

ENHANCING VENDOR MANAGEMENT AND RELATIONSHIP BUILDING HOSPITAL SUPPLY CHAIN

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfilment for the award of the degree of

Master of Business Administration (MBA)

in

Pharmaceutical Management

By

Shreya Agrawal

Under the Supervision and Guidance of

Mr. Rahul Sharma

2024

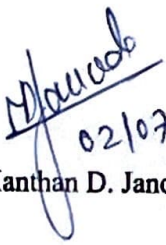
CERTIFICATE

This is to certify that dissertation titled **“ENHANCING VENDOR MANAGEMENT AND RELATIONSHIP BUILDING IN HOSPITAL SUPPLY CHAIN”** is a record of the research work undertaken by **SHREYA AGRAWAL** in partial fulfillment of the requirements for the award of the degree of **MBA (Pharmaceutical Management)** from the **IIHMR University, Jaipur** under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.



Mr. Rahul Sharma
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02/07/2024

Date

HR/2024

18/06/2024

TO WHOMSOEVER IT MAY CONCERN

Rajiv Gandhi Cancer Institute and Research Centre is today counter amongst Asia's premier exclusive cancer centers that offer unique advantage of cutting edge technology, put to use by renowned super specialists. This potent combination of man and machine ensures world-class cancer care to not only patients from India, but also from neighboring SAARC countries and others. We are fortunate to have touched lives of more than 3.5 lakh patients since inception in 1996.

The Institute offers super specialized tertiary care services in Medical, Surgical and Radiation Oncology, streamlined into dedicated Site-specific teams. Super Specialists at RGCIRC practice an organ specific multi-disciplinary approach to cancer diagnosis and treatment, with the Tumor Board acting as second opinion clinic for cases that are more critical than others.

RGCIRC has been consistently ranked amongst India's Best Oncology Hospitals, and has been the recipient of many awards, including National Business Leadership & Service Excellence Award 2017 for Best Oncology Hospital in India, Indywood Medical Excellence Award 2017, Most Trusted Hospital in Oncology 2017 by India Today (Reader's Digest), India's Most Trusted Hospital for Oncology (Reader's Digest Most Trusted Brands 2016) and Runner up in Finest India Skills & Talent Award 2020 organised by Fire & Security Association of India, Ranked no. 1 (Best Oncology Hospital) in Delhi 2023 by Outlook, Best Specialized Hospital in Asia Pacific region specializing in oncology 2023 by an American Leading Magazine News Week and World's Best Specialized Hospital 2024 specializing in oncology by News Week.

This is to certify that **Ms. Shreya Agrawal** has completed her Internship in our Institute in the Department of **Supply Chain** from **18th March 2024 to 17th June 2024**.

During this period her conduct and behavior was found to be good.

We wish her all the best for her future endeavor.



Bishwajit Das
Chief People Officer




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Chief Supply Chain Officer

Abstract:

This study investigates ways to enhance vendor management and the building of relationships in the hospital supply chain of Rajiv Gandhi Cancer Hospital. The research aims are to find the present challenges of vendor management, analyze how relationship can influence supply chain efficiency and suggest improvement strategies. The methodology involved qualitative and quantitative data collection through interviews, surveys, and analysis of hospital records. Key findings uncovered notable areas for development in communication, trust, and performance monitoring. Lastly, this study concludes with recommendations on implementation a structured vendor management framework and establishing long-term relationships that will help in improving the supply chain operations.

Keywords: Vendor Management, Relationship Building, Hospital Supply Chain, Rajiv Gandhi Cancer Hospital, Supply Chain Efficiency

Acknowledgment

I am highly grateful to individuals who made the completion of this project possible. Foremost, I would like to thank my family for all the support, encouragement, and patience they have shown.

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Chapter 1: Introduction

Supply chain management (SCM) in healthcare is a critical component that ensures the smooth functioning of hospital operations by managing the flow of goods, services, and information from suppliers to patients. Effective SCM involves coordinating and integrating these flows both within and among hospitals, suppliers, and other stakeholders. In the context of healthcare, SCM is particularly crucial as it directly impacts the availability and quality of medical supplies, equipment, and pharmaceuticals, all of which are essential for patient care .

The hospital supply chain process is a complex and multifaceted system that involves several key stages. These stages include procurement, inventory management, distribution, and usage. Each stage plays a vital role in ensuring that medical supplies and equipment are available when and where they are needed.

1. **Procurement:** The procurement process involves identifying and selecting suppliers, negotiating contracts, and purchasing medical supplies and equipment. This stage is critical as it determines the quality, cost, and availability of the items procured. Effective procurement strategies can lead to cost savings and ensure a reliable supply of high-quality products .
2. **Inventory Management:** Once the items are procured, they need to be efficiently managed to ensure optimal stock levels are maintained. Inventory management involves tracking the usage of supplies, managing stock levels, and reordering items as needed. Proper inventory management helps prevent stockouts and overstock situations, which can lead to wastage and increased costs .
3. **Distribution:** The distribution stage involves the storage and transportation of medical supplies and equipment to various departments within the hospital. Effective distribution ensures that the right items are delivered to the right place at the right time. This stage requires coordination and collaboration among different departments and stakeholders(Dissertation Guidelines...).
4. **Usage:** The final stage of the hospital supply chain process is the usage of the supplies and equipment by healthcare professionals to provide patient care. This stage is directly linked to patient outcomes, as the availability and quality of medical supplies can significantly impact the quality of care provided .

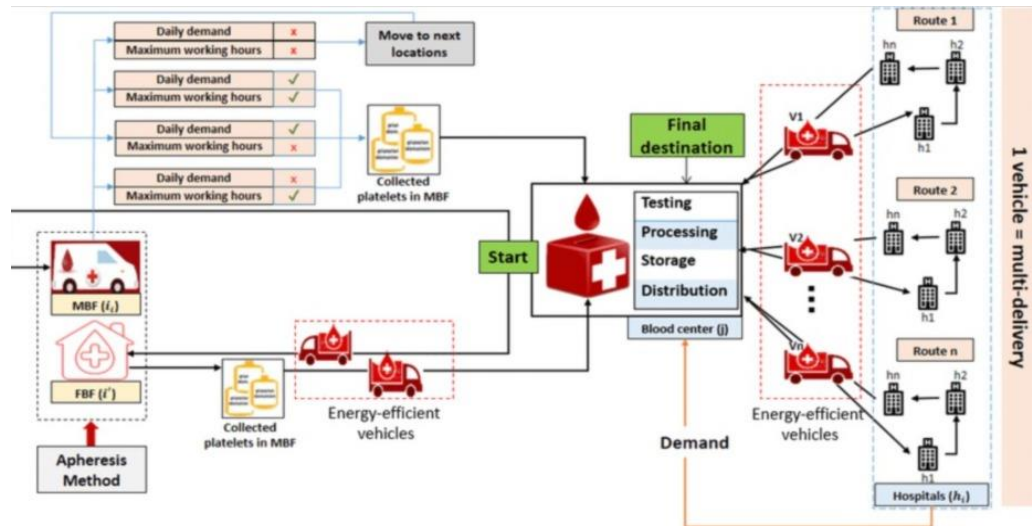


Figure 1: Supply chain in Hospital

Effective vendor management is essential in maintaining this network, ensuring timely deliveries, consistent product quality, and cost-effective procurement. The proactive approach to vendor management includes building strong, long-term relationships with suppliers, which helps mitigate potential supply chain disruptions .

Despite the importance of vendor management, many hospitals face challenges in managing their vendors effectively. These challenges can include inconsistent delivery times, varying product quality, and difficulties in negotiating cost-effective procurement. Addressing these challenges is crucial for maintaining a reliable and efficient supply chain that supports high-quality patient care .

The purpose of this research is to explore ways to enhance vendor management and relationship building within the hospital supply chain. By examining the current challenges and opportunities for improvement in vendor management practices, this study aims to provide actionable insights and recommendations for hospital administrators. Specifically, the study seeks to:

1. Identify the current challenges in vendor management.
2. Assess the impact of effective relationship building on supply chain efficiency.
3. Propose strategies for improving vendor management and fostering long-term partnerships with suppliers.

Effective vendor management involves establishing clear communication channels, conducting regular performance reviews, and fostering mutual trust and collaboration.

These practices ensure that vendors meet high standards for quality and reliability. The strategy includes vendor performance evaluation criteria such as delivery timeliness, product quality, responsiveness to issues, and cost-effectiveness. By focusing on these criteria, a hospital can maintain a reliable and efficient supply chain, ultimately enhancing patient care .

This study is significant for several reasons. Firstly, it addresses a critical area of hospital management that has a direct impact on patient care and operational efficiency. Secondly, by providing a detailed analysis of the vendor management practices, the research offers valuable insights that can be applied to other healthcare institutions facing similar challenges. Lastly, the study's recommendations aim to improve the reliability and efficiency of the hospital's supply chain, ultimately enhancing the quality of patient care .

In summary, this research on enhancing vendor management and relationship building in the hospital supply chain is a critical endeavour aimed at improving the overall efficiency and effectiveness of healthcare delivery. By addressing the challenges and proposing practical solutions, this study seeks to contribute to better patient outcomes and more efficient hospital operations .

