SOLUTIONS TO IMPROVE LOGISTICS MANAGEMMENT IN BUSINESSES

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Abstract

Transportation is viewed as a vital component of logistics systems that provides timely delivery of products, reduces operating costs, and increases customer satisfaction. This paper primarily seeks to provide recommendations to strengthen the management of transport activities in logistics firms. To support this goal, this document will examine how transportation efficiency is important to achieving an organisation's logistics goals, the major issues associated with managing transportation, and recommendations for resolving these issues. This research is primarily based on secondary research, which includes data from various academic journals, research papers, and articles. Following a detailed process of gathering data, content analysis was used to provide meaningful information from the collected materials. The results indicated that transportation systems that work efficiently result in improved logistics operations, better inventory management, an increased market presence or reach, and improved supply chain processes. Logistics firms also have many challenges, which consist of inadequate infrastructure, high capital infusion required, fluctuating fuel prices, issues with technology integration, and government regulations. This research proposes possible solutions to such challenges, for example, by using a transportation management system (TMS), real-time track and trace technologies, route optimization, improved fleet operations, multimodal transport options, and promoting opportunities for sustainability in transport.

Keywords: logistics, transportation, management, solutions

Introduction

Relevance of the topic: In today's competitive business climate, business logistics innovation is extremely important (Jam et al., 2025). Business logistics innovation helps to increase efficiency in supply chain operations, including product storage, product handling, and product distribution (Hrouga and Sbihi, 2023). Of all the supply chain activities, transportation is by far the most important for delivering goods to customers on time and at an affordable price. An effective transportation system will reduce delays, increase the speed of deliveries, and improve the customer satisfaction level of businesses (Sibarani et al., 2026). Therefore, continual improvement and innovation in transportation systems are essential to ensure that logistics activities operate effectively. Modern technology and improved practices in transportation management provide an opportunity for businesses to increase the productivity and coordination of their logistics chain as a whole.

Novelty of the paper: This paper provides insight into the importance of innovation in business logistics through a focus on transportation being an integral part of an efficient logistics system. Researchers highlight that transportation is an integral part of logistics business operations (Gayialis et al., 2022; Wedha, 2023). However, transportation still lacks improvements in many parts of the world, especially in the developing countries like India (Sahu et al., 2022). This study investigates ways in which enhancing transportation can increase the performance of a logistics operation and support business growth.

Research aim: to suggest solutions to improve transportation in logistics management in business.

The following **objectives** have been set to achieve the aim

1. To analyze the importance of better transportation management in logistics businesses.
2. To identify the challenges of improving transportation management in logistics businesses.
3. To provide solutions to enhance the transportation management in logistics.

Research object and methods

The research object of the paper is the solutions in improvement of transportation in logistics management in business.

The secondary research method is used by this study to achieve the research aim and objectives. The secondary data, including research papers, articles, journals, and books, are used to collect the data. The collected data is analyzed using content analysis. Content analysis helps to identify the in-depth knowledge of qualitative data collected from the secondary sources.

Research results and discussion

Benefits of better transportation in logistics management in business

Logistics management in today's corporate world depends on transportation to achieve maximum effectiveness and efficiency. With an effectively managed transportation system, you could decrease the amount of time necessary to

move a shipment through your distribution network (Palkina, 2022). An adequately designed and maintained transportation infrastructure supports the rapid movement of goods from producers through the distribution process. By providing their customers with fast deliveries, companies can enhance their competitive position by improving their operational efficiency and enhancing the satisfaction of their customers (Sarder, 2025). Establishing reliable and timely delivery schedules helps a company establish long-term relationships with its customers while establishing itself as a dependable and trustworthy supplier. The cost savings of a well-planned transportation system are also significant due to the potential arising from reduced operating expenses for transporting goods (Palkina, 2022). Using proper transportation planning techniques, firms can determine the most direct routes, minimize fuel usage, minimize the number of times goods are handled while being transported and leverage the capacity of each vehicle. In this coordinated manner, companies can combine shipments, minimize the number of empty return trips for vehicles, and maximize the use of each vehicle's capacity. As a result, all logistics costs are reduced and the total resources used by an organization are reduced to a more efficient use. By lowering their transportation costs, firms create an environment that enables them to deliver lower prices to customers, attract customers, and grow their market share (Katamadze and Katamadze, 2023).

