

The role of digital logistics management in improving the competitive advantage of organizations

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Abstract: *This study aimed to analyze the strategic role of digital logistics management in enhancing the competitive advantage of organizations amidst rapid digital transformation and intensifying global competition. The study employed a descriptive-analytical approach, reviewing and analyzing recent scientific literature related to digital logistics, digital transformation, and competitive advantage. The study concluded that the shift towards digital logistics contributes to increased operational efficiency, reduced costs, improved service quality, and greater flexibility and responsiveness, thereby enhancing the sustainable competitiveness of organizations. The study recommended integrating digital logistics into the overall organizational strategy, rather than treating it as a separate operational function.*

Keywords: Digital Logistics Management, Digital Transformation, Competitive Advantage, Supply Chains, Organizational Performance

Introduction

Competition in the modern business environment has become more complex and intense as a result of globalization, the acceleration of technological innovation, and rising customer expectations [1]. Organizations can no longer achieve competitive advantage solely through traditional production methods; they now need to leverage digital technology as a strategic resource. In this context, digital logistics management has emerged as one of the most important areas reflecting an organization's ability to adapt to digital transformations and achieve sustainable added value. Logistics management is particularly important because it represents the link between an organization, its suppliers, and its customers, and it directly impacts service levels, costs, and time. With digital transformation, logistics operations are no longer managed using traditional methods but rely on integrated digital systems capable of processing and analyzing data and making decisions more accurately and quickly [2].

Problem Statement

Despite the increasing prevalence of digital transformation concepts and the adoption of modern technologies in various administrative functions, the application of these concepts in logistics management still faces numerous challenges, both theoretical and practical. Many organizations rely on digital solutions only partially or for limited operational purposes, without integrating them into a comprehensive strategic framework for managing logistics activities. This reduces their ability to achieve the expected added value from digital transformation [3].

Recent literature indicates that digital logistics management possesses significant potential to improve operational efficiency, reduce costs, enhance response times, and raise service quality. However, this potential is not necessarily realized in all organizations due to the absence of a clear strategic vision, weak integration between digital systems, and a shortage of qualified personnel capable of effectively utilizing modern technologies. Furthermore, resistance to organizational change and the lack of clarity regarding the expected strategic return on investment in digital logistics are among the most prominent factors hindering the full utilization of this trend. On the other hand, there is a relative deficiency in Arabic literature addressing digital logistics management as a strategic approach to achieving competitive advantage [4]. Most studies have focused on technical or operational aspects, without delving into an analysis of the relationship between digital logistics and dimensions of competitive advantage such as cost reduction, quality, flexibility, responsiveness, and innovation. This deficiency leads to a limited number of theoretical frameworks upon which organizations can base the design and implementation of effective digital logistics strategies. Therefore, the research problem lies in the need to develop a theoretical framework that clarifies how digital logistics management contributes to enhancing the competitive advantage of organizations, through an analysis of its concepts, components, and mechanisms of impact on organizational performance. The study stems from the following central question:

What is the role of digital logistics management in enhancing the competitive advantage of organizations?

The Importance of the Study

The importance of this study is evident in several aspects, most notably:

1. Highlighting digital logistics management as a strategic approach to achieving competitive advantage.
2. Bridging a knowledge gap in Arabic literature related to digital logistics.
3. Providing a theoretical framework that can form the basis for future applied studies in various organizations.

Study Objectives

This study aims to:

- Clarify the concept of digital logistics management and its dimensions.
- Explain the concept of competitive advantage and its key dimensions.
- Analyze the impact of digital logistics management on improving the competitive advantage of organizations.
- Highlight the role of digital transformation in developing logistical performance.

Study Methodology

The study adopted a descriptive-analytical approach, reviewing and analyzing books, peer-reviewed scientific studies, and specialized reports related to the study topic. The goal was to build a comprehensive theoretical framework that explains the relationship between digital logistics management and competitive advantage [5].

Theoretical Framework

First: Digital Logistics Management

1. The Concept of Digital Logistics Management

Digital logistics management refers to the use of modern digital technologies in planning, implementing, and controlling logistics activities, including transportation, warehousing, inventory, information flow, and coordination with supply chain stakeholders. This management aims to integrate physical and information flows and improve transparency and operational flexibility [6].