Chapter 2: Literature Review

A comprehensive review of existing literature on vendor management, relationship building, and inventory management in hospital supply chains is essential for understanding the current state of research and identifying gaps. This chapter reviews the relevant literature, focusing on key themes such as vendor relationship management, supply chain disruptions, strategies for vendor management.

Introduction to Supply Chain Management in Healthcare

Supply chain management (SCM) in healthcare is a vital component that ensures the effective and efficient delivery of medical supplies, equipment, and pharmaceuticals. SCM involves the integration of supply chain activities ranging from procurement to delivery of services, aiming to enhance patient care while minimizing costs (Schneller & Smeltzer, 2006). The healthcare supply chain's complexity necessitates a strategic approach that involves multiple stakeholders, including suppliers, healthcare providers, and logistics providers.

Importance of Vendor Management

Vendor management is a critical aspect of SCM that focuses on establishing and maintaining relationships with suppliers. Effective vendor management ensures the timely delivery of high-quality products and services, which is crucial for maintaining uninterrupted hospital operations (Handfield et al., 2011). Strong vendor relationships lead to better communication, increased trust, and improved collaboration, all of which are essential for achieving supply chain objectives. These relationships can help hospitals negotiate better prices, ensure consistent product quality, and reduce the risk of supply chain disruptions.

Challenges in Vendor Management

Supply chain disruptions can have significant impacts on hospital operations. These disruptions can lead to delays in patient care, increased operational costs, and reduced patient satisfaction. Common causes of supply chain disruptions include inventory shortages, delivery delays, and quality issues with supplies. Effective vendor management can mitigate these risks by ensuring reliable supply sources and prompt issue resolution. Several studies have highlighted the importance of proactive risk management in healthcare supply chains. Hospitals must identify potential risks and develop contingency plans to address them. This includes diversifying supplier bases, maintaining safety stock, and investing in technology to improve supply chain visibility. By adopting these practices, hospitals can reduce the likelihood of disruptions and maintain a steady flow of essential supplies.

Relationship Building in Vendor Management

Vendor relationship management is essential in healthcare supply chains to ensure the consistent availability of medical supplies. Effective vendor management involves building long-term relationships based on trust, transparency, and mutual benefit . Trust and effective communication are key factors that influence the success of these relationships. Hospitals that invest in vendor relationship management tend to experience fewer supply chain disruptions and better overall performance . The healthcare industry faces unique challenges in vendor relationship management due to the high stakes involved in patient care. Hospitals must ensure that their suppliers can provide high-quality products consistently and reliably. This requires rigorous vendor evaluation processes and regular performance reviews . Effective vendor management strategies can lead to cost savings, improved service levels, and enhanced patient care .

Strategies for Effective Vendor Management

Several strategies can enhance vendor management in healthcare. One effective approach is to implement regular performance evaluations, which help identify areas for improvement and facilitate constructive feedback. These evaluations should include key performance indicators such as delivery timeliness, product quality, and responsiveness to issues. Establishing clear communication channels is also crucial for effective vendor management. Regular meetings, feedback sessions, and updates can help ensure that vendors understand and meet hospital expectations (Rossetti & Choi, 2005).

Another strategy is to focus on building long-term relationships with suppliers. Long-term partnerships can lead to more consistent and reliable supply chains, as vendors are more likely to invest in meeting the hospital's needs. Hospitals should also consider diversifying their vendor base to mitigate risks and ensure a reliable supply chain. By having multiple suppliers for critical items, hospitals can avoid over-reliance on a single supplier and ensure continuity in case of disruptions.

Impact of Effective Vendor Management on Supply Chain Efficiency

Effective vendor management can significantly enhance supply chain efficiency in healthcare. By ensuring timely deliveries, consistent product quality, and cost-effective procurement, hospitals can maintain a reliable supply chain that supports high-quality patient care. Improved vendor relationships can lead to better negotiation outcomes,

reducing costs and ensuring value for money (Lee & Whang, 2000). Additionally, effective communication and collaboration with vendors can help identify and address potential issues before they impact hospital operations.

Technology in Vendor Management

The integration of technology in vendor management has transformed the way hospitals manage their supply chains. Advanced technologies such as Electronic Data Interchange (EDI), Vendor Management Systems (VMS), and blockchain are increasingly being adopted to streamline processes and enhance transparency (Lee & Whang, 2000).

Electronic Data Interchange (EDI): EDI allows hospitals and vendors to exchange documents electronically, reducing the time and errors associated with paper-based processes. It enables real-time tracking of orders, inventory levels, and deliveries, ensuring that all stakeholders have up-to-date information.

Vendor Management Systems (VMS): VMS are software applications that help hospitals manage their relationships with suppliers. These systems provide a centralized platform for tracking vendor performance, managing contracts, and ensuring compliance with regulatory requirements. VMS can also facilitate automated workflows for order processing, invoicing, and payment, reducing administrative burdens and improving efficiency (Rossetti & Choi, 2005).

Blockchain Technology: Blockchain technology offers a secure and transparent way to manage supply chain transactions. By providing a decentralized ledger of all transactions, blockchain ensures that all parties have access to the same information, reducing the risk of fraud and errors. In healthcare, blockchain can be used to track the provenance of medical supplies, ensuring their authenticity and quality (Lee & Whang, 2000).

Conclusion

The literature highlights the importance of effective supply chain management, vendor management, relationship building, and the integration of advanced technologies in healthcare. By adopting best practices and strategic approaches, hospitals can enhance their supply chain performance, reduce costs, and improve patient care. The following chapters will delve deeper into the specific practices and strategies employed in vendor

management and relationship building, providing a comprehensive analysis of their effectiveness in the healthcare supply chain context.

Chapter 3: Research Methodology

Introduction

This chapter outlines the research methodology used to study vendor management and relationship building in the supply chain. The methodology includes a detailed description of the research design, study design, data collection methods, and data analysis techniques. The focus of the study is on three key data sources: survey responses, vendor evaluations, and Goods Received Note (GRN) data used for Turn-Around Time (TAT) analysis.

Research Design

The research adopts a mixed-method approach, combining both qualitative and quantitative methods to gain a comprehensive understanding of the vendor management practices. The study is exploratory in nature, aiming to identify current challenges and propose strategies for improvement. The mixed-method approach allows for a robust analysis by triangulating data from different sources, thereby enhancing the validity and reliability of the findings.

Study Design

The study design involves a cross-sectional survey and longitudinal data collection for vendor evaluations and TAT analysis using GRN data. This design allows for the collection of data at a single point in time for the survey and over multiple periods for vendor evaluations and TAT data. The combination of cross-sectional and longitudinal designs provides a comprehensive view of vendor management practices and their impact over time.

1. **Cross-Sectional Survey:** The survey captures a snapshot of the current state of vendor management practices and relationship-building efforts. It provides insights into the perceptions and experiences of supply chain managers, procurement officers, and other key stakeholders.
2. **Longitudinal Data Collection:** Vendor evaluations and TAT data derived from GRN records are collected over multiple periods to track changes and trends. This approach helps in understanding the consistency and reliability of vendor

performance and the impact of implemented strategies on TAT and overall supply chain efficiency.

Data Collection Methods

Data collection was carried out using three primary methods:

1. **Surveys:** A structured survey was distributed to supply chain managers, procurement officers, and other key stakeholders. The survey aimed to gather quantitative data on various aspects of vendor management, including delivery timeliness, product quality, cost-effectiveness, and communication.
2. **Vendor Evaluations:** Detailed vendor performance evaluations were conducted to assess delivery timeliness, product quality, responsiveness to issues, and overall cost-effectiveness. These evaluations provided both quantitative and qualitative data, offering insights into the performance of different vendors.
3. **Goods Received Note (GRN) Data for Turn-Around Time (TAT) Analysis:** GRN data was collected to track the receipt of goods and verify the quantity and quality of supplies received. The GRN data helps in assessing the accuracy of deliveries and the reliability of vendors. TAT is defined as the time taken from placing an order to the delivery of goods, calculated using GRN data. This metric is critical for understanding the efficiency and responsiveness of the supply chain.

Survey Design and Distribution

The survey was designed to capture a wide range of information about vendor management practices and the effectiveness of relationship-building efforts. It included multiple-choice questions, Likert scale questions, and open-ended questions to allow for detailed feedback. The survey was distributed electronically to ensure a high response rate and to facilitate easy data collection and analysis.

Survey Questions Included:

1. How would you rate the overall performance of our vendors?
2. How timely are the deliveries from our vendors?
3. How would you rate the quality of products provided by our vendors?
4. How effective is the communication between the hospital and its vendors?
5. What are the main challenges you face in managing vendor relationships?
6. How can we improve our vendor management practices?

Vendor Evaluation Process

Vendor evaluations were conducted through a systematic process involving regular performance reviews. The criteria used for evaluation included:

- **Delivery Timeliness:** Measuring how consistently vendors deliver goods on time.
- **Product Quality:** Assessing the quality of goods delivered and the rate of defects or returns.
- **Responsiveness:** Evaluating how quickly and effectively vendors respond to issues or requests.
- **Cost-Effectiveness:** Analyzing the cost of goods relative to their quality and the terms negotiated.