The transportation system has a direct impact on inventory management due to the reliability and predictability of moving goods. As a result, companies can keep their inventory levels at the optimal levels, without having to maintain excessive amounts of stock (Katamadze and Katamadze, 2023). This is especially significant in industries where storage costs are high or where goods have a short shelf life. Effective transportation enables the implementation of just-in-time delivery, where materials or products are received at precisely the time they are required for production or distribution. Therefore, businesses can benefit from reduced warehousing costs; a decrease in the risk of damage and obsolescence of products; and improved efficiencies throughout their supply chains (Palkina, 2022). Transportation improves coordination and integration throughout the supply chain. Logistics management uses transportation to link all the different steps in the supply chain together: from supplier to manufacturer, distributor to retailer. When transportation systems are performing well, it is easier and more efficient for the different players to communicate and coordinate work together. This improved coordination can lead to more accurate shipment scheduling, real-time tracking of goods, and quicker reaction times to meet shifts in demand (Kadłubek et al., 2022).

An additional benefit of enhanced transportation is the development of new markets. A well-developed transportation system allows a business to distribute its products to a wider geographical area than they would otherwise have access to, including some locations, which were not available previously. Because of improvements in transportation infrastructure and services, a company may be able to successfully enter regional, national, or international markets. By successfully entering these markets, creating new customers, and growing revenue (Palkina, 2022). An example of this is better roads, railroads, and shipping services provide more affordable, and quicker ways for businesses to ship their products over larger geographic distances. Additionally, improved transportation will also promote the use of technology within the logistics industry (Dyczkowska et al., 2023). With better transportation systems, businesses can integrate GPS tracking, real-time tracking and management systems, route optimization, as well as the use of digital, web-based logistics platforms. By using these technologies, logistics managers will have greater visibility into the flow of products through their supply chain, which will allow them to make better decisions regarding transportation planning and control (Cedillo-Campos et al., 2022). With real-time tracking, businesses can track the flow of product shipments, determine delays, and take corrective actions in a timely manner. Such visibility creates greater accountability for logistics operations while improving the performance of these functions overall.

Efficient transport reduces the risks of damage or loss of goods in transit. Goods can be managed more carefully during the shipping process as transit systems are managed correctly, and goods can also be transported appropriately when using the proper transport vehicles and equipment. Furthermore, properly packing products, using temperature-controlled transport, and providing adequate road conditions all contribute to the protection of products while being stored, shipped, and delivered, thereby reducing the likelihood of damage, spoilage, or contamination (Cedillo-Campos et al., 2022). Protecting sensitive merchandise from damage in transit is important not only for the well-being of the goods themselves but also because it reduces a business's financial losses and enables businesses to provide their customers with high-quality goods. In addition, improved transportation improves responsiveness to changing market conditions. If a business has an efficient transport system, they can quickly respond to changes in distribution plans and deliver inventory to customers in the places where it is needed most readily (Kadłubek et al., 2022). A good example would be a business's ability to increase delivery frequency or redirect shipments at the time of peak demand for a specific product in order to continue providing a high level of service and to eliminate stock shortages that could harm customer satisfaction or brand reputation.

Challenges of improving transportation management in logistics businesses

In order to increase operational effectiveness, reduce costs, and ensure timely delivery of goods, improving transportation management systems within logistics companies is essential. In particular, logistics companies face multiple types of challenges when enhancing their transportation management systems. The lack of sufficient transportation infrastructure is one of the most significant obstacles in transportation management today. Many areas have developing or insufficiently developed roadways, highways, railroad networks, and ports (Sarder, 2025). In addition, major highways often experience poor road conditions, too much congestion, and limited or no connectivity between Transportation hubs. All these factors lead to delays in the movement of goods by logistics companies that result in extended time in transit plus uncertain delivery dates (Modica et al., 2021). Therefore, all these delays lead to higher operational costs to Logistics Companies and decreased reliability of Transportation Services thereby making it very difficult for a company to offer consistent Transportation Service Quality. The high cost associated with the development and upgrade of the transportation system is also a significant challenge. Improving transportation management typically

