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"IMPACT OF GREEN PROCUREMENT PRACTICES ON SUSTAINABLE PERFORMANCE"

(An Evidence from Pharmaceutical Industry)

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Abstract

Purpose

The major purpose of this study is to find the Impact of green procurement practices on sustainable performance (evidence from pharmaceutical industry). There are so many variables in the green procurement practices that can explain the literature. Moreover, the importance of each factor is also defined for this study. Quantitative research approach used for this study and collect information with the help of questionnaire design. 5 different pharmaceutical companies were selected, and all the respondents were from the procurement department which has direct relation with the supplier, vendors, production, and distribution. A total of 250 respondents were contacted. Analyzing has been done with the statistical methods though SPSS software. Tables and their analysis were used in descriptive analysis and regression method has been used in inferential analysis so that hypothesis can be tested easily. These methods have been selected to know more about the topic in detail and according to the nature of the topic.

Findings

The general findings from this research are to find the Impact of green procurement practices on sustainable performance (evidence from pharmaceutical industry).

Practical Implications

The outcome of this journal can be helpful for the pharmaceutical companies. It elaborates which factors and areas of supply chain should be focused more on when a company goes to achieve the maximum level of sustainable performance.

Keywords

Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation.

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Chapter 1

INTRODUCTION

1.1 Introduction

Because of rising levels of industrialization, the current business climate is characterized by increasing vulnerabilities, and natural administration has become a source of widespread concern for organizations, states, and consumers (Roberts, 2019). The growing concern in the global market for "green" concerns, as well as the scarcity of standard assets, has forced leaders to approach production network techniques from a natural standpoint (Harlan, T. 2021). Green inventory network board (GSCM) is a new field that was inspired by the need for natural cognizance (Srivastava, 2017). Green procurement has emerged as a substantially new way for enterprises to achieve benefit and piece-of-the-pie objectives by lowering ecological risk and impact (Hu and Hsu, 2020). Execution estimate is difficult in supply chains with several sellers, manufacturers, distributors, and pharmaceuticals, whether geographically or globally dispersed because it is difficult to attribute execution outcomes to a single substance within the chain (Sabari, S., Kohzad, M., Sarkis, J., & Shen, L. 2019). Supply chain execution estimation is difficult for a variety of reasons, particularly when looking at multiple levels inside a store network, and green production network execution estimation is essentially non-existent. Considering these impediments and difficulties, green procurement is essential for a variety of reasons (including administrative, promotional, and seriousness grounds). Conquering these barriers is not a trivial matter, but the long-term manageability (ecological and otherwise) and severity of linkages may be dependent on the productive receipt of GSCM (Sharman, Shaft, and Apex, 2019).

Green procurement practices are now a cutting-edge production network technique for securing unprocessed resources and upgrading the pharmaceutical system in organizations. The green procurement process is also known as the sustainable procurement approach (Olusola, O. E., Sugarbush, F., & Strand Hagen, J. O. 2020). One of the main concerns that organizations are capable of addressing is the reduction of waste or contamination during the time spent collecting material in the pharmaceutical system, while organizations are implementing feasible measures to accomplish so (Singh, J., Singh, H., & Kumar, A. 2020). Most systems around the world use strong and harsh measures for manufacturing businesses to lay out green procurement concepts and exhibits that might add esteem to the manufacturing area (Nderitu &Ngugi, 2018). Procurement procedures are critical and a vital approach to contribute to performance excellence. The goal of this part is to give background information on green procurement practices and to enhance its performance from a global viewpoint. Manufacturing enterprises have a vital role in the economy, with most firms encouraged to pursue green initiatives in the raw material procurement process (Flores et al., 2020). Most pharmaceutical organizations have concentrated on it in recent years to better expand their

procurement exercises with computerized rehearses in their operations. This is due to the capability's success as a critical unit for several organizations at the coordinating and functional levels. In general, cautious procurement using mechanical practices may result in gigantic savings store reserves and an expansion in advantages (Percy, 2018).

According to Kalanga (2018), sustainable procurement is a spending and venture strategy that is typically associated with public strategy; nevertheless, it is also relevant to the pharmaceutical industry. In contrast to a confidential cost saving benefit evaluation, organizations that train manageable procurements meet their demands for things, administrations, and utilities in a method that grows net advantages for them and the greater globe (Mamun, A. J. A. 2020). In doing so, they should analyze additional expenses in addition to the standard procurement principles of cost and quality, but realistically speaking, the drawn-out repercussions of a possible provider's methods are sometimes seen as a form of value idea. These components are categorized as ecological, economical, and social. According to Garnier and Renda (2020), public expenditure typically accounts for 15-30% of the national GDP, and each purchase provides a chance to move markets toward innovation and sustainability. Governments may set a good example by implementing important policy objectives through Sustainable Public Procurement (SPP). It helps governments achieve environmental goals such as lowering greenhouse gas emissions, increasing energy and water efficiency, and encouraging recycling. Poverty reduction, better fairness, and adherence to key labor norms may be among the social advantages (Deus, R. M., Botticelli 2017).

Pharmaceutical businesses in Pakistan have faced changes in their workplace because of, among other things, intense global and domestic competitiveness, a more astute customer base and demanding marketplaces, and the work of various and rapidly emerging technologies (Markus, 2019). Despite the use of modern computerized procurement, running expenses have been growing, demanding the deployment of all necessary controls to best serve the customer (Atiyeh, A. T. 2021). As a result, these businesses' operational management becomes important. According to Abdulla (2019), one strategy that firms may use to increase operational productivity is to use electronic procurement. Following that, the assessment attempted to establish a link between the company's procurement execution and the use of electronic procurement techniques. Over time, events such as the energy crisis and general consumerist behavior have enabled people and organizations to appeal, particularly for unpolished components (Mukendi, A., Davies, I., Glazer, S., and Donaghy, P. 2020). Because of limited raw material supplies, the emphasis has shifted to asset protection and reuse. Green procurement is a comprehensive strategy that includes the organization, persons, strategies, and innovation (Nugroho, A. T., and Hakimi, Y. 2019). It is also known as controllable procurement, and

a few businesses recognized long-range savings in energy consumption, rubbish generation, and water utilization, as well as the use of repurposed materials (Victor and John, 2019).

1.2 Background of Study

In recent years, regulation has been limited to financial reward outcomes in areas such as productivity, liquidity, development, and stock exchange execution (Chen, Y., Kumara, E. K., & Sivakumar, V. 2021). The scope of growth has been separated into three categories: transactions, employees, and resources. According to Higgins (2017), a sustainable growth rate should be determined based on overall organizational execution, monetary strategy, and profits. This is completed through progress-checking methods, which include the presentation of frameworks, subsystems, divisions, and representatives (Bryant, P. 2019). It analyses totals of execution data to assess progress towards defined goals. In any case, operations management has been scrutinized for having the option to evaluate insignificant aims and how to assess them (Malay, O. E. 2021).

According to Kennard (2020), suitable purchase is the partnership in which cash connected events, gatherings, and regular security are exchanged against business requirements. He emphasizes the benefits of accepting a cautious approach to buying as a usage control, chipping away at inner and outer norms through execution evaluation, and compliance with ecological and social principles. According to Bobis and Staniszewski (2019), green procurement is far from a one-time occurrence, but rather a well-established concept. According to Campbell (2018), viable fulfilment has emerged as an important point of view for planning. In any case, research on store network execution estimation, particularly in the between hierarchical concentration, where associations manage different associations in another level, has been somewhat restricted (Gunasekaran et al. 2021).

The procurement network facilitates the management of interconnected assets, which begins with the procurement of raw components and concludes with the end client (Nadeem, 2019). This process assists pharmaceutical organizations that desire to compete in achieving their aims. Only organizations that pay careful attention to a large procurement network on the board may conceivably get an advantage in the current market (Kevin and Marcos, 2018). Supervisors now recognize that the degree to which they transform their procurement network into a value chain directly affects productivity. Organizations that invest nothing or very little in developing modern supply binds cannot provide a benefit to their customers. They have a history of underperformance near here (Tamil, 2019).

Green procurement practices are associated with many factors such as top administration support, data and correspondence innovation foundation, supplier determination, and consistency rules created by experts to preserve the environment (Kumar Mangla, S., & Kazancoglu, Y. 2021). Absolute quality management is one of the most urgent concerns for organizations, and various manufacturing

businesses are establishing and concocting their production network methods to deal with shaping the procurement approaches. This increases productivity and increases workers' confidence in their ability to meet the criteria and demands of the firm's partners (Kipke and Moi, 2017). Green procurement procedures are associated with several features such as top administration support, data and communication innovation framework, supplier selection, and consistency rules created by specialists to preserve the environment (Kannan and Khobragade, 2020). Overall quality management is one of the most important issues for organizations, and various manufacturing firms are establishing and configuring their production network methods to deal with shaping the procurement techniques. This increases the efficacy and confidence of the representatives in meeting the requirements and demands of the firm's partners (Kipke Moi, 2017).

Green procurement refers to an environmentally conscious purchasing drive that strives to ensure that materials or items purchased meet regular goals set by the purchasing relationship, for example, decreasing waste sources, advancing reuse, reusing, resource reduction, and material substitution (Jillian, 2019). Green procurement guarantees that stock or purchasing chain managers consider the manageability issue when purchasing data sources, in addition to the traditional purchasing metrics of value, conveyance, and cost (Harper, 2021). Green procurement advantages include standard security because green items are frequently delivered in a way that uses less energy and regular assets or uses them more economically from the method involved with getting unrefined components, parts of handling and manufacturing, shipping, usage, and definite removal (Svetlana, 2018).

Furthermore, green purchasing supports trash reduction because green items are often meant to reduce the amount of waste produced (Kaimber, 2020). They may, for example, use repurposed materials or use less packing, and the supplier could simulate the movement of a recover 'program. Third, there are reserve funds for green purchasing. This is because green items are composed of common materials that can be reused, repurposed, and disposed of without difficulty (Maloney, 2019). As a result, an organization may see lower trash collection, waste treatment, and energy expenditures. In general, they use fewer resources for pharmaceutical and activity, saving money on water and electricity (Fleischer, 20210. The importance of sustainability and being environmentally friendly prompted the notion and move from inventory network the executives to green inventory network the board. Because of the advantage it provides organizations on a global scale, GSCM has grown in importance. The evidence suggests that GSCM is directly related to company execution (Quintana-Garca et al., 2021). In this case, whether such green purposeful practises contribute to an adjustment of the company's monetary presentation or not is debatable (Fazzini and Maso, 2016). The answer to

this question is crucial for business and national level implementation since critical interest in climate and social practices leads to enormous costs.

In the present situation, the question is whether these costs can be converted into a competitive advantage for the organization. Numerous researches investigating the possible linkages between GSCM, and the company's exhibition conclude that naturally and socially capable organizations with the mantras do well by doing something useful and Mutual benefit Win produces higher returns. Furthermore, a few studies show a link between the Green Production networks. The executives (GSCM) or the Reasonable Production network (SSCM) and the upper hand (Bari and Park-Pops, 2020). Firm-explicit elements (for example, energy-efficient plat, advancement the board, information movement, and so on) lead to high corporate execution by broadening the strategic advantage as well as improving the firm's image among partners, thereby assisting in obtaining worldwide recognition for the organizations (Fazzini and Dal Maso, 2016). GSCM and SSCM have consistently outperformed scientists worldwide over the last decade. Because of its evolving character and enlarged scope under the canopy of plausible course of events, most business houses are adopting such practices, either due to peer pressure or as part of their social commitment to society and the environment. Against this backdrop, while excellent literature is available, it falls short on a hypothetical model and the executives' technique for convincing implementation of the GSCM within organizations.