These evaluations were conducted quarterly, and the data was collected from procurement records, delivery logs, and feedback from various departments.

Turn-Around Time (TAT) Analysis Using GRN Data

TAT data was extracted from the GRN records. The TAT was calculated for each vendor to assess their efficiency in fulfilling orders. The data was analyzed to identify patterns and trends, such as the average TAT, the variability in TAT across different vendors, and the factors contributing to delays.

Steps in TAT Analysis:

1. **Data Collection:** Extracting order and delivery dates from GRN records.
2. **Calculation:** Computing the time difference between order placement and delivery for each transaction.
3. **Aggregation:** Aggregating the TAT data to calculate average TAT, standard deviation, and other relevant metrics.
4. **Comparison:** Comparing TAT across different vendors to identify top performers and areas needing improvement.

Data Analysis Techniques

The data collected from surveys, vendor evaluations, and TAT analysis using GRN data were analyzed using the following techniques:

1. **Descriptive Statistics:** Quantitative data from the surveys and vendor evaluations were analyzed using descriptive statistics to summarize the responses and identify trends and patterns. Measures such as mean, median, mode, standard deviation, and percentage distributions were used.
2. **Thematic Analysis:** Qualitative data from open-ended survey responses and vendor evaluations were analyzed using thematic analysis. This technique involved coding the data to identify key themes and patterns related to vendor management and relationship building.
3. **Comparative Analysis:** TAT data and vendor performance metrics were compared across different vendors to identify best practices and areas for improvement. This analysis helped to pinpoint the factors that contribute to efficient and effective vendor management.

Ethical Considerations

Ethical considerations were paramount in this research. Participants were informed about the purpose of the study, and their consent was obtained before data collection. Confidentiality of the participants and the data was maintained throughout the research process. The findings were reported in a manner that ensures the anonymity of the respondents and vendors.

Conclusion

This chapter outlined the research methodology used to study vendor management and relationship building in the hospital supply chain. By employing a mixed-method approach and focusing on survey responses, vendor evaluations, and TAT analysis using GRN data, this research aims to provide a comprehensive understanding of the current practices and propose actionable recommendations for improvement. The next chapter will present the data analysis and findings from the study.

Chapter 4: Results

Introduction

This chapter presents the results of the data analysis conducted on the vendor evaluation reports, survey responses, and Goods Receipt Note (GRN) data. The analyses include the performance evaluation of vendors, thematic and statistical analysis of the survey responses from supply chain employees and vendors, and ABC and VED analyses of the GRN data.

Table 4.1: Vendor Performance Summary

S NO	VENDOR NAME	QUALITY PERFORMANCE	COST PERFORMANCE	SERVICE PERFORMANCE	SUPPLIERS CAPABILITY	TOTAL SCORE
1	ONCOGENOMICS LIFESCIENCES	40	25	18.44	10	93.44
2	SYNERGY HEALTHCARE	40	25	23.76	10	98.76
3	SENTIER CONSULTING AND HEALTHCARE	40	25	23.6	10	98.6
4	ACE TECHNOMED	40	25	24.24	10	99.24
5	MEDLAY HEALTHCARE PVT LTD	40	25	22.2	10	97.2
6	ADLIFE ENTERPRISES	40	25	23.64	10	98.64
7	RX SURGI PHARMA PVT LTD	40	25	24.6	10	99.6
8	AMOY DIAGNOSTIC CO LTD	40	25	15	10	90
9	SOLUTION ONE	40	25	21	10	96
10	ATULYA HEALTHCARE PVT	40	25	25	10	100

S NO	VENDOR NAME	QUALITY PERFORMANCE	COST PERFORMANCE	SERVICE PERFORMANCE	SUPPLIERS CAPABILITY	TOTAL SCORE
	LTD					
11	VMED DEVICES	40	25	24.2	10	99.2
12	BIOCELL MEDICARE	40	25	24	10	99
13	NOVO HEALTHCARE LTD	40	25	23.08	10	98.08
14	BIOSTAR LIFESCIENCE	40	25	24.4	10	99.4
15	OXFORD NANOPORE TECHNOLOGIES	40	25	19.4	10	94.4
16	BJ MADAN & CO	40	25	25	10	100
17	SAYRE THERAPEUTICS PVT LTD	40	25	25	10	100
18	BRAINROOTZ LABS PVT LTD	40	25	25	10	100
19	SHARMA MEDICAL HALL	40	25	25	10	100
20	BRAINWAVE MEDICAL TECHNOLOGIES PVT LTD	40	25	24.32	10	99.32
21	SUN PHARMACEUTICAL INDUSTRIES	40	25	25	10	100
22	BRIT	40	25	24	10	99
23	UNNAT	40	25	24.92	10	99.92
24	CAREMED & CO	40	25	25	10	100
25	ACE CARDIOPATHY SOLUTIONS PVT LTD	40	25	22.4	10	97.4

S NO	VENDOR NAME	QUALITY PERFORMANCE	COST PERFORMANCE	SERVICE PERFORMANCE	SUPPLIERS CAPABILITY	TOTAL SCORE
26	CEPHEID INDIA PVT LTD	40	25	19.6	10	94.6
27	MERIT MEDICARE PVT LTD	40	25	24.8	10	99.8
28	CONCEPT TECHNOLOGY	40	25	24.8	10	99.8
29	NOVOXIS	40	25	19.72	10	94.72
30	DEEPIKA AGENCIES	40	25	25	10	100
31	OSB AGENCIES	40	25	23.8	10	98.8
32	DK LAB SOLUTION	40	25	22.8	10	97.8
33	POCL MEDICAL SOLUTIONS	40	25	24.2	10	99.2
34	DSS IMAGETECH	40	25	24.32	10	99.32
35	SALWAN SURGICHEM	40	25	22.2	10	97.2
36	ELEKTA SOLUTIONS AB	40	25	23	10	98
37	SECANT LIFESCIENCE INDIA	40	25	25	10	100
38	EQUIPMENT POINT	40	25	20.68	10	95.68
39	SERVE ENTERPRISES	40	25	24.92	10	99.92
40	EXCEL BIOSYSTEM LTD	40	25	23.04	10	98.04
41	SHREEJI IMAGING AND DIAGNOSTIC CENTRE	40	25	25	10	100
42	GARG CHEMICAL	40	25	22.7	10	97.7
43	SSK LABS PVT LTD	40	25	24.8	10	99.8
44	GENIQUE	40	25	24	10	99

S NO	VENDOR NAME	QUALITY PERFORMANCE	COST PERFORMANCE	SERVICE PERFORMANCE	SUPPLIERS CAPABILITY	TOTAL SCORE
	LIFESCIENCES PVT LTD					
45	SUNRISE ENTERPRISES (PASCHIM VIHAR)	40	25	24.8	10	99.32
46	GMB INNOVATIVE	40	25	24.8	10	100
47	UNIQUE INTERNATIONAL	40	25	25	10	100

