

Midocean University

College of Management

Department of project management



**The impact of Supply chain on business sustainability:
An applied study on workers in the private sector in Saudi Arabia**

Prepared by:

Saleh Alfhidi

Thamer alanzi

Majed altuwaly

Supervised by:

Scientific research committee, Mid Ocean university

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Dedication

I dedicate this work to everyone who strives for daily improvement and a brighter tomorrow.

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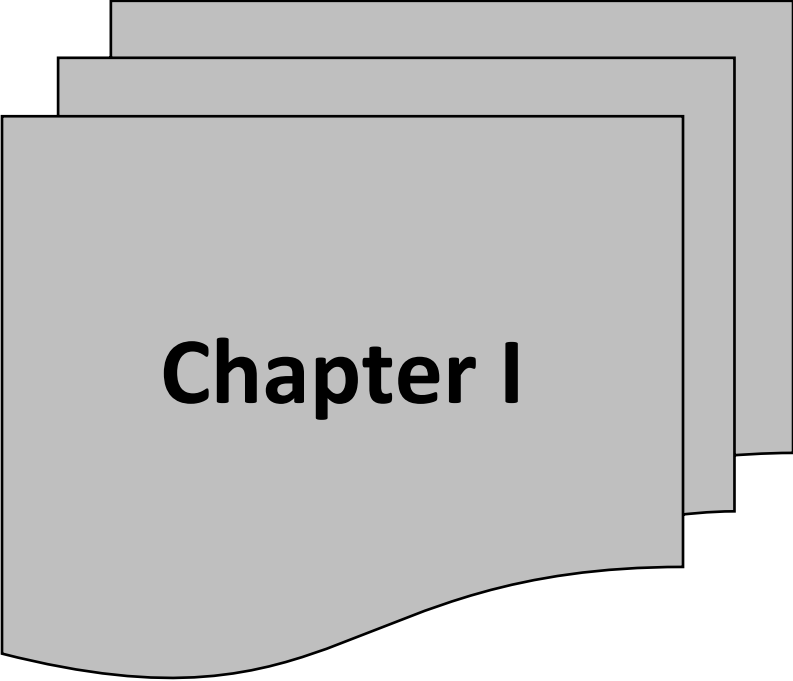
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Abstract

In the modern business world, sustainability has turned into a strategic concern. Environmental factors at the local, regional, and global levels have also put a lot of pressure on business functions to incorporate the concept of sustainability—which encompasses economic, social, and environmental concerns—into every choice that is made in order to maintain or increase their competitive advantages. One of the most crucial components of the operations department of the business, supply chain management, must now be handled sustainably. More stringent measures must be taken to address supply chain competition, such as implementing sustainable supply chain management techniques that can provide an advantage over competitors. These actions would boost business performance and support sustainable performance. This study reviewed the significance of sustainable supply chain management techniques for the achievement of sustainable performance. For this purpose, a survey will be conducted to apply the research to a number of employees. Some of key results according to the obtained rules indicate that It is clear to see that application of supply chain in the private sector in Kingdom of Saudi Arabia is moderate with mean of (2.93) and standard deviation of (0.74). and it is clear also to see that the economic dimension of sustainability in supply chain in the private sector in Kingdom of Saudi Arabia is moderate with mean of (3.012) and standard deviation of (0.87).



Chapter I

Chapter one

Introduction

- **Introduction**
- **Research Problem**
- **Research Questions**
- **Research Significance**
- **Research Definitions**
- **Research Framework**
- **Research Hypotheses**
- **Literature review**
- **Research methodology**
- **Research structure**
- **Research boundaries**
- **Timetable of the Research**

Chapter one

Introduction

1.1 Introduction

In recent decades, businesses have actively sought out competitive advantages in the volatile global commercial landscape. The value of sustainability to a company's financial line has progressively increased. In keeping with the growing significance of sustainability, Researchers studying supply chains have looked at whether a company's potential to improve its sustainability performance depends on whether or not it extends sustainability concerns outside of its internal operations, into its supply chain.

Regarding this, one of the topics of increasing concern, Considering the intricacy and worldwide scope of sustainability-related problems, is whether businesses recognize the value of cooperation within their supply chains. Since integration of the supply chain (SCI) encompasses three dimensions— Integration of internal, supplier, and customer —it involves tactical cooperation with both external and internal partners in the supply chain. Performance and sustainability management practices (SMPs) may be enhanced by SCI (Beske and Seuring, 2014).

Over the last ten years, business sustainability has progressed branding, greenwashing, and other a crucial strategic requirement. international corporations in business are still concentrating on achieving sustainability results as required by both regulators and investors, who also want the sustainability performance disclosure data. The quantity of worldwide public firms that have disclosed their financial and non-financial sustainability performance in terms of environmental, social, ethical, and governance (ESEG) statistics has increased from less than 100 to over 14,000. Most sustainability criteria are currently optional, and there are several conflicting philosophies of

sustainability. In the dynamic and ambiguous domain of corporate sustainability, the relationship between ESP and ESEG can be perceived as either complimentary or rivalling. A practical and strategic approach is required for corporate sustainability. In order to address ESEG concerns and generate enduring profitability and wealth creation for its investors, corporate organizations have been confronted with the problem of implementing appropriate methods and strategies for a sustainable supply chain in recent years (Rezaee, 2016).

These modifications have affected consumers' lifestyles and profoundly altered how businesses operate. and being vital to all sectors of the economy, such as manufacturing, services, fast-moving consumer goods (FMCG), healthcare, water, and other products. By concentrating on social, economic, and environmental objectives, supply chain management that is sustainable (SSCM) guarantees efficient supply chain operations. Handling material, information, and capital flow as well as coordinating chain of supplies operations among businesses and connecting them all to sustainable development (SD) objectives that are determined by the needs of stakeholders and customers is known as supply chain coordination (SSCM). Improving supply chain results and connecting them to SD goals is the ultimate goal of SSCM, but reaching these objectives is still difficult in the cutthroat global business market of today (Habib et al., 2019).

The paper is organized to cover the following topics: concept definition and explanation; supply chain types; supply chain relevance; phases and development principles; and supply chain impact on business sustainability in terms of improving the organization's service quality.

1.2 Research Problem

According to the study of (Kang, 2018; Fu et al., 2022), It's yet unknown how production companies collaborate with partners in the supply chain to fulfil their intended performance in sustainability, Notwithstanding the growing corpus of studies on sustainable supply chain management. Organizations are now needed to use a range of techniques to optimize their business operations because of the quick development of technology and the intense rivalry seen within the company world. With an emphasis on operational and financial success, the relationship between corporate performance and sustainable supply chain management (SSCM) is being investigated by current research. It offers perceptions into the allocation of resources, operational structure, and strategic tool selection required to improve organizational execution This study recognizes supply chain's effects on business sustainability.

1.3 Research Questions

Consequently, the following research topics are addressed by this study:

1. What is the reality of applying supply chain management within the organization?
2. What is the level of implementation of business sustainability (economic, environmental, social) within the organization?
3. What is the impact of applying supply chain management on enhancing business sustainability (economic, environmental, social) within the organization?

1.4 Research Significance:

It is crucial to conduct research on how supply chains affect the sustainability of businesses for a number of reasons.

1. Theoretical Significance:

- Supply chains directly affect an organization's ability to remain sustainable by assisting in the development of cost-effective strategies, enhancing financial performance, and guaranteeing the successful execution of projects within allocated budgets.
- Supply chains need to be in line with the strategic goals of the company since doing so makes sure that initiatives assist the company achieve its goals and strengthen its position in the market, which in turn improves business sustainability.
- Supply chains emphasize efficiency and ongoing improvement through project management, opportunity identification, application of best practices, process optimization, and attainment of company sustainability.

2. Practical Significance:

- Supply chains are essential to project success. By identifying the fundamental elements that lead to successful project results, supply networks may be understood in relation to the sustainability of the firm.
- Supply chains have a big influence on project management risk management. Organizations can lower project risk and improve project success by implementing efficient risk management procedures if they have a clear grasp of this impact.

1.5 Research Definitions:

➤ **Supply chain:**

Supply chains include the businesses and operations required to plan, produce, transport, and utilize a good or service. Companies rely on their supply chains to give them the resources they need to continue operating and growing. Every company is a part of one or more supply chains and contributes to them all (Stadtler, 2014). The phrase "supply chain management" first appeared in print in the late 1980s and gained popularity in the 1990s. Before then, companies referred to their processes as "logistics" and "operations management" instead. Below are a few definitions of a supply chain:

- "The arrangement of businesses that introduce goods or services to the market is known as a supply chain." (Stadtler, 2014).
- "Every step involved, whether directly or indirectly, in completing a customer request is included in the supply chain. The manufacturer, suppliers, transporters, warehouses, retailers, and even the customers themselves are all a part of the supply chain.
- "A supply chain is a system of facilities and channels of distribution that handles the sourcing of raw materials, conversion of raw materials into intermediate and final goods, and delivery of these goods to consumers." (Van Weele, 2018).

➤ **business sustainability**

Generally understood to mean growth that "meets present needs without compromising future generations' ability to meet their own needs, ensuring intergenerational equity is the goal of sustainability. Put this way, there is no denying the validity of sustainability principles. Most individuals want their children to have similar opportunities and to live just as long as their parents

did. The same reasoning holds true in the corporate world, where most managers aim for profits that increase and are at least as profitable as they were previously. By this reasoning, the ability of businesses to fulfil their immediate financial demands without jeopardizing their future ability to meet needs themselves or those of others can be referred to as business sustainability. Time is therefore essential to the idea of sustainability (Bansal & DesJardine, 2014).

1.6 Research Framework:

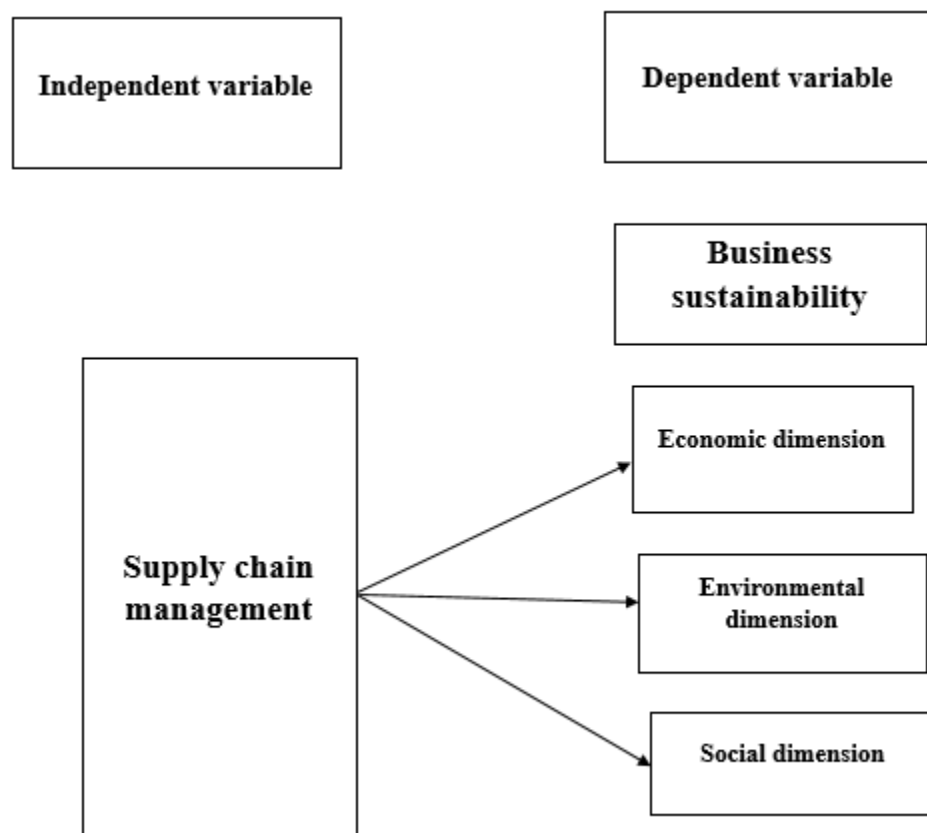


Figure (1) shows research framework

The preceding graphic makes it evident to us that the goal of the current research is to examine how supply chains affect the sustainability of businesses:

- **Independent variable:** supply chain management.
- **Dependent variable:** business sustainability (economic, environmental, social).

1.6 Research Hypotheses

Then the research raises the following hypotheses:

- The application of supply chain management impacts on enhancing business sustainability (economic, environmental, social) within an organization.

1.8 Research methodology:

- Method:

To identify the reality of applying supply chain management within the organization, the level of application of business sustainability (economic, environmental, social) within the organization, and to identify the impact of applying supply chain management on enhancing business sustainability (economic, environmental, social) within the organization, this study relied on a descriptive analytical approach.

- Research Sample:

In order to create reliable data, a survey will be conducted to apply the research to a number of employees.

- **Research Tools:**

Utilizing the chosen sample, the questionnaire will be used as a research tool to produce accurate statistical data and indications.

- **Statistical Methods**

Some of the statistical tools that will be employed in the study are as follows:

- ✓ Linear regression coefficient.
- ✓ The arithmetic mean and standard deviation will be used to answer the study questions.

1.9 Research structure:

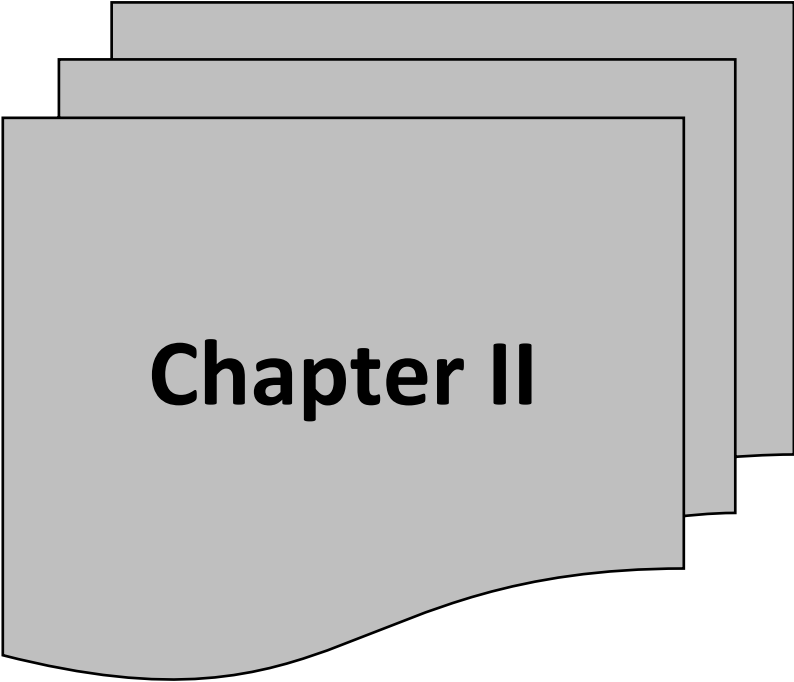
- ✓ **Chapter one:** Study problem and significance.
- ✓ **Chapter two:** supply chain.
- ✓ **Chapter three:** The influence of the supply chain on the sustainability of businesses.
- ✓ **Chapter four:** Methodological techniques.
- ✓ **Chapter five:** Field Outcome.
- ✓ **Chapter six:** Analysis of Proposal and Outcome

1.10 Research boundaries:

- **Time constraints:** This study will be carried out in the first semester of the school year 2024–2025.
- **Objectivity border:** This study used a descriptive analytical approach to ascertain the reality of implementing the supply chain (strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing) within the

project, to comprehend the challenges associated with doing so, and to look into the effects of the supply chain on business sustainability.