In general, the primary goal of SCM was to save costs and expand administration with less emphasis on ecological concerns. Outside influences, such as statutory rules and parallel industry arrangement issues, compelled organizations to approach production network networks in a way that considers environmental factors. Previously, the exams were limited to inclining the board, wasting the executives, and improving the assistance path with the least amount of time, effort, and material (Agarwal and Sharma, 2016). However, in recent years, the concept of circle shop network executives has emerged, replicating the advantage provided utilizing value-added components, recycling, and reusing the things in the firm. However, the green store network executive’s notion developed in the United States during the 1960s, and it is now recognized globally. Few organizations in agricultural countries such as India and China have responded successfully to the concept of ecological manageability (Lu et al., 2015). GSCM was familiar with restoring acceptable administration from a commercial standpoint. Regardless, the goal of Manageability is not self-contained.

As a result, there has been an advancement of the production network across the board into SSCM and GSCM directed by institutional powers while explicitly working under the widely recognized structure of global natural Maintainability (Somjai et al., 2020). GSCM is based on the executives' essential ecological supportability characteristics in conjunction with the traditional

pharmaceutical network. It also includes procurement, coordinated activities, fabrication, transportation, removal, repurposing, or reuse. The goods are divided into four categories: innovative, green, crossover, and standard. A mixed inventory network strategy centered on eco-friendly concerns is the most practical method for producing green commodities.

1.3 Research Gap

In the current situation of the pharmaceutical business, it was proposed that legislators and appropriate experts at the local, public, and global levels should spell down eco-friendly procurement techniques and guidelines. For over two decades, this has sparked and elevated both academic and business interest in the requirement to figure out sustainable practice procurement cycles of organizations. This is because reasonable procurement practice incorporates social, prudent, natural, and local area considerations in the purchase and sale of products (Islam et al., 2022). To be considered sustainable, purchasing practices must routinely review the shop network and impacts from five perspectives: climate, diversity, basic liberties, altruism, and welfare (Brammer and Walker 2021). As a result, inexpensive procurement controls deal with all components of the inventory network's upstream sections to boost triple primary concern execution (Sayed et al., 2020). Inventory network overflow serves as a foundation for assessing the growth of inventory network frameworks. It covers the value growth of an organization's production network capabilities (Chmapong, 2019).

Sustainable Procurement has received a lot of attention from specialists in the last ten years about in-house and appropriating execution modes that purchaser supplier dyad connections feasible, and practical procurement in the pharmaceutical industry (Rauparaha and He Wage, 2017).

In any event, the effects of practical attainment on store network excess have received less attention. A practical and green procurement might potentially increase organizational production and efficiency. A careful review of the procurement text reveals that the examination of the concept of practical procurement has been more focused in developing countries like Pakistan.

1.4 Problem Statement

Pakistan’s pharmaceutical sector, which accounts for around 11% of the country's GDP, has recently been stagnant. Low overall efficiency and large efficiency differences among subsectors reflect the absence of rivalry (World Bank study, 2021). Nonetheless, the report estimates a 6% growth rate in 2015 and predicts that the positive trend will continue, with the growth rate increasing to 6.6% in 2016 and 7% in 2017. A lack of seriousness in the procurement policies area has encouraged audits of current techniques and the creation of motivators, for example, through charge impetuses and reduced unneeded guidelines to stimulate rivalry. These motivators have done nothing to advance rivalry in the area. Green procurement practices can result in the establishment of deeply embedded

capacities that are implicit, relationship-explicit, and not easily duplicated by competition, thereby increasing a firm's intensity.

However, its operations, like those of many other Pakistan pharmaceutical companies, have been linked to the increased use of plastic sacks frequently used to package finished goods, resulting in environmental issues. This sector has also faced other natural challenges, such as hazardous waste, the disposal of rubbish by consumers; and the need to reduce carbon dioxide emissions. In response to these challenges, the pharma sector launched the Manageable Living Arrangement in 2010, to rapidly grow business advantages from lower environmental impacts as they modify their production processes and update our products and packaging. Pharmaceutical organizations have consistently engaged in green procurement practices such as item re-convenience, supplier contribution, and moral practices, as well as participating in and expanding CSR exercises on ecological consideration. The organization has been developing green systems to improve environmental, financial, and social performance. There is a requirement to specify whether the organization's acceptance of green supplier drives has influenced its seriousness in the hunt. As a result, the assessment attempted to determine the influence of green procurement practices on the seriousness of pharmaceutical businesses in Pakistan.

1.5 Research Questions

1. What is the impact of green supplier selection on sustainable supply chain performance?
2. What is the impact of green supplier development on sustainable supply chain performance?
3. What is the impact of green supplier collaboration on sustainable supply chain performance?
4. What is the impact of green supplier evaluation on sustainable supply chain performance?

1.6 Research Objectives

1. To find the impact of green supplier selection on sustainable supply chain performance.
2. To find the impact of green supplier development on sustainable supply chain performance.
3. To find the impact of green supplier collaboration on sustainable supply chain performance.
4. To find the impact of green supplier evaluation on sustainable supply chain performance.

1.7 Significance of Research

The study's implications may be useful to subject matter experts, procurement specialists, academics, policymakers, providers, and financial backers. This study may be useful to professionals in the subject of procurement methods. Given the subject's growing reputation among experts and academics, interest in procurement guidelines is a vital solid area for green pharmaceutical organizations. It will also help in validating assumptions about the influence of green procurement practices on the reasonable execution of organizations. Policymakers can also utilize the data to

promote green procurement techniques. The study will assist medication strategy manufacturers in determining the finest approaches to enhance their green procurement procedures and easily resolve the ongoing issues they have for CSR and business progress. The evaluation may aid in addressing the highlighted concerns to broaden the use of green procurement in increasing supportable execution among the impacted. The survey's findings will be used by both the public and private sectors to identify natural obstacles and concerns affecting local locations, as well as to establish standards and recommendations to encourage the use of green procurement. The data may also be used by investors to make critical decisions about e-procurement planning to reduce expenses and increase income in a green way. When financial dealers agree that observational data should be used for benchmarking purposes, the findings will be used. Green procurement tactics enable qualified suppliers to interact with other qualified, enlisted buyers. Purchasers and sellers can initiate transactions, which can then be completed using electronic payment sites. Clients may then effectively purchase the items or administrations they want, extending their options for exclusive deals or volume restrictions.

Chapter:2

LITERATURE REVIEW

2.1 Introduction

Green procurement practices are now a cutting-edge production network approach for securing raw components and improving the pharmaceutical system in organizations. The green procurement procedure is also known as the controllable procurement approach (Jillian, 2020). One of the main concerns that organizations are capable of addressing is the reduction of waste or contamination during the time spent collecting material in the pharmaceutical system, while organizations are implementing successful measures to accomplish so (Yellow, 2021). Most of the systems all over the globe use feasible and tough measures for manufacturing businesses to lay out green procurement concepts and exhibits that may add esteem to the manufacturing field (Nderitu and Ngugi, 2014). Procurement methods are essential and a keyway to contributing to the exhibition's excellence. The purpose of this section is to provide the basic facts regarding the green actions of procurement and to work on its display from a global perspective concerning pharmaceutical business with modernized concepts (Sharma, 2019).

Pharmaceutical enterprises play an important role in the economy, with the great majority of organizations motivated to pursue green initiatives in the unprocessed substance procurement process (Sánchez-Flores et al., 2020). The investigation momentum is to assess the relationship and determine how pharmaceutical manufacturing firms are embracing green procurement practices, for example, top administration backing, data, and correspondence innovation foundation to upgrade fabricating technique for the long-haul presentation. The investigation focuses on further expanding the pharmaceutical system by agreeing to the norms and guidelines to produce pharmaceutical organizations. Client upkeep is dependent on the form of green procurement, and each organization is engaging in corporate social responsibility activities, such as carrying out green innovations in their production network division. Because of the possible outcome, this article investigates moral procurement methodologies and supplier selection criteria to impact the climate, society, and economy (Islam et al., 2017).

This part provides a detailed description of the writing and what the green procurement practices signify for the pharmaceutical business to increase execution and support it for a longer timeframe (Usman and Ali, 2021). This section makes sense of detailed concepts to several perspectives for organizations functioning in the pharmaceutical business and which variables are critical in taking on the green procurement procedures. Manageable advancement in the procurement system has changed into a critical strategy for each pharmaceutical business, where each organization

exhibits the economic development process (Sarhaye &Mirendi, 2017). Economic procurement drills are centered on enhancing the favorable turn of events. The key reason for accepting a viable system is the critical task of purchasing and selecting suppliers (Kilonzo, 2018).

Green procurement has had an impact globally on the overall pharmaceutical industry, and it has become increasingly necessary for organizations to meet significant, administrative, and local area limits, as well as climate (Norman, 2021). Green procurement practices are associated with many factors such as top administration support, data and correspondence innovation foundation, supplier selection, and consistency rules created by experts to preserve the environment (Zeynap, 2021). Complete quality management is one of the most urgent challenges for pharmaceutical organizations, and various businesses are establishing and configuring their supply chain networks to deal with form procurement procedures. This increases the efficacy and confidence of the representatives in meeting the requirements and demands of the firm's partners (Kipkemoi, 2017). Procurement drills are critical, and the process is a fundamental component of the supply chain network. To assist execution, the procurement strategy comprises selecting a merchant, stock management, and actual purchasing of the material to create things to satisfy the requirements and wants of the mass clientele (Sonnet, 2019). The procurement cycle is an important part of the pharmaceutical manufacturing company, and the inventory network process is extremely reliant on procurement material that operates on a hierarchical execution (Leiyan,2016). Factors associated with green procurement impacting the company's performance are the fundamental component of pharmaceutical manufacturing companies.

Sarkis (2019) proposes that the procurement network architecture contains buying and inbound planned operations, creation, dissemination, and converse coordinated aspects. This indicates how businesses focus on total quality management (TQM), with an emphasis on working on thing quality, zero flaws, client devotion, preparing, specialist advancement, and so on, and coordinate it with biological organization, resulting in all out quality normal organization (Sharfman, 2019). This is divided into alternate points of view, primary thrusts, and goals. Sarkis (2019) defines the procurement network as frameworks that comprise purchasing, production, conveyance, and converse coordinated elements. According to (Handfield and Nichols, 2020), all operations associated with the creation and transformation of things from raw materials to the end purchaser, as well as data streams, are remembered for the inventory network. Several writers are investigating natural workouts at each critical stage of the storage network (Muma, 2018). In this study, green store network the board is divided into four terms: green buying, green creation, eco-plan, and opposed coordinated operations (Allen, 2019).

Green procurement has emerged as an important new way for businesses to achieve benefits and piece of the pie aims by reducing natural risks and effects (Hu and Hsu, 2020). Execution estimate is difficult in supply chains with several merchants, producers, wholesalers, and pharmaceuticals, whether geographically or globally dispersed since it is difficult to attribute execution outcomes to a single piece within the chain (Emily and Stephen, 2019). For further reasons, supply chain forecasting of execution is difficult, particularly when looking at multiple levels inside a supply chain network, and green inventory network execution estimation is virtually nonexistent. Considering these obstacles and difficulties, green certification is necessary for a variety of reasons (including administrative, advertising, and seriousness). Defeating these barriers is not a trivial matter, but the long-term viability (natural and otherwise) and severity of connections may be dependent on productive receipt of green procurement management (Sharfman, Shaft, and Annex, 2019).

2.2 Global Perspective of Green Procurement

Expanding vulnerabilities characterize the current corporate climate. GSCM has emerged as a key new approach for attempting to achieve benefits and a portion of the total industrial objectives while decreasing ecological risk and impact (Muma, 2019). The pharmaceutical industry has a solid supportability architecture in place being one of the world's largest manufacturers has a massive impact on people and assets all over the world (Derrig and Winson, 2020). The pharmaceutical organization's dependency on petroleum derivative energy for materials has been perceived, exposing them to high material costs and manufacturing constraints in the future. Meanwhile, waste generation and the use of toxic materials and water pose considerable risks (Tamara, 2020). This demonstrates that they have a deeply embedded switch-calculated structure. Furthermore, they have a policy on manufacturing line discharges to minimize an increase in global temperatures by replicating most of their losses in an incinerator (Angelina, 2021).