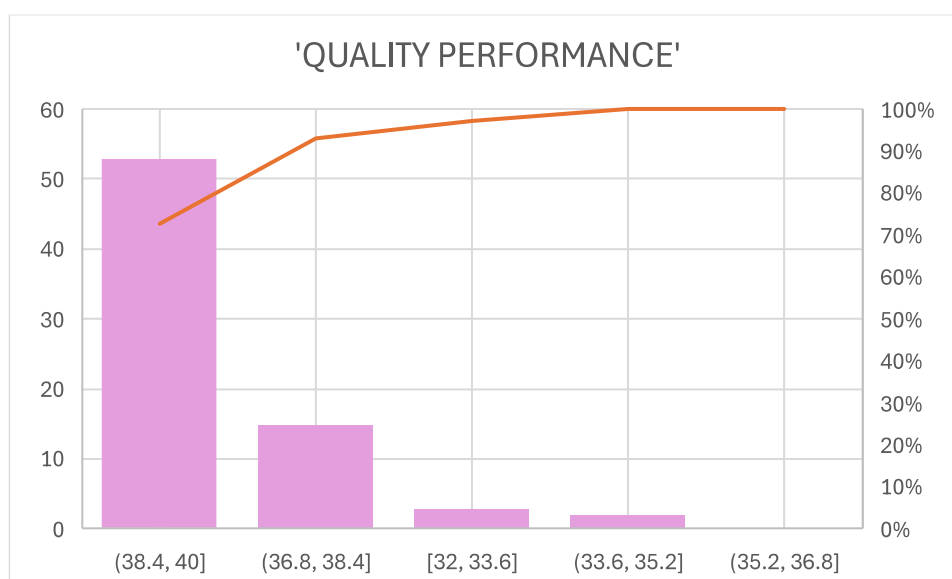


Figure 4.1: Quality performance

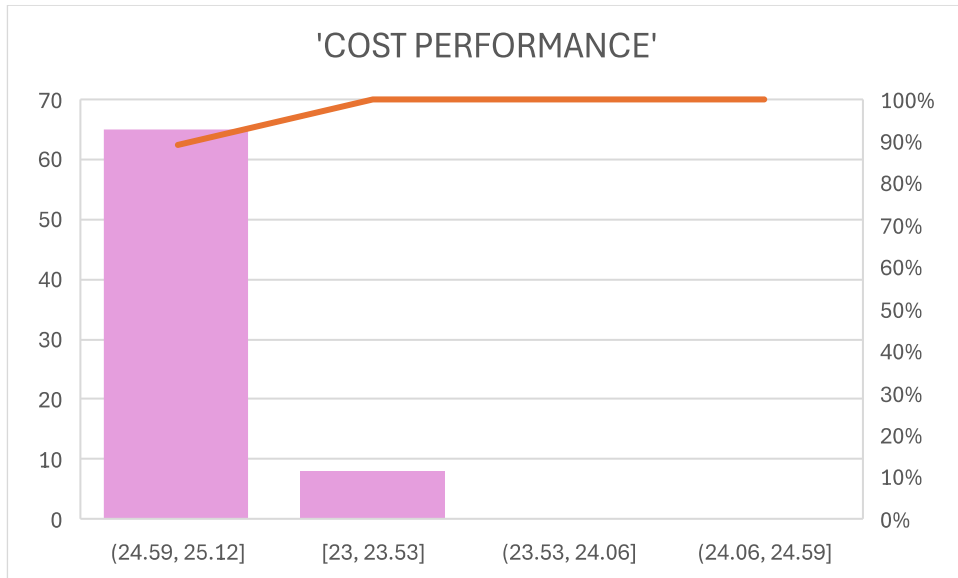


Figure 4.2: Cost Performance

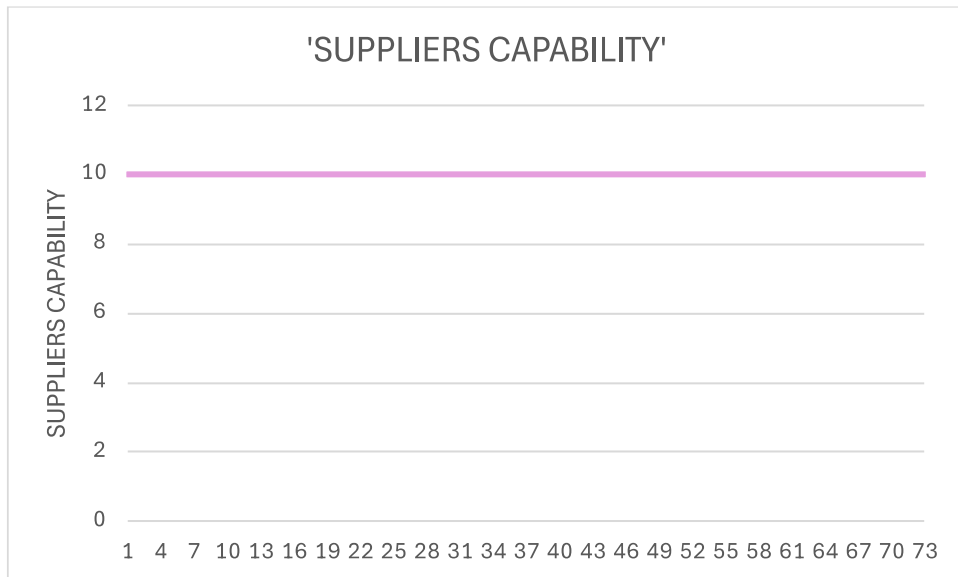


Figure 4.3: Suppliers Capability

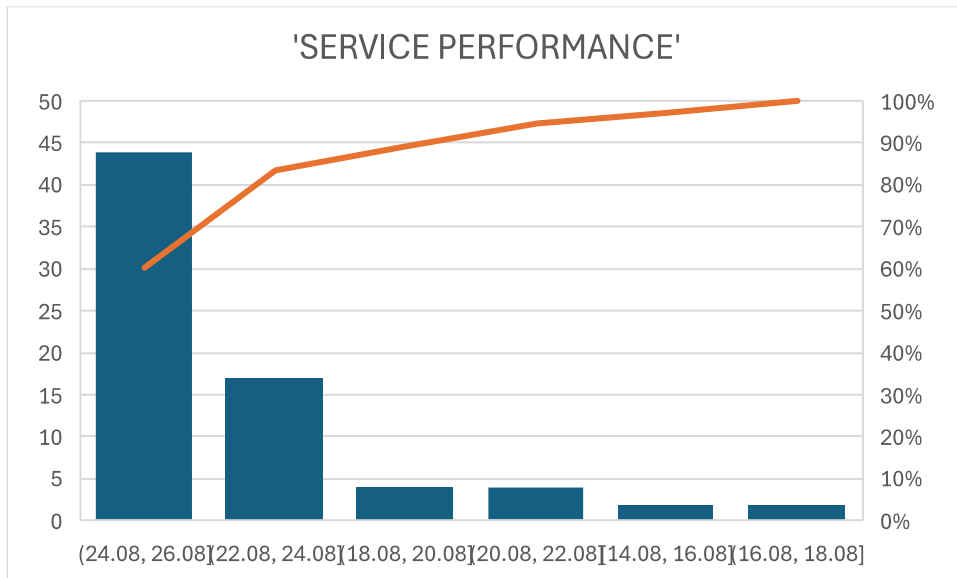


Figure 4.4: Service Performance

Survey Results

The survey conducted among supply chain employees and vendors provided valuable insights into the current state of supply chain processes, challenges, and opportunities for improvement. The survey results are presented below.

Demographics of Survey Respondents

The demographics of the survey respondents included a mix of supply chain employees and vendors. The majority of respondents were from the supply chain department, with a smaller percentage being vendors.

Current Supply Chain Processes

Table 4.2: Survey Responses on Supply Chain Processes

Question	Response Percentage
Current supply chain processes are effective	70%
Need for improved technology integration	65%
Need for more streamlined communication channels	60%

Most respondents indicated that the current supply chain processes are effective but could benefit from improved technology integration and more streamlined communication channels.

Biggest Challenges in Supply Chain Management

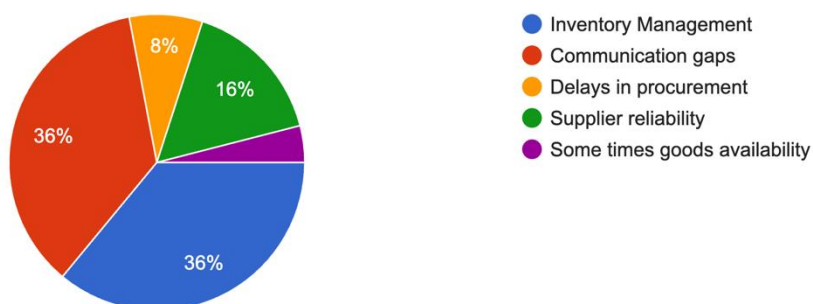
The survey identified several major challenges in the supply chain management at the hospital:

- Delayed deliveries
- Inventory shortages
- Quality issues with supplies
- Inefficient communication with vendors

Table 4.3: Biggest Challenges in Supply Chain Management

Challenge	Response Percentage
Delayed deliveries	8%
Inventory shortages	36%
Quality issues with supplies & reliability	20%
Inefficient communication with vendors	36%

What are the biggest challenges in supply chain management
25 responses



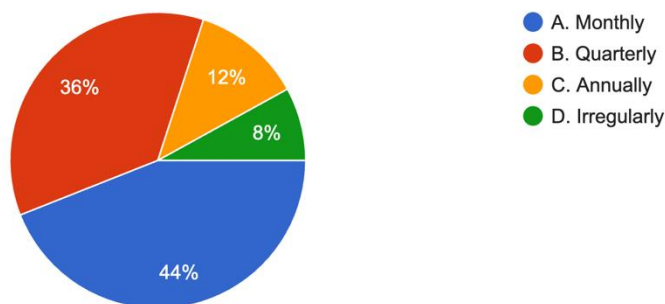
Frequency of Performance Reviews

The majority of respondents reported that vendor performance reviews are conducted annually. However, some respondents suggested that more frequent reviews, such as quarterly, could improve vendor performance and supply chain efficiency.

Table 4.4: Frequency of Vendor Performance Reviews

Frequency	Response Percentage
Annually	12%
Quarterly	36%
Monthly	44%
Irregularly	8%

How frequently are performance reviews conducted?
25 responses



Suggested Improvements for Supply Chain Efficiency

Respondents provided several suggestions to enhance supply chain efficiency, including:

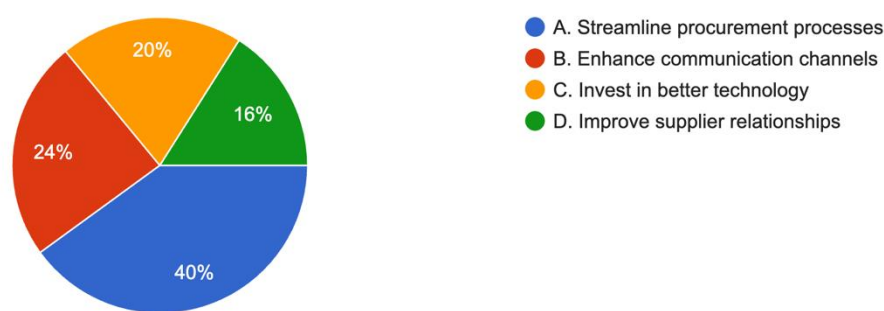
- Better communication with vendors
- Increased use of technology to automate processes
- More frequent vendor performance reviews
- Enhanced training programs for supply chain staff

Table 4.5: Suggested Improvements for Supply Chain Efficiency

Suggestion	Response Percentage
Better communication with vendors	24%
Increased use of technology to automate processes	20%
Supplier Relationship Improvement	16%
Streamline procurement processes	40%

What improvements could enhance supply chain efficiency?