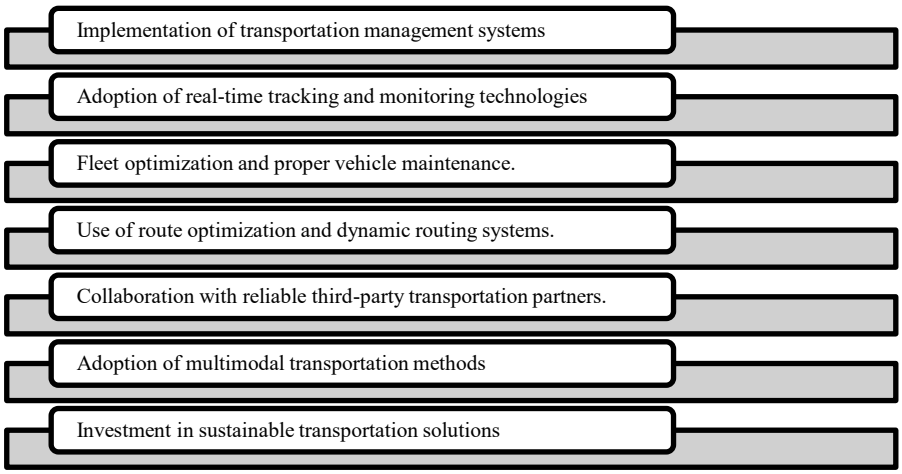
requires significant investments in new and modern vehicles; advanced technology for tracking; route optimization software; and equipment that uses less fuel (Dyczkowska et al., 2023). Many logistics companies can find this type of investment difficult to make. Although maintenance of a vehicle fleet, upgrading of a vehicle fleet, and service of a vehicle fleet represent additional operational costs incurred by a logistics company, additional operational costs are incurred when these activities are performed. Fluctuations in the price of fuel present additional challenges regarding transportation operations. Fuel is one of the largest single cost components associated with the logistics industry (Sarder, 2025). Fuel prices are frequently changing because of various factors, and this makes it difficult for logistics companies to manage their funds according to current fuel prices, which causes an increase in the total operating costs associated with the transportation of products. In times of rising fuel costs, logistics companies experience a reduction in their profit margins.

Transportation management is complicated by route planning and fleet management as well. Logistics companies must plan multiple deliveries, ensure vehicles are full, and determine the most efficient routes for delivery. Route planning can be especially challenging due to factors such as road closures, congestion, weather conditions, and unexpected disruptions to planned routes (Dyczkowska et al., 2023). Large fleets require significant planning in advance and ongoing monitoring to be efficient. Without proper coordination of operations and route optimization, transportation operations can become ineffective and costly. Challenge of technology integration is a growing concern in the logistics field. With increasing numbers of digital tools, including GPS tracking, transportation management systems, and real-time monitoring systems, the ability to integrate these into daily operations can be quite difficult (Modica et al., 2021). Some logistics companies may simply not have the expertise necessary to implement or manage various technologies. Employees may also require training on how to work with the new systems. In addition, logistics companies may experience significant costs when upgrading their technology, creating an additional obstacle to their ability to integrate technology into their logistics processes (Dyczkowska et al., 2023). Transportation management is affected by regulatory and compliance requirements. Logistics companies must abide by a myriad of government regulations such as those related to vehicle safety, hours of service for drivers, environmental regulations, and transportation permits. Because there are many different types of government regulations that exist on local, state and federal levels; this makes compliance of various types of logistics difficult for businesses moving goods over long distances and around the world (Katamadze and Katamadze, 2023). In order to comply with these regulations, there can be increased documentation, additional inspections, and operational changes to meet all the various types of regulations, resulting in more time being needed to complete transportation activities.

Disruptions from the outside can have a significant impact on transportation management. Events such as natural disasters, adverse weather conditions, accidents involving vehicles; political unrest; and strike activity can have an impact on transportation. By experiencing these types of disruptions, it is possible to have delays in shipments, damage to products, and issues with developing logistics plans (Kundu et al., 2022). To mitigate these types of risks, transportation companies need to have contingency plans and alternative routes established, which can complicate logistics overall. The transportation industry has to cope with several challenges related to the need for security, due to the potential risks associated with moving large volumes of goods over long distances, including theft, potential loss or damage of either the goods in transit or the vehicle itself, and potentially tampering with the cargo during transit.

