observation from this analysis is the positive correlation between company size and longevity. This suggests that larger companies tend to have a longer history and experience in the field.

Respondents to our questionnaire are predominantly male, representing 72% of the sample, while females represent 28%. In our sample, there is a predominance of managers, and employees , and directors. These profiles stand out for their level of responsibility and are likely to have a significant influence on the company.

It is indeed essential to consider the respondents positions when interpreting the results and the perspectives expressed in the questionnaire. (Nunnally, 1978) ,emphasized the importance of this consideration in their research, highlighting the need to precisely target the studied population to obtain reliable and relevant results. Taking into account the

respondents positions allows for a better understanding of how their positions may influence their responses and perspectives on the studied topic.

Our study has yielded significant results from the qualitative data analysis. After conducting a correlation test and subjecting our hypotheses to simple and multiple linear regression tests, we can confirm the validity of all our hypotheses.

In this regard, the study revealed that quality and customer satisfaction had a positive and significant impact on . This result was confirmed by the previous study by (Lachache, 2020), (Li, 2004) & (Hani, 2020), demonstrating that improving and enhancing customer relationships had a significant impact gaining competitive advantages. This result was achieved because the employees selected in this study were strongly correlated with customers and could have an appropriate communication process to improve the relationship, ultimately contributing to affecting performance. Furthermore, the current result could be described as follows: when customers benefit from reliable products and services, they are highly satisfied. Similarly, customers may be somewhat satisfied with timely product development and some innovations in these products, especially when they receive feedback from the supply chain, which helps strengthen this relationship and, consequently, the company will gain market parts and a competitive advantage.

The study also showed that flexibility and responsiveness had a positive and significant impact on industries competitiveness. Previous researches conducted by (Abdulhamid, 2012) **&** (Thatte, 2007) also confirmed this result, indicating that the more the company is felxible and responsive the higher the impact on the competitiveness of the company.

Additionally, the study revealed that sustainability and future outlooks also had a positive and significant impact on companies competitiveness. This result was corroborated by the previous studies by (Mahmoudi, 2006), (Merzouk, 2007) **&** (Yahaya, 2012) which indicated that an increase awareness of being sustainable by continuing to invest in developping strategic and innovative strategies and processes within the supply chain also promoting ethical business practices will impact surely the competitiveness of the company .

Furthermore, the study revealed that operations management practices within a supply chain had a positive and significant influence on the company competitiveness . Previous studies conducted by (chibani, 2015), (Thatte, 2007)**&** (marinagi, 2014) ,confirmed this result. This is because a supply chain with optimised operational processes, which

enhances the over all performance of the company. This helps them optimise their efficacity and efficiency, ultimately gaining competitive advantages

However, the study's results also highlighted the positive and significant impact of costs and efficiency, which differs from the conclusions of previous studies cited by (Li, 2004) , (Thatte, 2007). These studies suggested that cost and efficiency had a positive but not significant influence on a company competitiveness .

Conclusion

In this third chapter, we presented the quantitative results obtained. The results provided a numerical perspective on the elements studied, the ensuing discussion allowed us to interpret and discuss these results in-depth.

CONCLUSION

The results of this study underscore the crucial importance of the supply chain in gaining competitive advantages in the pharmaceutical sector. By examining several key variables, such as operations management, innovation , partnerships with suppliers ,customer relationships,service quality , costs and effeciency, Flexibility and Responsiveness, and sustainability and Future Outlook, we were able to assess the relationship between these factors and overall competitive advantage of companies.

The quantitative approach adopted in this study, provided a comprehensive overview of the influence of the supply chain on companies competitiveness. Data collected from professionals working in the supply chain of pharmaceutical companies were carefully analyzed using regression analysis.

The results clearly demonstrated that all supply chain practices have a positive and significant impact on the competitivity of pharmaceutical companies. Strengthening strategic partnerships with suppliers enables companies to enhance their operational efficiency, flexibility, and innovation capabilities. Additionally, a strong customer relationship fosters customer satisfaction, loyalty, and the acquisition of new business opportunities and gaining competitve advanatges .

Flexibility and responsiveness within the supply chain are pivotal for pharmaceutical companies. They ensure customer satisfaction by meeting evolving demands, reduce lead times, enhance cost-efficiency, and mitigate risks from disruptions. Moreover, they confer a competitive advantage, stimulate innovation, facilitate market expansion, optimize resource allocation, foster collaboration, and enable sustainability initiatives. In an era of rapid change and intense competition .

Furthermore, sustainability and future outlooks, which involves promoting ethical , innovative and strategic business processes, allows companies to reduce production costs, improve efficiency, and rapidly meet specific customer requirements and adapt easily to market changes.

In conclusion, this study highlights the importance of developing and effectively managing the supply chain in the pharmaceutical sector. Companies that pay special attention to supply chain practices can benefit significantly gaining better operational performance which leads to gaining competitive advanatges , resulting in enhanced competitiveness, increased profitability, and greater relationships and partnerships with the collaborators. Therefore, it is essential for pharmaceutical companies to continue investing in the development and optimization of their supply chain to remain competitive in today's dynamic market.

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ANNEXE

Questionnairy

Bonjour, je suis une étudiante de l'École Nationale Supérieure de Management (ENSM) située à Kolea. Dans le cadre de notre mémoire de fin d'études académiques, nous menons une étude sur l'impact de la chaîne logistique sur la compétitivité des entreprises. Nous visons à obtenir une variété d'opinions et de points de vue, donc il n'y a ni réponses bonnes ni mauvaises. Nous vous encourageons à répondre de manière spontanée. Veuillez noter que toutes les réponses seront traitées de manière confidentielle.

