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Logistics Optimization: A Literature Review of Techniques for Streamlining Land Transportation in Supply Chain Operations

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Abstract : This study conducts a thorough literature review of logistics optimization techniques that aimed at improving the efficiency of supply chain operations. Logistics optimization encompasses key areas such as transportation management, inventory control, and distribution network design, each of which plays a critical role in streamlining supply chain performance. The review identifies mixed-integer linear programming (MILP) as a dominant method, widely used for its flexibility in handling complex logistics problems. Other methods like heuristic algorithms and combinatorial optimization also prove effective in solving large-scale logistics challenges. Furthermore, real-time data integration and advancements in simulation techniques are transforming the decision-making processes within supply chains, leading to more dynamic and responsive operations. The inclusion of sustainability goals, particularly in minimizing carbon emissions, has emerged as a growing trend in logistics optimization. This research highlights the need for integrated, holistic approaches that consider the interconnectedness of logistical components. The findings provide valuable insights to guide future research and practical applications, fostering more resilient and efficient supply chains.

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