Solutions to enhance the transportation management in logistics

In order to manage transportation in logistics better, an effective use of strategies that directly deal with operational inefficiencies, technology gaps, and currently used infrastructure is essential. Effective solutions, as mentioned in Figure 1, is essential to enhance the transportation management in logistics. As mentioned in the Figure 1, the first recommended solution is the implementation of transportation management system. A very effective way of solving transportation management issues would be through the use of advanced Transportation Management Systems. A TMS is a digital platform that allows logistics companies an easier, more effective way of planning, managing, and monitoring transportation (Gomes et al., 2023). When TMS are properly implemented, small and large companies can utilize these digital platforms to optimize route plans, coordinate the movement of freight, and track shipments in real-time. When TMS are being used in developing an optimal route plan, the TMS will utilize both data collected and an understanding of current traffic conditions along with, for example, delivery date required and number of available vehicles to determine the most efficient route, thus eliminating any extra travel time (Katamadze and Katamadze, 2023). By reducing travel distances for either faster deliveries, reduce fuel consumed, or reduce overall costs of operations, TMS utilized to perform these functions would be one of the most effective ways to manage transportation better (Kundu et al., 2022). Another important solution to transportation management is an overall adoption of real-time monitoring technologies (Gomes et al., 2023). When real-time monitoring technologies are used within logistics, logistics providers are able to place a GPS and an online monitoring system within their vehicles in order to pinpoint exactly where their freight is at any given time during the delivery process. By implementing real-time visibility of freight, logistics management has a better ability to monitor deliveries and react quickly to any delays caused by either traffic or equipment failures. Fleet optimization is an important tactic to improve transportation management (Gomes et al., 2023). Logistics companies need to frequently evaluate their fleet size, types of vehicles, and maintenance schedules to ensure they are making the most out of their transportation assets. Vehicles that are suitable for the weight and volume of items being shipped will result in less fuel burned and better delivery performance (Tsolaki et al., 2022). In addition to reducing fuel usage, regular maintenance on vehicles is critical because poorly maintained vehicles tend to have more breakdowns resulting in delays in delivery. Preventive maintenance programs can assist in keeping vehicles in good working order, thus reducing unanticipated repair expenses.



Source: as per literature analysed in this part

Fig. 1. Solutions to enhance the transportation management in logistics

Another approach to enhancing transportation management is to improve how routes are planned. Transportation companies can take advantage of route optimization software to assess the shipping locations of deliveries and the traffic flow through roads to find the most efficient route (Tsolaki et al., 2022). By utilizing this technology, management can minimize congestion on roads, reduce the amount of time spent travelling, and have items delivered on time. Logistics firms can also implement dynamic routing systems; this allows updates to be made to routes based on changes to the volume of traffic on the road at any given time or time sensitive deliveries. Implementing a dynamic route planning process leads to improved transportation efficiency while minimizing disruptions to day-to-day operations (Kmiecik, 2022). Utilizing dependable transportation partners can also be an effective method for improving the efficiency of delivery and other logistics operations. Many logistics companies utilize third-party carriers to perform some of their transportation operations, and by selecting their transportation partners wisely, companies can ensure that their transportation operations will be efficient. By developing multimodal transportation options, logistics companies can utilize a number of different forms of transportation, including road, rail, and sea (Kmiecik, 2022). Each of these forms has its own advantages and disadvantages in regard to the price of transportation, speed of transportation, and the volume that can be transported. For example, while rail is generally the most affordable option for shipments that are being shipped over a long distance in large quantities, road transportation is usually the best method for providing flexibility for the last mile of transportation for deliveries (Gomes et al., 2023). When logistics companies use a combination of the various forms of transportation available, they will have the ability to increase cost effectiveness, as well as the quality of service provided by their delivery companies. Digital communication technologies, automated notifications, and integrated logistics technologies provide each of the parties involved in the transportation process with access to timely updates concerning shipment delivery schedules and shipping status (Tsolaki et al., 2022). Improved communication among the parties involved eliminates ambiguity and confusion and enhances the operational effectiveness of the transportation system. By investing in sustainable transportation methods, organizations can improve transportation management. Companies that offer logistics services can use fuel-efficient vehicles, electric delivery trucks, alternative fuel transportation technologies, and optimize their use of vehicles to reduce fuel consumption and decrease negative environmental impacts.

Conclusions

1. The paper analysed the benefits of better transportation in logistics business to highlight its importance. It is identified that it enables faster delivery of goods, decreased costs resulting from transporting products, better inventory control, and higher levels of customer service provided through logistics operations.

2. The challenges identified are inadequate transportation infrastructure, excessive operational and technological costs, unpredictable fuel prices, and difficulty managing routes and fleets.

3. Suggested solutions include implementing transportation management systems, using real-time tracking tools, optimizing fleet and routing efficiency, and implementing sustainable transportation practices. Implementing these transportation solutions helps logistics companies to enhance the overall operations of the company.

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