- **Spatial boundaries:** It will be applied to some private sector institutions in the Kingdom of Saudi Arabia
- **Human limits:** It will be applied to workers in private sector institutions in the Kingdom of Saudi Arabia.



Chapter II

Chapter two

Theoretical framework

- **Introduction**
- **Models and Definitions for the Supply Chain**

- **Critical Review of Supply Chain Management Definitions and Terminology**
- **Supply chain integration (SCI):**
- **Sustainability management practices (SMPs)**
- **Relationship between SCI and SMPs**
- **Supply Chain Strategy**
- **Relationships between SMPs and sustainability performance**
- **Supply Chain Network Design**
- **References**

2.1 Introduction:

Today, there is intense competition on the worldwide market. Due to the emergence of products with shorter life cycles and the increased demands of consumers, businesses are being compelled to make investments in and give their supply chains more attention. This, in addition to the ongoing development of transportation and communication technology (such as internet, mobile, and overnight delivery), has inspired the ongoing development of supply chain methods and strategies for efficient management. Recently, the production systems' architectures have been impacted by the pressures of a competitive market and emerging information technology, necessitating: shorter time to market.

- increased system flexibility.
- significant cost savings.
- expanded quality idea (Jaipur, 2013).

Many writers attempted to distil the core of supply chain management into a single concept in the 1990s. Its components are:

- the management philosophy's goal,
- the intended audience,
- the goal or goals and
- the overall strategy for accomplishing these goals (Perez-Franco et al., 2016)

Clearly, the goal of supply chain management (SCM) is to depict the "network of organizations that are involved, through both upstream and downstream linkages, throughout the various operations and procedures that generate value before being delivered to the final customer as goods and services. A supply chain, in the broadest sense, is made up of two or more organizations that

are legally independent but are connected by material, financial, and informational exchanges. These companies could be manufacturers of parts, component and end product suppliers, logistic service providers, or even the (final) client (Stadtler, 2014).

When used in a restricted context, the phrase "supply chain" can also refer to a huge corporation with multiple locations, frequently across international borders. For a worldwide corporation like this, efficiently coordinating the flow of materials, information, and finances is still a difficult undertaking. However, because the locations constitute a single, big organization with a single top management level, decision-making ought to be simpler. While the phrase "intra-organizational" refers to a supply chain in the narrow sense, "broad supply chain" is also known as an inter-organizational supply chain. Despite this distinction, close coordination between the various functional departments—such as marketing, Production, procurement, logistics, and finance are all necessary—a prerequisite that is, of course, inherent in modern businesses (Van Weele, 2018).

The field of supply chain management has garnered increasing attention from theorists and practitioners since the 1980s, when businesses realized that they could no longer successfully compete without their suppliers or other supply chain participants and realized the advantages of forming cooperative partnerships both inside and outside of their own company. Over the past ten years, the applicability of supply chain management (SCM) has been extensively studied in a variety of application domains, leading to the proposal of several definitions of SCM in the literature (Frazelle, 2020).

Even though SCM is widely used in academic and professional settings, there is still a great deal of misunderstanding about what it means since, as (Habib, 2010), A few writers described supply chain management (SCM) as the process of moving goods and raw materials smoothly, while some saw it as an integrated system or a management process, others saw it as a management philosophy.

Even within the same paper, had conflicting conceptions of SCM: while serving as an integrated system and a management philosophy. Such ambiguity indicates that in order to define the notion precisely, a closer look into the SCM-related operations is necessary (Cooper and Ellram, 1993).

2.2 Models and Definitions for the Supply Chain:

Well-established in the literature, the term "supply chain" refers to the alignment of businesses that deliver goods or services to market. Manufacturers, suppliers, carriers, warehouses, wholesalers, retailers, and other middlemen are all part of the supply chain, as are the actual customers. From raw materials to completed items, every product traded on the consumer goods market goes through a succession of transactions on the business-to-business market. For instance, a final customer who buys a bottle of Coca-Cola does not do it directly from the company, but via a middleman (like a hypermarket or local shop), and the item passes through multiple business-to-business interactions on the Coca-Cola – wholesaler – retailer – final customer circuit (Căescu and Dumitru, 2011).

All parties engaged, directly or indirectly, in completing a customer request make up a supply chain. feels that the supply chain of any company, like a manufacturing, consists of all the processes involved in receiving and fulfilling a request from a customer. These responsibilities include, but are not restricted to, customer support, marketing, operations, distribution, financing, and new product development (Chopra and Meindl, 2007).

A typical supply chain consists of a network of processing links for goods, information, and services that exhibits supply, transformation, and demand characteristics. The supply chain typically consists of three stages: distribution, production, and purchase. Every one of these phases could consist of multiple facilities spread over various parts of the globe. In the automobile sector,

for instance, assembly factories are situated in different nations than suppliers of various components, and distribution is done on a global scale (Chen and Paulraj, 2004).

"A group of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of goods, services, funds, and/or information from a source to a customer" is how one may define a supply chain. A "direct supply chain," "extended supply chain," and "ultimate supply chain" are the three levels of supply chain complexity. A central company, its suppliers, and its clients make up the direct supply chain. The immediate supplier's suppliers and the immediate customer's customers are also a part of the extended supply chain. All businesses engaged in the flow of goods, services, money, and information from the ultimate suppliers to the ultimate customers are part of the ultimate supply chain. The final supply chain also includes functional middlemen like financial, logistical, and market research companies. There is always a core organization in a supply chain, regardless of the number of participants and variety of business processes involved. This organization has the ability to control the supply chain in its entirety or not, and even in the absence of management, it continues to exist as a phenomenon in business.

(Mentzer et al., 2001).

"Life cycle processes comprising physical, information, financial, and knowledge flows whose purpose is to satisfy end-user requirements with products and services from multiple linked suppliers" is the definition of a supply chain. This definition states that the supply chain includes procedures for a wide range of tasks, such as locating, producing, shipping, and marketing tangible goods and services. For durable goods and services, the terms "life cycle" relate to both the market life cycle and the usage life cycle, which are distinct from one another. Consequently, post-purchase product assistance emerges as a crucial supply chain element (Ayers, 2001).

Typically, an integrated supply chain model consists of three interconnected flows:

- material flows, each of which is divided into three stages: distribution, transformation, and purchase.
- informative flows, such as links to websites or electronic data exchanges,
- and financial flow (which includes customer payment to retailer for final product and supplier and subcontractor payment for products and services) (Ayers, 2001).

It goes without saying that physical distribution plays a crucial role in supply chains, but in many cases, financial and informational components are just as significant as physical flow. In addition, the importance of knowledge inputs in supply chain operations must be emphasized. For instance, the supply chain process for new products necessitates close coordination between physical (components, prototypes, etc.) and intellectual (the design) inputs (Waller, 2003).

In the supply chain, the movement is not just forward from the first supplier to the last customer. For a variety of purposes, including maintenance and repair, remanufacturing, recycling, and disposal, goods may move back up the supply chain. In domains like environmental preservation, recycling, and customer happiness, the reverse chain can be quite significant. A set of programmes or competencies known as "reverse logistics" are designed to move goods from consumers to producers in the opposite direction of the supply chain. Related activities may involve managing returns of products, recycling, reusing materials, disposing of waste, refurbishing, or remanufacturing (Moise, 2008).

Lastly, we have to acknowledge that a supply chain has several connected providers. The supply chain can be configured in a wide variety of ways. Some are brief and straightforward, like a tiny grocery that purchases vegetables straight from the farmer; others are lengthy and intricate, like a

fish cannery that purchases fish from fishermen and distributes the goods via a network of retail stores. A growing number of businesses coordinate the material and information flows among several suppliers, manufacturers, and distributors in a supply network at both the upstream and downstream levels (Seifbarghy and Gilkalayeh, 2012).

2.3 The Supply Chain Lifecycle:

Supply chains have developed throughout history to satisfy the many demands of human communities, to take advantage of natural resources, and to make it possible for people to trade and do business effectively. Supply chain performance and practices are covered in the vast body of supply chain literature (e.g., Swink et al., 2007; Flynn et al., 2010), supply chain tactics and how they change over time (e.g. Ketchen & Giunipero, 2004), and discusses how supply chain architectures are altering to some extent (e.g., Halldorsson et al., 2007; Ülkü & Schmidt, 2011). The management of current supply networks has received more attention than the broad patterns of the supply chain life cycle, despite the literature's abundance. Scholars have generally explored the notion of life cycles in connection with the life cycle of a product (Klepper, 1996; Windrum & Birchenhall, 1998).

We are now going to look at the supply chain life cycle. We provide context for the conversation by examining case studies that highlight various life cycle dynamics, trajectories, and impacting factors from industries such as steel, apparel, electronics, aerospace, and the automobile sector. Within these industries, there are supply networks that are established and largely stable, those that are developing or novel, and those that are in transition or may see upheaval in the future. The various phases of the supply chain life cycle are then covered in more detail (Ülkü & Schmidt, 2011).

Steel supply chains: This sector offers an illustration of a fairly developed supply chain at this point. The late 19th century saw the emergence of large-scale steel production due to technological advancements. In the 20th century, integrated steel mills and "minimills" followed the invention of the Basic Oxygen Steel manufacturing method in the 1950s and the early 1970s of Electric Arc Furnaces for recycled steel (Groover, 2013).

Of course, a lot of technological advancements have since occurred that have improved the steel industry's efficiency, automation, and quality. The amount and range of steel goods produced worldwide are still growing. Product variety is still increasing, frequently as a result of industries like the auto industry's need for specific applications. Over the past thirty years, the amount of steel produced in various nations has varied, but thanks to advanced technologies, the general organization of steel supply chains has been largely constant. In fact, many of the inputs, value-adding stages, and material flows in the industry, if not the variety of steel products and their applications, would still be familiar to Frederick Winslow Taylor, who conducted much of his groundbreaking work on "scientific management" in the Pennsylvanian steel industry in the late 19th century (The World Steel Association, 2015).

Supply Chains in the Electronics Industry: From the basic USB pen drive to the newest smart phone technologies, electronic storage via flash memory (Wong, 2010) is essential to today's mobile computing environment. Taking into account how recently the technology and related equipment were introduced, as well as the creation of their supply networks, is enlightening. In 1987, the first patent was filed for the popular type of flash memory that is included in the majority of consumer electronics (Toshiba, 2012).

More than 10 years later, in 1999, the first USB pen drive patent was granted. In 2000, IBM introduced a commercial USB drive that had an 8MB capacity. This was a five-fold increase in

storage capacity compared to the ordinary floppy disc at the time, and it also offered much quicker read and write speeds. Eight gigabyte USB drives, which have a thousand times more storage space, are now widely available for a reasonable price. As a result, during the past fifteen years, the supply chains for these items have emerged, grown, and matured at a highly rapid "clockspeed," with fluctuations due to competing flash technologies (Buchanan, 2013).

It is clear from the aforementioned examples that the stages of emergence, growth, maturity, and decline are all part of the supply chain lifecycle, just like they are in the case of a product. When a supply chain is first established, we regard this as the start of the supply chain cycle. These supply chains are referred to as new or developing supply chains. Several technologies may be in competition at the early stages of the first lifecycle stage, which we refer to as nascent. Additionally, there may be various supply chain choices that may be utilized in the future, not all of which are likely to advance further. When a new supply chain forms, existing supply chains could also be affected in the beginning. The supply chain is being used more and more, and its enabling technologies and procedures are performing better and remaining stable. These are the hallmarks of the supply chain lifecycle growth stage (Georgiadis et al., 2006).

This could result in a large increase in product throughput in physical supply chains, which could have an equivalent impact on the quantity of knowledge shared, information exchanged, or services rendered, depending on the specifics of the chain. The supply chain typically has robust and dependable underlying supply chain processes and enabling technologies, and it reaches the mature stage when demand reaches a consistent level with a high degree of certainty. Since a mature market is usually supplied in the mature stage, the nature and quantity of supply chain change are generally quite minor. Declining throughput is a hallmark of declining supply networks, which can occur for a number of reasons, including market decline or the replacement of old supply

chains by new ones. It's also important to remember that businesses might acquire reasonably established supply chains through strategic outsourcing or mergers and acquisitions. However, given the context of the supply chain lifecycle that is being examined here, we do not see such acquired supply chains as novel (Georgiadis et al., 2006).

2.4 Critical Review of Supply Chain Management Definitions and Terminology:

The supply chain is made up of all the processes and activities related to the movement of information and items from the stage of raw materials to the final user of the good or service, as we demonstrated in the previous section. Supply chain management is the term used to describe the coordination of actions and procedures among supply chain participants (Handfield and Nichols, 2003).

The goal of supply chain management (SCM) is to oversee the exchange of goods, services, and information across a network of businesses, consumers, and supply chain partners. and supply chain management has expanded and changed significantly since it was first introduced as a concept in the 1980s (Russel and Taylor, 2009).

A number of scholars claim that the historical development of the logistics function laid the groundwork for supply chain management (SCM), while others view SCM and logistics as synonymous. Logistics, often known as supply chain management, is the department in charge of moving and storing goods as they go from initial suppliers to middle-tier vendors to ultimate consumers. There are distinctions between the concepts of supply chain management and traditional logistics, even if SCM includes logistics management tasks. While supply chain management (SCM) considers movement through all linked organizations that make up the supply

chain, logistics is the management function in charge of all material movement inside the confines of a single organization. In addition to recognizing all aspects of conventional logistics, supply chain management also encompasses marketing, new product development, financing, and customer service (Waters, 2008).

Four conceptual frameworks—traditionalist, re-labelling, unionist, and intersected—are used to compare supply chain management to logistics.