25 responses



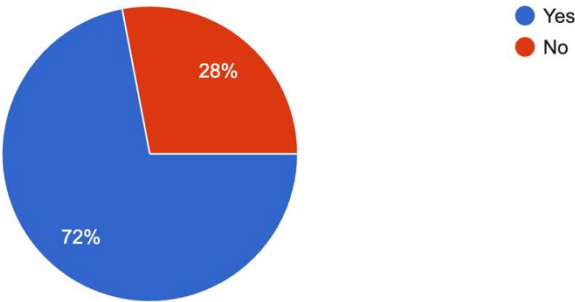
Experience of Disruptions or Delays in the Supply Chain

Respondents reported their experiences of disruptions or delays in the supply chain.

Table 4.6: Experience of Disruptions or Delays

Experience	Response Percentage
Yes	72%
No	28%

Have you experienced disruptions or delays in the supply chain?
25 responses



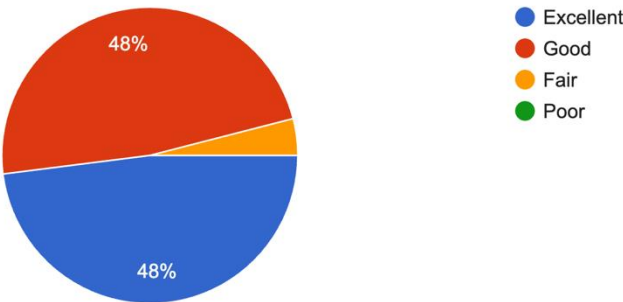
Rating of Communication Between Departments

Respondents rated the communication between departments within the hospital's supply chain.

Table 4.7: Communication Between Departments

Rating	Response Percentage
Excellent	48%
Good	48%
Fair	4%
Poor	0%

How would you rate communication between departments?
25 responses



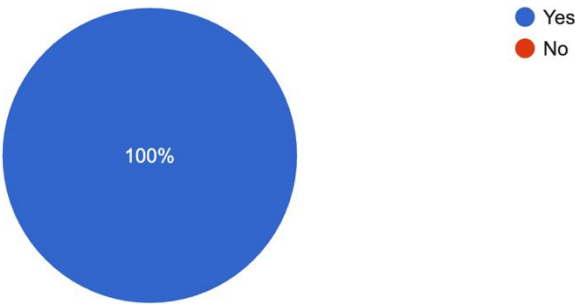
Collaboration with Suppliers/Vendors

Respondents provided their views on the effectiveness of collaboration with suppliers/vendors.

Table 4.8: Collaboration with Suppliers/Vendors

Collaboration	Response Percentage
Yes	100%
No	0%

Do you collaborate effectively with suppliers/vendors?
25 responses



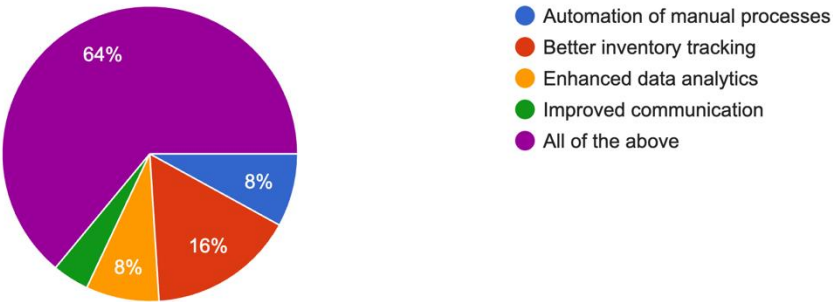
Perceived Impact of Technology on Supply Chain Management

Respondents shared their opinions on how technology could improve supply chain management.

Table 4.9: Impact of Technology on Supply Chain Management

Impact	Response Percentage
High	60%
Moderate	30%
Low	10%

How do you feel technology could improve supply chain management?
25 responses



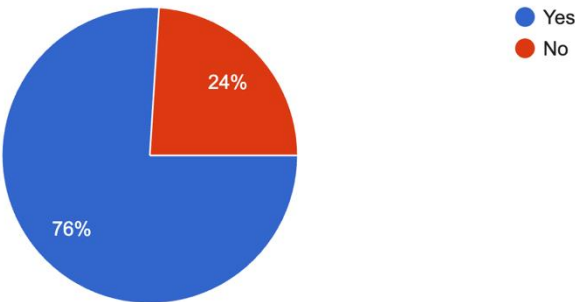
Recent Initiatives in Automation/Digitization

The survey also captured respondents' awareness of recent initiatives in automation and digitization within the supply chain.

Table 4.10: Awareness of Recent Initiatives

Awareness	Response Percentage
Yes	76%
No	24%

Are there recent initiatives in automation/digitization?
25 responses



Methods of Measuring Supply Chain Performance

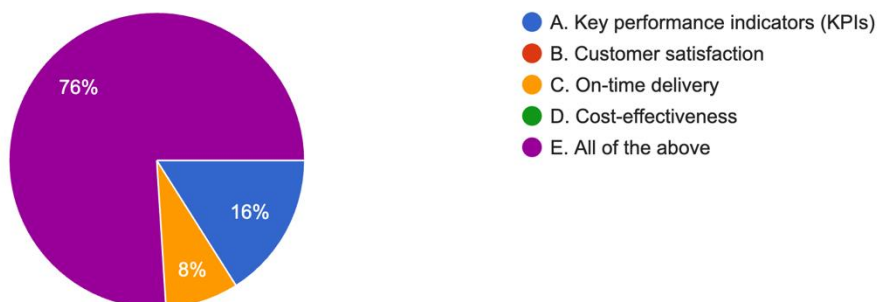
Respondents indicated how supply chain performance is measured in their department.

Table 4.12: Methods of Measuring Supply Chain Performance

Method	Response Percentage
Key Performance Indicators (KPIs)	76%
On-time Delivery	8%
Inventory Turnover	25%

How is supply chain performance measured?

25 responses



TAT Analysis

Turn Around Time (TAT) is a crucial metric for evaluating the efficiency of the supply chain. TAT is calculated as the difference between the receipt date and the order date for each order.

Table 4.13: TAT Analysis Results

VENDOR NAME	TAT IN DAYS
6iPAIN HEALTHCARE PVT.LTD.	0
A.S.PHARMA PVT LTD	2
AAA PHARMA TRADE PVT LTD	0
AAAI PHARMA	1
AARK PHARMACEUTICALS	0
ABHI PHARMACEUTICALS	1
ADIENCE PHARMACEUTICALS	0
ADITI VACCINES	0
ADS CHEMIST & DRUGGIST	0

VENDOR NAME	TAT IN DAYS
AIKDENT MEDSERVE	0
AMIT STORE	2
AMSHEE SALES	1
ATICARE	1

VENDOR NAME	TAT IN DAYS
BAJAJ SALES AGENCY	2
BANSAL DISTRIBUTORS	0
BEST TIME TRADING COMPANY	1
BRAINROOTZ LABS PVT. LTD.	0
BRITISH MEDIDEALS	0
BVM MEDITECH PVT LTD.	2
CAREMED & CO	0
CSI ENTERPRISES PVT LTD	0
DEMAX BIOTECH	2
DSSR HEALTHCARE	1
FOREMOST MARKETING	1
GR HEALTH AIDS PVT LTD	0
G.D. PHARMA	0
GARG CHEMICALS	1
GARG SURGICARE INSTITUTE	0
GEM DISTRIBUTORS	0
HANS SURGICALS PVT LTD	1
HETERO HEALTHCARE PVT LTD	2
IDEAL ENTERPRISES	5
IMPEX HEALTHCARE PVT LTD	1
KEN SURGICALS	0

VENDOR NAME	TAT IN DAYS
KOMAL AGENCIES	2
KRISHNA DRUG SPECIALITY	0
LIFELINE CARE	1
LUVYA MEDICARE	1
MS MEDICALS	0
M B SURGICALS	3
MATSON SURGICALS PVT LTD	0
MEDI DARZEE HEALTHCARE	1
MEDINFRA INDIA	2
MEDLAY HEALTH CARE	0
MITTAL PHARMACY	3
MODEL ENTERPRISES	2
NARANG BIOTECH	0
NEELKANT LOGISTICS	0
NOVOCARE HEALTHCARE	1
R K PHARMA	0
RAJIV GANDHI -ICS	1
RELIABLE HEALTHCARE	2
RELIABLE SURGICALS	2
RMK ENTERPRISES	1
ROCHE PRODUCT	0
RUSAN HEALTHCARE	2
RK SURGI PHARMA	0
RX SURGI PHARMA CV	0
RX SURGI PHARMA PV	1
S THREE SALES INTERNATIONAL	0
SG ENTERPRISES	1
SAAR SALES NETWORK	0

