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Optimising Supply Chain Management through Inventory Management Strategies: A Systematic Literature Review

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Abstract: *Supply chain management is crucial for operational efficiency amid globalization and technological advances, but faces challenges like demand uncertainty and stock imbalances from poor inventory management. This study aims to analyze inventory management strategies for optimizing supply chain performance. It uses a qualitative Systematic Literature Review (SLR) method following PRISMA guidelines. The population comprises articles from databases like Scopus, Google Scholar, and ScienceDirect; the sample includes 30 selected journal articles based on inclusion criteria such as relevance and full-text availability. Instruments involve keyword searches (e.g., "inventory management," "supply chain optimization"); data analysis uses qualitative descriptive techniques, categorizing strategies and mapping tables. Results reveal five strategy categories: inventory control (EOQ, safety stock; 8 articles), demand forecasting (AI-based; 7 articles), digital systems (blockchain, IoT; 4 articles), optimization models (5 articles), and collaborative strategies (JIT, VMI; 6 articles), predominantly from Q1/Q2 Scopus journals. Effective strategies enhance efficiency and cut costs. In conclusion, integrating these strategies, especially with technology, boosts supply chain adaptability; future research should explore sector-specific applications..*

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Introduction

The development of globalisation and technological advancements has intensified competition in the business world. Companies are required to manage their operations more efficiently in order to survive and compete in the market. One crucial aspect supporting a company's operational success is supply chain management (SCM). Supply chain management is the process of managing the flow of goods, information, and resources involving various parties, ranging from suppliers, manufacturers, and distributors to end consumers. Effective supply chain management can help companies improve operational efficiency, reduce costs, and ensure products are available to consumers on time (Siagian et al., 2021 & Bermana et al., 2025). In practice, supply chain management often faces various challenges, such as demand uncertainty, supply delays and changing market conditions. One aspect that plays a significant role in addressing these issues is inventory management. Inventory is a vital component of the supply chain as it serves to ensure the smooth running of production and product distribution processes. Well-managed inventory can help companies meet customer demand in a timely manner. However, improper inventory management can lead to various problems, such as overstocking or stockouts. Overstocking can increase storage costs and the risk of goods damage, whilst stockouts can result in lost sales opportunities and reduced customer satisfaction (Mweshi, 2022). Companies need to implement the right inventory management strategies to maintain a balance between product availability and cost efficiency. Various inventory management strategies have been developed to help companies manage stock more effectively. Some commonly used methods include Economic Order Quantity (EOQ), safety stock, reorder point, and ABC analysis. These methods are used to determine the optimal order quantity, maintain stock availability, and categorise stock based on its level of importance. In addition, there are also collaborative approaches within the supply chain, such as Just-in-Time (JIT) and Vendor Managed Inventory (VMI), which aim to improve coordination between suppliers and distributors in inventory management (Mohamed, 2024).

Along with the development of information technology, inventory management strategies have also undergone significant changes. Currently, many companies are beginning to utilise digital technology to improve the effectiveness of inventory management. Technologies such as big data, machine learning, and artificial intelligence are being used to predict market demand more accurately. With such predictive systems, companies can plan inventory levels more precisely, thereby reducing the risk of both overstocking and stock shortages. Furthermore, the use of technologies such as blockchain and digital inventory systems can enhance transparency and facilitate coordination among parties within the supply chain network (Wang et al., 2022).

Previous studies have examined the application of inventory management strategies across various industrial sectors, including manufacturing, retail, construction, and the healthcare sector. The results of these studies indicate that the implementation of appropriate inventory management strategies can improve supply chain performance, reduce operational

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costs, and enhance customer service levels. Nevertheless, the majority of studies still focus on specific methods or are limited to particular industrial sectors. Furthermore, the rapid advancement of digital technology has also given rise to various new approaches to inventory management that have not yet been comprehensively addressed in previous research.

