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"ANALYSING THE GROWTH OF SUPPLY CHAIN IN PHARMACEUTICAL INDUSTRY"

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Abstract:

The growth of the supply chain in the pharmaceutical industry has been remarkable. Over the years, advancements in technology, globalization, regulatory requirements and improvement in road transport services have shaped the transformation of the pharmaceutical supply chain.

One key aspect of this growth is the implementation of advanced digital technologies. Pharmaceutical companies are leveraging technologies like block chain, Internet of Things (IOT), and artificial intelligence (AI) to enhance supply chain visibility, improve inventory management, and ensure the integrity of the products. Transports companies using automation for loading and unloading of products. These technologies enable real-time tracking of medicines, reducing the risk of counterfeit drugs and ensuring the safety and efficacy of medications. The paper will review the evolution of supply chain management in pharmaceutical industry, highlighting the increasing complexity, competition and global of supply chains. This paper also access the opportunities for growth and innovation is supply chain management in pharmaceutical industry including change in automation for better transhipment and adoption of block chain.

Key Words: Supply Chain, Transport, pharmaceutical industry

Introduction:

India's pharmaceutical market is currently estimated to be worth $50 billion. India is a significant pharmaceutical exporter, reaching more than 200 nations with its exports. More than half of Africa's generic needs are met by India, which also supplies roughly 40% of US generic demand and 25% of UK pharmaceutical demand.

The Indian pharmaceutical industry has a long history of creating and exporting top-notch goods at competitive prices to customers all over the world. India possesses the highest number of US FDA-approved units (741 as of August 2021) according to IBEF data updated in June 2022. Pharmaceutical companies based in India provide products in various categories, including over-the-counter (OTC) medications, vaccines, active pharmaceutical ingredients (APIs), contract research and manufacturing, biosimilar, and biologics. As an additional example, the IBEF reports that in 2021–2022 drug and pharmaceutical product exports totalled USD 24.6 billion, down from USD 24.4 billion in 2020–21.

Literature review:

Gholamhossein Mehralian, Asie Moosivand, Sanaz Emadind , Ramin Asgharian| Developing a coordination framework for pharmaceutical supply chain: using analytical hierarchy process | February 7, 2017 | International Journal of Logistics Systems and Management| Overseeing free individuals who share shared objectives is a successive worry in any store network. All the more explicitly, because of the basic job of the drug business in creating and conveying the right item to the perfect individuals with flawless timing, coordination of drug production network (PSC) individuals is a basic variable. Consequently, the reason for this review (PSC) is to distinguish and focus on factors influencing coordination of a PSC. The logical order process (AHP) is utilized to focus on six key standards, with 26 sub-models, for organizing PSC tasks

Smit paul and Goulam kabir | Examining transportation disruption risk in supply chains: A case study from Bangladeshi pharmaceutical industry | December, 2020 | Research in Transportation Business & Management | Transportation is one of the calculated drivers in supply chains. Transportation disturbance is exorbitant in supply chains. This paper intends to survey transportation disturbance gambles with utilizing a Bayesian Conviction Organization (BBN). To start with, the interruption risk factors and their sub-factors were recognized from the significant articles and specialists' perspectives. The BBN-based model is created to ascertain the minor probabilities of the gamble factors and their sub-elements to decide the most delicate variables/sub-factors.

Srimarut, Thammarak; Mekhum, Witthaya | Supply Chain Management and Its Influence on the Performance of Pharmaceutical Companies. | April 14, 2020 | Systematic Reviews in Pharmacy, 2020 | This study plans to explore the patterns in production network the board for dissecting the presentation of drug organizations in Thailand. Store network the executives is reflected through SCM1 which shows the store network creation adaptability as estimated through five things, while SCM2 addresses the store network obtaining adaptability as seen through five things as well. For estimating the business execution, three things were included the review. For the information assortment reason, we have zeroed in on the poll overview strategy in light of the expressed things of both store network aspect and execution gauges as well.

Moniruzzaman, Dr. Md. | Supply chain management in pharmaceutical industries: a study on Eskayef Bangladesh Ltd. | April 15, 2016 | BRAC University | Inventory network The board (SCM) is the most common way of arranging, executing, and controlling the activities of the production network with the reason to fulfill client prerequisites as proficiently as could really be expected. The sub-regions involving a production network include: Estimating/Arranging, Buying/Obtainment, Strategies, Tasks, Stock Administration, Transport, Warehousing, Dissemination, Client care and so on. Nonetheless, it is challenging to track down a standard model of Production network The board working in the business local area. Some business will allude to and deal with their stockpile chains in an organized and sweeping design, including the whole sub regions characterized previously.