This prompted them to revise their approach to salary and legal working age in pharmaceutical factories. This has shown how controllable procurement may have a significant impact on execution with pharmaceutical manufacturing, but because of the competition, the organization's performance was improved on this (Henderson, 2019). According to Pereira, and Tari (2021) because of administrative, severe, and promoting tensions and drivers, pharmaceutical procurement endeavors have enlarged their natural consciousness (Li, 2018). Pharmaceutical businesses highlight their trade procedures by pursuing global authoritative standards like globalization, green manufacturing, and eco-design. Simultaneously, considering subsequent suggestions, pharmaceutical ventures have attempted to carry out a variety of GSCM practices to improve their natural execution considering this commodity reasoning to more successfully act as suppliers to familiar ventures (Sharfman, 2019).

Inward natural administration, notably accountability from high-level administrators and support from mid-level leaders will be critical for the success of any GSCM programs in the pharmaceutical business (Sannes, 2021). This is not the same as any enterprise in almost any location on the earth. As a result, one of the most key strides in this sector is board training in GSCM practices (Jacob, 2022). The pharmaceutical industry has recognized its value but has fallen short in incorporating these requirements into training (Li, 2018). It is unclear what the barriers to execution are, but the lack of essential technology, the executives' abilities, and information, and undoubtedly the lack of financial support for execution may all be barriers (Naim, Bricklayer, and Bateman, 2016). The procurement of materials and elements is most important for pharmaceutical manufacturing, this needs to be green and eco-friendly (Enduro, and Pepard, 2016).

The negative effects of unsustainable manicuring on the planet's climate and wellness are many and usually difficult to quantify (Munnik et al, 2020). While the manufacturing and material caused by pharmaceuticals are articulated, compound pollution from the gold extraction process has a double impact on the climate, with negative health implications for procurement networks and those living near such activities (Yelpaala, 2021). Sarpong et al. (2019) reveal concentrations of pharmaceutical procurement during the manufacturing process. Even though the pharmaceutical sector industrial and incidental supports the supply chain networks it is widely recognized as a socio-ecologically problematic business (Peck and Sinding, 2003). According to Kusi-Sarpong et al. (2019), to make their inventory network exercises and plans more organically and socially sound, the mining industry has sought an endeavor to transcend beyond its industrial constraints. Green production network executives are gaining importance since it is recognized that it may help with reducing the negative consequences of procurement activities while also improving production competitiveness (Rozar, et al, 2018). According to Sannes (2020), Malawi has a deeply rooted controllable green growing system in which they have accepted all three lower parts of the bottom line of climatic, social, and monetary development, making it genuinely exceptional in the pharmaceutical business for progress. Ingari and Obura (2017) investigated if procurement would be the solution for green procurement execution concerns in the pharmaceutical industry that adopt viable green procurement, the exhibition may take a favorable pattern. On the other hand, designing an eco-friendly supply chain begs to reduce waste generated by pharmaceutical manufacturing (Ingari et al, 2021). This, however, has not been widely adopted and has worked on the organization's image, resulting in a larger piece of the pie that flows down to work on pharmaceutical firm execution (Ingari et al, 2012).

2.3 Pharmaceutical Industry of Pakistan

Social affluence is directly related to happiness. Apart from the regularizing impact of focusing on general well-being, there is also a positive relationship between a population's strength and a country's financial success (Sprout and Canning, 2018). The procurement of the pharmaceutical industry is a complex relationship that encompasses several manufacturers, stages, services, and organizations. The procurement regulations, administrative procedures, guidelines, and rules of the present government are usually poor; as a result, they occasionally block general productivity in terms of responding to the current medication market. However, market constraints vary by region.

Pharmaceutical procurement should take place in both the global and local pharmaceutical markets. In various countries, general health workers have limited abilities in developing an absorbed procurement program that fits their business experience. Increasing numbers of nations are moving or have already moved away from a fully operational public area pharmaceutical and circulation organization and are searching for new ways to draw in the confidential area to work on general well-being. According to Hartford et al. (2007), there are several stages in the procurement cycle; thus, regardless of the model used for controlling the procurement and conveyance framework, a reasonable methodology should be executed, for example, the selection of savvy medications to battle illness, the measurement of requirements, conceivable pre-determination of merchants, control of procurement and supply, great quality of the item, and the observing of sellers' exhibition. Kirytopoulos et al. (2008) investigated the ANP determination of seller rules, which included danger, provider's profile, pricing, administration, quality, and so on. Nonetheless, he discovered that the dynamic cycle in the pharmaceutical industry is dominated by quality difficulties.

There were no medication manufacturing agencies and no regulations controlling this industry when Pakistan was established in 1947. According to Naseem-Ullah (2017), several multinationals began projects in Pakistan in the 1960s, and there were a few local manufacturers, although key clinical products were imported from that point on, and the present atmosphere has altered fundamentally. There are currently conflicting data on the number of assembly enterprises in Pakistan. (PRIME, 2018) There are 759 effective decision-makers. In any event, there were 637 corporations on the list of enrolled organizations with Pakistan's Medication Administrative Power (DRAP), which is the administering authority for the medicine company, in September 2019. In any event, there is a difference among Pakistan's pharmaceutical manufacturing enterprises between multinational corporations (MNCs) and local manufacturers. Even though our medical services and treatments are rapidly expanding, a large portion of the population in Pakistan does not have access to the most recent medications. However, this provides an opportunity for the government and pharmaceutical industry

partners to go further and expand their efforts. Many Pakistani residents receive high-quality pharmaceuticals and prescriptions at reasonable prices from pharmaceutical companies in Pakistan. In Pakistan, pharmaceutical organizations not only promote and safeguard pharmaceuticals and medications in major areas, but they also compete in a-list marketplaces. Following are some growth wise pharma companies which are operating in Pakistan.

a. GlaxoSmithKline
b. Getz Pharma (Private) Limited
c. Abbott Laboratories Pakistan Limited
d. Sami Pharmaceutical (Private) Limited
e. The Searle Company Limited
f. Hilton Pharma (Private) Limited
g. Ferozsons Laboratories
h. Pfizer Pakistan Limited
i. Wyeth Pakistan Limited

2.4 Green procurement Practices in Pharmaceutical Industry

Organized operational activities play a significant role in enacting producers, conveyance routes, and pharmacy stores. It is seen as an improvement area for the pharmaceutical industry (Bejiman, 2019). Because of the competition among pharmaceutical organizations, natural restrictions, ecological consciousness, and high consumer awareness, green coordinated elements can be used to lessen the negative effects of these activities on the climate (Trisha, 2021). Pharmaceutical stock differs depending on its specific properties from other products. Medicine is one of those fleeting things (Agarwal, 2018). Perhaps the most important thing in the pharmaceutical industry is to focus on the risks and benefits of prescriptions in terms of human health, rather than the impact on the environment (Amjad, 2022). Because of competition among organizations and strict environmental restrictions, all ecological data of medicine producers are kept secret in the pharmaceutical industry (Leo and Maria, 2020). Through an examination of distributed logical writing, this paper examines the goals of green planned procurement in the pharmaceutical industry. The results and conclusions of this survey will enable us to identify articles in numerous conditions, distinguishing all the progressions after some time to discover research gaps (Frankwood, 2021).

According to research, pharmaceutical procurement is one of the system apparatuses that is often appropriate for achieving regular legitimacy (Crosbey et al, 2018). Green public procurement (GPP) has been boring the plans there is still a huge, unknown opportunity to include it in a more organized approach to deal with achieve supportability goals (Milios et al, 2017). Green procurement

investigates natural concerns through the total cost of thing ownership and item life cycle evaluation (Correia et al, 2019). Green procurement is used interchangeably with phrases such as earth-friendly procurement sustainable procurement and eco procurement (Bolton, 2018). The focus of a certain project in terms of green procurement differs depending on the goals of the pharmaceutical organization. Pharmaceutical organizations may consider purchasing things made from repurposed materials or considering ecological requirements when selecting a green supplier (Igarashi, M et al, 2020). As green public procurement is playing an undeniably significant role in energizing the interest in eco-friendly items and administrations, there is an urgent need to dissect which variables drive the consideration of ecological standards openly tenders (Testa, 2016).

There is an undeniable job of supply-side interest with cost aims in the transitory materials business, specifically in pharmaceuticals (Sunny and Walker, 2019). This is accomplished by planning a coordinated supply chain network to work with item conveyance to customers on schedule. The important thing is to prevent errors and disturbing impacts to limit the amount of undesired deficit and create a consistent cycle (Mousazadeh et al, 2021). The nature of pharmaceutical procurement conveyance in the supply chain to puts material management digitized and in a green way. As a result, it is one more number increasing the cost of providing pharmaceutical products of help and decreasing consumer loyalty (Khorasani et al, 2017). Appropriately regulating the stock level within reach to achieve a framework broad and adequate level of administration, determining how much to ask per request period, and determining the purpose of re-requesting in a staggered and multi-area of supply chain network is critical and difficult (Kxtten and Dupree, 2020). The complexity of this issue is substantially greater when it comes to stock control anticipating corruptible items for pharmaceuticals. This complication is often so great that an understanding model for such situations is required (Dong et al, 2020).

The cost of reusing pharmaceuticals in the procurement process is difficult to calculate at every step of manufacturing. The cost of permanent removal is easy to calculate, but the cost of recovery is a different concept (Archimedes, 2022). What is the cost of a strong procurement framework that works with viable client executives and ensures reusable behavior? What is the expense of bringing concerns to light and instructing customers to bring back unwanted prescriptions? Regardless of expense, the message is obvious. For economic, environmental, and health reasons, pharmaceuticals inside the industry should be reduced to reduce the amount of stock heading for permanent disposal (Vandella, 2018). Effective communication for this purpose necessitates the efforts of the whole PSC. Everything else being equal, effective dedication will result in a greener and more realistic future (Alexis, 2019). Modern organization for the pharmaceutical business that is harmless to the ecosystem

or reasonable the board is defined as the key, direct, compromise, and accomplishment of an association's social, environmental, and financial objectives in the basic coordination of key between legitimate business processes for chipping away at the company's and its creation network accessories' drawn out execution (Awais and Shoaib, 2022). This implies that specific regulations must be followed by all supply chain network associates. Simultaneously, competent ecological and social behaviors should be advanced to benefit the entire supply chain (Wu and Dunn, 2018). Green procurement executives rehearse can refer to many activities and drives carried out by a group attempting to reduce their impact on the indigenous ecosystem.

Green inventory management is a unique concept. It is based on two concepts: the inventory network, the board concept, and the ecological administration concept (Pollak, 2021). Green inventory network executives are the result of combining natural administration with the supply chain network for pharmaceutical procurement and manufacturing. It aims to connect losses to the production network structure to conserve energy and prevent the entry of hazardous elements into the environment (Muchiri, 2019). To address what an association's inventory network operations mean for the climate, GSCM integrates pharmaceutical factors with inventory network standards. Pharmaceutical organizations are increasingly aware of the impact of a tight combination of the production network and green procurement in enabling broader supportable eco-friendly business methodology. Many people are currently looking for solutions and guidance on how to implement a viable green supply chain. A practical green procurement is not only optimal for the organization, but also excellent in comparison to its limited environmental impact (Congizant, 2018). Zornin and Cagno (2020) investigated the GSCP used by outsider coordinated factors in other industries in terms of clear practices done and level of receipt of each training, and what this reception might indicate for the organization's execution. It helps to discover that, even though there is a general increase in income for environmental concerns, the continued level of acceptance of GSCP among the investigated as well as their advantages to business execution is still limited (Henan, 2022).

A few players have taken a more aggressive approach and have begun to gain significantly from the acceptance of GSCP, mostly in terms of natural and monetary execution. Zelbst (2019) accomplished a review to contribute mostly to the major pharmaceutical observational studies about the influence of green inventory network (GSCM) practices on execution. Their article also planned to hypothesize and empirically test comprehensive GSCM practices and execution methodology. The concept combines green inventory network practices that connect producers with production network partners (both suppliers and clients) to aid in ecological sustainability across the pharmaceutical production network (Maxwell, 2021). They discovered that, overall, the acceptance of GSCM drills

by manufacturing associations motivates work on ecological execution and financial execution, which, in turn, strongly affect functional execution. Hierarchical execution is improved via functional execution. According to Menzel, Smagin, and David (2021), who researched to investigate the pattern and influence of eco-friendly manufacturing on the monetary performance of organizations in the European car and medicine industries, special focus was given to asset utilization. The investigation identified no important link between greener pharmaceuticals and company execution; nonetheless, a pattern in reducing assets, namely power, was discovered. Furthermore, a pattern in carbon dioxide reduction was discovered, which is one of the concerns driving GSCM rehearsals (Susmi, 2020).