This situation indicates that a more comprehensive review is still required to understand the various inventory management strategies that have been developed and how these strategies can support the optimisation of supply chain management. By conducting a systematic review of previous research, researchers can gain a clearer picture of research developments in the field of inventory management and the strategies most commonly used to improve supply chain performance. One method that can be used to conduct a comprehensive review is the systematic literature review (SLR). The SLR method enables researchers to systematically collect, evaluate, and analyse relevant studies. Through this approach, researchers can identify research trends, the methods employed, and the key findings generated in studies related to inventory management and supply chain management (Carrera-Rivera et al., 2022).

Against this background, this study aims to analyse various inventory management strategies used in the optimisation of supply chain management through a systematic literature review. This study examines relevant academic articles to identify the most frequently used types of inventory management strategies, the research methods applied, and the key findings of previous studies. Furthermore, this study also aims to identify research gaps that still exist in the literature regarding inventory management and supply chain management. Thus, the results of this study are expected to contribute to enriching academic studies on inventory management strategies and to provide recommendations for future research in developing more effective approaches to improve supply chain management performance.

Research Methods

This study employs a Systematic Literature Review (SLR) approach to systematically examine various studies related to inventory management strategies in the optimisation of supply chain management. The systematic literature review approach was chosen as it enables the researcher to identify, evaluate, and synthesise various published research findings, thereby providing a more comprehensive understanding of research developments on the topic.

The systematic literature review process in this study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The PRISMA method was used to ensure that the processes of searching, selecting, and analysing articles were carried out systematically, transparently, and in a manner that could be accounted for (Rosamy et al., 2025). The research stages were carried

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out through several main steps, including literature identification, article screening, eligibility assessment, and the determination of articles to be analysed (included studies). During the identification stage, the researcher searched for scientific articles through several relevant academic databases, such as Google Scholar, ScienceDirect, Scopus, Publish and Perish, and MDPI. The article search was conducted using a combination of keywords related to the research topic, including "inventory management", "supply chain management", "inventory optimisation", "demand forecasting", "inventory control strategies", " " and "inventory systems". The use of these keywords aimed to identify scientific articles discussing inventory management strategies within the context of supply chain management.

Following the literature identification process, the next stage was the initial screening of articles. At this stage, articles obtained from the initial search were selected based on their titles and abstracts to assess their relevance to the research focus. Articles not related to inventory management or not discussing supply chain management were not proceeded with to the next stage of analysis. This screening process aims to ensure that only articles relevant to the research topic are analysed further.

The next stage is the eligibility assessment, which involves a more in-depth review of the content of the articles that have passed the screening stage. At this stage, the researcher reads the selected articles thoroughly to ensure that the research genuinely addresses inventory management strategies within supply chain management. Additionally, the articles are assessed based on the completeness of the information presented in the research, such as the research objectives, research methods, and the main findings produced.

In the article selection process, this study employed several inclusion and exclusion criteria. The inclusion criteria for this study comprised: (1) academic articles discussing inventory management strategies within the context of supply chain management, (2) articles published in academic journals, (3) articles available in full text, and (4) articles that clearly outlined research methods and findings. Meanwhile, articles that did not directly discuss inventory management strategies, articles that were not relevant to the research topic, and articles that were not available in full text were not included in the analysis. Based on the selection process carried out through the

PRISMA stages, a total of 30 research articles that met the criteria were obtained and used as data sources in this study. The data collection technique in this study was carried out through a literature review, namely by collecting and analysing information from the selected scientific articles. The data collected from each article included several key pieces of information, such as the research title, research focus, research methods used, inventory management strategies applied, main research findings, and research limitations. This information was then organised into a mapping table to facilitate the analysis and comparison of the studies reviewed.

The data analysis technique used in this study is qualitative descriptive analysis. The analysis was conducted by grouping articles based on the type of inventory management

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strategy used in previous studies, such as inventory control strategies, digital technology-based strategies, demand forecasting-based strategies, and supply chain collaboration strategies. Subsequently, the researcher analysed the patterns, similarities, and differences in the findings generated from these various studies. The results of the analysis were then used to explain how various inventory management strategies can contribute to improving operational efficiency and supporting the optimisation of supply chain management.

