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The Impact of Supply Chain Practices on Performance in Goverment Hospitals in Jordan

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Abstract*: Supply Chain (SCM) plays a pivotal role in enhancing Performance and ensuring service continuity within healthcare organizations. Goverment hospitals, in particular, operate under significant pressures stemming from constrained resources, increasing demand for healthcare services, and heightened exposure to supply disruptions. This study investigates the effect of Supply Chain practices on Performance in goverment hospitals in Jordan. A quantitative, descriptive–analytical research design was employed, utilizing a structured questionnaire administered to administrative and technical personnel engaged in supply chain functions. The study examines five key SCM dimensions: demand planning, procurement and supplier management, inventory management, storage and distribution, and information sharing. Performance was evaluated using indicators including medical supply availability, responsiveness, cost efficiency, waste reduction, and service continuity. The results reveal a statistically significant positive relationship between SCM practices and operational performance, with inventory management and information sharing identified as the most influential determinants. The study concludes by offering practical recommendations aimed at enhancing supply chain efficiency and improving hospital performance in resource-constrained healthcare environments.*

Keywords: Supply Chain Management, Operational Performance, Goverment Hospitals, Inventory Management, Jordan .

1. Introduction

Healthcare supply chains play a fundamental role in ensuring the availability of medicines, medical consumables, and essential equipment required for patient care. Unlike commercial supply chains, healthcare supply chains are highly sensitive due to the direct consequences of shortages on patient safety, service quality, and clinical outcomes. Any disruption in the supply of critical medical items can lead to delays in treatment, increased operational pressure, and compromised healthcare delivery[1], [2]. Goverment hospitals are particularly vulnerable to supply chain inefficiencies due to constrained budgets, centralized procurement procedures, bureaucratic processes, and high patient volumes. In the Jordan n context, these challenges are compounded by economic instability, fluctuating market availability, logistical difficulties, and increased demand for goverment healthcare services. As a result, goverment hospitals often experience recurring shortages, excess inventory, expired medical items, and delayed procurement cycles. Despite the importance of Supply Chain in healthcare systems, limited empirical research has examined its impact on Performance in Jordan n goverment hospitals. This study seeks to address this gap by analyzing how different SCM practices influence hospital performance and identifying key areas for improvement that are feasible within existing constraints[3], [4].

2. Problem Statement

Goverment hospitals in Jordan continue to face persistent challenges related to the availability and management of medical supplies. Inadequate demand forecasting, lengthy procurement procedures, weak inventory control, limited information sharing, and inefficient internal distribution contribute to frequent stockouts and operational inefficiencies. These issues negatively affect service continuity, increase waste due to expired items, and place additional strain on healthcare staff [6]. The core problem addressed in this study is the lack of empirical evidence regarding the extent to which Supply Chain practices influence Performance in Jordan n goverment hospitals. Without such evidence, decision-makers lack a clear basis for prioritizing interventions and allocating limited resources effectively [5].

3. Research Objectives

This study aims to:

A. Assess the level of implementation of Supply Chain practices in Jordan n goverment hospitals.
B. Measure the level of Performance and service continuity in these hospitals.

C. Examine the impact of SCM practices on operational performance.
D. Identify the most influential SCM dimensions affecting hospital performance.
E. Provide practical recommendations to improve supply chain efficiency and operational outcomes.

4. Research Questions and Hypotheses

A. What is the level of Supply Chain practices in Jordan n goverment hospitals?
B. What is the level of Performance in these hospitals?
C. Do SCM practices significantly affect operational performance?
D. Which SCM dimensions have the strongest impact on performance?

Research Hypotheses

H1: Supply Chain practices have a statistically significant effect on Performance in goverment hospitals in Jordan .

H1a: Demand planning has a significant effect on operational performance.

H1b: Procurement and supplier management have a significant effect on operational performance

H1c: Inventory management has a significant effect on operational performance.

H1d: Storage and distribution practices have a significant effect on operational performance.

H1e: Information sharing has a significant effect on operational performance.

5. Literature Review

Previous studies emphasize that effective Supply Chain enhances healthcare performance by ensuring the availability of essential medical items, reducing lead times, and minimizing waste. Research has consistently shown that poor demand forecasting and inadequate inventory policies increase the likelihood of stockouts and expired products. Other studies highlight the importance of supplier management and information integration in reducing procurement delays and improving transparency [7], [1], [8]. In goverment healthcare systems, SCM effectiveness is closely linked to Performance indicators such as responsiveness, cost control, and service continuity. However, most existing studies focus on private hospitals or healthcare systems in stable environments. There is limited research addressing SCM-performance relationships in goverment hospitals operating under economic and logistical constraints, particularly in the Jordan n context. This study contributes to the literature by addressing this gap [9].

6. Conceptual Framework

The study proposes a conceptual framework in which Supply Chain practices (demand planning, procurement and supplier management, inventory management, storage and distribution, and information sharing) serve as independent variables, while Performance (availability of supplies, responsiveness, cost efficiency, waste reduction, and service continuity) is the dependent variable [10], [3], [2].

7. **Methodology**

Research Design

The study adopts a quantitative, descriptive-analytical research design.

Population and Sample

The population includes staff involved in supply chain-related activities in Jordan n goverment hospitals, such as administrators, procurement officers, warehouse managers, pharmacists, and department heads. A sample of approximately 220 respondents was selected using a convenience sampling method [11].

Data Collection Instrument

Data were collected using a structured questionnaire based on a five-point Likert scale. The questionnaire consisted of items measuring SCM practices and Performance [12].