2.5 Green Supplier Selection

Initially, procuring a supplier considered the following components: cost, flexibility, and quality to recognize and select an appropriate supplier (Dowlatshahi, 2020). The concept of choice has widened in the new past to recall additional bounds for green challenges, much beyond the traditional models of the supply chain (Bai and Sarkis, 2019). The green plan is supported positively by supplier selection, observation, and evaluation, and so has visible quality over several elements (Seuring and Muller, 2018). Guo and Tsai (2015) conducted research on evaluating green development network suppliers and discovered that the standards used to evaluate providers were the green arrangement, green materials including supplies, gathering of green taking care of, selling and packaging in a green way, transportation that is not harmful to the biological system, and reusing. Guo and Tsai (2015) also remembered twelve criteria for evaluating green suppliers for their study and analyzed the results. According to the analysis, the major drivers for green practices are four green measures: planning, material usage, waste reduction and energy conservation, and reduction of harmful pharmaceutical use. According to the research, the demand for ISO 14001 certification and ICT is widely regarded as a basis for assessing suppliers (Pinkerton, 2020).

The execution of the store network architecture is contingent on the receipt of the four standards in assessing suppliers to achieve an organization's green aims (Jason, 2019). The selection of a supplier is a complex dynamic relationship. Before organizations made decisions based merely on cost and quantity, most cutting-edge experts considered that the mix of parts should meet the financial and specialized necessities, as well as an organization's strategy (Ashrama, 2021). Ho et al. (2018) proposed that international standards be used to evaluate supplier selection. Traditional supplier selection methods prioritize money and specialized expertise while pharmaceutical productivity. Today, organizations should consider their suppliers' natural conscience and suggest that they reduce their environmental impacts (Paul and Smith, 2021). Aside from the usual standards, such as cost and quality, the investigation investigated green concerns that might play a big role in acquiring and

offering fundamental natural characteristics that can be used in supplier selection. Choices about suppliers have become one of the chiefs' primary responsibilities, as well as one of the most fundamental and intricate concerns they must handle (Zainol, 20200.

Most supplier selection procedures are scientific order processes that rely on emotional information provided by professionals (Gunnar, 2019). Because it does not need large or standard information testing and hence has a considerable acceptable relevance, dark occurrence examination with equal weighting has been used for supplier determination (Shamshad, 2021). However, their tactics demand emotional information from experts, as well as similarly weighted elements and starting facts to shape social arrangements in occurrence investigation. In any instance, some dim data cannot be easily procured, and the connection coefficients of each succession are of varying importance to the framework at various periods (Sada and Basko, 2018). As a result, in this unique situation, a reasonable green supplier selection dynamic technique for the substance cycle industry based on a better dark frequency model is proposed, in which both financial and natural standards for compound handling industry supplier determination are considered, and further developed dim rate coefficients are characterized utilizing change groupings of the underlying data are considered (Crystal, 2020). The loads are subsequently determined using the updated weighted dark coefficient advancement model to get a further enhanced connection coefficient.

The selection of a possible supplier has been identified as one of the fundamental difficulties that an associate encounter while maintaining a decidedly competitive stance. Supplier selection (SS) has a direct impact on both productivity and income (Jacqueline, 2021). In general, green procurement is considered primarily from a financial standpoint; but, in the most recent years, organizations have become progressively more concerned with natural and unnatural challenges (Rabbani et al., 2019). Because of increased awareness of ecological concerns and natural administrative systems, both commercial and public sectors are under immense pressure to include natural perspectives in their production network practices Hao et al., 2018). The combination of environmental concerns with supply chain practices is known as a green inventory network (Sarkis, 2018). Green procurement practices in the SCM network results in increased seriousness and financial execution (Dubey and Singh, 2020).

According to Lee and Ou-Yang (2019), to compete in the global market, pharmaceutical businesses must face natural challenges. Associations are adopting natural views in their activity and production network practices to get a global advantage (Karimi, and Shekarabi, 2019). However, while managing ecological float, organizations must not only focus on greening intra-authoritative supply chain and procurement activities but also the inter-departmental angles (Fahimnia et al., 2015).

According to Hussey and Eagan (2017), pharmaceutical businesses are aware of how natural improvements may significantly increase their business proficiency, save overall expenditures, and aid them with green procurement benefits. Green procurement includes several steps, from natural substance procurement to end-client item delivery (Hoseini and Karimi, 2019). These stages necessitate a valid choice of supplier from among several considering the necessity and assumptions of the supplier association. As a result, organizations must go above their bounds to examine the presentation of their suppliers to match top-notch and ecological criteria (Bai and Sarkis, 2020). The corporate environment is defined as unusually volatile, competitive, and dynamic (Hoseini and Shekarabi, 2018). To ensure better execution from their suppliers, associations frequently take out different projects and administrative checks in their SCM practices (Awasthi et al., 2019).

As a result, it is quite likely that the selection of a possible supplier is a puzzling dynamic approach completely bent on reducing the essential arrangement of suppliers to the last options. These dynamic cycles are associated with a high level of susceptibility. As a result, many multi-measures direction (MCDM) approaches have been developed in recent years to solve these issues. For the evaluation of a group of suppliers, the MCDM methodologies used in the study consider both subjective and quantitative factors. Traditional supplier selection was mostly based on criteria such as cost, delivery time, quality, and degree of administration (Weber et al., 2021).

2.6 Green Supplier Development

With the arrival of another era in the pharmaceutical industry in which change is regarded as one of its essential features, the accomplishment and perseverance of associations will be difficult to ensure, particularly when it comes to mentioning regular security and green assembling issues (Pourjavad and Shahin, 2018). Green Production network the executives (GSCM) as an authoritative way of thinking aims to construct the overall industry and monetary capability of pharmaceutical organizations while controlling natural unfavorable consequences and increasing medical proficiency (Govindan, Soleimani, and Kannan, 2015). As a result, most pharmaceutical companies are looking for ways to adapt to the GSCM spotlight. As a result, suppliers play an important role in the advancement of GSCM (Hussain and Al-Aomar, 2018). The presentation of GSCM is being focused on by addressing the natural execution of providers (Fu, Zhu, and Sarkis, 2019). As a result, pharma associations focus on the implementation of GSCM by recognizing current green suppliers. In terms of pharmaceuticals, have offered several techniques for selecting green and sensible providers, examining the biological display of providers, and researching green providers (Rajesh, 2020).

The examined measures for green provider improvement programs are classified as quantitative or ambiguous or pitifully characterized emotional (Mayorga, 2019). The GSDP appraisal

is made more delicate by the ambiguity associated with the evaluation of emotional rules, as well as the doubtful estimation of these acts by a couple. Therefore, the significance of a good approach that manages both quantitative and emotional guidelines is highlighted in order to show up at suitable GSDP evaluation outcomes (Goyal and Kaushal, 2020). Essentially, the MCDM techniques are joined by human judgements and preferences that are problematic due to the sensitivity and imprecision in the human unique cycle (Rangaiah 2018). As a result, for most issues in pharmaceutical procurement applications, these approaches are tailored to emotional human inclinations (Sangaiah et al. 2018). The pioneers like to make decisions using phonetic terms rather than large scales (Pourjavad 2019). The fleecy set green procurement operates with dynamic by harsh reasoning and phonetic expressions and is regarded as a solution to such MCDM model deficiency problems (Mayorga, 2018).

Specialists produced various philosophies, for example, the entire consistency technique to examine providers in light of the reasonable parts of regular, social, and financial (Durmi 2019). Zarbakhshnia et al. (2020) assessed pariah banter scheduled activities providers based on viability parameters using soft AHP and feeble multi-objective improvement by extent evaluation. For green provider assurance and green accessory determination orders. According to the coordinated exams for the category of green provider evaluation, green provider procurement methodologies were used to assess the providers considering green measures.. The use of green supplier evaluation approach has been used to evaluate the natural exhibition of suppliers (Chauhan, and Goyal 2018)

It is assumed that all suppliers are green or follow the manageability measures in their exposition for all directed tests in the first five courses (Shakir, 2020). In any event, as previously said, not all suppliers are green or continue to enhance maintainability execution. Thus, in the last class, green supplier advancement programs assessment, researchers focus on identifying greening opportunities and working on the ecological execution of suppliers to further grow the green production network across the board (Daniel, 2021). Regardless of the importance of improvement initiatives to green suppliers, there are a few focal points here. For example, Bai and Sarkis (2022) developed an appropriate technique based on the uncomfortable set hypothesis to study the relationships between GSDP credits and execution results. Fu, Zhu, and Sarkis (2022) suggested a formalized dark-based digitized technique to investigate the GSDPs inside a telecom frameworks supplier.

Hollos and Paulraj (2017) disentangled the constricting hypothetical viewpoints on authenticity in examining organizational execution and top management accountability as outcomes of green supplier improvement. Similarly, they examined the effects of two criteria on supplier performance: green procurement and green supplier improvement. Dou, Zhu, and Sarkis (2019) effectively provided

a dim Scientific Organization Cycle-based model to decide GSDP that improves supplier display. They also thoroughly investigated green supplier enhancement programs, with a specific focus on supplier contribution penchant levels. According to a study of lead exams in the field of Green Supplier Improvement Projects evaluation, there is no framework in place to track down major green measures for assessing GSDP. As a result, when considering low-importance green models, the preceding procedures are repetitive and unsightly. Furthermore, several researchers missed the vulnerability problem during the period spent assessing GSDP. The vulnerability is addressed by the flowery reasoning in this review's recommended strategy (Markus, 2020).

2.7 Green Supplier Collaboration

Business developments and progress in various stages of the SC, for example, item configuration, bundling, and turnaround coordinated operations can create critical advantages assuming interior and external accomplices collaborate (Wong et al., 2021). Many studies have been conducted to investigate the value of cooperative development across SC partners (Mama et al., 2019). Sustainable development revolves around utilizing the deciding boundaries of ventures and the SC to jointly manage green administration issues (Li et al., 2020). Existing research reveals how such connections, which can focus on affiliation, governance, and association beneficial development, fundamentally alter acceptance execution (Hong et al., 2019). According to Krishnan et al. (2021), green SC may be created feasible by attempting to squander connected anxieties through agreeable turn of events. According to studies (Liao et al., 2021), SCC has a significant impact on progression capability. Participation, for example, advances enormous benefits through advancement, as demonstrated (Sanchez Rodriguez 2019).

A few investigation medications have been led to investigate the determinants of improvement ability in collaborative endeavors (Liao et al., 2021). Power structures, adversaries, and creative talents are all important drivers of acceptable progress (Yang and Lin, 2020). Natural rule techniques have been discovered to use solid regions to influence the co-improvement of pleasant path architectures (Yin et al., 2021). According to Li et al. (2020), the level of confidence among manufacturers and suppliers as propelling accomplices is the most important factor determining the feasible invention and execution of pleasant evolution. According to experts, organizations' monetary display in agreeable is still up in the air because of their devotion to greening (Kumar and Goswami, 2019). Furthermore, the implementation of green advancement activities is dependent on the collaboration of SC colleagues (Yang and Lin, 2020). Furthermore, the public realm plays an important role in the greening of events (Mother et al., 2019). For example, if green development results in higher costs, experts should finance the SC players (Mom et al., 2019).