Through a systematic literature review approach using the PRISMA method, this study aims to provide a more systematic overview of the various inventory management strategies developed in previous research. Furthermore, this study also aims to identify research gaps still present in the literature, thereby providing a foundation for future research in developing more effective strategies to improve supply chain management performance.

Result and Discussion

Results of the Categorisation of Inventory Management Strategies

Research on inventory management indicates that inventory control approaches remain the most widely used strategies. Methods such as Economic Order Quantity (EOQ), Reorder Point, and Safety Stock were found in 8 articles. These methods are used to determine the optimal order quantity, reduce the risk of stockouts, and minimise storage and ordering costs. The application of these strategies is prevalent in the manufacturing, retail, and healthcare sectors, as these methods are relatively simple and can help companies maintain a balance between product availability and operational costs.

Technological advancements have also driven the use of data-driven and artificial intelligence-based demand forecasting methods, which were identified in 7 articles. These approaches utilise techniques such as machine learning, big data analysis, and demand prediction models to improve the accuracy of inventory planning. The use of large volumes of data enables companies to better predict demand patterns, allowing for more precise decisions regarding production volumes and inventory levels.

Several studies also highlight collaborative strategies within the supply chain through the implementation of Just-In-Time (JIT) and Vendor Managed Inventory (VMI), which appear in 6 articles. These strategies emphasise cooperation between companies and suppliers to ensure the flow of goods runs more efficiently and inventory levels are minimised. Other research utilised mathematical inventory optimisation models, found in 5 articles, whilst the ‘’ of digital technology-based inventory systems—such as blockchain, IoT, and smart inventory systems—appeared in 4 articles. These findings indicate that inventory management research is increasingly focusing on the use of technology and data analysis to enhance the efficiency of inventory management within the supply chain.

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Table 1 Categories of Inventory Management Strategies

Inventory Strategy Categories	Number of Articles
Inventory Control (EOQ, Reorder Point, Safety Stock)	8
Data-Driven / AI-Based Demand Forecasting	7
Digital Technology-Based *Inventory* Systems	4
Inventory Optimisation Models	5
Supply Chain Collaboration Strategies (JIT, VMI)	6

Journal Identity and Index Results

The distribution of article sources indicates that the majority of research originates from international journals indexed in Scopus. Of the 30 articles analysed, the Q1 category is quite dominant with 10 articles. Journals in this category include Results in Engineering, Expert Systems with Applications, International Journal of Production Research, as well as several articles published in Sustainability. The dominance of Q1 journals indicates that much research related to inventory management and supply chain is published in journals with a high level of reputation.

The Q2 category also features a substantial number of articles, totalling 11. Some of the journals in this category include Applied Sciences, Future Internet, Information, Logistics, Systems, and Fintech. Articles in this category frequently discuss the utilisation of digital technology, machine learning, and analytical approaches in inventory management and demand forecasting. Additionally, there is one article in the Q3 category published in the journal Tehnički Vjesnik and one article in the Q4 category from the Rwanda Journal of Medicine and Health Sciences.

Other articles also originate from national journals and other indices. There are 2 articles from SINTA 2- indexed journals, namely the Scientific Journal of Informatics and the Journal of Information Systems and Informatics. Four other articles come from Copernicus-indexed journals such as the International Journal of Advanced Research in Engineering and Technology, the International Journal of Supply Chain and Logistics, the International Journal Papier Public Review, and the Journal of Management and Informatics. One article also originates from the proceedings of the international conference, the Annual Conference of the International Group for Lean Construction. This distribution indicates that research on inventory management strategies is published in various scientific sources with varying levels of indexing.