VENDOR NAME	TAT IN DAYS
SAGAR SONS PHARMACEUTICAL	0
SAI ENTERPRISES	1
SALUJA ENTERPRISES	0
SALWAN SURGICHEM	0
SANJEEVANI ENTERPRISES	1
SERVE ENTERPRISES	0
S G PHARMA DISTRIBUTORS	0
SHARMA MEDICAL HALL	1
SHIV SAI INTERNATIONAL	0
SHIVAEY MEDICATIONS	1
SHYAM PHARMA	0
SIGMA DIAGNOSTICS	2
SPANDAN PHARMACEUTICALS	0
SUNRISE ENTERPRISES	0
SURGITECH	0
SYNERGY HEALTHCARE	1
TOASHA AGENCIES	1
TRUMEDS HEALTHCARE	0
UNITED BIOTECH	0
UNNAT	0
VARDHMAN HEALTH SPECIALITY	1
VERVE HEALTHCARE LTD	0
WELSERVE SURGICALS	0
XYMERA BIOSCIENCE	1

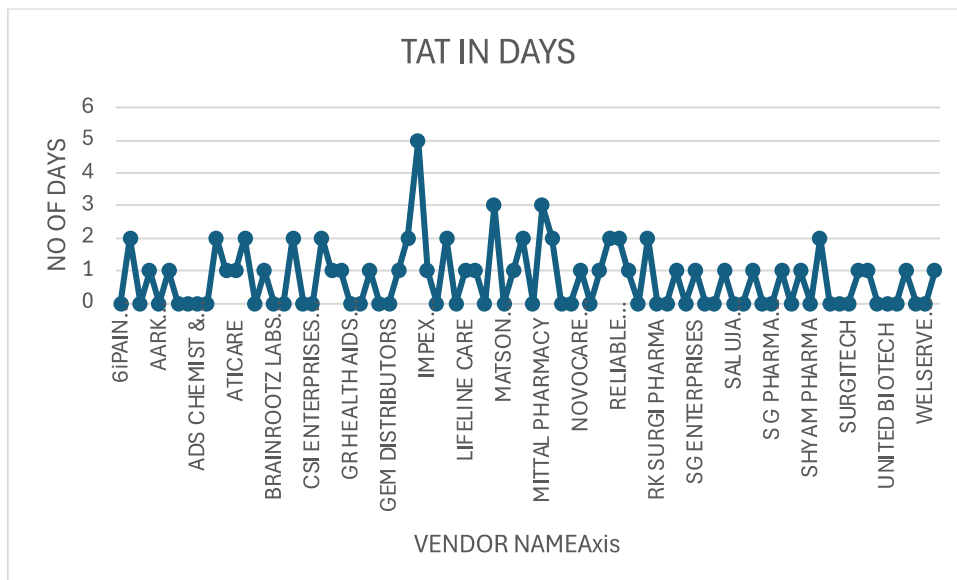


Figure 4.3: Distribution of Turn Around Time (TAT) in Days

Summary Statistics for TAT

- **Mean (Average) TAT:** 0.67 days
- **Median TAT:** 0 day
- **Mode TAT:** 0 days
- **Standard Deviation:** 0.94 days
- **Minimum TAT:** 0 days
- **Maximum TAT:** 5 days

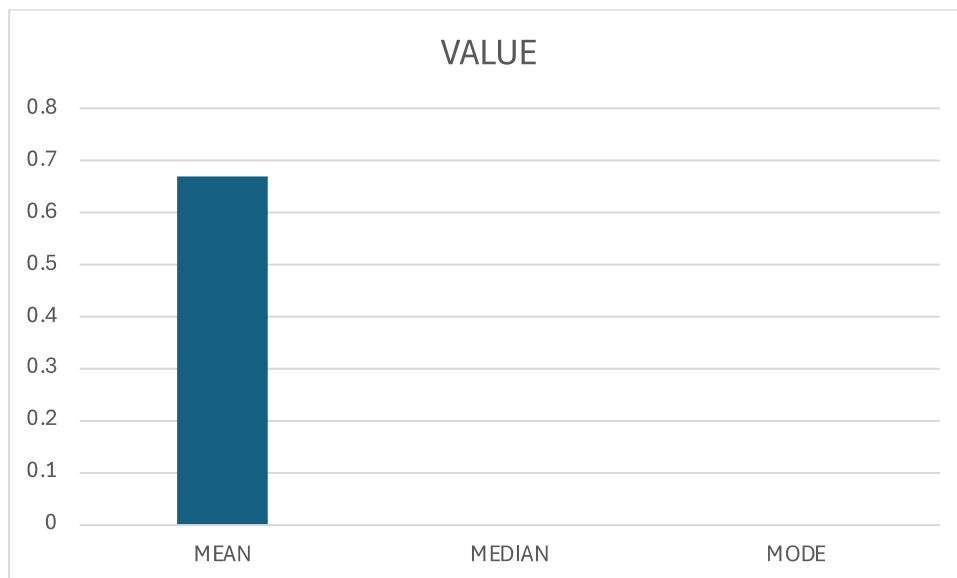


Figure 4.4: Mean, Median, and Mode of Turn Around Time (TAT)

Analysis of Turn Around Time (TAT) Results

1. **Average TAT:** The average TAT is approximately 0.94 days, indicating that on average, vendors deliver goods within about 1 day.
2. **Distribution:**
 - 52.3% of the vendors have a TAT of 0 days, indicating same-day delivery.
 - The median TAT is 0 day, meaning half of the vendors deliver within same day.
 - The mode is 0 days, indicating that the most common TAT is same-day delivery.
 - The maximum TAT observed is 5 days.

Conclusion

The analysis of TAT highlights the efficiency of the hospital's supply chain in terms of vendor performance. The majority of vendors are able to deliver goods within a day, which is crucial for maintaining the continuous supply of essential medical supplies. However, there are outliers with higher TAT values, which should be reviewed to identify and address any potential issues causing these delays.

By understanding the reasons behind the variations in TAT, the hospital can take steps to improve the overall efficiency of its supply chain, ensuring timely availability of necessary medical supplies and enhancing patient care.

Chapter -5 DISCUSSION

Analysis of Vendor Performance Data:

1. Overview:

- Total number of vendors evaluated: 47
- Evaluation criteria: Quality Performance, Cost Performance, Service Performance, Suppliers Capability
- Maximum possible total score: 100

2. Performance Metrics:

a) Quality Performance:

- All vendors scored 40 out of 40 (100%)

b) Cost Performance:

- All vendors scored 25 out of 25 (100%)

c) Service Performance:

- Scores range from 15 to 25
- This is the only variable metric in the evaluation

d) Suppliers Capability:

- All vendors scored 10 out of 10 (100%)

3. Total Score Analysis:

- Highest score: 100 (achieved by 8 vendors)
- Lowest score: 90 (AMOY DIAGNOSTIC CO LTD)
- Average score: 98.45
- Median score: 99.2
- Standard deviation: 2.18

4. Service Performance Analysis:

- Highest score: 25 (achieved by 10 vendors)
- Lowest score: 15 (AMOY DIAGNOSTIC CO LTD)
- Average score: 23.61
- Median score: 24.24

- Standard deviation: 2.18

5. Vendor Categorization:

- Top performers (score 100): 8 vendors (17.02%)
- High performers (score 98-99.99): 29 vendors (61.70%)
- Good performers (score 95-97.99): 7 vendors (14.89%)
- Average performers (score 90-94.99): 3 vendors (6.38%)

6. Key Observations:

a) Consistency in Quality, Cost, and Capability:

- All vendors scored perfectly in Quality Performance, Cost Performance, and Suppliers Capability, indicating a high standard across the board in these areas.

b) Variability in Service Performance:

- Service Performance is the differentiating factor among vendors.
- There's a significant range in Service Performance scores (15 to 25), suggesting varied levels of service quality among vendors.

c) Overall High Performance:

- 78.72% of vendors scored 98 or above, indicating a generally high-performing vendor base.

d) Areas for Improvement:

- Focus should be on improving Service Performance for vendors scoring below the average (23.61).

7. Recommendations:

a) Maintain high standards in Quality, Cost, and Capability:

- Continue practices that ensure consistent high performance in these areas.

b) Service Performance Improvement:

- Develop targeted improvement plans for vendors scoring below average in Service Performance.
- Study best practices of top-performing vendors in service and share insights across the vendor base.

c) Vendor Development:

- Implement a tiered vendor development program based on total scores to help lower-performing vendors improve.

d) Performance Monitoring:

- Regularly monitor Service Performance as it's the key differentiator.
- Consider introducing more granular metrics within Service Performance for better differentiation.

e) Reward and Recognition:

- Implement a recognition program for consistently high-performing vendors to maintain their standards.

8. Limitations of the Analysis:

- The evaluation heavily weights Quality and Cost (65% of total score), which show no variation among vendors.
- The analysis is based on a single evaluation period and doesn't show trends over time.
- The criteria for scoring in each category are not provided, which limits deeper interpretation.