Sharing information is a time-consuming process that should be broken down into manageable chunks as often as possible (Negra et al., 2020). Several studies specifically investigate the influence of information sharing frameworks on the manageability of SCs (Mohammadi, 2019). According to Prater (2019), outstanding data sharing enhancements eased effort and typical execution outcomes. Firms should definitively manage scattered data in settings to work on their market (Vasconcelos, 2021). According to Father et al. (2021), various data sources and collaborative modes are fundamental forerunners of data serious progress showing activities. Information exchange affects the amount of SCC amongst SC artists for long haul relationships. In any event, information sharing has a mixed impact on the SC's sustainability. In contrast to the widely accepted belief that information sharing among SC individuals is always beneficial, Yu et al. (2020) suggest that beneficial endeavors do not always benefit the SC. Kumar and Van Dissel (2016) argue that information sharing may lead to disagreements. Furthermore, spellbinding data associations are unlikely to change the delegates' perceived capacity to obtain data (Shi and Weber, 2021). To realize the value in the anticipated benefits of procurement, SC trailblazers must anticipate these challenges and engage proactively to overcome them. Compartment et al. (2020) guarantee that the influence of green procurement on SC legal execution is subject to the recurrence of correspondence between the involved parties.

Cooperation refers to the combined activities of stock chain conspirators. Gunasekaran et al. (2015) defined store network collaboration as a long-term connection formed between store network members to lower costs and risks while improving quality and market value. Upstream partners of a central organization are suppliers in a basic supply chain, whereas downstream partners are clients. The exercises of cooperative connection between the central company and its suppliers to increase SC-related execution are known as supplier-coordinated efforts (William, 2019). Purchasers frequently rely on the assets of their suppliers, which include advanced know-how, fabrication expertise, design mastery, and monetary assistance (Yan and Dooley, 2014). At the same time, suppliers rely on buyer businesses for product knowledge, market demands, client assumptions, and so on. As a result, it has become customary for enterprises to collaborate to get access to and use shared assets to launch specialized practices. Yan and Dooley (2014) demonstrated that collaboration works with information generation by integrating input from collaborators. To improve environmental management, partner organizations leverage each other's assets and exercises to capitalize on learning and information exchange opportunities (Gromova et al., 2015). Supplier collaboration is often ineffective for further developed execution (Yan and Dooley, 2014) due to a lack of correspondence, a commonly strong atmosphere, and a shared direction.

It is unclear whether the supplier-coordinated effort will further develop GSCM practices. Regardless, suppliers are the critical component in greening an organization's SC. To begin implementing ecological practices in tasks, it is critical to collaborate with suppliers. According to Chiou et al. (2018), long-term important benefits may be safeguarded by collaborating with suppliers. Kopfer et al. (2019) discovered that supplier-coordinated effort has a significant impact on firm execution in terms of creative ability and monetary consequences, with social trust and rely on being critical components for supplier connections. Chiou et al. (2020) showed that firm-supplier collaboration in item creation can improve company performance. In any instance, establishing a connection necessitates investment, assets, and the ability to share data and information. The links are regarded as the most important source of unique ideas and data in the academic community. Cooperative relationships enable firms to deliver implied and unambiguous information to suppliers while also improving information generation and development (Gromova et al., 2015).

Cooperation may reduce purchasing costs by lowering contracting costs, improving coordination, and using a common functional critical thinking approach. Key suppliers can have a significant impact on the overall success of a major business (Kopfer et al., 2019). As information sharing becomes more common and inescapable in supplier collaboration, trust, receptivity, and candor become increasingly important. When common trust exists, supplier-savvy behavior is minimized, and as a result, purchase costs are reduced through increased coordination, data sharing, and interaction dependence. Reliance between organizations is unavoidable in a coordinated endeavor. In any instance, over-reliance may impair the central company's inventiveness (Kopfer et al., 2019). Hypothetical claims in previous research and observational findings don't paint a clear picture of whether supplier collaboration impacts corporate operations and under what conditions their displays go to the next stage. Disparate outcomes place core enterprises in a quandary about whether to collaborate.

2.8 Green Supplier Evaluation

The escalation of competition, stringent government restrictions, and increasing ecological concerns have confined endeavors to work on practicable outcomes in their activity and production network rehearses these days (Stealer, 2020). Aiding necessitates the incorporation of ecological, social, and monetary characteristics into their manufacturing cycles and supply chains (Tim Wood, 2019). Supply chains are sophisticated, consisting of multiple linkages spread over numerous tiers and geologies. Green production network management (GSCM) is a projection technique that blends ecological thinking into inventory network management (Akash, 2020). Confounded systems were used at the joining and production line levels in GSCM to assess or improve natural results. Producers

might create and practice a compelling game plan program while overcoming natural obstacles thanks to the link between suppliers and customers (Oscar, 20190. The implementation of a green manufacturing organization may lessen the time of poisons from the source, and the amount of greening of providers will directly affect the environmental show of endeavors. Furthermore, carrying out the green shop organization may provide a firm with financial benefits and an advantage, which is critical to the organization's growth (Stephen, 2020).

Because GSCM integrates several steps from normal substance procurement to movement, a focused association should not only deal with intra-hierarchical stock organization but also focus on the inter hierarchical viewpoints (Alex and Sheery, 2021). Providers, as upstream store network partners, play an important role in a company's achievement of its objectives. Choosing the ideal green supplier in a creative network is therefore an incredibly important decision to globally maintain an association's serious status (Ahmed and Waqar, 2021). With the ultimate objective of wonderful and natural principles, several perspectives and criteria must be considered in the green supplier decision. As a result, green supplier selection should be evident as a dynamic bent on ensuring superior performance from an organization. The growth of suitable green supplier assessment and determination (GSES) methodologies has accelerated in recent years (Austin, 2019). Prior evaluations from various perspectives have prompted some writers to write reviews on GSCM or green provider selection. Koberg and Longoni (2022) proposed a purposeful writing evaluation of works focusing on GSCM in global stockpile chains. Badi and Murtagh oversaw an effective study of the writing on GSCM in the improvement industry.

Bastes and Liyanage (2020) participated in a writing review on the consideration of major value leaders, the construction organization of the board, and the board's sustainability. Maditati et al. (2019) conducted a bibliometric analysis of GSCM literature to investigate the relationships between GSCM drivers, practice pointers, and execution measures. Tooth and Zhang (92021) performed a meta-analysis of GSCM writing in order to analyze the overall relationship between GSCM practices and business execution. Fahimnia et al. (2022) used network analysis tools to evaluate the scattered studies associated with GSCM. Mardani et al. (2022) presented an efficient survey of the utilization of underlying conditions exhibited in the evaluation of cost-effective and environmentally friendly manufacturing networks on the board. Igarashi et al. (2020) conducted a supplier selection writing survey and developed a feasible model to coordinate the various factors of green supplier selection. Konys (2019) conducted a meta-analysis of the literature on green-situated supplier selection and introduced a cosmology-based technique to synthesize the analyzed supplier determination and assessment measures. Furthermore, the quantitative and subjective choice strategies in the supportable

supplier board were surveyed and broken down, the multicriteria decision-making (MCDM) techniques for planning green stock chains were evaluated, and the green procurement approaches for assessing green supplier execution were investigated (Erika and Kate, 2019).

Even though the existing literature on GSCM is extensive, little or few research efforts have been focused on completely analyzing the mathematical models used to support green procurement exercises (Lady, 2019). The studies only focused on the MCDM models for green provider selection, while previous research by Zimmer et al. (2020) did not include model weighting philosophy or execution assessment technique. Furthermore, these writing studies require an update because most of the related publications were released following their inquiry. As a result, in this review, we methodically investigate the logical literature associated with GSES models by using Scopus academic data collection. Following a strategic survey procedure, the primary goal of this research is to answer the following research questions: (1) What GSES strategies have been developed in the writing? (2) What regulations are being discussed regarding GSES issues? (3) What weighting techniques are used to determine rule loads? (4) What vulnerability techniques have been used for dealing with specialized assessment data? Furthermore, factual investigations on year, diary, nation, and application location have been broken down to serve as a reference for scientists working on this subject (Michael, 2020).

Organizations in the pharmaceutical industry employ cycles to reuse broken-down pharmaceuticals as unprocessed stuff (Sufiyan, 2019). The cycle occurs in the pharmaceutical industry reuse on worn or damaged reputation that is unrepairable and unsuitable for use. There are substantial concerns about this green procurement process since the pharmaceutical industry is one of the primary causes of environmental contamination (Maryies, 2021). Pharmaceutical firms are regarded as hazardous waste since consuming them emits black and harmful smoke, producing air pollution. Pharmaceutical goods are also uncertain for the environment in many cases since they cause dangerous gases (also known as cavitation), which contaminate subsurface water resources. Furthermore, recycled pharmaceutical products can be used in many ways (Norman, 2020). This study is to shed light on waste reuse methods and environmental contamination concerns in pharmaceutical manufacturing organizations. As a result, the precise dedication of this investigation revolves around the reusing method of pharmaceutical products and their utilization as unrefined stuff (Freeman and Chen 2015).

The examination and integration of suppliers are critical in creating a great and serious chain (Ghadimi et al. 2019). Because of rethinking activities, organizations' reliance on suppliers has grown; as a result, supplier assessment and selection have taken on remarkable importance. The supplier assessment and selection process is completed with diverse aims in mind (Govindan et al. 2015).

Similarly, as awareness of environmental impacts grows, standards and procedures for green production network activities become critical success elements for organizations (Liao et al. 2016). One of the fundamental principles in green workouts is the elimination or reduction of trash, which generates hazardous strong waste, energy mishaps, and ozone-harmful chemical discharges. Waste management may be developed further to become a center of competence for suppliers (Torabzadeh, 2017).

2.9 Sustainable Supply Chain Performance

Because of rising ecological concerns, the board of the Green Store Network has garnered the attention of academics and business professionals (Liobikien et al., 2016). Green manufacturing contains criteria that should be followed during the pharmaceutical process, such as no major security concerns, no strain on laborers and item administrators, and no natural contamination, waste reuse, and rubbish disposal (Gong et al., 2019). Green manufacturing in the organization incorporates the preparation of manufacturing and the board to thoroughly examine the utilization of energy, ozone-harmful chemical discharges, and waste excrement. Green manufacturing aims to reduce city waste by increasing the effectiveness of businesses (Aziziankohan et al., 2017). Taking into consideration the perspectives of institutional hypothesis and asset base hypothesis, the accompanying hypotheses are set on a mission to investigate how various institutional constraints lead to firms eventually incorporating comparable gamble the executives' practices into their stockpile the board processes.

Green purchases demonstrate the efforts made to a country's financial progress and improvement while ensuring that the resources utilized in their production are still available, as well as the natural administrations (Cherian, 2020). The desire for a green economy is a functional strategy plan that directs advancement measures at the intersection of the two economies and the climate (Jacob, 2022). It can aid in financial diversification by quickening the rate of mechanical modifications and maintainability execution (Haryanto, 2019). Green purchasing refers to the procurement of executives by organizations to limit waste poop in the structure. Green purchases align with firm manageability execution by gaining notoriety on the lookout (Khoiruman, 2017). Furthermore, green purchases aid in the long-term sustainability execution of organizations by ensuring that the purchased outcomes of enterprises are environmentally friendly (Cherian and Jacob, 2018).

Clients are the organization's principal partners, which might influence the organization's practices and creation processes (Chavez et al., 2016). Clients, as essential financial professionals, can exert pressure on enterprises to prevent environmental degradation by adopting climate-friendly practices (Dhull and Narwal, 2016). Solid client cooperation improves the GSCM in organizations, which in turn improves the competence and manageability of firm execution. To improve GSCM

practice in an organization, executives should appreciate all the partners, particularly clients (Neramballi et al., 2017). The link between supplier evaluation and supplier selection is unimportant in terms of manageable execution. The component of customer engagement was also considered, and it was discovered to have a negative association with manageable execution (Foo et al., 2018). According to the asset-based hypothesis, as demand increases, execution increases, and clients are the primary specialists driving the interest and supply balance increase. We may say that, in terms of relevance to business, customer engagement will have a significant impact on supportability execution. Eco-plan is defined as a company's design of interaction plans to examine natural corruption and its negative impact on the biological system (Kuo et al., 2018).