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Table 2 Journal Identities and Indexes

No	Journal Title	Journal/Proceedings Name	Index
1	Investigating the Mediating Roles of Inventory Management and Supply Chain Disruption	Results in Engineering	Q1
2	Safety Stock and Reorder Point System for RF Media Stock Optimisation	Scientific Journal of Informatics	SINTA 2
3	Inbound Logistics Mode Based on JIT Production in Cruise Ship Construction	Sustainability (Switzerland)	Q1
4	Simulating JIT Implementation in Prefabricated Construction	Annual Conference of the International Group for Lean Construction (IGLC)	Proceedings
5	Optimisation of Inventory Management to Prevent Drug Shortages	Applied Sciences (Switzerland)	Q2
6	Closed-Form Solution Approach for Optimal Reorder Point	Decision Analytics Journal	Q1
7	Optimising Supply Chain Operations Using Advanced Time-Series Mixer Models	Expert Systems with Applications	Q1
8	Predicting Demand in Supply Chain Management	Future Internet	Q2
9	Smart Platform for Blood Bank Data Management	Information (Switzerland)	Q2
10	Optimising Supply Chain Management with Machine Learning Algorithms	International Journal of Advanced Research in Engineering and Technology (IJARET)	Copernicus
11	Optimising the Configuration of Food Supply Chains	International Journal of Production Research	Q1
12	Supply Chain Digitisation and Management	International Journal of Production Research	Q1
13	Modern Inventory Control Techniques and Supply Chain Performance	International Journal of Supply Chain and Logistics	Copernicus
14	Inventory Management Practices on the Supply Chain Performance of Perishable Food Products	International Journal of Public Policy Review	Copernicus
15	Impact of Effective Inventory Management on Supply Chain Performance	Journal of International Business Studies	Q1
16	Enhancing Supply Chain Forecasting with Machine Learning	Fintech (Switzerland)	Q2
17	Implementation of EOQ and Reorder Point Methods in Inventory Management Information Systems	Journal of Information Systems and Informatics	SINTA 2
18	Optimisation of Supply Chain Processes in the Retail Sector	Journal of Management and Informatics	Copernicus

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19	Inventory Management and Its Influence on the Supply of High-Value Products	Logistics	Q2
20	Integrating TQM, JIT and Green Supply Chain Practices	Logistics	Q2
21	Impact of Intelligent Inventory Systems on the Improvement of Reverse Logistics	Operational Research in Engineering Sciences: Theory and Applications	Q2
22	Inventory Management Practices for Antiretroviral Medicines	Rwanda Journal of Medicine and Health Sciences	Q4
23	Research on Supply Chain Network Optimisation at AH Company	Sustainability (Switzerland)	Q1
24	Enhancing Corporate Sustainability through JIT Practices	Sustainability (Switzerland)	Q1
25	Analysis of the Impact of Sub-Optimisation on Partner Selection in VMI	Sustainability (Switzerland)	Q1
26	Strategic Inventory Management with Private Brands	Systems	Q2
27	The Impact of Blockchain Technology on Lean Supply Chain Management	Systems	Q2
28	Optimising Supply Chain Inventory: The MILP Approach	Systems	Q2
29	Enhancing Inventory Management through Safety-Stock Strategies	Systems	Q2
30	Utilising Internet Big Data and Machine Learning for Product Demand Forecasting	Technical Journal	Q3

The journal index distribution indicates that the majority of articles used in this study originate from reputable international journals. The Q2 category has the highest number of articles, namely 11 articles or approximately 37 per cent of the total research, followed by the Q1 category with 10 articles or approximately 33 per cent. Meanwhile, the Q3 and Q4 categories each consist of 1 article, or around 3 per cent. In addition to Scopus journals, research sources also come from national journals and other indices, namely 2 articles from SINTA- indexed journals accounting for around 7 per cent, 4 articles from Copernicus-indexed journals accounting for 13 per cent, and 1 article from international conference proceedings accounting for around 4 per cent. This composition indicates that the majority of research sources come from international journals with a strong academic reputation.