Merci.

Section 1 : Informations générales

1. Etes-vous

☐ Homme

☐ Femme

2. Votre Âge

☐ 25 à 34 ans

☐ 35 à 44 ans

☐ 45 à 54 ans

☐ De 55 ans et plus

3. le statut juridique de votre entreprise

☐ SARL (Société à Responsabilité Limitée)

☐ EURL (Entreprise Unipersonnelle à Responsabilité Limitée)

☐ SPA (Société Par Action)

☐ SNC (Société en Nom Collectif)

☐ EPIC (Establishment Public à Caractère Industriel)

☐ Autre….

4. Quelle est la nature juridique de votre entreprise ? *

☐ Public

☐ Privé

☐Mixte

☐ Autre …

5. Le lieu de résidence

6. Quelle est la taille de votre entreprise (nombre d'employés) ?

☐ Petite

☐ Moyenne

☐ Grande

7. Quel est le nombre d'employés dans votre entreprise ?

☐ Moins de 50 employés

☐ Entre 51 et 100 employés

☐ Plus de 100 employés

8. Quel est le montant du capital social de votre entreprise ?

☐ Moins de 1.000.000 DA

☐ Entre 1.000.000 DA et 5.000.000 DA

☐ Plus de 5.000.000 DA

9. Depuis combien de temps votre entreprise est-elle en activité ?

☐ 1 à 5 ans

☐ 6 à 10 ans

☐ De 10 ans et plus

10. Quel est votre rôle dans l'entreprise ?

☐ Directrice / Directeur

☐ Manager / Responsable

☐ Chef de projet

☐ Collaborateur

☐ Autre…

Section 01 : Supply chain

Dimension 01 : Gestion des Opérations

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout a fait d'accord
La gestion efficace des opérations de la supply chain nous permet d'atteindre nos objectifs commerciaux					
La supply chain contribue à optimiser nos processus opérationnels					
La supply chain est responsable de la coordination des activités tout au long de notre chaîne d'approvisionnement					
Nous évaluons régulièrement les performances de notre supply chain à					

l'aide d'indicateurs clés					

Dimension 02 : Flexibilité et Réactivité

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout a fait d'accord
Notre supply chain est capable de s'adapter rapidement aux fluctuations de la demande du marché					
La supply chain joue un rôle clé dans notre capacité à réagir rapidement aux changements des conditions commerciales					
La flexibilité de notre supply chain nous permet de répondre rapidement aux besoins					

changeants de nos clients.					
Nous avons mis en place des mécanismes pour faire face aux imprévus et aux perturbations dans notre supply chain					

Dimension 03 : Coûts et Efficacité

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout a fait d'accord
La supply chain contribue à la réduction de nos coûts d'exploitation					
Des stratégies efficaces de supply chain nous aident à économiser des ressources et à minimiser les coûts					
Nous évaluons régulièrement					

les coûts de notre supply chain pour identifier les opportunités d'optimisation					
Nous évaluons régulièrement l'efficacité de notre supply chain pour identifier les domaines d'amélioration potentiels.					

Dimension 04 : Qualité et Satisfaction Client

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout a fait d'accord
La supply chain joue un rôle dans le maintien et l'amélioration de la qualité de nos produits ou services					
Une supply chain bien gérée contribue à la satisfaction de nos clients.					
Nous surveillons la qualité de notre supply chain pour garantir une					

expérience client positive					
Nous encourageons l'innovation dans notre supply chain pour rester compétitifs sur le marché					

Dimension 05 : Durabilité et les Perspectives futures

	Pas du tout d'accord	Pas d'accord	Neutre	D'accord	Tout a fait d'accord
Nous intégrons des pratiques de développement durable dans notre supply chain pour répondre aux attentes des parties prenantes et des clients					
La supply chain contribue à promouvoir des pratiques commerciales responsables et éthiques au sein de notre entreprise					
Nous prévoyons que la supply chain jouera un rôle de plus en plus stratégique dans notre entreprise à l'avenir					

Nous sommes conscients de l'importance de continuer à investir dans le développement et l'amélioration de notre supply chain					

Section 02 : la compétivité des industries

	Pas du tout d'accord	Pas d'accord	D'accord	Tout a fait d'accord
Notre industrie est proactive dans l'adoption de nouvelles technologies et pratiques pour rester compétitive				
Notre industrie s'adapte rapidement aux évolutions du marché pour maintenir son avantage concurrentiel				
Notre industrie met en œuvre des normes strictes de contrôle de qualité pour améliorer sa compétitivité				
Notre industrie collabore étroitement avec des partenaires clés pour				

renforcer sa compétitivité				
Notre industrie investit dans la formation et le développement des compétences de ses employés pour être compétitive				
Nous considérons le développement des compétences comme un moyen d'améliorer notre avantage concurrentiel				
Notre industrie adopte une stratégie de tarification compétitive pour se positionner avantageusement sur le marché				
Notre industrie met en œuvre des stratégies de marketing efficaces pour accroître sa compétitivité				
Une bonne image de marque est un atout essentiel pour notre industrie dans un environnement concurrentiel				
L'accès à l'innovation et à la recherche est un facteur déterminant dans l'optimisation de la compétitivité				

de notre industrie				