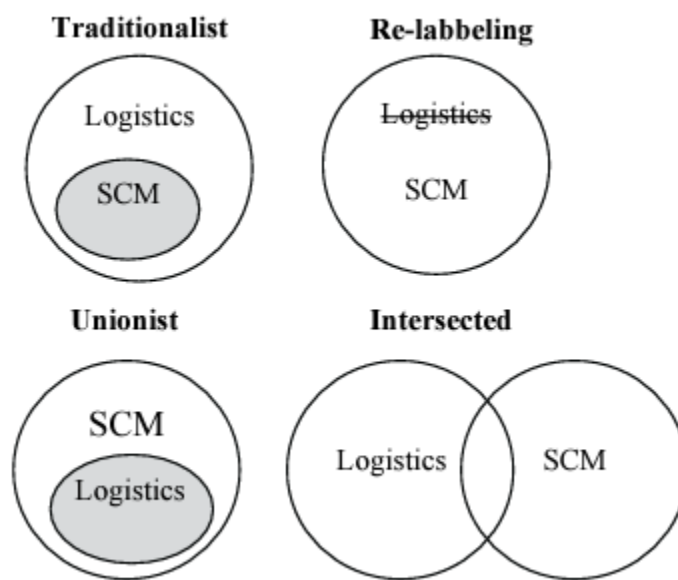


Figure (2) shows supply chain management logistics

Source: (Larsson and Halldorsson, 2004)

SCM is seen by the traditionalist school of thought as a subset of external or interorganizational logistics. From a re-labelling perspective, logistics is simply renamed as supply chain management (SCM). The unionist perspective confines logistics to one of several business processes or domains, arguing that logistics is a component of SCM. Logistics handles operational decisions, SCM is associated with strategic decisions, and tactical decisions fall under the intersection,

demonstrating that SCM is a wide approach that spans many, if not all, company domains (Larsson and Halldorsson, 2004).

However, (Ballou et al., 2000) distinguish three SCM dimensions, which are as follows: intra-functional dimension (with reference to how the business manages the operations and procedures related to logistics), Interorganizational coordination, which deals with the coordination of the chain of activities taking place between legally distinct companies in compliance with the product flow, and inter-functional coordination, which refers to the coordination of activities (pertaining to certain functions) between the functional areas of the company (Ballou et al., 2000).

2.5 Supply chain integration (SCI):

Interorganizational coordination, which deals with the coordination of the chain of activities taking place between legally distinct companies in compliance with the product flow, and inter-functional coordination, which refers to the coordination of activities (pertaining to certain functions) between the functional areas of the company. Achieving effective and efficient flows of information, money, and choices is the aim in order to maximize customer value at a low cost and a rapid pace (Flynn et al., 2010).

In the literature, the three components of SCI—internal, supplier, and customer integration—have received widespread acceptance. The degree to which a manufacturer structures its own organizational strategies, procedures, and processes into cooperative, synchronized processes, in order to meet the needs of its consumers and effectively engage with its suppliers, is known as internal integration (Flynn et al., 2010; Wong et al., 2011; Zhao et al., 2011).

Data and information system integration are necessary for internal integration inside a company since they allow businesses to integrate operations across many functional areas. involving

communication, cooperation, and group decision-making between the various roles. Internal integration makes functional goal alignment and responsiveness easier through cross-functional information sharing and collaboration. improving outcomes like operational performance as a result. Firm performance and competitive capabilities (Antonio et al., 2009; Williams et al., 2013).

The degree to which a manufacturer collaborates with its external partners to organize inter-organizational strategies, practices, and procedures into cooperative, synchronized activities is known as external integration. These primarily entail close cooperation, system coupling, information exchange, and cooperative decision-making with important suppliers and clients. Whereas external integration concentrates on cooperation across supply chain partners' organizations, internal integration concentrates on cross-functional cooperation within businesses. This complete coverage and management of the supply chain is achieved through internal and external integration (Huo et al., 2015; Sun and Ni, 2012; Wiengarten et al., 2014; Yang et al., 2016).

2.6 Sustainability management practices (SMPs):

Businesses that aim to enhance sustainability endeavor to implement both internal and external SMPs. SMPs within an organization. Internal operating procedures that improve sustainability at the corporate level are being used by businesses more and more. Among these strategies is environmental management, which attempts to reduce expenses associated with pollution of the environment (Lucas and Noordewier, 2016).

Reuse, recycling, and remanufacturing are examples of activities that promote sustainability and reduce the harmful environmental effects of waste disposal, raw material extraction, transportation, and distribution while maximizing product recovery and reuse. By enhancing

worker well-being, an additional internal operational practice advances the social dimension of sustainability (Pagell and Gobeli, 2009; Voorde et al., 2012).

According to Pagell and Gobeli, there is a good correlation between operational effectiveness and employee well-being practices. Because the number of workplace accidents and injuries has increased over the previous ten years, it is now crucial to maintain workplace safety in order to safeguard employees' health and well-being and advance their welfare (Das et al., 2008; Okun et al., 2016).

Ensuring health and safety conditions is essential for businesses striving for sustainability. Pagell and Gobeli focused on the records kept by organizations on preserving the health and safety of their workers (as shown by safety violation records) in order to study employee well-being. Vachon and Klassen (2008) measured social equality within human resource operations and business strategy using fair labour practices related to the workplace and employee well-being (Jørgensen, 2008).

SMPs between organizations. Businesses' efforts to address sustainability go beyond their internal operations; they also consider the capabilities of their suppliers and assist them in meeting sustainability standards that meet the expectations of their customers. Events like the 2007 Mattel toy recall and Unilever's suspension of its palm oil contract indicate that a supplier's noncompliance with environmental regulations can have a significant detrimental effect on the target firm, including short-term financial loss and long-term harm to the company's reputation. Companies like Adidas and Nike have had difficulty addressing concerns of social justice including cruel working conditions. The main source of these environmental and social issues has been vendors who have operated outside of their direct supervision. As a result, businesses have come to understand how crucial it is to interact with supply chain partners in order to effectively

manage sustainability. The strategic significance of integrating sustainability issues in the performance management of their primary suppliers has been increasingly acknowledged by focal firms (Gimenez and Tachizawa, 2012).

2.7 Relationship between SCI and SMPs:

Businesses were able to support sustainable practices through a combination of external and internal factors. The term "factors that assist firms in achieving sustainability practices" refers to enablers. The company's environmental commitment, senior management's backing, the availability of resources, the supply management skills of purchasing professionals, and appropriate performance assessment methods are just a few examples of internal enablers. Supply chain-related competencies including trust, national culture, and technology and logistical integration are examples of external enablers. Possessing a high level of both internal and external supply chain integration (SCI) to support a company's supply management capabilities is crucial for enabling its supply management programmes (SMPs), as they require coordination across all of their supply chain partners (Gimenez and Tachizawa, 2012).

One of the most important functional practices in the supply chain has been supplier integration. Managing suppliers has traditionally involved exchanging important information, incorporating suppliers in the process of producing new products, and creating supplier programmes in order to preserve high standards and long-term strategic relationships. By fostering mutual trust and a culture that works well together, businesses establish strategic partnerships with significant suppliers and preserve enduring, positive connections while exchanging information and vision. Such strategic alliances have emerged as a key SMP enabler given the growing significance of the supplier's role in SMPs (Paulraj, 2011; Wilding et al., 2012).

Engaging in cooperative efforts with suppliers throughout the supply chain can also assist focal enterprises in recognizing a variety of sustainability issues. Researchers looked into how important it was for businesses to have strong, long-term relationships with their suppliers as they made the shift to sustainability. Bundles of supply chain techniques made it easier to establish green supply chains, according to their study on green supply management skills. The cross-functional liaisons, supplier partnerships, purchasing policies and processes, and environmental technical skill literacy (e.g., advanced awareness of environmental issues and how they affect supply) are all included in these packages (Huq et al., 2016).

Manufacturing performance was positively impacted by cooperative environmental activities with supply chain participants, such as adopting common environmental goals, collaborating on environmental planning, and cooperating to eliminate pollution or other environmental effects. To sum up, cooperative methods and information exchange with suppliers are required to support SMPs within and between organizations (Huq et al., 2016).

Businesses that seek to increase sustainability adopt SMPs that do so both within and between organizations. Internal operational procedures that improve sustainability at the business level are referred to as intra-organizational SMPs. Nonetheless, businesses are already addressing sustainability outside of their own walls. Additionally, they have turned their attention to inter-organizational SMPs that support their suppliers in meeting sustainability requirements and meeting the expectations of their clients. Supplier integration may play a key role in helping businesses successfully implement intra- and inter-organizational SMPs because it is characterized by strategic collaboration (Okun et al., 2016).

Customer integration assists businesses in creating enduring ties with their clients and raising client satisfaction levels. Businesses can better understand their consumers by gaining direct access to

information about their wants and expectations through customer integration techniques. In the era of sustainability, understanding and meeting client needs is essential. Businesses that include customers into their supply chain and operational processes can increase revenue by providing high-quality goods and services while upholding environmental and social sustainability. They are also better equipped to serve potential clients. In particular, pressure from external stakeholders and customers is a key factor in SMPs. Incorporating a company's largest clients into integration strategies helps facilitate the exchange of information across organizations, allowing the company to better understand the financial requirements as well as social and environmental concerns of its clients. The application of SMPs may follow from these realizations. Since client pressure encourages SMPs throughout a company's Customer integration among supply chain participants may be crucial to the implementation of intra- and interorganizational SMPs (Gelhard and von Delft, 2016).

The goal of internal integration is to eliminate functional barriers through collaborative decision-making, information sharing, and cross-functional teamwork. Internal integration promotes information sharing and cooperation across various functions by strengthening the horizontal connections between internal functional units. Organizational objectives must change, new talents and skills must be acquired, and organizational structures that are more sustainable must be implemented for SMPs to be implemented successfully. Internal integration could be a key factor in the development of new sustainability-related skills and capabilities through cross-functional cooperation (Zhao et al., 2011).

Furthermore, internal integration facilitates the harmonization of operational procedures and objectives with strategic company initiatives, such as environmental sustainability. Through cross-functional collaboration, such alignment may aid in converting a company's sustainability

priorities into operational practices, improving the organizational structure's sustainability (Wolf, 2014).

2.8 Supply Chain Strategy:

SCS has been acknowledged as a vital part of SSCM since it makes SCM operations easier and gives managers the tools they need to successfully compete in the market. It connects and synchronizes information sharing between suppliers and customers as well as supply chain (SC) operations. The coordination of long-term strategic cooperation amongst decision-makers in the universal network for process development and product production is known as supply chain synchronization, or SCS. To get the intended outcomes, a methodical approach that trades off operational modules and performs a cost-benefit analysis is used. Modern organizations follow flexible SCS and can keep conscious of changes under any circumstances; indeed, SCS provides guidelines across all SC levels, facilitating firms' operational activities (Kumar et al., 2017; chopra, 2014).

By including sustainability objectives, supply chain strategy (SCS) has shown to be a useful idea for managing operations and network architectures. SCS gives businesses a competitive edge, helps them reduce waste, guarantees that there is no adverse environmental impact, and helps them accomplish economical supply operations. It also enhances customer service. It takes extensive organizational restructuring to align people and processes with SCS. This involves redefining and reclassifying responsibilities to concentrate on change destinations, simplify processes, and develop new skills; it also necessitates redeploying underperforming assets in order to achieve the anticipated increases in SC performance. SCS demonstrates the pattern of choices made about the sources of products in a successful SSCM system, capacity planning, raw material management, and product and service delivery. Because of this, dynamic organizations frequently employ a

variety of tactics, such as combining SSCS with their overarching business plan (Perez-Franco et al., 2016; Arora & Sivakumar, 2016).

The profitability, competitive position, and asset utilization efficiency of an organization can be used to evaluate its performance. The primary goal of SCM is to connect organizational strategy and performance; nonetheless, it is still difficult to pinpoint the precise characteristics of SSCM that should be linked to performance. Since the successful integration of numerous SC partners is a prerequisite for attaining SC success, the creation of SCS necessitates an examination of various internal and external elements. A variety of tasks are involved in industrial operations, including purchasing, selling, distributing, and transporting information to and from stakeholders and SC partners. Developing country organizations who have begun to realize the benefits of SCS are incorporating it into their entire business strategy in order to increase stakeholder satisfaction and organizational performance (Abbas et al., 2014; Wang, 2019).

From the standpoint of a developing market, factual support for this realization is still lacking. A number of recent studies have attempted to elucidate the critical role that the supply chain plays in the operations of organizations. SCS has received particular focus in this research, which highlights the need to address contemporary global issues. SCS affects big businesses in developed nations in a big way. Nevertheless, the majority of emerging nations do not yet possess the necessary technology advancements to employ automated methods. In order to guarantee quality and client happiness, which will improve performance and spur growth, they must thus rely on the plan (Tarigan et al., 2021).

2.9 Relationships between SMPs and sustainability performance:

It has long been known that appropriate sustainability performance indicators and internal environmental management techniques have a good relationship. Environmental procedures, for instance, that enable a company to create environmentally friendly products can lessen those items' negative environmental effects and enhance environmental performance. In a similar vein, environmentally friendly recycling procedures support businesses in their efforts to reuse, recycle, and remanufacture components, materials, and returned goods. Starbucks, 3M, and Wal-Mart's recycling policies are examples of this (Sarkis et al., 2010).

The goal of employee health and safety systems is to improve worker wellbeing. There exists a positive correlation between an organization's employee well-being initiatives and enhanced environmental quality as well as improved sustainability performance outcomes. Academic research has validated the idea that employee-related behaviors that are positively correlated with employee satisfaction and attitudes result in general quality improvements. A company's efforts to strengthen internal operational health and safety can also benefit the company's reputation. Thus, we argue that employee behaviors within the company have a favorable correlation with sustainable performance (Pagell and Gobeli, 2009).

Businesses are shielded from potential risks associated with environmental harm and social norm breaches by using appropriate assessment techniques to monitor and evaluate suppliers on whether they satisfy sustainability requirements. Because it is highly likely that supplier assessments will improve environmental performance and result in positive economic performance, monitoring could therefore prevent needless financial loss (Koplin et al., 2007).

In addition, monitoring supplier qualifications during the assessment process aids companies in maintaining their corporate legitimacy and reputation, which enhances social performance. In many countries, the sensible response to the rising number of supplier-related mishaps has been to develop the long-term capability of suppliers to satisfy more difficult sustainability standards. Businesses that provide education and training programmes to impart knowledge in line with sustainability standards have a greater chance of fostering mutual trust with their suppliers and improving their social, environmental, and economic performance. Collaborating with suppliers along the supply chain can assist a business in recognizing the various obstacles arising from sustainability concerns, encompassing environmental and social aspects (Yang et al., 2010).

A corporation can gain sustainable power by spending resources to increase suppliers' understanding of sustainability standards, even though doing so might be expensive and take time. This gives the company the flexibility to handle unforeseen interruptions that could devastate its entire supply chain (Bai and Sarkis, 2010).