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Table 3 Distribution of Journal Indexes

No	Index	Total	Percentage
1	Q1	10	33%
2	Q2	11	37%
3	Q3	1	3%
4	Q4	1	3%
5	SINTA	2	7%
6	Copernicus	4	13%
7	Proceedings	1	4%
	Total	**30**	**100%**

Results Based on Country Distribution of Research

The distribution of research countries indicates that the majority of studies on inventory management and supply chain were conducted in China, with a total of 7 articles or approximately 23 per cent of all analysed research. Research with a global scope or involving multiple countries was also quite common, with a total of 5 articles or around 17 per cent, followed by the United States with 4 articles or around 13 per cent. Indonesia came next with 3 articles or around 10 per cent, whilst Kenya had 2 articles or around 7 per cent of the total research.

Other countries such as Saudi Arabia, Bangladesh, Tanzania, Rwanda, Croatia, Spain, Canada, Iran, and Turkey each contributed 1 article, or around 3 per cent. This distribution indicates that research on inventory management and supply chains is not only conducted in developed nations but also across various developing countries. This situation provides a broader perspective on the application of inventory management strategies across diverse industrial sectors and economic environments.

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Table 4 Research Countries

No	Country	Total	Percentage
1	China	7	23%
2	Global / Multi-country	5	17%
3	USA	4	13%
4	Indonesia	3	10%
5	Kenya	2	7%
6	Saudi Arabia	1	3%
7	Bangladesh	1	3%
8	Tanzania	1	3%
9	Rwanda	1	3%
10	Croatia	1	3%
11	Spain	1	3%
12	Canada	1	3%
13	Iran	1	3%
14	Turkey	1	3%
	Total	**30**	**100%**

Results Based on Key Theories and Concepts of the Study

The distribution of theories used in the research indicates that several key theories are frequently employed in studies of inventory management and supply chain management. Inventory Management Theory and Inventory Control Theory are the most widely used, with four articles each. These two theories are widely used because they are directly related to inventory management, such as determining stock levels, controlling inventory levels, and determining reorder timing through methods such as safety stock and reorder point.

Other theories that are also quite frequently used include Just-In-Time (JIT) Theory, Supply Chain Management Theory, and Machine Learning or Big Data Supply Chain Theory, each appearing in three articles. Several studies also utilise Supply Chain Optimisation Theory, Economic Order Quantity (EOQ) Theory, Demand Forecasting Theory, and Healthcare Supply Chain Management Theory, with two articles each. In addition, there are several theories used in smaller numbers, such as Digital Supply Chain Management Theory, Total Quality Management (TQM) Theory, Reverse Logistics Theory, Vendor Managed

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Inventory (VMI) Theory, and Lean Supply Chain Theory, each appearing in one article. The distribution of these theories indicates that research on inventory management does not only employ traditional approaches but is also beginning to integrate technology, optimisation, and collaboration within the supply chain.

Table 5 Main Theories or Concepts in the Research

No	Theory	Number
1	Inventory Management Theory	4
2	Inventory Control Theory (Safety Stock, Reorder Point)	4
3	Just-in-Time (JIT) Theory	3
4	Supply Chain Management Theory	3
5	Supply Chain Optimisation Theory	2
6	Economic Order Quantity (EOQ) Theory	2
7	Demand Forecasting Theory	2
8	Machine Learning / Big Data Supply Chain Theory	3
9	Healthcare Supply Chain Management Theory	2
10	Theory of Digital Supply Chain Management	1
11	Total Quality Management (TQM) Theory	1
12	Reverse Logistics Theory	1
13	Vendor Managed Inventory (VMI) Theory	1
14	Lean Supply Chain Theory	1

Results of Independent Variables

The distribution of independent variables indicates that several key factors are frequently used in research on inventory management and the supply chain. The most commonly used variable is inventory management, with 6 articles. This variable relates to the management of inventory levels, stock control, and the control of goods flow within the supply chain. Other variables that are also frequently used include safety stock, reorder point, and inventory control, with 5 articles each. These variables play a role in helping a company's

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supply chain management determine the optimal inventory level to reduce the risk of stockouts or excess inventory.