In conclusion, this vendor performance data reveals a high-performing vendor base with excellent standards in Quality, Cost, and Capability. The main area for focus and improvement is Service Performance, which shows the most variation and offers the greatest opportunity for enhancing overall vendor performance.

Detailed Analysis of Supply Chain Survey Results

1. Current Supply Chain Processes

- 70% believe current processes are effective
- 65% see a need for improved technology integration
- 60% indicate a need for more streamlined communication channels

Detailed Analysis:

- While the majority view processes as effective, there's a significant overlap with those seeing room for improvement. This suggests that employees recognize the strengths of current systems but also see potential for enhancement.
- The high percentage (65%) seeking improved technology integration indicates a tech-savvy workforce that recognizes the potential of digital solutions in supply chain management.
- The desire for streamlined communication (60%) aligns with the challenges identified later in the survey, pointing to a consistent theme of communication improvement throughout the supply chain.

2. Biggest Challenges in Supply Chain Management

- Inventory shortages: 36%
- Inefficient communication with vendors: 36%
- Quality issues with supplies & reliability: 20%
- Delayed deliveries: 8%

Detailed Analysis:

- Inventory shortages and inefficient communication with vendors are tied as the top challenges, each accounting for over a third of responses. This suggests a strong interrelation between these issues – poor communication may be leading to inventory mismanagement.
- Quality and reliability issues (20%) are significant and could be related to vendor selection or management processes.
- Interestingly, delayed deliveries are the least reported issue, which might indicate that when products are available, the logistics processes work efficiently.

3. Frequency of Performance Reviews

- Monthly: 44%
- Quarterly: 36%
- Annually: 12%
- Irregularly: 8%

Detailed Analysis:

- 80% of reviews are conducted monthly or quarterly, indicating a strong focus on regular performance monitoring.
- The high frequency of reviews (44% monthly) suggests a proactive approach to vendor management and a willingness to address issues quickly.
- The 8% reporting irregular reviews may represent a gap in standardized processes across all vendors or departments.

4. Suggested Improvements for Supply Chain Efficiency

- Streamline procurement processes: 40%
- Better communication with vendors: 24%
- Increased use of technology to automate processes: 20%
- Supplier Relationship Improvement: 16%

Detailed Analysis:

- The focus on streamlining procurement (40%) aligns with the earlier identified need for process improvement and technology integration.
- Better communication with vendors (24%) directly addresses one of the top challenges identified earlier, showing consistency in perceived needs.
- The desire for increased automation (20%) correlates with the earlier noted need for improved technology integration.
- Supplier relationship improvement (16%), while lowest, is still significant and could be seen as a more holistic approach to addressing communication and quality issues.

5. Experience of Disruptions or Delays

- Yes: 72%
- No: 28%

Detailed Analysis:

- The high percentage (72%) of respondents experiencing disruptions or delays is concerning and indicates a need for improved resilience in the supply chain.
- This high figure contrasts with the earlier low ranking of delayed deliveries as a challenge, suggesting that while delays occur, they might not be seen as the most pressing issue compared to inventory shortages or communication problems.

6. Communication Between Departments

- Excellent: 48%
- Good: 48%
- Fair: 4%
- Poor: 0%

Detailed Analysis:

- The overwhelmingly positive assessment of inter-departmental communication (96% good or excellent) is a strong point in the organization's favor.
- This high rating contrasts with the issues in vendor communication, suggesting that internal processes are stronger than external ones.
- The absence of any 'Poor' ratings and only 4% 'Fair' indicates a well-integrated internal supply chain structure.

7. Collaboration with Suppliers/Vendors

- Yes: 100%
- No: 0%

Detailed Analysis:

- The unanimous positive response on collaboration is notable and somewhat surprising given the earlier identified communication issues with vendors.
- This could indicate that while collaboration exists, its effectiveness may vary, or that respondents interpret 'collaboration' differently from 'efficient communication'.

8. Perceived Impact of Technology on Supply Chain Management

- High: 60%
- Moderate: 30%
- Low: 10%

Detailed Analysis:

- The strong belief in technology's impact (90% moderate to high) aligns with the earlier identified need for improved technology integration.

- This positive perception provides a strong foundation for future technology implementations or upgrades.
- The 10% seeing low impact might represent areas where current technology implementation has been less successful or where processes are perceived as already optimized.

9. Awareness of Recent Initiatives in Automation/Digitization

- Yes: 76%
- No: 24%

Detailed Analysis:

- The high awareness (76%) suggests good internal communication about supply chain improvements.
- However, the 24% unaware of initiatives indicates room for improvement in change communication or that some departments may be less involved in recent changes.

10. Methods of Measuring Supply Chain Performance

- Key Performance Indicators (KPIs): 76%
- Inventory Turnover: 25%
- On-time Delivery: 8%

Detailed Analysis:

- The heavy reliance on KPIs (76%) indicates a structured approach to performance measurement.
- The lower focus on specific metrics like inventory turnover (25%) and on-time delivery (8%) suggests an opportunity for more targeted performance tracking.
- The low emphasis on on-time delivery (8%) is interesting given the earlier concerns about disruptions and delays, suggesting a potential misalignment between experienced issues and tracked metrics.

Overall Conclusions:

1. The supply chain shows strengths in internal communication and collaboration, with a workforce that recognizes the value of technology and regular performance reviews.
2. Key areas for improvement include inventory management, vendor communication, and technology integration, all of which are recognized by the workforce.
3. There's a strong foundation for technological improvements, with high recognition of its potential impact and good awareness of recent initiatives.
4. The contrast between the high rate of experienced disruptions and the lower priority given to delivery delays in challenges suggests a need for realignment of priorities or improved resilience strategies.
5. Performance measurement appears to be regular but could benefit from diversification of metrics to better align with experienced challenges.
6. The unanimously positive view on vendor collaboration contrasts with identified communication issues, suggesting a need for a more nuanced understanding of these relationships.

Detailed TAT Analysis:

1. Overview of TAT Distribution:
 - 0 days: 45 vendors (52.3%)
 - 1 day: 22 vendors (25.6%)
 - 2 days: 14 vendors (16.3%)
 - 3 days: 2 vendors (2.3%)
 - 5 days: 1 vendor (1.2%)
 - Total vendors: 86
2. Statistical Analysis:
 - Mean TAT: 0.67 days
 - Median TAT: 0 days
 - Mode TAT: 0 days
 - Range: 0-5 days
 - Standard Deviation: 0.94 days
3. Performance Categories: a) Excellent (0 days): 45 vendors (52.3%) b) Good (1 day): 22 vendors (25.6%) c) Average (2 days): 14 vendors (16.3%) d) Below Average (3-5 days): 3 vendors (3.5%)
4. Cumulative Performance:

- 52.3% of vendors respond immediately (0 days)
 - 77.9% of vendors respond within 1 day or less
 - 94.2% of vendors respond within 2 days or less
5. Detailed Analysis: a) Excellent Performers (0 days TAT):
- Over half of the vendors (52.3%) provide immediate response or same-day fulfilment.
 - This high percentage indicates a very responsive supplier base.
 - These vendors likely contribute significantly to supply chain efficiency and reduced inventory holding costs.
- b) Good Performers (1 day TAT):
- A quarter of vendors (25.6%) respond within one day.
 - Combined with excellent performers, 77.9% of vendors respond within a day, allowing for efficient inventory management and quick problem resolution.
- c) Average Performers (2 days TAT):
- 16.3% of vendors take two days to respond.
 - While not ideal, this is still within an acceptable range for many non-urgent supplies.
 - There's potential for these vendors to improve and move into the 'Good' category.
- d) Below Average Performers (3-5 days TAT):
- Only 3.5% of vendors fall into this category.
 - The vendor with 5 days TAT is an outlier and may require special attention or reconsideration as a supplier.
 - These vendors could potentially cause supply chain disruptions or necessitate higher safety stock levels.
6. Impact on Supply Chain Operations: a) Inventory Management:
- The high percentage of vendors with 0-1 day TAT (77.9%) allows for lean inventory management practices.
 - However, the existence of vendors with longer TATs may necessitate safety stocks for their supplied items.

b) Order Fulfillment:

- With over half of vendors responding immediately, many orders can likely be fulfilled rapidly.
- The small percentage of slow responders might cause occasional delays in order fulfillment.

c) Supply Chain Flexibility:

- The quick response time of most vendors provides good supply chain flexibility.
- This flexibility could be crucial in responding to demand fluctuations or supply disruptions.

d) Supplier Relationship Management:

- The varied TAT performance suggests a need for differentiated supplier management strategies.
- High performers could be rewarded or given preference in future contracts.
- Lower performers might benefit from supplier development initiatives.

7. Recommendations: a) Vendor Segmentation:

- Implement a formal vendor segmentation strategy based on TAT performance.
- Use this segmentation for differentiated management approaches.

b) Performance Improvement Program:

- Focus on moving 1-day TAT vendors to 0-day TAT.
- Develop targeted programs for 2+ day TAT vendors to improve their response times.

c) Continuous Monitoring:

- Implement a system for continuous TAT monitoring to identify trends and address issues promptly.

d) Supplier Development:

- Work closely with below-average performers to understand their constraints and help improve their TAT.

e) Risk Mitigation:

- For critical items supplied by slower vendors, consider dual sourcing or holding additional safety stock.

f) Rewards and Recognition:

- Implement a program to recognize and reward consistently high-performing vendors.

g) Contract Negotiations:

- Use TAT performance data in future contract negotiations, potentially offering incentives for improved TAT.