Eco-plan practices to reduce the natural hazards of the creation cycle will improve firm proficiency and efficiency (Recker, 2016). These operations include competent utilization of environmentally friendly energy sources in the manufacturing system, which improves organization efficiency (Aziziankohan et al., 2017). The utilization of green items and technique design encompasses the utilization of eco-accommodating unpolished components and an eco-plan with reduced energy and material use. The green data framework regulates the data framework's work to aid in climate-friendly activities and economic execution (Shevchuk, 2016). The framework simplifies the organizations' behaviors and exercises in the direction of clean energy and green development. The green data framework is an important component of GSCM that guides green production network activities (Seethamraju and Ice, 2019). Green data frameworks function to construct the humble benefit and execution of businesses, which has a significant influence on manageability execution (Dao et al., 2018). This is because, as compared to traditional IT frameworks, it consumes less energy. Green IT is more important than merely reducing energy usage (Dao et al., 2018). The assets will be shifted toward the regular ones, and greater emphasis will be placed on climate-friendly pharmaceutical rehearsals.

Regulatory pressures on associations to agree to rules and recommendations to protect the environment strengthen the link between green pharmaceuticals and manageable execution (Sarkis et al., 2019). Seethamraju and Ice (2019) showed in their review that by including data from 396 manufacturers in China to investigate the relationship between institutional strain and GSCM. A wide range of institutional strains can harm while also contributing to a mutually advantageous agreement for all organizations (Sarkis et al., 2019). According to the asset-based hypothesis, as interest in a green store network grows, the assets should be extended to improve maintainability. When there is institutional strain, organizations will typically deliver greater performance in green manufacturing and green creation. With the growing concern for the environment, lowering costs and generating

higher-quality products have been the goals of several organizations. There is now a focus on green manufacturing, from product development to the management of every stage of the product life cycle (Kukkonen, 2020).

Eco-plans, reusing procedures, reusing products with minimum expenditure utilization, and clean production are examples of natural practice phases (Chavez et al., 2016). According to the literature on ecological administration, green activities are linked with the two goods and their climate-related acts. This reduces item damage and has a significant impact on production network operations, including regular assets (Choi and Hwang, 2015). The ability of an organization to accomplish its ecological practices and reasonable tasks has a major impact on its exhibition yield. The value of green pharmaceuticals and production has been well recognized in the writing, but the emphasis on upstream suppliers is insufficient for their presentation improvement work. This inventory network and the board structure reduce natural hazards and the environmental impact of item production and removal. This also aids in the procurement of advantages for the pharmaceutical units, giving them an advantage (Arshad Ali et al., 2020).

2.10 Theoretical Framework

Pharmaceutical organizational speculation provides a foundation for depicting authoritative ways of behavior, plans, or designs. Previous research on green procurement and sustainable procurement has looked at organizational development and transparency. The Resource-Based View (RBV) provides a basis for how organizations might get an advantage by embracing natural practices. The Institutional Hypothesis then explains why organizations favor green procurement.

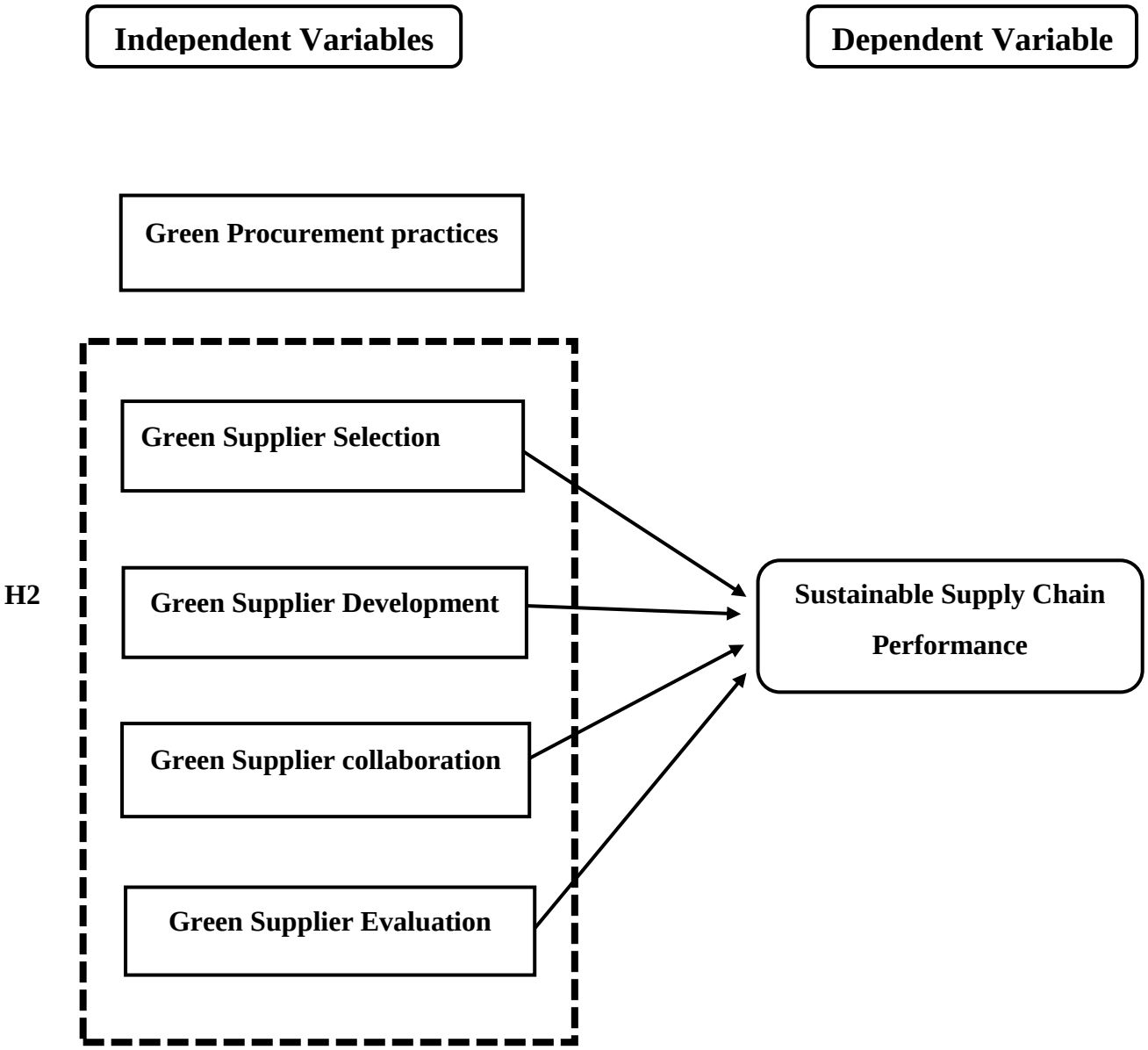
2.10.1 Resource Based View Theory

The firm's RBV theory emphasizes that important, fascinating, somewhat imitable, and non-substitutable assets provide an advantage (Melville, Kraemer, and Gurbaxani, 2004). Cardeal and Antonio (2012) recognized that the Resource-based perspective evaluates individual assets and states that a competitive advantage is formed on Important, Intriguing, and Incomparable assets and Associations. These assets include resources, capabilities, hierarchical cycles, and data, which are grouped into eight distinct or elusive assets. The RBV emphasizes that the climate may be an impediment that affects the serious business edge, and therefore the need for organizations to exploit environmental benefits to stay ahead of the competition (Hart, 1995).

Pralahad and Hamel (1994) advanced the center skills theory. Capabilities cover what an organization can succeed at (Prahalad and Hamel, 1994); nevertheless, center skills address a variety of talents that an organization may use to outperform competitors in the commercial center (Lawson and Lorenz, 1999). Organizations must channel assets to exploit their center capabilities under the

Asset Based View. This premise is critical for businesses listed on the NSE that are conducting green procurement practices.

2.11 Research Framework



2.12 Hypothesis

H1: Green supplier selection has a positive impact on sustainable supply chain performance.

H2: Green supplier development has a positive impact on sustainable supply chain performance.

H3: Green supplier collaboration has a positive impact on sustainable supply chain performance.

H4: Green supplier evaluation has a positive impact on sustainable supply chain performance.

Chapter:3

RESEARCH METHODOLOGY

3.1 Introduction

The methodology of research refers to techniques used to gather data and knowledge to achieve research objectives. Research is describing the overall Impact of green procurement practices on sustainable performance (an evidence from pharmaceutical industry). The research is conducting according to the current business situation of the pharmaceutical industry of Pakistan.

3.2 Research Approach

For this study, we use the deductive research approach. The deductive approach involves the statistical collection of data which is applied to the comprehensive and analytical assessment of the data. This research technique finds the result for Impact of green procurement practices on sustainable performance.

3.3 Research Strategy

For this study we use the quantitative research strategy. The benefit of choosing quantitative research strategy for this research is that we can hit the sample group as much broader as possible. Systematic tests have been used in this quantitative research.

3.4 Research Design

The investigation's plan explains why this investigation is being conducted. The calculated structure to locate and dissect data in an organization that strives to combine setting with the climate and business in the field for the examination purposes is known as research configuration. The research design for this study is descriptive methodology. This research is used to evaluate the Impact of green procurement practices on sustainable performance. This descriptive research is used to collect information about the current existing situation of the green procurement of pharmaceutical industry of Pakistan.

3.5 Research Technique

It is the method used to collect data and information by keeping in mind the margin of error efficiently and comprehensively. For this study, we use survey circulation technique. These surveys were objected to collect information about the green procurement practices of the pharmaceutical industry of Pakistan, usually from large groups of people. A questionnaire has been distributed to the target population. It contained research questions. This helped individuals to take their moment, think about it, and come back with the most suitable responses. Respondents expressed their views, emotions, and thoughts as confidential. This helps researchers to find the best results.

3.6 Research Instrument

A surrogate standardized questionnaire was used as an instrument for gathering the data to assess the attitude of the respondents against the interest variables. The present analysis is quantitative; thus, a questionnaire based on 5 Likert scale for data collection. The present research followed the approved and already established standardized questionnaire for the collection of primary data. Data was obtained from the previous studies via a standardized questionnaire adopted. The questionnaire was adopted from Ali Ibrahim and Kazim Sari (2023) The Effect of Green Purchasing Practices on Financial Performance under the Mediating Role of Environmental Performance: Evidence from Turkey.

3.7 Unit of Analysis

The Pakistan's pharmaceutical industry is the unit of analysis for this research.

3.8 Target Population

The research used population for this research involves managers, employees, and other supply chain and procurement related people from the 5 pharmaceutical Corporations in Pakistan. The data was collected from the pharmaceutical companies are working in these regions and evaluated to assess the Impact of green procurement practices on sustainable performance (an evidence from pharmaceutical industry). Companies included for this research (ABT Pharma, Skyline Pharma, Glaxco Smith, Abbot Pharmaceutical and SM Pharma). These companies are selected based on annual sales, operational performance, and financial performance. The target population for this research was 700 (employees, supervisors, and managers of the pharmaceutical industry).

3.9 Sampling

Sampling the research is a significant method for collecting information on the sample size of the population. It describes the method or framework for the researcher while choosing the best sample items. The sample size for this research is 250 respondents under the population of 250. Considered 5 pharmaceutical companies (ABT Pharma, Skyline Pharma, Glaxco Smith, Abbot Pharmaceutical and SM Pharma.

3.10 Sample Size

Size of the sample for this research derived from formula and Krejeie & Morgan table 1970. The size of the sample for this research is 250 respondents.

3.11 Sampling Technique

This research performs random sampling technique. Sample random sampling methods used for the identification of workers of 5 Pharmaceutical Companies of Pakistan.

3.12 Source of data

We used only the primary data source for this research. A standardized questionnaire was circulated within the target population to collect information. Researcher originates primary data to examine the Impact of green procurement practices on sustainable performance in pharmaceutical industry. Research enables tackling and overcoming this issue in the present condition of the construction industry. It offered good accuracy, a higher degree of monitoring, up-to-date information.

