Journal of
New Approaches in Management and Marketing
Volume 5, Issue 1, Sping 2026, Pages 104 to 126
https://www.jnamm.ir
eISSN: 2981-1554
Original Article (Mixed)

Presenting a Performance Evaluation Management Model for the Domestic Supply Chain Using a Hybrid DEMATEL and Analytic Network Process (ANP) Approach.

Ali Raeis Poor[1], **Habib Kolahkaj**[2]

1- Department of Public Administration, Ramh C, Islamic Azad University, Ramhormoz, Iran.
2- Department of Business Management, Ahv.C. Islamic Azad University, Ahvaz, Iran.

Receive:
06 January 2026
Revise:
25 February 2026
Accept:
13 April 2026

Keywords:
Supply Chain, Employee Skills, Value Added, Performance Improvement, Investment and Growth, Organizational Culture Development.

Abstract

The purpose of this study is to present a performance evaluation management model for the internal supply chain applying a hybrid approach of DEMATEL and the Analytic Network Process (ANP). In terms of purpose, the research is applicable, and regarding data collection it is descriptive–survey in nature. The statistical population of the study consisted of 12 experts, including 5 members from the hospital's internal logistics unit and 7 managers from Namazi Hospital. To determine the relationships among 13 indicators within the five main components of the hospital's internal supply chain, the DEMATEL method was employed. These relationships were subsequently incorporated into the Analytic Network Process model, and the weights of the 13 indicators were calculated by Super Decisions software. The indicators were ranked as follows: performance of completing patient treatment through access to comprehensive treatment resources, delay-free patient treatment performance, patient waiting time, service provider supply time, professional value-added productivity, error-free performance in patient safety, continuity of the clinical treatment supply process, reliability and accessibility of suppliers of healthcare service resources, communication with patients, overall logistics cost management in the clinical treatment supply chain, reliability of investment and growth and revenue of the clinical treatment process, improvement of hospital staff skills to prevent errors, and development of organizational culture. The results of this study indicated that the hospital's internal supply chain has a positive, direct, and significant impact on improving hospital performance. The findings of this research can be highly useful for optimizing managerial practices and supporting effective decision-making among hospital managers and administrators.

Please cite this article as (APA): Raeis Poor, A and Kolahkaj, H. (2026). Presenting a Performance Evaluation Management Model for the Domestic Supply Chain Using a Hybrid DEMATEL and Analytic Network Process (ANP) Approach. *Journal of New Approaches in Management and Marketing*, *5*(1), 104-126.

https://doi.org/10.22034/jnamm.2026.434343.1047

Publisher: Research Center of Resource Management Studies and Knowledge-Based Business

Corresponding Author: Ali Raeis Poor | **Email:** ali106@iau.ac.ir

Journal of
New Approaches in Management and Marketing
https://www.jnamm.ir
Volume 5, Issue 1, Sping 2026, Pages 104 to 126

Extended Abstract

Introduction

Supply chain management refers to the coordination and management of a complex network of activities aimed at delivering the final product to the end consumer or customer. It is a critical function in business operations and includes processes such as the procurement of raw materials, manufacturing and assembly of products, order registration and tracking, distribution through various channels, and ultimately delivery to customers. The structure of a company's supply chain consists of external suppliers, internal organizational operations, external distributors, and customers (Glavas et al., 2018).

Compared with traditional management approaches that focus on managing individual members separately, supply chain management emphasizes managing relationships and seeks solutions to reduce supply, production, and distribution cycles while increasing flexibility and responsiveness. This approach aims to improve existing processes and facilitate the development of new products capable of meeting continuously changing customer demands. To achieve this, organizations need to adopt and implement supply chain technologies and information systems in order to reduce supply chain cycles and integrate their operational processes (Talaei & Ziaian, 2022).

Christmann and Taylor (2012) state that exporting and selling to international customers are two primary drivers for improving firms' environmental performance. When companies export their products, they often face environmental or "green" requirements, which can motivate manufacturing firms to implement supply chain management practices. In many countries, exporting products requires obtaining specific certifications demonstrating that the use of these products does not harm the sustainable development of the destination country. In addition, consumer pressure also encourages organizations to adopt supply chain management practices. The effects of drivers for implementing supply chain management can be evaluated through three dimensions of firm performance: environmental performance, operational performance, and economic performance (Zoogah, 2011).

Environmental performance has become increasingly important for managers of manufacturing companies due to regulatory requirements, public awareness, and the pursuit of competitive advantage. Recent studies have provided insights into potential patterns of supply chain relationships that can enhance environmental performance. However, investment in such programs can be substantial, and the pressure for environmental investment may be high, while improvements in environmental performance resulting from the adoption of these practices are not always guaranteed (Kim et al., 2019).