2.10 Supply Chain Network Design:

Over time, SCS and network architecture must adapt to measure and promote behaviors that maximize an organization's long-term success. An organization won't achieve the intended performance level if it doesn't restructure in accordance with the stated objectives, and the strategy as a whole will be questioned. The organization expects that the supplier's network architecture will adhere to the producers' production specifications (mran, 2020). As a result, providers should consider aspects related to price, delivery, and quality while making decisions. The performance of the designated location and linked parties in SCM is directly impacted by SCND (Jin et al., 2017). The evolution feature of the SCND structure serves as the foundation for the modification, and the issue is how to estimate and then modify the network structure. Because of this, SCND

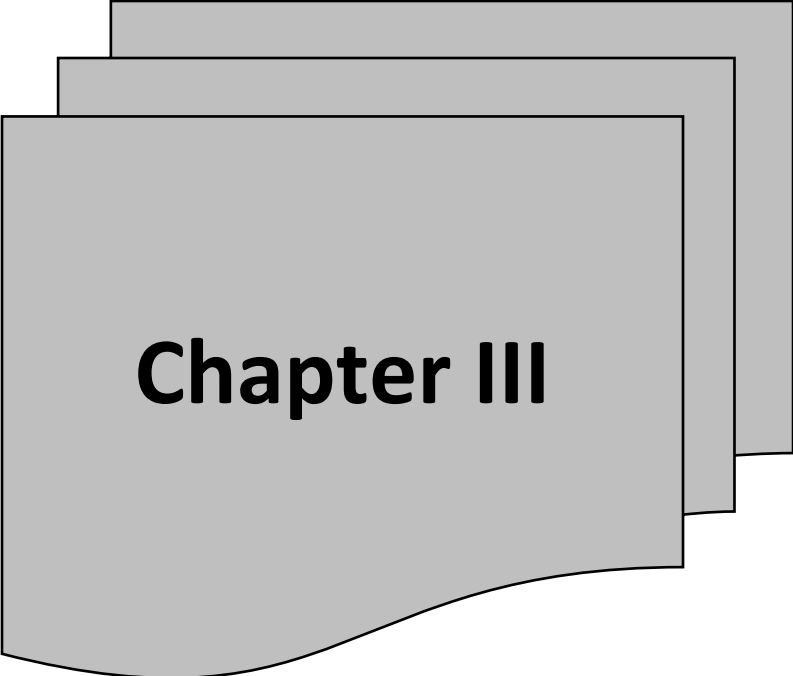
becomes difficult for those involved in distribution as well as manufacturing. Like SCS, SCND has a significant potential to influence the overall performance of an organization (Tiwari, 2016).

The goal of SCND's configuration theory is to provide customers with products in a useful and efficient manner. It views the SCND as a strategic goal to ascertain the quantity, position, and capacities of the production facility, distribution hubs, and supplier groups in order to select the most efficient material flow along the supply chain. SC relies on an effective network architecture to reduce operating costs and communicate with customer feedback. Conversely, SCND holds significant sway over SCM decisions, which impact organizational performance and are related to all SCS decisions. SCND as a manufacturing, supply, and demand component combined (Abbas, 2020; Lin & Wang, 2011).

The SD perspective has received very little attention in prior SCND research, which has mostly concentrated on profit-related issues. In order to identify the ideal degrees of capability and operational output associated with sustainable SC operations, a revised framework for SCND was made available. Even while coordination mechanisms and importance to each management are important, the supply chain design is still mostly unknown. In their analysis of the SCND, (Lin & Wang, 2011). stressed that supply disruptions—a.k.a. delays or inability in the procurement process—cause losses in inventories and sales. SCND has an impact on supply chain operations and minimizes disruptions, but it also has an impact on the business's general operations. Better SCND makes a company less susceptible to operational dysfunctions, which enhances organizational performance.

A number of recent research (Shahzad et al., 2020; Pradabwong et al., 2017; De Vass& Miah, 2018) have also emphasized the significance of various SCND methodologies and their impact on process enhancement of organizational performance. Rich countries have more resources to

implement automated systems, which leads to improved SCND and better operational and financial performance for the firm; in underdeveloped countries, on the other hand, this effect is not well studied.



Chapter III

Chapter 3

The impact of the supply chain on business sustainability

- **Introduction.**
- **Sustainability management practices (SMPs).**
- **Review of Literature on Sustainability.**
- **Sustainability Performance.**
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Chapter 3

The impact of the supply chain on business sustainability

3.1 introduction:

Businesspeople must continue to meet market demand with maximum sales levels and maintain maximum production levels due to the fierce competition in the market. In order to satisfy this need, businesses need to keep innovating their products and services to stay ahead of the competition. Businesses need to prepare plans in order to thrive in the face of intense global competition. In order to compete in a competitive market and endure amidst a growing number of competitors, businesses must be able to sustain their competitive edge, quality, and value (Studies & Adeeleh, 2020).

To remain competitive, the company's performance needs to be continuously enhanced. The degree to which an organization is able to meet the expectations of its major stakeholders, such as owners, employees, and customers, is known as organizational performance. A company's performance serves as a critical benchmark to determine whether or not it has gained a competitive edge. Reducing production costs to the reasonable minimum needed to satisfy consumer demands is one of the best ways to compete effectively in the market. Appropriate supply chain management, which is thought to be crucial to a business organization's success, can help achieve this (Carvalho et al., 2012).

Due of this, a number of academics have recently focused on sustainable supply chain management. This idea integrates sustainability with supply chain management, and it mandates that all business operations increase the sustainability of the supply chains they operate. It can also be a company's strategic plan for reaching specific financial objectives, which entails methodically

arranging business dealings between buyers and sellers as well as between organizations. Every business manager in this situation needs to be capable of organizing, carrying out, and overseeing the chain of supplies procedure. Through the application of effective chain of supplies, corporate organizations can ensure a lasting competitive advantage by lowering the overall cost of meeting customer needs relative to their competitors in the market (Kroes & Ghosh, 2010).

Over the last ten years, business sustainability has progressed from greenwashing and branding to a critical strategic need. international corporations in business are still concentrating on achieving performance in sustainability as required by investors and regulators, who also want the sustainability performance disclosure data over 14,000 international public businesses are now listed, up from fewer than 100 a decade ago. Both their environmental, social, ethical, and governance (ESEG) sustainability performance that is not based on money data and their economic sustainability performance in terms of finances (ESP) must be disclosed. There are numerous conflicting ideas of sustainability, and most sustainability criteria remain optional. A strategic necessity and practical approach to business sustainability are required in this dynamic and extremely hazy realm concept corporate sustainability, in which the connection between ESP and ESEG may be seen as conflicting/competing or complementing/completing (Rezaee, 2018).

In order to address ESEG concerns and generate enduring profitability and wealth creation for its investors, corporate organizations have been confronted with the problem of implementing appropriate sustainable supply chain policies and practices in recent years. The need to incorporate sustainability's non-financial ESEG and financial ESP elements into supply chain management is rising. By emphasizing process improvements, Sustainability of the supply chain (SCS) is progressing in providing sustained long-term profitability. This section provides a structure for integrating sustainability reporting and assurance, sustainability performance dimensions, theory

and standard implications, integrating assurance into SCS on sustainability reporting in order to provide shared benefit for all stakeholders (Rezaee, 2018).

3.2 Sustainability management practices (SMPs):

Businesses that aim to enhance sustainability endeavor to implement both internal and external SMPs. SMPs within an organization. Internal operating procedures that improve sustainability at the corporate level are being used by businesses more and more. Among these strategies is environmental management, which attempts to reduce expenses associated with pollution of the environment (Lucas and Noordewier, 2016).

Reuse, recycling, and remanufacturing are examples of activities that promote sustainability and reduce the harmful environmental effects of waste disposal, raw material extraction, transportation, and distribution while maximizing product recovery and reuse. By enhancing worker well-being, an additional internal procedure for operations advances the sustainability's social component. According to Pagell and Gobeli, there is a good correlation between operational effectiveness and procedures for the well-being of employees. (Pagell and Gobeli, 2009; Voorde et al., 2012).

Due to the rise in the quantity of occupational accidents and injuries increased throughout the previous ten years, it is now crucial to maintain workplace safety in order to safeguard workers' well-being and well-being and advance their well-being. Ensuring health and safety conditions is essential for businesses striving for sustainability. Pagell and Gobeli focused on the records kept by organizations on preserving the health and safety of their workers (as shown by safety violation records) in order to study employee well-being. Vachon and Klassen (2008) measured social

equality within business plans and human resource operations using fair labour practices related to the workplace and employee well-being. (Das et al., 2008; Okun et al., 2016).

SMPs between organizations. Businesses' initiatives aimed at addressing sustainability go outside of their internal business processes; they also consider the capabilities of their vendors and assist them in fulfilling sustainability criteria that satisfy their clients' demands. A supplier's failure to meet Environmental regulations may have a major detrimental effect. impact the main business, such as short-term financial loss and long-term damage to the business's reputation. Examples of such incidents include the Unilever palm oil contract suspension and the 2007 Mattel toy recall (Zhang et al., 2011).

Companies such as Nike and Adidas have had difficulties in tackling social equity concerns, including abusive labour practices. The main source of these environmental and social issues has been vendors who have operated outside of their direct supervision. As a result, businesses have come to understand how crucial it is to interact with supply chain partners in order to effectively manage sustainability. The strategic significance of integrating sustainability issues in the performance management of their primary suppliers has been increasingly acknowledged by focal firms (Gimenez and Tachizawa, 2012; Seuring and Müller, 2008).

3.3 Review of Literature on Sustainability:

The performance and reporting of business sustainability have garnered a lot of attention in writings on supply chain management. Sustainability, according to Cruz and Marques (ruz & Marques, 2014) is a social goal that focuses on attaining the triple bottom line—profit, environment, and people—performance. (Rezaee, 2016) describes corporate sustainability as the practice of focusing on financial ESP in generating shareholder profit while achieving non-

financial ESEG sustainable performance safeguarding the objectives of every other stakeholder. Numerous research streams focus on different facets of sustainable supply chain management as well as reporting and performance in sustainability.

The opening phrase of research includes of multiple studies that explore whether being green and socially conscious pays off Regarding the manner in which commercial entities ought to manage social and environmental challenges in order to determine the importance of social and environmental activities to SCS. The emphasis of this research stream is on the value that social and environmental programmes add to a company's entire value chain, including customer interfaces, distribution channels, completed goods, procedures, and customer services. The findings show that SCS are becoming more and more popular. According to (Simoes and Marques, 2012), performance analysis is important, and as a result, there are several methods (parametric and non-parametric) for assessing the waste services' economic performance (Rezaee, 2016).

The second study stream discusses the potential costs and advantages of sustainability as well as whether expenditures in social and environmental activities has a positive impact on customers' perceptions of goods and services. According to (Tate et al., 2010), institutional pressure is the primary force driving companies' efforts to integrate ESEG sustainability performance, both financial and non-financial, into their SCS plan. These pressures are coming from their stakeholders and should be taken into account (Wijen, 2014).

Drivers connected to stakeholders, processes, and products are the three categories into which (Foerstl et al., 2015). divide the Five contextual drivers of SCS that are interrelated. In addition, this line of research employs the phrase SCS to highlight managerial choices and behaviors that lead to the achievement of activities related to non-financial ESEG sustainability performance in addressing social and environmental issues, as well as financial ESP (production process, capital

flows, material management, and information), and to compare these choices and actions Using best practices for supply chain management (Foerstl et al., 2015).

The third study stream (Pagell & Shevchenko, 2014), looks at several sustainability performance ideas. Business sustainability is addressed by a number of theories, such as Stakeholder theory, agency theory, institutional/legitimacy theory, disclosure/signaling theory, and stewardship theory (Hernandez, 2012).

These theories are discussed along with how they relate to SCS in the following section. Stakeholders perceive the sustainability performance aspects (ESP and ESEG) as actions with added value that generate worth for them, in accordance with stakeholder theory. Good businesses (strong performance in sustainability) set by demonstrating their legitimacy as good corporate citizens through corporate transparency and a corporate culture that is linked to reputation management, they set themselves apart from bad enterprises (poor sustainability performance), in accordance utilising the theories of signaling, disclosure, and legitimacy and institutions. According to stewardship theory, management is a custodian of all resources and capital, including social, economic, personal, industrial, social and cultural, and environmental (Aravind, 2011).

The application of standards, specifically those created by ISO, the International Organisation for Standardization subject of another line of research. Specifically, ISO 9000 aims to improve ISO 14,000 for product quality advances ISO 26,000, environmental management, reporting, and auditing emphasizes the profit, people, and planet triple bottom line. The problems of standard enforcement and symbolic adoption (Christmann & Taylor, 2006; Delmas & Montes-Sancho, 2010), and sustainability ratings and certifications. have all been clarified by earlier research on the adoption of sustainability standards. Sustainability standards are presently best practices,

predetermined procedures, and voluntary methods used to evaluate and report a company's ESG sustainability performance (Bartley, 2007; Chatterji & Toffel, 2010).

The last line of relevant study highlights the significance of the financial and non-financial performance of ESEG sustainability as well as financial ESP, but it also offers conflicting data about sustainability in business ESEG initiatives and their effects on profits and company value. The appearance of sustainable development in relation relating to environmental and social issues, their significance for The fields of accounting and finance, their effects regarding reporting, accounting, sustainability, and auditing, and the necessity of scholarly studies on sustainability are all covered in a number of publications (Hopwood, 2009; Gray, 2010; Bebbington & Larrinaga, 2014).

In particular, accounting for sustainability development is described by (Unerman & Chapman, 2014) as a challenging and crucial field of study. More theoretical advancement and diversity are yet required in the fields of SCS in particular and corporate sustainability in general. By establishing a link between market-based financial and operational performance and accounting, as well as environmental supply chain standards, (Golicic & Smith, 2013). conclude that SCS improves a firm's financial ESP. The 2013 Global Corporate Sustainability Report from the United Nations Global Compact discusses the current state of corporate sustainability and highlights the steps that businesses throughout the world have done to include sustainability into their SCS, operations, and strategy (UN Global Compact, 2013). According to the survey, businesses are placing more emphasis on supply chain sustainability (SCS) and are making headway in establishing requirements for their suppliers to include sustainability into their plans and operations.

A comprehensive approach to integrating the sustainability performance's nonfinancial ESEG and financial ESP aspects a firm's total worth chain, from the executive level strategic planning to purchasing, manufacturing process, production design, distribution, outbound logistics, marketing, and customer services, has not been adequately covered by previous research, despite the fact that it has looked at several aspects of SCS (UN Global Compact, 2013).

3.4 Sustainability Performance:

As management is under increasing pressure to cut expenses in the near term while laying the groundwork for sustained expansion, a sustainable supply chain management, and sustainable performance, sustainability may be able to help. Management needs to figure out how to resolve any possible conflict and optimize ESP and ESEG sustainability performance because Companies, society, and the environment have a complex and often tense connection. However, the multifaceted and sometimes contradictory elements of sustainability performance are not adequately explained by a coherent business sustainability framework.

The question of whether ESEG activities and programs—whose costs are direct and tangible but their associated benefits, which are frequently intangible and unmeasurable (like corporate social responsibility)—are appropriate for a firm to engage in has generated a great deal of discussion. An externality that extends beyond ESP disclosure is sustainability performance on ESEG, which can have a favorable or negative impact on investors and other market players (Rezaee, 2018).