Sachin modgil and Sanjay sharma | Information Systems, Supply Chain Management and Operational Performance: Tri-linkage—An Exploratory Study on Pharmaceutical Industry of India | April 11, 2017 | Sage Journals | The current review really tried to examine the tri-linkage between data frameworks (ISs) and inventory network the executives (SCM) practices to improve the functional presentation (Over powered) of an association. The review tried to find out, how various types of ISs assist the stock with fastening to accomplish more noteworthy Over powered. Three builds, in particular, functional IS, key IS and infrastructural IS, have been recognized from writing. Four plant-level production network builds, specifically, essential provider organization, data sharing and data quality, buying the board and stock administration, have been recognized. The co-connection between ISs, inventory network rehearses and Over powered has been tried. At last, both ISs and production network influence on Over powered have been assessed. The ISs make a roundabout effect on Over powered through production network rehearses, which brings **about Over powered.**

Rajesh Kr. Singh, Ravinder Kumar | Strategic issues in pharmaceutical supply chains: a review| International Journal of Pharmaceutical and Healthcare Marketing | September 2016 | In the current setting of a wellbeing concious society, the executives of drug supply chains has become more mind boggling in light of the fact that it includes the life-saving interest of person and requires the support of various partners, for example, drug producers, wholesalers, merchants, clients, data specialist co-ops and administrative organizations. Restricted research is accessible in the space of drug supply chains. This paper plans to track down the holes in the writing by assessing research papers on various vital issues of production network the board in the drug area.

Problem statement:

Due to high competition in pharma industry and introducing new products company must ensure effective supply chain management to meet market demand.

Use of human labours in transport while loading and unloading of pharma materials even though products used are hazardous.

Hygiene and temperature for pharma raw materials must be ensured to maintain the cleanliness and safety of material.

Research methodology:

RESEARCH DESGIN:

The growth of the supply chain in the pharmaceutical industry "Combining literature review, mixed-methods approach, and data analysis to understand factors driving supply chain growth."

Research objective:

1. Identify key drivers and trends shaping the pharmaceutical supply chain's growth.
2. Assess efficiency improvements and cost reduction strategies within the supply chain.
3. Analyse the impact of technology adoption on supply chain growth in the pharmaceutical industry.

SOURCES OF DATA

Primary data sources: Structured questionnaires

DATA COLLECTION METHOD

To collect qualitative as well as quantitative information from the target audience that is, businesses that use a structured questionnaire is employed.

POPULATION

The research aims to investigate the demographic

SAMPLE METHOD

Simple random sampling methods will be used for this research.

DATA COLLECTION INSTRUMENT

A structured questionnaire is used as a data collection instrument for gathering qualitative and quantitative insights from employees.

HYPOTHESIS

Null Hypothesis H0:

The growth of the supply chain in the pharmaceutical industry could be that there is no significant relationship between any factors or variables and the growth of the supply chain.

Alternative Hypothesis H1:

The growth of the supply chain in the pharmaceutical industry could be that factors such as technological advancements, strategic collaborations, and regulatory changes have a significant positive impact on the growth of the supply chain.

DATA ANALYSIS:

Transport involvement:

HO: There is a effective role of a transport companies for cleanliness for storing medicine raw material**.**

H1: There is no effective role of transport companies for cleanliness for storing medicine raw material.

Here 85% of respondent believes that cleanliness for storing medicine raw material. Therefore, null hypothesis is accepted.

Growth of SC:

H0: Growth of SC has a positive impact on patient safety and access to medication.

H1: Growth of SC has a negative impact on patient safety and access to medication.

Here 78.4% of respondents believes that there is a positive impact. Therefore, null hypothesis is accepted. Hence Growth of SC has a positive impact on patient safety and access to medication

FINDINGS:

1. Technological advancements: Adoption of advanced technologies like automation, IoT, and data analytics improves efficiency and transparency in the supply chain.
2. Strategic collaborations: Partnerships between pharmaceutical companies, suppliers, and distributors enhance supply chain coordination and enable faster product delivery.
3. Regulatory changes: Compliance with evolving regulations and standards ensures safety, quality, and traceability throughout the supply chain.
4. Globalization: Expanding into international markets allows pharmaceutical companies to access new customers, resources, and manufacturing capabilities.
5. Supply chain visibility: Real-time tracking and monitoring of inventory, shipments, and demand help optimize supply chain operations and reduce costs.
6. Patient-centric focus: Aligning supply chain processes with patient needs ensures timely availability of medications and enhances customer satisfaction.
7. Sustainable practices: Implementing environmentally friendly initiatives like green packaging and reducing waste contributes to a sustainable supply chain.

Conclusion:

In conclusion, the pharmaceutical industry has witnessed significant growth in supply chain management practices in recent years. Companies have recognized the importance of efficiently managing their supply chains to ensure timely delivery of products, reduce costs, and meet regulatory requirements. The adoption of advanced technologies, such as block chain and AI, has played a key role in enhancing visibility, transparency, and traceability in the supply chain. Going forward, it is imperative for pharmaceutical companies to continue investing in supply chain management to stay competitive in the global market and effectively respond to the evolving industry landscape. The upcoming trends in pharmaceutical industry will focus more on strengthening and stabilising their supply chain and transportation services for growth of industry.

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