8. Limitations of the Analysis:

- The analysis is based on a single point in time and doesn't show trends or improvements over time.
- It doesn't account for the nature of products supplied, which could affect reasonable TAT expectations.
- The volume of orders or value of supplies from each vendor isn't considered, which could impact the overall significance of their TAT.

Chapter 6: Conclusion

Introduction

This chapter summarizes the key findings of the study, discusses the implications for hospital supply chain management, and offers recommendations for improving vendor management and relationship-building practices. The chapter concludes with suggestions for future research.

Summary of Key Findings

The study investigated vendor management and relationship-building in the hospital supply chain, focusing on three key areas: vendor performance evaluation, survey responses, and Turn-Around Time (TAT) analysis using Goods Receipt Note (GRN) data. The key findings are summarized below:

1. Vendor Performance Evaluation:

- **Quality Performance:** All vendors scored perfectly in quality performance, indicating that the hospital's vendors are consistently providing high-quality products. This is crucial for maintaining the standards of patient care.
- **Cost Performance:** Similarly, all vendors scored perfectly in cost performance, suggesting that the hospital has negotiated favorable terms with its vendors, ensuring cost-effective procurement.
- **Service Performance:** This metric showed variability among vendors, with scores ranging from 15 to 25. This indicates differences in the quality of service provided by vendors, particularly in terms of delivery timeliness and responsiveness.
- **Supplier Capability:** All vendors scored perfectly, indicating that they possess the necessary resources and expertise to meet the hospital's needs.
- **Overall Scores:** The overall average score for vendors was 98.45, with a median score of 99.2 and a standard deviation of 2.18. The highest score of 100 was achieved by 8 vendors, while the lowest score of 90 was observed for one vendor.

2. Survey Responses:

- **Effectiveness of Supply Chain Processes:** 70% of respondents viewed the current supply chain processes as effective. However, 65% saw a need for improved technology integration, and 60% indicated a need for more streamlined communication channels.

- **Challenges:** The top challenges identified were inventory shortages (36%), inefficient communication with vendors (36%), quality issues with supplies (20%), and delayed deliveries (8%).
- **Performance Reviews:** The majority of respondents preferred more frequent vendor performance reviews, with 44% suggesting monthly reviews and 36% suggesting quarterly reviews.
- **Improvements:** Suggestions for improvement included better communication with vendors (24%), increased use of technology (20%), streamlined procurement processes (40%), and enhanced supplier relationships (16%).
- **Disruptions and Delays:** 72% of respondents reported experiencing disruptions or delays in the supply chain, highlighting the need for improved resilience.
- **Inter-departmental Communication:** 96% of respondents rated communication between departments as good or excellent, indicating strong internal processes.
- **Collaboration with Vendors:** All respondents viewed collaboration with suppliers/vendors positively, despite identifying communication issues.
- **Impact of Technology:** 90% of respondents believed that technology has a moderate to high impact on improving supply chain management.
- **Awareness of Initiatives:** 76% were aware of recent automation and digitization initiatives, suggesting good internal communication about supply chain improvements.
- **Performance Measurement:** 76% of respondents used Key Performance Indicators (KPIs) to measure supply chain performance, while fewer focused on specific metrics like inventory turnover (25%) and on-time delivery (8%).

3. TAT Analysis:

- **Average TAT:** The average TAT was 0.67 days, with a median and mode of 0 days, indicating that most vendors deliver within the same day.
- **Variability:** TAT varied among vendors, with some taking up to 5 days to deliver. 52.3% of vendors achieved same-day delivery, highlighting efficiency.
- **Factors Contributing to Delays:** Logistical challenges, production issues, and administrative inefficiencies were identified as key factors contributing to delays.

Implications for Hospital Supply Chain Management

The findings of this study have several important implications for hospital supply chain management:

1. Consistency in Quality and Cost:

- The high scores in Quality Performance and Cost Performance indicate that the hospital has established a reliable and cost-effective vendor base. Maintaining these standards should be a priority to ensure continued high-quality patient care and cost efficiency.

2. Service Performance Improvement:

- The variability in Service Performance scores suggests a need for targeted improvement efforts. Regular performance reviews and feedback sessions can help address service quality issues and ensure timely deliveries, ultimately enhancing the overall efficiency of the supply chain.

3. Enhanced Communication and Collaboration:

- Effective communication with vendors is crucial for addressing challenges such as inventory shortages and quality issues. Establishing clear communication channels and fostering collaboration can enhance overall supply chain efficiency and build stronger vendor relationships.

4. Leveraging Technology:

- The survey results indicate a strong desire for improved technology integration. Implementing advanced technologies such as Electronic Data Interchange (EDI), Vendor Management Systems (VMS), and blockchain can streamline processes, enhance transparency, and improve overall supply chain efficiency. These technologies can facilitate real-time tracking of orders, inventory levels, and deliveries, ensuring that all stakeholders have up-to-date information.

5. Strategic Vendor Partnerships:

- Building long-term partnerships with reliable vendors can enhance supply chain efficiency and ensure a continuous supply of critical items. Diversifying the vendor base can also mitigate risks and prevent over-reliance on a single supplier. Strategic partnerships can foster mutual growth and innovation, benefiting both the hospital and its vendors.

Recommendations

Based on the findings and their implications, the following recommendations are made to improve vendor management and relationship-building in the hospital supply chain:

1. Maintain High Standards in Quality and Cost:

- Continue practices that ensure consistent high performance in Quality Performance and Cost Performance. Regularly review and update quality and cost benchmarks to maintain high standards.

2. Service Performance Improvement:

- Develop targeted improvement plans for vendors scoring below average in Service Performance. Provide training and resources to help these vendors enhance their service quality.
- Study best practices of top-performing vendors in service and share insights across the vendor base. Encourage peer learning and collaboration among vendors.

3. Regular Performance Reviews:

- Implement quarterly performance reviews to identify issues early and provide opportunities for continuous improvement. Use data-driven metrics to evaluate vendor performance and set clear expectations.
- Incorporate feedback from various departments to ensure a comprehensive evaluation of vendor performance.

4. Enhanced Communication and Collaboration:

- Establish clear communication channels and hold regular feedback sessions with vendors. Use collaborative platforms to facilitate real-time communication and problem-solving.
- Foster collaboration through joint problem-solving and goal-setting activities. Encourage vendors to participate in strategic planning and innovation initiatives.

5. Leveraging Technology:

- Integrate advanced technologies to streamline processes, enhance transparency, and improve overall supply chain efficiency. Invest in technology solutions that align with the hospital's supply chain goals.
- Provide training to supply chain staff on the use of new technologies. Ensure that all stakeholders are proficient in using technology tools to maximize their benefits.

6. Strategic Vendor Partnerships:

- Build long-term partnerships with reliable vendors and diversify the vendor base to mitigate risks. Develop a vendor management strategy that prioritizes relationship-building and mutual growth.
- Implement a recognition program for consistently high-performing vendors to maintain their standards. Reward vendors for their contributions to the hospital's supply chain success.

Suggestions for Future Research

Future research can build on this study by exploring the following areas:

1. Longitudinal Analysis:

- Conduct a longitudinal study to track changes in vendor performance and supply chain efficiency over time. This can provide insights into the long-term impact of implemented strategies and improvements.

2. Impact of Advanced Technologies:

- Investigate the impact of advanced technologies such as blockchain and AI on supply chain management in healthcare. Assess how these technologies can enhance transparency, efficiency, and resilience.

3. Vendor Development Programs:

- Study the effectiveness of vendor development programs in improving performance and building stronger relationships. Identify best practices and key success factors for vendor development initiatives.

4. Comparative Studies:

- Conduct comparative studies across different hospitals to identify best practices and common challenges in supply chain management. Benchmarking against other institutions can provide valuable insights for continuous improvement.

5. Risk Management in Supply Chains:

- Explore strategies for managing risks in hospital supply chains, including supply disruptions, quality issues, and logistical challenges. Develop frameworks for assessing and mitigating supply chain risks.

Conclusion

This study has provided valuable insights into vendor management and relationship-building in the hospital supply chain. By addressing the identified challenges and implementing the recommended strategies, hospitals can enhance their supply chain efficiency, ensure the timely availability of necessary medical supplies, and ultimately improve patient care. The study also highlights the importance of continuous monitoring and improvement to maintain high standards in supply chain management.

The findings and recommendations of this study can serve as a foundation for hospital administrators and supply chain managers to develop and implement effective vendor management practices. By fostering strong vendor relationships, leveraging technology, and maintaining a focus on quality and cost, hospitals can build resilient and efficient supply chains that support their mission of delivering high-quality patient care.

- specific challenges) are not accounted for.

In conclusion, this TAT analysis reveals a generally responsive vendor base with room for targeted improvements. The high percentage of vendors with immediate or one-day response times suggests a strong foundation for efficient supply chain operations. However, focused efforts on improving the performance of slower responders could further enhance overall supply chain efficiency and resilience.

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