3.13 Data Analysis

The research followed quantitative methods of data processing, obtained by questionnaire. Quantitative results were collected from questionnaires evaluated using IMB-SPSS Statistics-19 tools in concise statistics such as percentage and mean to explain the Impact of green procurement practices on sustainable performance in pharmaceutical industry. The data was provided with sufficient explanations, using statistical methods.

Chapter:4

RESEARCH AND DATA ANALYSIS

4.1 Overview

The main aim and goal for this chapter are to apply different tests (regression analysis, relatability, correlation analysis) to discover the results depend on the statistics collected from numerous third-party logistics providers employees, staff to perform numerous tests. This part of the chapter is extremely significant for us subsequently it explains and determines whether the amount of the independent variables given in the hypothesis made known in Chapter 2 to the variable is significant. There are six portions of this chapter. The initial portion contains the feedback of the third-party logistics provider employees and staff from which the Structured Likert scale survey questionnaires were distributed, the frequency table of the employees and staff who fill out the Structured Likert scale survey questionnaires and who gave the contribution (Age and Genders, Education, Work Experience), and then the descriptive information of the exploration study. The Reliability test of the Structured Likert scale questionnaire we lean towards to be comfortable to get the knowledge of the employees and staff, the correlation amongst independent and dependent variables, regression analysis of the statistics we tend to gather. Lastly, an argument on the results together with the Statistical Package for Social Sciences (SPSS).

4.2 Demographics and Response Rate

As detailed in chapter 3, an overall of 250 Structured Likert scale questionnaires is disturbed amongst the different pharmaceutical companies' employees at different levels in which get the filled questionnaire of 250 employees. Thus, it can be said that the response percentage is a full 100%. This is an amazing response rate and expresses that the research study topic is very important for the supply chain workers and staff of pharmaceutical who need to learn about the green procurement and the level practices and sustainable supply chain performance to take their skill, knowledge, and abilities in the business field of pharmaceutical. It also reveals the attention of pharmaceutical industry employees in a comprehensive way. In this study search, 250 pharmaceutical supply chain employees are the ones who give positive and negative reactions about the Structured Likert scale questionnaire distributed between them. 250 Structured Likert scale survey questionnaires were used for the aim and purpose that they were filled by pharmaceutical companies' employees who were involved in the participants and then apply to analyze the outcome of our study.

4.3 Frequency Table

4.3.1 Genders

Genders					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Female**	120	48.0	48.0	48.0
	Male	130	52.0	52.0	100.0
	Total	250	100.0	100.0	

This data and information table displays complete statistics about the genders (Female/Male) of the employees 5 pharmaceutical companies. Who takes part in the research study. As it is well-defined before that 250 employees and staff statistics were managed and collected to analyze the outcomes out of 250 who contribute to Likert scale questionnaires, from 250 employees 130 which is 52.0% are male and 120 are female which is 48.0%. So, the numbers of responses both male and female contribute to research equally to make available their point of view on the research study of the consequence of pharmaceutical green procurement practices (Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation) and Sustainable supply chain performance.

4.3.2 Ages

Ages					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**20-25**	115	46.0	46.0	46.0
	26-30	83	33.2	33.2	79.2
	31-40	28	11.2	11.2	90.4
	41-50	21	8.4	8.4	98.8
	50+	3	1.2	1.2	100.0
	Total	250	100.0	100.0	

This data table presents the age of the employees of pharmaceutical companies who take part in the Structured Likert scale questionnaires manage for this study. The data table shows that 115 (46.0%) employees were those who were between the ages of (20 – 25). Moreover, the data table shows that 83 (33.2%) employees are those who are the ages from (26 – 25). The data table shows that 28 (11.2%) employees are those who are aged from 31-40. The data table shows that 21 (8.4%)

\employees are those who have the ages from 41-50. Finally, 3 (1.2%) staff and employees are those who are aged 50+.

4.3.3 Respondent Qualification & Education

Educations					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Bachelors**	102	40.8	40.8	40.8
	Masters	76	30.4	30.4	71.2
	MS/MPhil	62	24.8	24.8	96.0
	Ph.D.	10	4.0	4.0	100.0
	Total	250	100.0	100.0	

This data table displays the qualification and educational background of employee of pharmaceutical companies who contribute to the search. In statistics 102 (40.8%) are those who have the bachelor educations, 76 (30.4%) are those who have the master's educations, 62 (24.8%) are those who have the MS/MPhil educations and 10 (4.0%) those who have the Ph.D. educations and have given time to take part in completing the Structured survey Likert scale questionnaire manage for this study.

4.4 Reliability Analysis

Cronbach's alpha is an assessment of core reliability, that is, how closely related a set of elements are as a group. It is measured to be a degree of scale reliability. A "big" value for alpha does not indicate that the assessment is Uni-dimensional. If, moreover, to determine internal reliability, researchers wish to make an available sign that the measure in question is Uni-dimensional, further investigations can be completed. Investigative factor analysis is one technique of examination dimensionality. Cronbach's alpha was introduced by Lee Cronbach in 1951. The resultant Cronbach's alpha coefficient of consistency ranges from 0 to 1 in as long as this total valuation of a measure's consistency. If all the number of items is fully independent of one, then alpha is zero; and, if wholly items have high co-variances, then Cronbach alpha will approach 1 as the number of items in the measure methods infinity. Internal consistency states in what method wholly items involved in the valuation. Its dealings in what method a similar concept and wholly items are co-related to the interdependence of the items in the assessment (Tavakol and Dennick, 2011). Internal reliability is characteristically managed and analyzed using Cronbach's Alpha (α). Cronbach's Alpha varieties from 0 to 1, with bigger values demonstrating greater internal reliability (and ultimately consistency). Common guiding principle for appraising Cronbach's Alpha are given if internal reliability is ranges from 0.00 to .69 that means the internal reliability is Poor, if internal reliability is ranges from 0.70 to

0.79 that means the internal reliability is Fair, if internal reliability is ranges from 0.80 to 0.89 that means the internal reliability is Good, if internal reliability is ranges from 0.90 to 0.99 that means the internal reliability is Excellent/Strong.

Table:2

Reliability Statistics

Variable	Cronbach's Alpha	N of Items
Green Supplier Selection (GSS)	.814	5
Green Supplier Development (GSD)	.790	5
Green Supplier collaboration (GSC)	.731	5
Green Supplier Evaluation (GSE)	.809	5
Sustainable Performance (SP)	.712	5

The benefits of Cronbach's alpha demonstrated by dependability metrics are quite favorable in this evaluation. The advantages of Cronbach's alpha have clearly indicated the higher level of dependability and consistency advanced by the poll using essentially the research specified within the review. Cronbach's alpha benefits are quite close to one, demonstrating the consistent quality of the survey used as well as the trustworthy responses offered by the respondents; it is in the center of the stated standard of 0.7-0.9. This Cronbach alpha indicates that the Likert scale is more consistent, and the drifting survey for this quantitative inquiry is valid and clear.

4.5 Correlation Analysis

Correlation analysis is a statistical approach used to determine the degree of relationship between two quantitative variables (independent and dependent). A high correlation between two variables indicates that independent and dependent factors are strongly related, whereas a low correlation between two variables indicates that independent and dependent variables are hardly related. It is the way of analyzing the strength of such relationship using accessible statistical data from green procurement practices obtained via the structured Likert scale questionnaire. This approach is closely related to linear regression research, which is a numerical method for demonstrating the link or connection between a dependent variable, known as the response, and one or more descriptive or independent variables. Correlation analysis is used to determine the strength of connections between dependent and independent variables. The correlation constant r varies between +1 and 1, where a positive and negative correlation range is 1 and 0 represents correlation absenteeism. If the correlation value is positive, it indicates that the independent and dependent variables have a direct link. If one variable rises, the other will rise as well, and if the correlation value is negative, it indicates that there are inverse linkages between the independent and dependent variables. In case, one variable will

increase, then other will decrease. The focus and purpose of this search study is to make recognized the impact of green procurement practices (Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation) and sustainable supply chain performance in the pharmaceutical industry. To inspect the influence of these independent and dependent variables, it is significant for pharmaceutical companies who practice green procurement Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation) and sustainable supply chain performance relate to each other. Our current study managed and analyzed through Pearson's correlation to reach our purpose. The correlation study is managed to inspect the linking between two variables dependent and independent variables. It also defines how vital this linking is or not. The Correlation search study provides a technique to determine if there is any linking between two variables dependent and independent variables and any variations in other variables due to the change of any independent and dependent variables.

Table 3

Correlations						
		Green Supplier Selection	Green Supplier Development	Green Supplier collaboration	Green Supplier collaboration	Sustainable Performance
Supplier Selection	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	250				
Green Supplier Development	Pearson Correlation	.498**	1			
	Sig. (2-tailed)	.000				
	N	250	250			
Green Supplier collaboration	Pearson Correlation	.621**	.510**	1		
	Sig. (2-tailed)	.000	.000			
	N	250	250	250		
Green Supplier collaboration	Pearson Correlation	.694**	.473**	.499**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	250	250	250	250	
Sustainable Performance	Pearson Correlation	.531**	.590**	.601**	.543**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	250	250	250	250	250

**. Correlation is significant at the 0.01 level (2-tailed).

The table above shows that the relationship between green supplier selection and sustainable performance is positively significant with contribution .531 (53.1%). Whereas the relationship between green supplier development and sustainable performance is positively significant with the contribution of .590 (59%). Similarly, the relationship between green supplier collaboration and sustainable performance positively is significant with contribution of .601 (60.1%). Also, Green

Supplier Evaluation has a positively significant relationship with sustainable performance with a contribution of .543 (54.3%).

4.6 Regression Analysis

A regression study is a collection of statistical techniques used to assess the relationships between a dependent variable and one or more independent variables. It may be used to assess the strength of the relationship between dependent and independent variables and to forecast future relationships between them. Regression analysis is an effective method for determining which variables impact a variable of interest. Regression research allows you to accurately establish which factors are important, which variables may be ignored, and how these variables impact each other. To conduct relapse research, specialists must express a dependent variable that they believe is being influenced by one or more free variables. Relapse research comes in a variety of forms, including direct, many straight, and nonlinear. The most often used relapse prevention approach is plain direct and different direct. Nonlinear relapse analysis is commonly used for more complicated factual sets in which the free and subordinate components have a nonlinear connection. A relapse study is a method for identifying the relationship between the dependent and free components. It consists of a variety of methodologies used by various researchers to investigate the relationship between the dependent and independent variables in the study, with the primary emphasis on the connecting of dependent and independent variables. Furthermore, regression analysis can essentially recognize how the independent variable behaves when the dependent variable fluctuates, while all other independent variables are assumed constant. Throughout the regression analysis, it is also of relevance to describe the variance in the dependent variable, which changes across the forecast regression characterizing the practice of the possibility distribution. Regression is similarly used for forecasting and estimating, it enables us to recognize one of the independent variables which are linked to judge the changes that they bring to the dependent variables and have a look at their relations. In a few states, regression search is managed to estimate the random connection amongst the dependent variable and independent variables.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.894[a]	.798	.796	.350
a. Predictors: (Constant), Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation				

As the value of R shows the simple correlation. Based on the value of R which we have .894 shows a strong sign of high correlation which is 89.4%. Likewise, R^2 shows a sign of the level to which "information flows" can be defined by independent variables. Additionally, R^2 can also be distinct as the ratio of whole of the variations in the variable which is carried by the predictor variables. Regarding this study, R^2 is .798 (79.8%) which is high, it means there is strong variation in independent and dependent variables. Similarly, Adjusted R^2 shows how suitable our model is so once it comes to this study, Adjusted R^2 is .796 (79.6%) model fit which is an excellent mark.