Therefore, considering the growing importance of environmental supply chains and the performance of internal supply chains, as well as the increasing attention these topics have received in recent years and their associated benefits, this study investigates the indicators affecting internal supply chain performance. Accordingly, the main research question addressed in this study is: **What is the model for managing the performance evaluation of the internal supply chain using a hybrid approach of DEMATEL and the Analytic Network Process (ANP)?

Theoretical Framework

The supply chain is an essential network within the business infrastructure significantly facilitating production and distribution processes in companies that market their products. This network plays a vital role in creating numerous employment and professional opportunities for many individuals (Zinati et al., 2025).

Nouri et al. (2025) examined the impact of supply chain integration dimensions on new product innovation performance through supply chain agility in Pegah Pasteurized Milk Company in the northwest region of the country. The results of the study, using path analysis techniques, indicate that internal integration, customer integration, and supply chain integration have a significant effect on supply chain agility. Furthermore, supply chain agility, market knowledge, and product development significantly influence product innovation capability. In addition, internal integration, customer integration, and supply chain integration significantly affect product innovation capability through the mediating role of supply chain agility.
Zinati et al. (2025) also investigated the design of a maturity model for the Fourth Industrial Revolution in the banking service supply chain and the development of digital banking using a grounded theory approach. According to the findings, the identified categories included ten categories in the causal conditions, seven categories as components of the core phenomenon, four categories related to contextual conditions, eleven categories in the strategies section, seven categories representing intervening conditions, and finally eight categories in the outcome section of the model.

Research Methodology

In terms of its objective, this research is applicable, and in terms of data collection, it is descriptive–survey in nature. The statistical population of the study consisted of 12 experts, including five specialists from the internal logistics unit of the hospital and seven managers from Namazi Hospital.

Research Findings

To determine the relationships among the 13 indicators of the five main components of the hospital's internal supply chain, the DEMATEL method was employed. The identified relationships were then incorporated into the Analytic Network Process (ANP) model, and the weights of the 13 indicators were calculated by Super Decisions software.
The ranking of the 13 indicators, in order of priority, was as follows: completion of patient treatment through full access to medical resources; on-time treatment performance without delay; patient waiting time; service provision time; professional value-added productivity; error-free performance in patient safety; continuity of the clinical treatment supply process; reliability and accessibility of medical service resources; communication with patients; overall logistics cost management in the clinical treatment supply chain; reliability of investment, growth, and revenue of the clinical treatment process; enhancement of hospital staff skills to prevent errors; and development of organizational culture.
The results of this study indicate that the hospital's internal supply chain has a positive, direct, and significant impact on improving hospital performance. The findings provide valuable insights for hospital managers and decision-makers in optimizing management practices and enhancing overall operational effectiveness.

Conclusion

The present study was conducted with the aim of proposing a model for performance evaluation management of the internal supply chain employing a hybrid approach of DEMATEL and the Analytic Network Process (ANP). The findings of this research are consistent with the results of previous studies conducted by Nouri et al. (2025), Zinati et al. (2025), Mirshekar et al. (2024), Alizadeh (2024), Mousavi (2023), Samiei et al. (2023),

Journal of
New Approaches in Management and Marketing
https://www.jnamm.ir
Volume 5, Issue 1, Sping 2026, Pages 104 to 126

Amozadeh et al. (2023), Davoodi and Sazgari (2022), Haddadzadeh and Motwalian-Bafeghi (2022), Zhang et al. (2022), Jetton (2022), and Dachyar and Mahendra (2020).

Nouri et al. (2025) investigated the impact of supply chain integration dimensions on new product innovation performance through supply chain agility in Pegah Pasteurized Milk Company in the northwest region of the country. The results, obtained using path analysis techniques, showed that internal integration, customer integration, and supply chain integration have significant effects on supply chain agility. Furthermore, supply chain agility, market knowledge, and product development significantly influence product innovation capability. In addition, internal integration, customer integration, and supply chain integration significantly affect product innovation capability through the mediating role of supply chain agility.

Based on the findings of the present study, several recommendations are proposed. Since hospital supply chain processes must be aligned with clinical care processes and supporting processes, it is necessary to consider all these aspects of performance simultaneously within clinical care processes, process efficiency support, and patient safety. Priorities should be determined according to the calculated weights of the indicators. Identifying key performance aspects enables supply chain managers to focus on the most critical factors when seeking to improve hospital performance.