Initiatives to implement efficient corporate governance practices, reduce the costs associated with breaking applicable laws, rules, and regulations, Negative externalities include things like poor reputation and branding, ineffective corporate governance practices, an unsuitable tone set by the directors, assertive administration, breaking the law, inadequate safety nets, executives who take

excessive risks, irresponsible corporate social responsibility, pollution, depletion of natural resources, and violations of human rights (Ng & Rezaee, 2015).

Achieving a suitable balance between the both brief and prolonged continuous improvement the core of company sustainability is the performance of financial ESP and non-financial EESG sustainability. Divergent strategies may be employed by management to ensure the sustainability of the organization. One strategy is to argue that sustainability is just about following some optional activities and engaging in philanthropy unrelated to the company's main objective of generating shareholder value. The other developing strategy emphasizes the ongoing improvement of both short- and long-term performance, taking sustainability into account when creating possibilities to create shared value. The growing specificity of global sustainability performance economy is discussed in this section, along with a classification of both monetary and non-monetary ESP and the sustainability performance's ESEG dimensions and the elements of ongoing improvements aimed at achieving sustainability's primary goal of generating shared value. These orientations align well with SCS and show a broad range of perspectives on How the performance of sustainability should be linked to organizational actions (Govindan et al., 2014).

Rather than including important trade-offs, sustainability is generally seen as a continuum of binary decisions that imply rising commitments (Hahn et al., 2010) and ambiguity. Due to this tendency towards the belief that "more is better," disagreements over approaches have not been easily tolerated. As a result, academics, executives, companies, and professional organizations either belong to disparate groups or, regrettably, do you consider yourself to be "interested in sustainability". Actually, recent international initiatives have greatly systematized the definition of sustainability in relation to the ESEG framework, which emphasizes the importance of ethics throughout and lists "economic imperatives" as a top priority (Global Reporting Initiative, 2013).

As a result, disregarding sustainability performance will come to seem like the same kind of foolishness as not considering financial performance when studying organizations. Research on supply chain management in the future and treatment of the social and environmental performance components of SCS should be treated as significant as the economic performance, according to Pagell and Shevchenko. concentrating on the ongoing enhancement of non-financial ESEG sustainability performance and financial ESP makes sense for a variety of reasons, such as making the best use of limited resources, being efficient and effective with costs, satisfying customers, building positive relationships with suppliers, luring and retaining exceptional personnel, boosting company reputation, and generating value for stakeholders. The interaction and tensions between various sustainability performance components can be assessed by concentrating on various the integrated relationships between SCS activities and the ESP and ESEG aspects of sustainability performance (Sustainability Accounting Standards Board, 2013).

Conflicts between non-financial ESEG sustainability performance and financial ESP, as well as conflicts amongst the ESEG components themselves, can arise among the many aspects of the success in sustainability in a number of ways. The monetary and non-financial aspects of sustainability performance present the greatest tension (and consequently, potential conflict of interest), because management is reluctant to invest in and actively participate in ESEG sustainability for fear that doing so would divert funds from shareholders. Due to resource constraints, management must exercise selectivity in determining the scope, size, and nature of ESEG activities, which presents a possible conflict of interest and second level of tension (Touboulic & Walker, 2015).

In addition to a monetary ESP return that is more sustainable conformity of management with ISO 26,000 requirements is anticipated to have a good impact on SCS and closely match the objectives

of investors and enterprises along with those of the global environment and society. Supply chain Supervisors ought to recognize that the actual measurement of a company's Success ought to be judged by more than just its declared profits, as well as through its management, Environmental efforts, moral behavior, and social responsibility. This will help it analyses possible conflicts of interest amongst stakeholders due to differences in the ESP and ESEG elements of sustainability performance. For instance, by selling their products, tobacco corporations may boost shareholder wealth, but at the risk of endangering the health of their consumers. In order to reduce discrepancies between sustainable performance's ESP and ESEG dimensions brought on by variations in the costs and benefits of the private and social spheres, supply chain management employs policies and initiatives (Touboullic & Walker, 2015).

It is essential and difficult to measure performance accurately across all domains—financial, human, social, and environmental. Measurement becomes critical when all tasks are focused on, and it becomes challenging when there are no standard performance indicators. Stakeholders must be informed about the input measurement as well as ESP and ESEG operations, like earnings growth, the number of volunteer hours contributed by staff members, initiatives to lower greenhouse gas emissions, and financial resources allocated to community projects, and the overall count of individuals training for or participating in a specific project or activity (Govindan et al., 2014).

3.5 Importance of sustainability:

For most businesses, sustainability is a top concern—even a strategic one. The great majority of respondent organizations priorities sustainability, according to our study with 85% of businesses considering it to be if not a top priority for certain company's divisions and 23% considering it to be a strategic emphasis for the entire organization. Compared to other sectors, manufacturing,

logistics, and oil and gas industries are more likely to consider sustainability as a strategic priority for their business (39%). Sustainability has an effect on the bottom line in addition to protecting the environment. Companies can boost profits through benevolence and acknowledgment in the marketplace, as well as financial savings from reduced waste (Lozano & von Haartman, 2018).

Global supply chains depend on sustainable practices. Global industries are starting to priorities streamlining their operations and ensuring that their methods are as sustainable as possible. This has resulted in a global push to support transparent, sustainable supply chains. A few businesses are attempting to close the sustainability gap. Large corporations are no longer the only ones concerned with sustainability. Supply chain operators at all levels are also joining the "green" trend, according to a survey through the supply chain Readers' assessment of the publication. Seventy percentage of participants stated that Initiatives pertaining to sustainability held great significance in their respective organizations. Furthermore, 32 percent of them claimed to be under client pressure to continue using sustainable techniques (Clift, 2007).

This is a blatant sign that customers are beginning to care more about the origins of their goods and the mode of transportation they use, therefore businesses should be paying attention to these factors as well. Furthermore, logistics and a sustainable, circular economy are closely related. In a Greenbiz Group poll for UPS, executives in sustainability observed that switching to a sustainable circular system depends heavily on logistics," with 87% of them agreeing (Lozano & von Haartman, 2018).

Businesses must put a renewed emphasis on sustainable operations. The topic of supply chain sustainability has recently returned to prominence due to political transactions. The Paris Climate Treaty, according to Supply Chain Management Review, will encourage companies to consider how their activities affect the environment globally. Businesses are striving to expand their

network reach and service capabilities through businesses such as Aeroscraft, which is aiming to employ airships for alter the worldwide network of supplies. These companies also claim to have lower carbon emissions and higher levels of fuel economy (Hofmann et al., 2014).

Operators must have the proper resources at their disposal to ensure that their companies are acting responsibly towards the environment, as sustainability will remain a critical issue for supply chain and logistics management in the future (Lozano & von Haartman, 2018).

There are three main points in favor of an environmentally friendly supply chain, The problem of Sustainability of the supply chain has gained significant attention in recent times. More than ever, companies are focusing on how their supply chain procedures support environmental initiatives. Businesses are attempting to balance environmental compliance requirements with rising demand while keeping a close eye on their bottom line. Why is it that supply chain operations managers should work to establish the most sustainable supply chain possible? What are this movement's primary motivating factors?

1. Efforts foster business transformation:

In a 2010 interview, The Society for Organisational Learning's founder, Peter Senge, professor the Sloan School of Management at MIT —emphasized how important it is for operations managers to begin considering sustainability in terms of their potential to influence a company's future. Senge stated, the Sloan School of Management at MIT confront [sustainability] issues practically." The ability to narrate a tale about why this is a significant journey is crucial (de Camargo Fiorini & Jabbour, 2017).

The tale is still the same now. Jessica Lyons Hardcastle, a contributor to Environmental Leader, has observed, for example, that businesses are becoming more conscious of how their supply

chains reduce carbon emissions and preserve natural resources. Organizations are essentially shifting the narratives that they use to promote themselves to the rest of the world market by enhancing sustainability and altering business procedures. Operations managers with a vision for the future must think about their sustainability initiatives (de Camargo Fiorini & Jabbour, 2017).

2. Risk management is one and the same:

The growth and opportunities for businesses are not the only things that an environmentally friendly supply chain affects; sustainability can also benefit risk management efforts. Businesses have the chance to become more environmentally compliant by mitigating risk, even inside the IT department. Sustainability ought to be included as a component in terms of risk mitigation, according to research by Mihalis Giannakis and Thanos Papadopoulos published in the International Journal of Production Economics. Organizations may enhance their management strategies and competencies by taking sustainability risks into consideration, which include environmental, economic, and social factors (Fallahpour et al., 2017).

3. Reduce cost and increase revenue:

Including more ecologically friendly techniques can also result in notable financial benefits. This is the reason why many big businesses are changing to become more environmentally friendly. For example, Elizabeth Ichniowski of Spend Matters reports that Coca-Cola committed \$5 billion in an African supply chain project to acquire more sustainable and consistent components for the company's products. Furthermore, Hardcastle mentioned that Apple is advocating for stricter environmental regulations. All of these justifications for a sustainable supply chain come down to the reality that sustainability is quickly emerging as a crucial feature of the contemporary supply chain (Fallahpour et al., 2017).

3.6 Long-Term Collaborative Value Generation:

Enterprises receive criticism for paying little attention to how their activities affect society and the environment in favor of maximizing profits and, thus, creating short-term shareholder value. This behavior of short-termism is at odds in the long run perspective of company sustainability. The focus on sustainability of business is growing, and as it is incorporated into company culture and operations, the production of shareholder value is giving way to "creating shared benefit in a sustainable manner," which aims to safeguard the interests of all parties involved. "Policies and practices that enhance a company's competitiveness while simultaneously advancing the economic and social conditions in the communities in which it operates" constitute the essence of shared value (Porter & Kramer, n.d.).

In order to maximize the benefits of actions on the community and the environment and to generate long-term shareholder value, Management is concerned with improving the financial ESP performance of company activities conducted within the framework of the shared value generation idea. This creates shared value for all stakeholders. In order to Ensure that all stakeholders receive shared value, Businesses need to shift their attention to mission in order to achieve company sustainability. In addition to making a profit and adding value for shareholders, business organizations should broaden their goal to include ensuring shared benefit for all stakeholders. The idea of shared value calls into question how management views development, sustainability, philanthropy, and profits. Business organizations can include non-financial ESEG and financial ESP into corporate settings, SCS, and business cultures through sustainable shared value creation (Porter & Kramer, n.d.).

The rise of business sustainability presents difficulties with allocation limited variety of hazards related to strategy, operations, finances, compliance, and reputation as well as opportunities for

businesses to participate beyond the need for economic gain in value creation to enhance the ESEG profile of companies (McGrath et al., 2004). In order to generate shareholder value, management may try to meet short-term goals (committee for Economic Development, 2007), but sustainability of business pushes administration to concentrate on reaching sustainability of long-term ESEG performance, both financially and non-financially. Management may fail to recognize the significance of extended duration and persistent Sustainability of ESP and ESEG success in generating shared value due to their intense concentration on maximizing short-term financial performance (McGrath et al., 2004).

The perspectives and comprehension of managers about the seemingly contradictory multifaceted elements of sustainability vary greatly, Furthermore, it is frequently challenging to comprehend the valid variations in corporate sustainability strategies due to the nebulous nature of the sustainability idea. In measuring ESP, investors and public firms increasingly priorities long-term market and financial performance measures such profits growth, return on assets, return on investment, long-term stock prices, and research and development (KPMG, 2013).

Executives and board members are "spending more time talking about leading indicators that reflect the long-term health of the company... and sharpening their focus on the company's drivers of long-term value creation," according to a poll of 1400 directors and executives. The primary forces behind long-term value creation are covered in this study, along with performance measurements, leading and Key performance indicators (KPIs) that lag, how to strike the correct equilibrium between trailing and leading KPIs, and strategies for informing all stakeholders about these KPIs. Research from academia indicates that by analyzing the relevance and significance of financial data and its relationship to capital costs and stock values, ESP plays a crucial role in generating value for shareholders (KPMG, 2013).

3.7 Implications of Sustainability Theory for the Sustainability of Supply Chains:

According to the idea of sustainability performance, a company should think about how its activities and SCS impact all parties involved, including the environment, society, and community, in addition to focusing on maximizing short-term shareholder profit. A number of theories, as this section discusses, can explain how the connected ESG and ESEG components of sustainable performance and their seamless connection to SCS are achieved. These theories include stakeholder/agency, institutional, stewardship, legitimacy, and signaling (Rezaee, 2017).

The connection between stockholders, or managers and principals, or agents, is defined by agency/shareholder theory, which also highlights any possible conflicts of interest between shareholders and management. According to management and shareholder theory may have interests that are different from those of their owners and is only responsible to the shareholders for generating shareholder value. Theory of Agency clarifies the principal-agent dynamics as well as supply chain administration's goal of enhancing ESP performance in order to generate shareholder value while paying little to no attention to additional non-monetary ESEG aspects of performance in sustainability (Connelly et al., 2011).

According to Jensen's (Jensen, 2001) "enlightened value maximization" and Freeman's (Freeman, 1984) stakeholder theory, the goal of balancing the goals of every party involved is to maximize sustainable performance and the firm's long-term value. "If a company disregards the interests of its stakeholders, it cannot maximize value.", " according to Jensen. Regarding this, stakeholders are divided into two categories: external stakeholders, which include suppliers, customers, government agencies, the environment, and society at large, and internal stakeholders, which include shareholders, management, and staff (Jensen, 2001).

Enlightened value maximization theory and stakeholder theory encourage value creation for all parties involved via non-financial ESEG sustainability performance and financial ESP. Stakeholder theory has not addressed potential conflicts among stakeholders, despite acknowledging the significance of safeguarding the interests of all parties involved, including shareholders, consumers, suppliers, creditors, workers, the environment, and society (Jensen, 2001).

According to legitimacy theory, businesses must abide by societal as well as political pressure in order to maintain their authenticity through upholding the social compact. Business organizations can attain legitimacy by fulfilling the "social compact" and gaining the backing of the community by concentrating on achieving the performance of ESEG sustainability, both financially and non-financially, as well as appropriate transparency of sustainability results (Guthrie & Parker, 1989).

Sustainability performance and sustainability disclosure are the two facets of company sustainability that signaling theory acknowledges. Companies can distinguish their excellent and noteworthy sustainability results from that of other businesses with less impressive sustainability results by financial reports' representation of the financial ESP sustainability performance data and voluntarily disclosing their ESEG sustainability performance that isn't financial, according to signaling theory. Because it can reveal performance in sustainability data in both ESEG categories, both financial and non-financial, signaling theory is relevant. As a result, sustainability transparency is more important than sustainability performance (Tilling, 2004).