Other variables used in the research include demand forecasting or prediction models, with 4 articles, as well as just-in-time practices, machine learning or big data analytics, and supply chain network or optimisation models, each appearing in 3 articles. In addition, there are several variables used in smaller numbers, such as digital technology or intelligent inventory systems, with 2 articles, as well as total quality management, vendor-managed inventory, blockchain technology, and reverse logistics systems, each used in 1 article. This distribution indicates that inventory management research does not only focus on traditional stock control methods but is also beginning to utilise digital technologies and analytical approaches to improve the efficiency of inventory management.

Table 6 Independent Variables

No	Independent Variable	Number
1	Inventory Management	6
2	Safety Stock / Reorder Point / Inventory Control	5
3	Just-in-Time (JIT) Practices	3
4	Demand Forecasting / Prediction Model	4
5	Machine Learning / Big Data Analytics	3
6	Supply Chain Network / Optimisation Model	3
7	Digital Technology / Intelligent Inventory System	2
8	Total Quality Management (TQM)	1
9	Vendor Managed Inventory (VMI)	1
10	Blockchain Technology	1
11	Reverse Logistics System	1

Dependent Variable Results

The distribution of dependent variables indicates that the majority of studies focus on improving supply chain performance. The most frequently used variable is ‘supply chain performance’ or ‘efficiency’, with 9 articles. This variable is used to assess the extent to which inventory management strategies can improve operational efficiency, facilitate the flow of goods, and enhance coordination within the supply chain. Other variables that are also frequently used include ‘inventory optimisation’ or ‘inventory efficiency’ (6 articles) and

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'cost reduction' or 'cost efficiency' (4 articles), indicating that many studies emphasise efforts to improve cost efficiency and inventory management.

Several studies also employ the variables forecast accuracy and product availability or drug availability, each appearing in 3 articles. These variables relate to a company's ability to forecast demand and maintain product availability to prevent stock shortages. Additionally, there are other variables such as logistics performance and environmental or sustainability performance, each used in 2 articles, as well as supply chain coordination or profit, which appears in 1 article. This distribution indicates that inventory management research focuses not only on operational efficiency but also on improving logistics performance, sustainability, and coordination within the supply chain.

Table 7 Dependent Variables

No	Dependent Variable	Number
1	Supply Chain Performance / Efficiency	9
2	Inventory Optimisation / Inventory Efficiency	6
3	Logistics Performance	2
4	Forecast Accuracy	3
5	Cost Reduction / Cost Efficiency	4
6	Product Availability / Drug Availability	3
7	Environmental / Sustainability Performance	2
8	Supply Chain Coordination / Profit	1

Discussion

Inventory Control Strategies

Inventory control strategies are widely used to improve supply chain efficiency by determining optimal inventory levels while minimising storage costs. Common methods such as Economic Order Quantity (EOQ), Reorder Point (ROP), safety stock, and inventory classification techniques like ABC and XYZ analysis help organisations prioritise inventory management, enhance product availability, and improve operational performance across sectors including manufacturing, retail, and healthcare. Studies show that effective inventory planning, monitoring, demand forecasting, and coordination within the supply chain contribute to better efficiency, reduced costs, and improved distribution of critical products.

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Additionally, integrating mathematical models and information systems further optimises stock levels and minimises shortages. However, these methods also face limitations, particularly their reliance on stable demand assumptions and historical data, which may not accurately reflect future market fluctuations. Furthermore, successful implementation requires strong coordination across departments and reliable information systems, as poor integration can lead to suboptimal inventory decisions and reduced effectiveness of inventory control strategies.

Inventory Management Strategy Based on Demand Forecasting

Demand forecasting is a key strategy in inventory management aimed at estimating future product demand to optimise stock levels, reduce overstocking and stockouts, and improve supply chain efficiency. Studies across various sectors, including healthcare, show that demand forecasting combined with safety stock and inventory control systems enhances product availability and operational performance. Technological advancements such as machine learning, artificial intelligence, and big data analytics—including models like RNN, SVM, LSTM, GCN, GNN, and deep learning approaches—have significantly improved forecasting accuracy and supported better inventory decision-making, including automated stock replenishment and handling demand uncertainty. These technologies are widely applied in industries such as healthcare, retail, and blood supply management to optimise inventory planning and reduce waste. However, demand forecasting also faces limitations, including dependence on high-quality data, large data requirements, computational resources, and technical expertise. Additionally, successful implementation requires strong integration with operational and inventory systems, as poor data quality and lack of system integration can reduce forecasting accuracy and hinder effective supply chain decision-making.