Validity and Reliability

Content validity was ensured through expert review. Reliability testing using Cronbach's Alpha yielded coefficients exceeding 0.70 for all constructs, indicating acceptable internal consistency.

Data Analysis

Data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis.

8. Results and Data Analysis

8.1 Descriptive Statistics of Supply Chain Practices

Table 1 presents the descriptive statistics for Supply Chain practices in Jordan n goverment hospitals.

Table 1. Descriptive Statistics of SCM Practices

SCM Dimension	Mean	Std. Deviation	Level
Demand Planning	3.12	0.74	Moderate
Procurement & Supplier Management	3.25	0.68	Moderate
Inventory Management	2.98	0.81	Moderate–Low
Storage & Distribution	3.18	0.70	Moderate
Information Sharing	2.85	0.83	Low
Overall SCM	**3.08**	**0.75**	**Moderate**

The results indicate that the overall level of Supply Chain practices in Jordan n goverment hospitals is **moderate** (Mean = 3.08). Procurement and supplier management recorded the highest mean (3.25), suggesting that formal purchasing procedures exist but remain largely traditional. In contrast, information sharing scored the lowest mean (2.85), reflecting limited use of integrated information systems and weak coordination among hospital departments. Inventory management also recorded a relatively low mean (2.98), which may explain recurring issues related to stockouts and expired medical supplies. These findings suggest that SCM practices are present but lack strategic integration and data-driven management [13].

8.2 Descriptive Statistics of Operational Performance

Table 2. Descriptive Statistics of Operational Performance

Performance Dimension	Mean	Std. Deviation	Level
Availability of Medical Supplies	3.02	0.79	Moderate
Responsiveness	2.95	0.82	Moderate
Waste Reduction	2.88	0.85	Low

Performance Dimension	Mean	Std. Deviation	Level
Cost Efficiency	3.10	0.71	Moderate
Service Continuity	3.26	0.67	Moderate
Overall Performance	**3.04**	**0.77**	**Moderate**

Performance in Jordan n goverment hospitals was rated at a **moderate level** (Mean = 3.04). Service continuity achieved the highest mean (3.26), indicating that hospitals manage to continue providing services despite supply challenges. However, waste reduction recorded the lowest mean (2.88), highlighting inefficiencies in inventory control and storage practices [14].

8.3 Correlation Analysis

Table 3. Pearson Correlation between SCM Practices and Operational Performance

SCM Dimension	r	Sig.
Demand Planning	0.48	0.000
Procurement & Supplier Management	0.52	0.000
Inventory Management	0.61	0.000
Storage & Distribution	0.45	0.000
Information Sharing	0.57	0.000
Overall SCM	**0.66**	**0.000**

The correlation results reveal a **strong positive relationship** between SCM practices and Performance ($r = 0.66$, $p < 0.05$). Inventory management showed the strongest correlation ($r = 0.61$), followed by information sharing ($r = 0.57$), indicating that hospitals with better control over inventory and data exchange achieve higher operational efficiency [15].

8.4 Multiple Regression Analysis

Table 4. Multiple Regression Results

Independent Variable	β	t	Sig.
Demand Planning	0.21	3.18	0.002
Procurement & Supplier Management	0.19	2.94	0.004
Inventory Management	0.32	4.87	0.000
Storage & Distribution	0.14	2.11	0.036
Information Sharing	0.26	3.98	0.000
R^2	**0.52**		
F-value	**41.6**		**0.000**

The regression model explains **52% of the variance in Performance** ($R^2 = 0.52$), indicating a strong explanatory power. Inventory management emerged as the most influential predictor ($\beta = 0.32$), followed by information sharing ($\beta = 0.26$). All SCM dimensions had statistically significant effects on operational performance, supporting all research hypotheses [16].

9. Discussion of Results

The findings of this study clearly demonstrate that Supply Chain practices significantly influence Performance in Jordan n goverment hospitals. The moderate level of SCM implementation reflects structural and resource-related constraints, yet the strong statistical relationships suggest that internal improvements can generate meaningful performance gains. Inventory management was identified as the most critical determinant of performance. This result aligns with previous studies emphasizing that poor inventory

control leads to stockouts, excess inventory, and expired medical supplies, especially in goverment healthcare systems. In the Jordan n context, where resource availability is limited, even small inefficiencies in inventory management can have amplified negative effects. Information sharing also showed a substantial impact on performance. Hospitals with better data visibility and coordination were more responsive and experienced fewer disruptions. This finding supports the argument that digitalization—even at a basic level—can significantly enhance healthcare supply chain performance. Interestingly, procurement practices showed a moderate but significant effect, suggesting that procedural compliance alone is insufficient without integration with planning and inventory systems. Storage and distribution had the weakest yet still significant impact, indicating operational rather than strategic influence. Overall, the results confirm that SCM should be treated as a **strategic function** rather than an administrative activity in goverment hospitals.

10. Conclusions

The study concludes that Supply Chain is a key driver of Performance in Jordan n goverment hospitals. While current SCM practices are moderately implemented, significant opportunities exist for improvement, particularly in inventory management and information integration.

11. Recommendations

The study recommends enhancing demand planning based on consumption data, improving supplier evaluation mechanisms, implementing structured inventory control policies, strengthening internal distribution processes, and adopting basic digital systems for information sharing. These interventions can significantly improve hospital performance without requiring extensive financial investment.

12. Limitations and Future Research

The study is limited by its reliance on perceptual data and its focus on goverment hospitals only. Future research could include comparative studies between goverment and private hospitals or adopt qualitative approaches to explore SCM challenges in greater depth.

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