Institutional theory promotes the importance of normative influences in corporate decisions that affect a group of people in resolving a variety of circumstances, opportunities, problems, and challenges that cause the structure to become institutionalized (Meyer, 1977; Edelman, 1992; Tolbert & Zucker, 1983). It implies that companies serve as a forum for people with similar

objectives. According to institutional theory, external measures like laws and regulations may not always be as helpful in fostering sustainable performance as the institutional environment, social issues, company culture, and governance. According to this idea, which centers on business sustainability, a company should function as an institution to serve all stakeholders, including those with social and human needs. As a result, the objective of SCS should be to accomplish shared goals (Roberts, 2004).

Lastly, the theory of stewardship acknowledges that both stakeholders in a commercial organization, both internal and external play an important role in creating shared value. These stakeholders should be responsible stewards who help to create wealth for shareholders while also promoting the welfare of clients, staff, the community, and the environment. The notion of stewardship (Hahn et al., 2010) provides an explanation for any conflicts between different aspects of performance in sustainability in terms of creating mutual benefit. A framework for comprehending the stewardship theory's consequences within the framework of the Relationship between management and stakeholders and multifaceted rewards for performance is offered by business sustainability. Improving sustainable performance is management's main responsibility as custodians of a company's resources and assets in order to generate shared value. In order to maximize the use of all capitals— monetary, manufactured, social, environmental, and reputational —and to manage associated risks, administration—as the custodian of company resources—possess the main responsibility for enhancing both monetary and non-monetary ESP and the sustainability performance of ESEG (Touboulic & Walker, 2015).

3.8 The connection between SMPs and SCI:

According to (Gimenez and Tachizawa, 2012), businesses were able to support sustainable practices because of a combination of internal and external influences. "Factors that assist firms in

achieving sustainability practices" is how they described enablers. The company's environmental commitment, senior management's backing, the availability of resources, the supply management skills of purchasing professionals, and appropriate performance assessment methods are just a few examples of internal enablers. Supply chain-related competencies encompassing faith and national customs, and technology and logistical integration are examples of external enablers. Because SMPs require coordination across all of its supply chain partners, having a high degree of both internal and external supply chain intelligence (SCI) to support a firm's supply management competency functions as a crucial facilitator in supporting its SMPs (Pullman et al., 2009).

One of the most important practical methods in the supply chain has been supplier integration. Managing suppliers has traditionally involved exchanging important information, incorporating suppliers in the process of producing new products, and creating supplier programmes in order to preserve high standards and long-term strategic relationships. Enterprises establish strategic alliances with significant suppliers and sustain enduring, positive relationships by cultivating reciprocal trust and a congruent culture, aside from exchanging insights and data. Such strategic alliances are now a key SMP enabler due to the growing significance of the provider's involvement in SMPs. (Perols et al., 2013; Zhang et al., 2015).

Engaging in cooperative efforts with vendors throughout Additionally, the supply chain assists center companies in recognizing a variety of sustainability issues (Huq et al., 2016; Klassen and Vachon, 2003). Elkington (1998) investigated the significance of strong, long-term relationships with suppliers for businesses transitioning to sustainability. Combinations of supply chain procedures enabled the deployment of environmentally friendly supply chains, according to research by Bowen et al. (2001) on the capacities of green supply management. These bundles comprise technical skill literacy in purchasing and environmental matters (e.g., advanced

awareness purchasing policies and procedures, supplier partnerships, cross-functional interactions, and environmental issues and how they impact supply (Perols et al., 2013).

According to Vachon and Klassen (2008), manufacturing performance was positively impacted by cooperative supply chain environmental activities participants, such as setting shared environmental goals, cooperating on planning for the environment, and reducing pollution or other environmental effects. To sum up, cooperative methods and information exchange with suppliers are required to support SMPs within and between organizations.

Businesses that seek to increase sustainability adopt SMPs that do so both within and between organizations. Internal management procedures that improve sustainability at the business level are referred to as SMPs within the organization. Nonetheless, businesses are already addressing sustainability outside of their own walls. Additionally, they have turned their attention to inter-organizational SMPs that support their vendors in meeting sustainability requirements and meeting the expectations of their clients. Supplier Integration could come into play a key part in helping businesses successfully implement both within and across organizations SMPs because it is characterized by strategic collaboration (Paulraj, 2011).

Customer integration assists businesses in creating enduring ties with their clients and raising client satisfaction levels. By gaining direct access to information about their wants and requirements, companies can enhance their understanding of their consumers through customer integration strategies. In the era of sustainability, understanding and meeting client needs is essential. Businesses that include customers into their supply chain and operational processes can increase revenue by providing high-quality goods Providing services even as upholding environmental and social sustainability. They are also better equipped to serve potential clients. In particular, pressure from external stakeholders and customers is a key factor in SMPs. Incorporating a company's

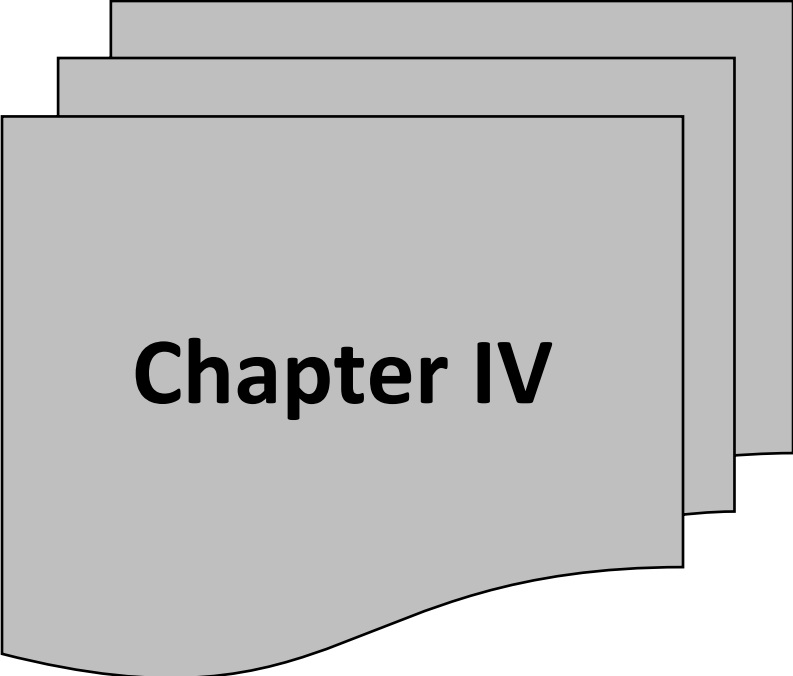
largest clients into integration strategies helps facilitate the exchange of information across organizations, allowing the company to better understand the financial requirements as well as social and environmental concerns of its clients. (Gelhard and von Delft, 2016).

(Gelhard and von, 2016) Delft. The application of SMPs may follow from these realizations. found that consumer pressure encourages supply chain partnerships (SMPs) among all the participants in a company's supply chain. Therefore, customer integration could be crucial for the implementation of SMPs within and between organizations (Pullman et al., 2009).

According to Flynn et al. (2010), internal integration is centered on removing functional barriers through collaborative decision-making, information exchange, and cross-functional teamwork. Integration within promotes sharing of information and cooperation amongst various functions by strengthening horizontal connections between internal functional units' Organizational objectives must change, new talents and skills must be acquired, and organizational structures that are more sustainable must be implemented for SMPs to be implemented successfully. (Antonio et al., 2009; Zhao et al., 2011).

Organizational objectives must change, new talents and skills must be acquired, and organizational structures that are more sustainable must be implemented for SMPs to be implemented successfully. Organizational objectives must change, new talents and skills must be acquired, and organizational structures that are more sustainable must be implemented for SMPs to be implemented successfully. Through cross-functional collaboration, such alignment may aid in converting a company's sustainability priorities into operational practices, improving the organizational structure's sustainability (Zhao et al., 2011).

in this aspect a lot of studies studied the relationship between supply chain and business sustainability, The studies of (Fu et al., 2022; Kang, 2018; Rezaee, 2018; Gouda & Saranga, 2018; Dossou, 2018; Ferro et al., 2017; Quarshie et al., 2016) The results demonstrate that there is strong impact of Supply chain on business sustainability as enterprises' financial and operational results is much enhanced When SSCM is successfully put into practice. The results also demonstrate a high and positive correlation between SMPs inside and between organizations and sustainability performance, or results in terms of the economy, environment, and society. Together, these SMPs enhance social and environmental performance.



Chapter IV

Chapter 4

Methodology

- **Method**
- **Conceptual Framework**
- **Description of sample selection**
- **Data collection**
- **Research Tools**
- **Data analysis and Interpretation**
- **Validity**
- **Reliability**
- **Statistical Methods**

Chapter 4

Methodology

4.1 Method:

The objectives of the current research are measuring the reality of applying supply chain management within the organization, the level of implementation of business sustainability (economic, environmental, social) within the organization as well as measuring the impact of applying supply chain management on enhancing business sustainability (economic, environmental, social) within the organization. To achieve these objectives, the quantitative approach was used in the research in collecting primary and secondary data, in order to provide sufficient data related to the subject of the study, which in turn helps companies operating in the business sector and supply chains inside and outside the Kingdom of Saudi Arabia and the possibility of optimally benefiting from it in all Stages in order to improve and develop the ways in which resources are handled and evaluated based on many systematic and organized criteria based on the opinions of experts in the field of supply chain and sustainability.

4.2 Conceptual Framework

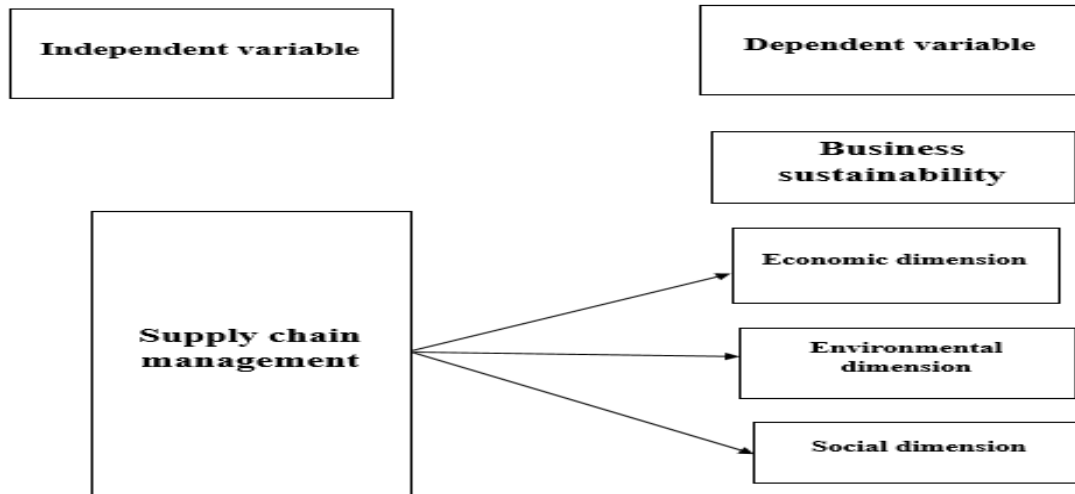


Figure (3) shows Research framework

4.2.1 Research Variables:

According to the previous framework, research variable can be presented as the following:

- **Independent Variable:** The independent variable is represented in Supply Chain.
- **Dependent Variable:** The dependent variable is represented in Sustainability

4.2.2 Research Hypothesis:

The current research raises the following hypothesis:

- The application of supply chain management impacts on enhancing business sustainability (economic, environmental, social) within an organization.

4.3 Description of sample selection:

- **First: Research Society:**

The current research is applied in private sector in Kingdom of Saudi Arabia

- **Second: Description of Sample selected:**

The current research is applied on (68) employees in several organizations in Kingdom of Saudi Arabia with different criteria. The sample was chosen randomly based on many criteria, such as age which included 4 sections ranges from 25 to more than 55 years old. The sample was chosen based on the education level which included 3 levels such as high education, master and doctorate degrees. It also was depended on gender divided into males and females. The sample included work experience which divided into 4 sections by 5 years from zero experience to more than 20 years. The sample was chosen from employees and managers in different fields in organizations. These criteria and characteristics of the sample of the study can be summarized as the following:

Table (1) shows Sample Characteristics

Variable	Categorization	No.	Percentage (%)
Age	25-35 years old	41	60.3 %
	36-45 years old	18	26.5 %
	46-55 years old	6	8.8 %
	More than 55 years old	3	4.4 %
Gender	Males	37	54.5 %
	Females	31	45.5 %
Education level	High Education	42	61.8 %
	Master Degree	17	25 %
	Doctorate Degree	9	13.2 %
Work experience	0 – 5 years	46	67.6 %
	6 – 10 years	18	26.5 %

	11 – 20 years	3	4.4 %
	More than 20 years	1	1.5 %

4.3.1 Age

As shown in the following figure, sample respondents were found 60.3 % of the sample were from 25-35 years old, 26.5 % were from 36-45 years old, 8.8 % were from 46-55 years old and finally, 4.4 % were more than 55 years old.

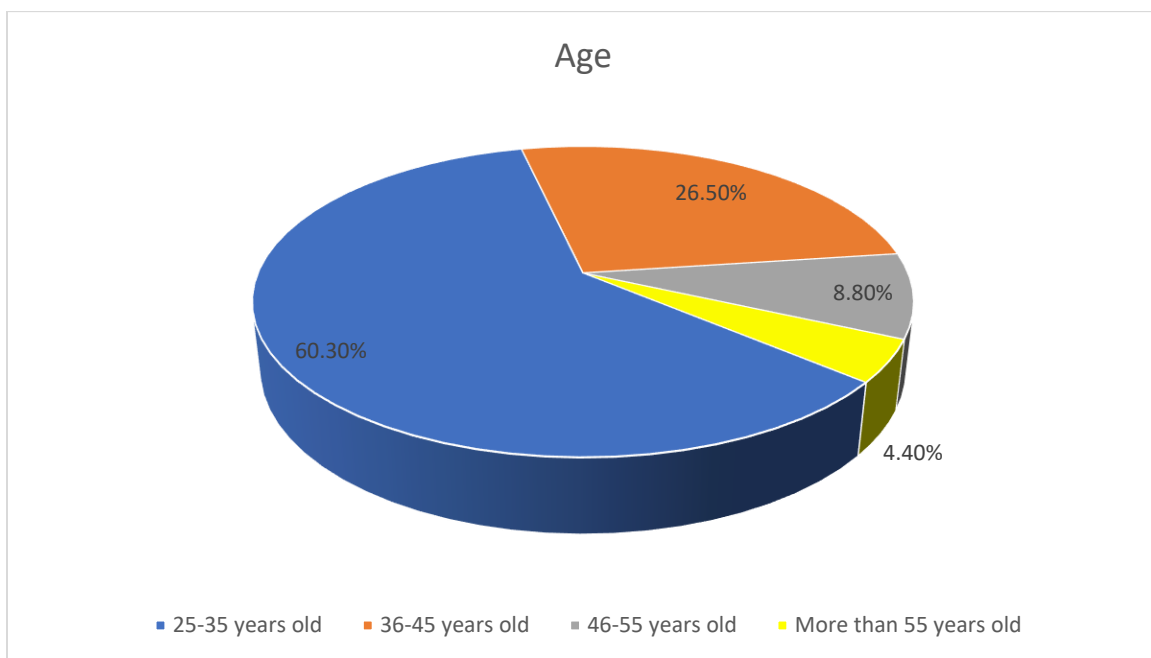


Figure (4) shows Sample age percentage

4.3.2 Gender

The respondents consisted of males and females, where found to be 54.5 % of respondents were males and 45.5% were females as shown in the following figure.