Components of Digital Logistics Management

Digital logistics management comprises an integrated system of technical and organizational elements that work together to ensure the efficient flow of materials and information within and outside the organization. The shift from traditional to digital logistics is more of a transformation in management philosophy than simply the adoption of technological tools [7]. Digital logistics management is based on integrating technology into all phases of planning, execution, and control. Digital logistics management relies primarily on logistics information systems that enable the collection, processing, and analysis of data from various supply chain activities in real time. These systems contribute to improved demand forecasting accuracy, enhanced coordination between suppliers and distributors, and reduced uncertainty, which was a prominent feature of traditional systems. Big data also plays a pivotal role in supporting logistics decision-making by analyzing operational patterns and identifying bottlenecks and potential risks early on. Furthermore, digital tracking technologies and the Internet of Things (IoT) are essential components of digital logistics management. They enable continuous monitoring of shipment and inventory movement, enhancing transparency and minimizing losses and delays. This technological integration helps improve inventory management and reduce costs associated with overstocking or shortages, positively impacting the organization's overall performance. Automation and artificial intelligence are

also essential components of digital logistics management, contributing to improved operational efficiency and reduced reliance on human intervention in routine activities. These technologies enable organizations to optimize route planning, fleet management, and logistics scheduling with greater precision and flexibility, supporting sustainability goals and competitive advantage [8].

Second: Competitive Advantage

The Concept of Competitive Advantage

Competitive advantage is defined as an organization's ability to outperform its competitors by delivering superior value to customers, whether through cost reduction, quality improvement, or product and service innovation. Competitive advantage is a fundamental element in ensuring an organization's continuity and growth.

Dimensions of Competitive Advantage

Competitive advantage is embodied in several key dimensions, the most important of which are:

- **Cost Reduction:** Achieving higher operational efficiency.
- **Quality:** Providing highly reliable products and services.
- **Flexibility:** The ability to adapt to market changes.
- **Speed of Response:** Meeting customer demands in a timely manner.
- **Innovation:** Developing new methods and processes.

Third: The Role of Digital Logistics Management in Enhancing Competitive Advantage

Digital logistics management plays a pivotal role in enhancing competitive advantage through:

1. Improving operational efficiency through automation and reducing human error.
2. Reducing costs by improving inventory management and minimizing waste.
3. Enhancing service quality through accurate and rapid information exchange.
4. Increasing flexibility and responsiveness to market and customer demands.
5. Supporting innovation in logistics process design.

Literature Review

Recent literature demonstrates a broad consensus on the strategic importance of digital logistics management in improving organizational performance and enhancing competitiveness. Studies indicate that organizations that have successfully integrated digital technologies into their logistics activities have achieved higher levels of operational efficiency compared to those that still rely on traditional systems. The literature also confirms that digital transformation in logistics extends beyond cost reduction to include improved service quality and increased customer satisfaction. Studies demonstrate that digital logistics management is a key factor in enhancing organizational resilience, enabling organizations to respond quickly to sudden changes in demand or disruptions that may affect supply chains [9]. In this context, some studies indicate that having an integrated digital logistics infrastructure contributes to reducing operational risks and increasing resilience to crises. On the other hand, the literature highlights that the success of digital logistics management depends on its integration with the organization's overall strategy, as treating it as a separate operational function diminishes its strategic impact. Some studies also point to challenges associated with implementing digital logistics, such as a shortage of qualified human resources, high initial investment costs, and resistance to organizational change. This necessitates adopting a gradual and well-considered approach to digital transformation. In general, the literature reflects a strong positive relationship between digital logistics management and competitive advantage [8]. Digital

logistics contributes to enhancing the dimensions of competitive advantage, namely cost reduction, quality improvement, increased responsiveness, and support for innovation. This aligns with the findings of this theoretical study.

Conclusion

This study concluded that digital logistics management represents one of the most important strategic pillars upon which modern organizations rely to achieve competitive advantage in a business environment characterized by constant change and intense competition. The study demonstrated that the shift towards digital logistics is not merely a technical choice, but an organizational and strategic necessity dictated by market demands and customer expectations. The study showed that employing digital technologies in managing logistics activities contributes to improving operational efficiency, reducing operating costs, enhancing service quality, and increasing flexibility and responsiveness. The study also emphasized that the integration of technology and qualified human resources is a crucial factor in the success of digital logistics management and the achievement of its strategic objectives. In light of this, it can be said that organizations adopting integrated digital logistics management are better positioned to achieve a sustainable competitive advantage compared to those relying on traditional methods, thus enhancing their growth and sustainability in local and global markets.

Recommendations

Based on the study's findings, it recommends adopting digital logistics management as an integral part of the organization's overall strategy, ensuring the integration of operational and strategic goals. It also recommends investing in the development of digital infrastructure and upgrading logistics information systems to meet the requirements of digital transformation. The study underscores the importance of human resource development through continuous training and building the digital capabilities of logistics personnel, as this plays a vital role in enhancing the efficient use of modern technologies and reducing resistance to organizational change. It also recommends strengthening integration and coordination among the various stakeholders in the supply chain by utilizing shared digital platforms. The study suggests that researchers conduct future applied studies to measure the quantitative impact of digital logistics management on organizational performance and competitive advantage in different sectors,

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