4.7 ANOVA

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	119.535	3	39.845	324.714	.000[b]
	Residual	30.186	246	.123		
	Total	149.722	249			
a. Dependent Variable: Sustainable Performance						
b. Predictors: (Constant), Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation						

The degree of significance of this model is .000 which is less than .05 and shows that the model is highly significant**.**

4.8 Coefficients

Coefficients						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	.147	.063		2.321	.021
	Green Supplier Selection	.174	.052	.175	3.365	.001
	Green Supplier Development	.216	.069	.210	3.131	.002
	Green Supplier collaboration	.535	.054	.560	9.963	.000
	Green Supplier Evaluation	.315	0.49	.216	8.142	.001
a. Dependent Variable: Sustainable Performance						

The F statistics is level of significant at 95% and point to model fitness. The t values for Green Supplier Selection are 3.365 which means it has a positive and significant influence on the sustainable performance and the significance level is 0.001 The t values for Green Supplier Development are 3.131 which means it has a positive and significant influence on the sustainable performance and the significance level is 0.002. The t values for Green Supplier collaboration are 9.963 which means it has a positive and significant influence on sustainable performance at the significance level is 0.000. The t values for Green Supplier Evaluation are 8.142 which means it has a positive and significant influence on sustainable performance and the significance level is 0.001.

4.9 Findings

Based on above statistics, the decisions regarding the results of the hypotheses were as follows.

Varibales	Significance level	Result	Accept / Reject
Green Supplier Selection	0.000	Positive Impact on Sustainable Performance	Hypothesis accepted
Green Supplier Development	0.003	Positive Impact on Sustainable Performance	Hypothesis accepted
Green Supplier collaboration	0.000	Positive Impact on Sustainable Performance	Hypothesis accepted
Green Supplier Evaluation	0.001	Positive Impact on Sustainable Performance	Hypothesis accepted

Chapter: 5

CONCLUSION, DISCUSSIONS AND RECOMMENDATION

5.1 Discussions

The green procurement model is the practice of all procedures, processes, inventories, logistics, planning, and many things that convert raw materials into the finished with sustainable, reliable and environment friendly. It requires the actual standardization of procurement activities of a company to enhance customer value and achieve a sustainable performance in the industrial market with positive green CSR activities. The focus of this study is to find the Impact of green procurement practices on sustainable performance (evidence from pharmaceutical industry. There was selected one dependent variable (sustainable performance) and 4 independent factors of green procurement practices (Green Supplier Selection, Green Supplier Development, Green Supplier collaboration and Green Supplier Evaluation). Developed four hypotheses and all the hypotheses accepted in this research with the impact of correlation, regression, and coefficients.

Green procurement practices represent an effort on behalf of suppliers, processes, and systems to formulate and maintain supply chains that are as productive as economically possible and environmentally friendly. Green procurement within supply chain involves anything from manufacturing to design information systems to the desired direction of these companies. Green procurement and its positive connection with sustainable performance. Although useful, it provides less than a comprehensive perspective on the supply chain of pharmaceutical industry of Pakistan. The present study has developed a theoretical framework that the Impact of green procurement practices on sustainable performance (evidence from pharmaceutical industry

Pharmaceutical organizations must recognize the most essential determinants for their business are green procurement techniques with sustainable performance. If a pharmaceutical organization implement green procurement, strategic alliances with institutions who for green organizational implementations, and continuous product development with environment friendly process, It will always be able to recognize clients and also respond appropriately on time. According to research findings, by using green procurement techniques, pharmaceutical companies would be able to better manage changing monetary frameworks, emerging business sectors, and shorter product life cycles. The primary advantages of green procurement practices in the pharmaceutical industry are the advancement of innovation, reduced waste, and manageability. This contributes to cooperation and partnership with other organizations, government, and the public to build a positive image of industry. Pharmaceutical organizations will ultimately increase business profit level if they place their business

open to the new technologies and improved collaboration within the different areas for green development and sustainable performance of the industry.

5.2 Conclusion

Green procurement practices are extremely important in the pharmaceutical business. Green procurement practices variables had a significant influence on the pharmaceutical sector's long-term success. Procurement in the pharmaceutical sector is enormous and complicated at all levels, necessitating effective strategic planning and assessment. The pharmaceutical business places a high value on sustainability. The findings of this study reveal that managers, supervisors, and staff in Pakistan's pharmaceutical business understand the criteria and dimensions for evaluating green procurement practices for long-term performance. This criterion assists pharmaceutical businesses in maintaining their growth and development in the pharmaceutical industry.

The pharmaceutical industry's supply chain is vast and intricate. Green procurement practices provide a significant contribution to gaining a competitive advantage via sustainability. Quality commitment, competitive strategy, financial efficiency, technical support, and skills that maximize logistics, procurement, inventory, and operational cost control all contribute to an organization's success. All of these aspects of green procurement practices have a direct influence on long-term success. Currently, sustained performance is critical for pharmaceutical industry operational success and organizational success. The primary goal of green procurement practices is to save the environment, collaborate with the public, and offer quality and flexibility throughout the pharmaceutical industry's whole procurement network.

As we all know, pharmaceutical items are more complicated, requiring more efficient supply chain management to maintain and improve sustainability. For pharmaceutical firms, strengthening the procurement network is critical. Green procurement practices are a key indicator of the pharmaceutical industry's overall success. Green procurement practices variables are connected and interdependent. Pharmaceutical firms have implemented a wide range of supply chain practices in order to increase their performance by performing aggressively in all supply chain operations and activities in an environmentally friendly manner. All the factors examined in the study suggest that green procurement practices have a beneficial influence on the pharmaceutical industry's sustainable performance.

The pharmaceutical industry is fraught with dangers and uncertainties, including political, legal, global, and environmental concerns. Green procurement practices assist the pharmaceutical sector in enhancing processes, systems, and business strategies to ensure that all operations run smoothly. Green Supplier Selection, Green Supplier Development, Green Supplier Collaboration, and

Green Supplier Evaluation are significant components in the pharmaceutical sector for ensuring ongoing performance and improving sustainability. Because of the pharmaceutical industry's inflexibility and unpredictability, incorporating green supply chain practices is the most difficult problem in this period. Integrated process management, information sharing, and effective communication are all significant factors that contribute to increasing competitive advantage through green procurement. Pharmaceutical firms may uncover opportunities and eliminate threats with the aid of effective green procurement practices to save cost and time while achieving the greatest degree of sustainable performance.

5.3 Recommendations

The Pakistan pharmaceutical sector is striving for continued access to high-quality competitive medicines with enough supply at a fair price. This is a direct result of inefficient institutional performance and policy. The problems of Pakistan's pharmaceutical sector are closely related to both internal and external causes. The key external impacts include a poor industrial structure in a developing economy, environmental issues, and market resources available, such as inadequate vendor partnerships and a lack of business technology development. Due to harsh living circumstances such as high taxes and high transportation expenses, the business climate has failed to sustain the pharmaceutical industry's supply chain and competitive advantage at the greatest level. Mismanagement of resources and inadequate planning of operations and supply chain are other major challenges for Pakistan's pharmaceutical sector. Internal factors influencing the market position of Pakistan's pharmaceutical industry include unproductive sourcing strategy, inventories, transportation, Information systems, and service quality. Although the research concluded Pakistan's pharmaceutical industry has some unfair practices such as mislabeling of products, smuggling, mafia, and other shady practices used as a method of creating the illegal market in the developing economy of the uncertain environment, these practices are professionally not forgivable. This leads to the conclusion that poor planning of the sector's supply chain activities had a substantial impact on the overall profitability of the pharmaceutical business. The lack of effective coordination and collaboration among industry players, a integrate industry structure, an unfair business environment, a lack of cooperation among supply chain members, and a lack of decisiveness in addressing pharmaceutical industry challenges exacerbated the problem of lack of competitiveness at the national, industrial, and individual company levels. The pharmaceutical sector in Pakistan requires competitive planning and strategy.

5.4 Future Research

Establishing a procurement management center of excellence in the pharmaceutical business would be advantageous because procurement concerns are critical to the industry. The study and business advice on green procurement practices will be an important component of the pharmaceutical

industry's center of excellence. Pharmaceutical businesses may contribute a development fee to operationalize the construction of the center of excellence, which would be committed to sponsoring research aimed at finding long-term solutions to common supply chain difficulties. Studies on procurement, financing, and pricing models based on international best practices are recommended, particularly in developing countries such as Pakistan, as the findings can go a long way towards addressing issues that appear to cause bottlenecks that impede the pharmaceutical industry's competitiveness. When implementing the views of many other industry leaders who are separated from an ongoing study, more analysis of supply chain management problems throughout the pharmaceutical industry is required because these studies did not identify the specific contributions of supply chain management to company competitiveness and the current study contains a very small sample, making it impossible to generalize findings across all pharmaceutical companies.

5.5 Limitations

The researcher encountered various limitations during the analysis process, which have long been recognized as hindrances. This research faced several shortcomings, including a short time frame and a small sample size, which fell short of the industry's requirement for a larger sample. However, the available time frame for completing the analysis proved inadequate, as obtaining responses from pharmaceutical industry staff members required a longer duration. It is necessary to allocate enough time to conduct thorough research, incorporating feedback from pharmaceutical companies nationwide, to ensure a comprehensive review. Additionally, the limitation of the small sample size became evident, as 250 participants were insufficient to adequately represent Pakistan's pharmaceutical industry. To conduct more extensive research that accurately reflects the entirety of Pakistan's pharmaceutical industry, a larger sample size was required.

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QUESTIONNAIRE

I am conducting research on Impact of green procurement practices on sustainable performance (an evidence from pharmaceutical industry). Please indicate the degree of your agreement with the following statements by choosing the appropriate number against each question using the scale below. I would appreciate it if you responded to the following survey with your complete attention.

Respondent's Details

Age:

☐ 21-25 years ☐ 26 30 years

☐ 31-35years ☐ 36-40years

☐ Above 40

Education

☐ Undergraduate ☐ Graduate ☐ Postgraduate

Gender:

☐ Male ☐ Female

Experience:

☐ 1-3 years ☐ 4-6 years

☐ 7-9 years ☐ Above 10 years

Organization Size:

☐ Small ☐ Medium ☐ Large

Job Role:

☐ Vendor Manager ☐ Supply Chain Manager

☐ Production Manager ☐ Employee

S. No	Factor	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Green Supplier Selection (GSS)						
GSS1	Our firm relies on suppliers' capabilities for eco-friendly technological implementations					
GSS2	Our firm support suppliers with green image and appearance in the market					
GSS3	Our firm encourages those suppliers who use environmentally friendly packaging materials					

GSS4	Our firm use those suppliers who involve in pollution control activities and waste management system					
	Green Supplier Development (GSD)					
GSD1	Our firm use those suppliers who provide the design, features, and specifications according to the environment needs.					
GSD2	Our firm encourages transfer to suppliers with expertise on environmental issues related to products.					
GSD3	Our firm trains suppliers to produce recyclable packaging					
GSD4	Our firms support suppliers in achieving their environmental targets.					
	Green Supplier Collaboration (GSC)					
GSC 1	Our firm cooperates with suppliers to achieve environmental objectives					
GSC 2	Our firm collaborates with suppliers during the product design stage to minimize damages caused to the environment.					
GSC 3	Our firm build a return system with suppliers for recycling and reuse of used and defective products.					
GSC 4	Our firm cooperates with suppliers for investment recovery through the resale of scrap and used materials.					
	Green Supplier Evaluation (GSE)					
GSE 1	Our firm control possible environmental effects by suppliers through monitoring with evaluation programs.					
GSE 2	Our firm makes surveys with suppliers to evaluate their					

	environmental compliance and performance.					
GSE 3	Our firm evaluates eco-friendly practices by secondary suppliers (suppliers of suppliers)					
GSE 4	Our firm brings suppliers from the same industry together and allows them to learn about each other's environmental problems.					
	Supply Chain Sustainable Performance (SSS)					
		Strongly Disagree (1)	**Disagree (2)**	**Neutral (3)**	**Agree (4)**	**Strongly Agree (5)**
SSS1	Our firm support reduction waste and emissions					
SSS2	Our firm supports Decrease in frequency for environmental accident					
SSS3	Our firm supports Decrease in cost for materials purchasing.					
SSS4	Our Firm supports supply chain sustainability					

Green SC in Pharma

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16%	10%	7%	10%
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