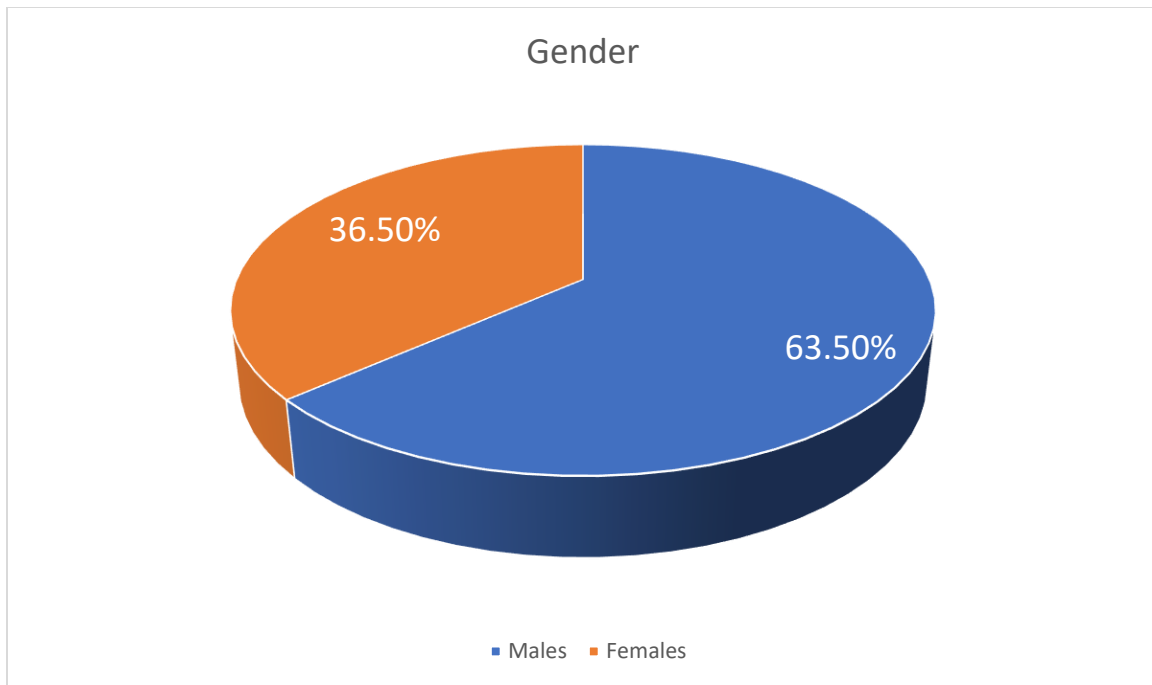


Figure (5) shows Sample Gender Percentages

4.3.3 Educational Level:

As shown in the following figure, the sample of the study included two educational levels, where the sample included 61.8 % with high education and 25 % have master degree, while the sample included 13.2 % with doctorate degrees.

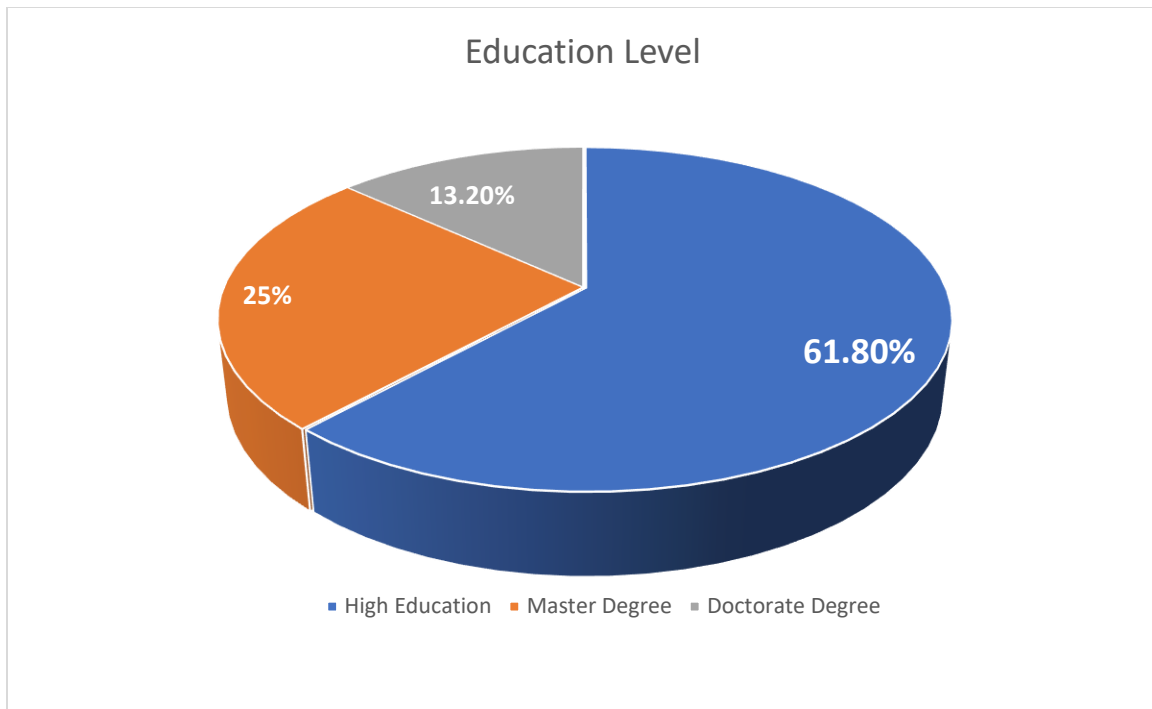


Figure (6) shows Sample Education level percentages

4.3.4 Experience:

The sample included several work experiences levels, where 67.6 % of the sample have (0 – 5) years of experience, 26.5 % of the sample have 6-10 years of experience, 4.4 % of the sample have 11-20 years of experience and 1.5 % of the sample have more than 20 years' experience as shown in the following figure.

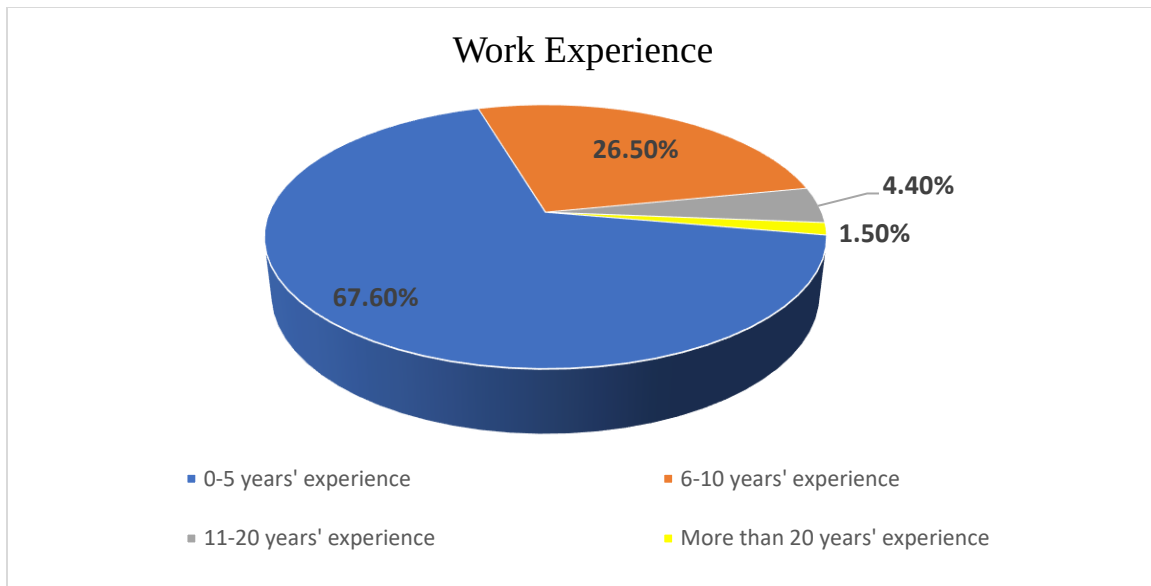


Figure (7) shows Sample work experience percentages

4.4 Data collection:

The current research depends on two main methods in collecting data, these methods will be illustrated as the following:

- **Secondary data:** This type of data is collected through previous literatures that included the variables of the current research.
- **Primary data:** This type of data is collected through applying research tool on the research sample. This is through applying the questionnaire as a tool of data collection through distributing the questionnaire to a number of employees within several institutions within the Kingdom of Saudi Arabia at random, relying on social media platforms and publishing the questionnaire link on them.

4.5 Research Tools:

The current research depends mainly on questionnaire as a toll of data collection, where the current questionnaire consisted of two sections as the following:

- **The first section:** included the demographic data including age, gender, education level and work experience.
- **The second section:** included (26) terms divided into two main sections, where the first section includes no terms and (10) sentences and the second section include (3) main dimensions. The first dimension refers to economic dimension of sustainability and includes (5) sentences; the second dimension refers to environmental dimension which has (6) sentences describes and the third term refers to social dimension of sustainability which includes (5) sentences in order to answer the research questions and achieve research objectives. There were (68) respondents. The questionnaire used Likert scale, where the answers were as shown in the following:

Table (2) shows the five-point Likert scale.

Term	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Answer degree	5	4	3	2	1

4.6 Data analysis and Interpretation:

The questionnaire link was shared through social media with the sample of the study, and they were given the necessary time to answer the questionnaire. After completing the questionnaire, the questionnaire results were collected from the sample for analysis.

4.7 Validity:

In order to identify the validity of the tool used in the study, two methods were used to calculate the validity of the tool used as follows:

4.7.1 Internal consistency:

Internal consistency was used to measure the validity of the tool, by measuring the consistency of each item of the questionnaire with the dimension to which it belongs to supply chain and sustainability in order to measure the consistency of each of the items with the total score in the results of questionnaire.

Table (3) shows Internal consistency of questionnaire.

The first axis			second axis								
			first dimension			second dimension			Third dimension		
N	R	Sig	N	R	Sig	N	R	Sig	N	R	Sig
1	0.715	0.000	1	0.742	0.000	1	0.962	0.000	1	0.965	0.000
2	0.824	0.000	2	0.695	0.000	2	0.775	0.000	2	0.749	0.000
3	0.692	0.000	3	0.942	0.000	3	0.842	0.000	3	0.846	0.000
4	0.720	0.000	4	0.865	0.000	4	0.745	0.000	4	0.745	0.000
5	0.841	0.000	5	0.745	0.000	5	0.823	0.000	5	0.695	0.000
6	0.915	0.000				6	0.866	0.000			
7	0.858	0.000									
8	0.939	0.000									
9	0.946	0.000									
10	0.708	0.000									

From the previous table, it is clear to see that all sentences have correlation levels ranges between (0.692: 0.965) and all sentences have correlation level (0.000) and this refers to that the questionnaire has high consistency level.

4.8 Reliability:

Depending on Alpha Cronbach coefficient in order to identify the level of consistency in order to measure the level consistency of the questionnaire and this is clear in the following table:

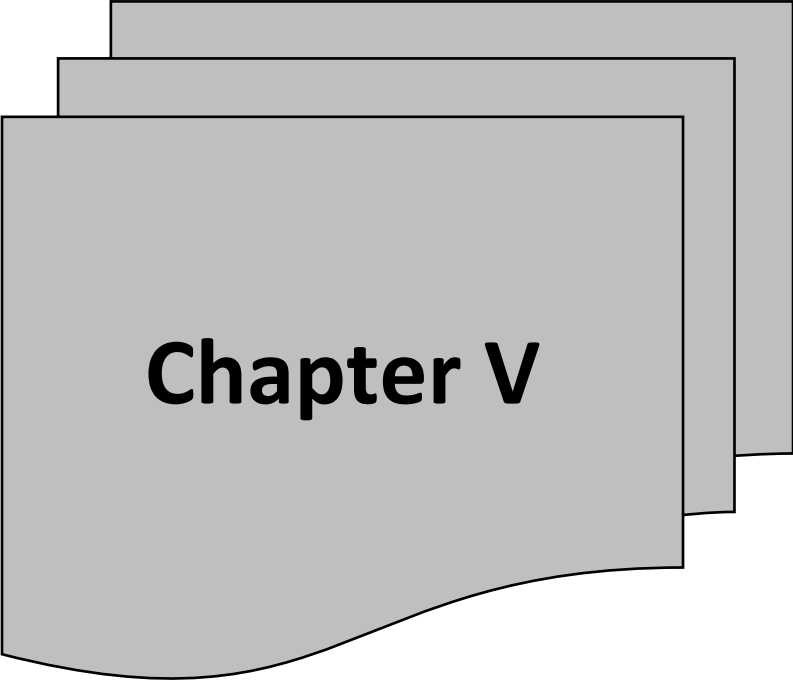
Table (4) shows Results of Alpha Cronbach correlation.

Term	Number of Sentences	Consistency
First Term	10	0.925
Economic Dimension	5	0.73
Environmental Dimension	6	0.86
Social Dimension	5	0.911
Total	26	0.81

From the previous table, it is clear to see that questionnaire has high level of consistency, where the Alpha Cronbach consistency, where Alpha Cronbach values ranged between (0.73: 0.925), and the questionnaire as total has (0.81). This shows that questionnaire has high level of consistency, this means that the results of the questionnaire is fixed at every time it tested in. In the light of the foregoing, the applied questionnaire is reliable and trusted as it has high levels of trust and accuracy.

4.9 Statistical Methods:

Data collected from the current questionnaire from the sample selected depending on (SPSS - 24) in order to analyze data and conduct statistical data through depending on mean, standard deviation and regression in order to test the research hypothesis as well as conduct trusted results



Chapter V

Chapter 5

Result and Discussion

- **Statistical analysis and Results of first independent variable (Supply Chain)**
- **Statistical analysis and Results of dependent variable (Sustainability)**
- **Results of the research**
- **Discussion**
- **Conclusion**
- **Recommendations**

Chapter 5

Result and Discussion

This chapter produces the results of the analysis performed through (SPSS) program depending on mean and standard deviation and Pearson's correlation coefficient in order to evaluate the impact and relation between the variables of the research.

5.1 Results of the first question

The following table illustrates mean and standard deviation of the (Supply Chain) variable according to responses of the research sample:

Table (5) Results of the analysis of the research sample's answers to Supply Chain

N.	Term	Mean	STD	Rank	Level
1	Your organization purchases raw materials at the right cost and good quality.	3.27	0.98	4	Moderate
2	Your organization stores raw materials and arranges them in appropriate places, including ventilation, lighting, and the necessary protective equipment.	2.64	1.06	8	Moderate
3	Your organization uses modern technology in the manufacturing process.	3.05	1.01	5	Moderate
4	Your organization has modern transportation equipment for shipping various goods.	2.36	1.04	9	Low
5	Your organization announces everything new in its field of work.	2.13	1.21	10	Low
6	Your organization enables its workers to get the information they need at the right time.	3.54	0.59	2	High
7	Your organization responds to customer requirements in a timely manner.	2.73	1.01	6	Moderate
8	Your organization adheres to established standards in the production process.	3.29	1.00	3	Moderate
9	Your organization depends on distributors to sell products.	3.59	0.54	1	High
10	Your organization implements after-sales service.	2.65	1.10	7	Low
Total		2.93	0.74		Moderate

It is clear to see that application of supply chain in the private sector in Kingdom of Saudi Arabia is moderate with mean of (2.93) and standard deviation of (0.74).

Through the previous table, it is clear that item (9) which stipulates “Your organization depends on distributors to sell products“ got the first rank with an arithmetic mean (3.59) and a standard deviation (0.54), followed by item (3.54) which stipulates “Your organization enables its workers to get the information they need at the right time“ which obtained an arithmetic mean of (3.54) and a standard deviation of (0.59), followed by Item (8), which stipulated "Your organization adheres to established standards in the production process" which obtained an arithmetic mean of (3.29) and a standard deviation of (1.00). Item (5) which stipulates “Your organization announces everything new in its field of work” came last with arithmetic mean of (2.13) and standard deviation of (1.21). Total section has an arithmetic mean of (2.93) and standard deviation of (0.74).

According to the foregoing, the current research sees that depending on distributors to sell products, depending on workers to get the information they need at the right time and establishing standards in the production process are the most effective factors on the supply chain. As well as, announcing all new about the work is the worst action that organizations must avoid as it has a negative impact on supply chain.

5.2 Results of the second question

This section contains three main dimensions in order to present the dependent variable from all directions, these dimensions are economic, environmental and social. These dimensions will be presented as the following:

5.2.1 Results of Economic Dimension:

The following table illustrates mean and standard deviation of the (Economic) dimension according to responses of the research sample:

Table (6) Results of the analysis of the research sample's answers to Economic dimension

N.	Term	Mean	STD	Rank	Level
1	Your organization outsources part of its activities to other organizations.	2.65	0.78	5	Moderate
2	Complaints from customers are taken into consideration within your organization.	3.24	0.97	1	Moderate
3	Your organization uses models to determine sales volume.	3.21	0.95	2	Moderate
4	Your organization offers products at affordable prices for everyone.	3.02	0.75	3	Moderate
5	Your organization benefits from the experiences of other organizations working in the same field.	2.94	0.96	4	Moderate
Total		3.012	0.87		Moderate

It is clear to see that the economic dimension of sustainability in supply chain in the private sector in Kingdom of Saudi Arabia is moderate with mean of (3.012) and standard deviation of (0.87).

Through the previous table, it is clear that item (2) which stipulates “Complaints from customers are taken into consideration within your organization” got the first rank with an arithmetic mean (3.24) and a standard deviation (0.97), followed by item (3) which stipulates “Your organization uses models to determine sales volume” which obtained an arithmetic mean of (3.21) and a standard deviation of (0.95), followed by Item (4), which stipulated "Your organization offers

products at affordable prices for everyone” which obtained an arithmetic mean of (3.02) and a standard deviation of (0.75). Item (1) which stipulates “Your organization outsources part of its activities to other organizations” came last with arithmetic mean of (2.65) and standard deviation of (0.78). Total section has an arithmetic mean of (3.012) and standard deviation of (0.87).

According to the foregoing, the current research sees that outsourcing part of the activities to other organizations, using models to determine sales volume and offering products at affordable prices for everyone.

5.2.2 Results of Environmental Dimension:

The following table illustrates mean and standard deviation of the (Environmental) dimension according to responses of the research sample:

Table (7) shows Results of the analysis of the research sample's answers to Environmental dimension

N.	Term	Mean	STD	Rank	Level
1	Your organization focuses on continuous improvement to reduce pollution.	2.92	0.96	5	Moderate
2	Your organization rationalizes the use of existing resources.	2.36	1.15	6	Low
3	Your organization focuses on providing environmentally friendly products.	3.25	0.59	1	Moderate
4	Your organization provides occupational safety and health equipment.	3.21	0.93	2	Moderate
5	Your organization contributes to spending on scientific research directed at protecting the environment.	2.95	0.81	4	Moderate
6	Your organization implements recycling for some products.	3.00	0.64	3	Moderate
Total		2.95	0.75		Moderate

It is clear to see that environmental dimension of sustainability in supply chain in the private sector in Kingdom of Saudi Arabia is moderate with mean of (2.95) and standard deviation of (0.75).

Through the previous table, it is clear that item (3) which stipulates “Your organization focuses on providing environmentally friendly products“ got the first rank with an arithmetic mean (3.25) and a standard deviation (0.59), followed by item (4) which stipulates “Your organization provides occupational safety and health equipment“ which obtained an arithmetic mean of (3.21) and a standard deviation of (0.93), followed by Item (6), which stipulated " Your organization implements recycling for some products” which obtained an arithmetic mean of (3.00) and a standard deviation of (0.64). Item (2) which stipulates “Your organization rationalizes the use of existing resources” came last with arithmetic mean of (2.36) and standard deviation of (1.15). Total section has an arithmetic mean of (3.54) and standard deviation of (0.75).

According to the foregoing, the current research sees that focusing on providing environmentally friendly products, providing occupational safety and health equipment and implementing recycling for some products are the most effective factors in the environmental dimension.

5.2.3 Results of Social Dimension:

The following table illustrates mean and standard deviation of the (Social) dimension according to responses of the research sample:

Table (8): Results of the analysis of the research sample's answers to social dimension

N.	Term	Mean	STD	Rank	Level
1	Your organization distributes a portion of its annual profits to its employees.	3.97	0.98	5	High
2	Workers within your organization get all their rights without discrimination.	4.01	1.20	4	High
3	Your organization contributes to the local development process and eliminating unemployment.	4.37	0.95	1	Very High
4	Your organization provides the necessary training for its employees.	4.25	0.95	2	Very High
5	Training programs within your organization aim to strengthen the relationship with stakeholders.	4.02	1.05	3	High
Total		4.124	0.86		High

It is clear to see that social dimension of sustainability in supply chain in the private sector in Kingdom of Saudi Arabia is high with mean of (4.124) and standard deviation of (0.86).

Through the previous table, it is clear that item (3) which stipulates “Your organization contributes to the local development process and eliminating unemployment“ got the first rank with an arithmetic mean (4.37) and a standard deviation (0.95), followed by item (4) which stipulates “Your organization provides the necessary training for its employees” which obtained an arithmetic mean of (4.25) and a standard deviation of (0.95), followed by Item (5), which stipulated "Training programs within your organization aim to strengthen the relationship with stakeholders" which obtained an arithmetic mean of (4.02) and a standard deviation of (1.05). Item (1) which stipulates “Your organization distributes a portion of its annual profits to its employees” came last with arithmetic mean of (3.97) and standard deviation of (0.98). Total section has an arithmetic mean of (4.124) and standard deviation of (0.86).

According to the foregoing, the current research sees that contributing to the local development process and eliminating unemployment, provides the necessary training for its employees and training programs within your organization which aim to strengthen the relationship with stakeholders are the most effective factors in social dimension of sustainability.

5.2.4 Results of the third question

In order to measure the impact of applying supply chain in enhancing sustainability, regression analysis was applied and found the following:

Table (9) shows Summary of regression model

R	R²	R² modified	Sig
0.8305	0.697	0.009	0.000

Sum of Squares	df	Mean ²	F	Sig
12.965	1	12.965	1.124	0.000

Dimension	B	Std. Error	Beta	T	sig
Economic	0.764	0.311	0.135	3.29	0.001
Environmental	0.625	0.266	0.245	3.41	0.000
Social	0.892	0.538	0.501	5.68	0.05

It is clear to us from the previous tables that there is a statistically significant impact of supply chains on business sustainability in the private sector in the Kingdom of Saudi Arabia, as the value of (F) reached (1.124) at a significance level of (0.000). Which indicates that supply chains have an impact on the dimensions of business sustainability by (69.7%), which is a high impact value.

By identifying the impact of supply chains on the dimensions of business sustainability, the value of (t) for the economic dimension was (3.29) at the level of significance (0.001), and the value of (t) for the environmental dimension (3.41) at the level of significance (0.000), and the

value of (t) was The social dimension (0.892) has a significance level of (0.05) and all of them have significant values, which indicates that supply chains have an impact on the dimensions of business sustainability (economic - environmental - social dimension).

5.3 Results of the research:

The current research conducted several results, which will be illustrated as the following:

- The reality of supply chain according to the sample of the research appears in depending on distributors to sell products, enabling its workers to get the information they need at the right time and adhering to established standards in the production process.
- The level of implementation of business sustainability economic dimension appears in receiving complaints from customers are taken into consideration within your organization, using models to determine sales volume and offering products at affordable prices for everyone.
- The level of implementation of business sustainability environmental dimension appears in providing environmentally friendly products, providing occupational safety and health equipment and spending on scientific research directed at protecting the environment.
- The level of implementation of business sustainability environmental dimension appears in the local development process and eliminating unemployment, providing the necessary training for its employees and implementing training programs within your organization aim to strengthen the relationship with stakeholders.
- There is a statistically significant impact of supply chain on business sustainability in the private sector in Kingdom of Saudi Arabia.

5.4 Discussion:

Through comparing the results of the current research and the results based on the literature review, it was found that the results of the current research agree with the results of several studies such as the study of (Fu et al., 2022) which found that sustainable supply chain has a significant impact on speeding the operational and financial performance of businesses. The results of the current research agree with the results of the study of (Kang, 2018) in integration of suppliers and customers is essential for facilitating SMPs within and between organizations. The findings also show that sustainability performance, or results in terms of the economy, environment, and society, is strongly and favorably correlated with SMPs within and between organizations. The results of the study also agree with the results of the study of (Gouda & Saranga, 2018) in demonstrating risk mitigation strategies help reduce supply chain risk, as these strategies do not necessarily reduce the actual supply chain risk that organizations confront. The current research also agrees with the results of study of (Ferro, et al., 2017) as the sustainable supply chain depends on validating a stakeholder structure of corporate sustainability initiatives.

5.5 Recommendations:

Through the results, the study presents a set of recommendations and research proposals that can develop the role that supply chain plays in achieving sustainability. Therefore, the most prominent recommendations reached will be presented as the following:

- The importance of providing the suitable training programs to implement supply chain in the optimal way.
- The importance of share tasks and processes of supply chain in order to achieve the best performance of supply chain.
- Organizations must focus on continuous improvement to reduce pollution.

- Organizations have to focus on providing environmentally friendly products.
- Organizations have to provide occupational safety and health equipment.
- Organizations must implement recycling for some products.
- Complaints from customers must be taken into consideration within organization in order to achieve customer satisfaction.
- Organizations must benefit from the experiences of other organizations working in the same field.

5.6 Conclusion:

The current research shows that depending on distributors to sell products, enabling its workers to get the information they need at the right time and adhering to established standards in the production process are very important in achieving sustainable supply chain. Receiving complaints from customers are taken into consideration within your organization is very important in implementing the economic dimension of sustainability. Providing environmentally friendly products, providing occupational safety and health equipment and spending on scientific research directed at protecting the environment is very important factor in implementing environmental dimension of sustainability in supply chain. Local development process and eliminating unemployment is very important factor in implementing social dimension in supply chain. There is a statistically significant impact of supply chain on business sustainability in the private sector in Kingdom of Saudi Arabia.

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Appendix A

Appendix A

Questionnaire form

Dear/

Please note that the researcher has prepared a questionnaire to assess " **The impact of Supply chain on business sustainability**" as part of the process of preparing a graduation project to fulfill the requirements of obtaining a professional master's degree in business administration."

Given the importance of this subject, please answer the questionnaire's questions. Note that your desire to provide the required data and information accurately and objectively will undoubtedly contribute to achieving better results, thereby assisting the researcher in reaching more accurate results and making more useful recommendations. Please note that the data and information that you will provide for this study will be used only for the purposes of scientific research, and will be treated as confidential, and you will be provided with the results of the study in the event of its completion if you wish to view it.

Thanking you for your kind cooperation

Demographic data:

Please mark with (✓) at your selection in the following:

Age	25 - 35	36-45	46-55	More than 55
(Years old)				
Gender	Male		Female	
Work	0-5 years	6-10 years	11-20 years	More than 20 years
Experience				
Education level	High Education		Master's degree	Doctorate Degree

Topic data:

Please indicate how much you agree or disagree with the following statements about risk management (financial risks, strategic risks, and operational risks), please tick (✓) in front of the statement as follows:

(1) Agree (2) Strongly Agree (3) Neutral (4) Disagree (5) Strongly Disagree.

Term	Selection				
	1	2	3	4	5
How do the dimensions of Supply chain influence business sustainability?					
Your organization purchases raw materials at the right cost and good quality.					
Your organization stores raw materials and arranges them in appropriate places, including ventilation, lighting, and the necessary protective					
Your organization uses modern technology in the manufacturing process.					
Your organization has modern transportation equipment for shipping various goods.					
Your organization announces everything new in its field of work.					
Your organization enables its workers to get the information they need at the right time.					
Your organization responds to customer requirements in a timely manner.					

Your organization adheres to established standards in the production process.					
Your organization depends on distributors to sell products.					
Your organization implements after-sales service.					
What is the statistically significant effect of the Supply chain (Economic Dimension, Environmental Dimension, Social Dimension) on improving the business sustainability					
Economic Dimension					
Your organization outsources part of its activities to other organizations.					
Complaints from customers are taken into consideration within your organization.					
Your organization uses models to determine sales volume.					
Your organization offers products at affordable prices for everyone.					
Your organization benefits from the experiences of other organizations working in the same field.					
Environmental Dimension					
Your organization focuses on continuous improvement to reduce pollution.					

Your organization rationalizes the use of existing resources.					
Your organization focuses on providing environmentally friendly products.					
Your organization provides occupational safety and health equipment.					
Your organization contributes to spending on scientific research directed at protecting the environment.					
Your organization implements recycling for some products.					
Social Dimension					
Your organization distributes a portion of its annual profits to its employees.					
Workers within your organization get all their rights without discrimination.					
Your organization contributes to the local development process and eliminating unemployment.					
Your organization provides the necessary training for its employees.					
Training programs within your organization aim to strengthen the relationship with stakeholders.					