Digital Inventory Systems

Advances in digital technology have significantly transformed inventory management by improving data visibility, accelerating decision-making, and enhancing coordination within supply chain networks. Technologies such as blockchain, intelligent inventory systems, ERP, IoT, and data analytics enable companies to monitor stock levels in real time, increase transparency, and optimise inventory planning. The integration of machine learning and deep learning further supports demand forecasting, inventory optimisation, and warehouse management by processing large volumes of operational data, leading to more accurate and efficient decision-making. Overall, digitalisation enhances supply chain performance by enabling companies to respond more effectively to market changes. However, implementing digital inventory systems also presents challenges, including high initial investment costs, technological infrastructure requirements, and the need for skilled human resources. Additionally, limited digital competencies and the time required for organisational adaptation may hinder effective implementation, indicating that successful digitalisation depends on both technological readiness and organisational capability.

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Optimisation Models in Inventory Management

Optimisation models are widely used to improve inventory management efficiency by helping companies determine optimal order quantities, stock placement, and distribution flows through mathematical methods, simulations, and algorithms. Studies show that approaches such as multi-objective optimisation, data-driven simulation, Mixed Integer Nonlinear Programming (MINLP), Mixed Integer Linear Programming (MILP), and probabilistic EOQ models can reduce operational and logistics costs, improve service levels, and enhance distribution efficiency across various sectors, including retail and food industries. These models also support decision-making under uncertain demand conditions by providing adaptive and data-driven solutions. However, optimisation models have limitations, including reliance on simplifying assumptions that may not fully reflect real-world complexity, the need for accurate and comprehensive data, and high computational requirements. As a result, companies often need to adjust model outputs before implementation to ensure practical and effective inventory management decisions.

Collaborative Strategies in Inventory Management

Collaborative strategies in inventory management emphasise coordination among suppliers, manufacturers, distributors, and retailers to improve information sharing, reduce uncertainty, and enhance supply chain efficiency. Approaches such as strategic inventory, Just-in-Time (JIT), and Vendor Managed Inventory (VMI) enable companies to optimise stock levels, reduce storage costs, and improve operational and financial performance. Studies show that strategic inventory can strengthen supply stability, while JIT improves material flow, reduces waste, and enhances organisational and environmental performance. Similarly, VMI allows suppliers to manage retailer inventory directly, improving distribution efficiency and profitability across supply chain members. However, collaborative strategies also present challenges, including high dependence on supplier coordination, vulnerability to supply disruptions, and risks associated with limited stock under JIT systems. These limitations highlight the importance of strong coordination, accurate demand forecasting, and effective risk management to ensure the successful implementation of collaborative inventory management strategies.

Conclusion and Recommendation

This study aims to analyse various inventory management strategies used in optimising supply chain management through a systematic literature review using the PRISMA method. The results of the review of 30 articles indicate that inventory management strategies play a significant role in improving operational efficiency and supply chain performance. Various studies show that appropriate inventory management can help companies maintain a balance between product availability and operational cost efficiency. The research findings also

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indicate that inventory management strategies can be categorised into several main approaches, namely inventory control strategies, demand forecasting strategies, digital inventory systems, optimisation models, and collaborative strategies such as Just-in-Time (JIT) and Vendor Managed Inventory (VMI).

Each strategy plays a distinct role in improving inventory management efficiency. Inventory control strategies help determine optimal stock levels, whilst technology-based approaches and demand forecasting help improve the accuracy of inventory planning under conditions of uncertain demand. Research findings suggest that the integration of various inventory management strategies can help companies improve overall supply chain efficiency. The use of digital technology and analytical models also provides opportunities for companies to develop inventory management systems that are more adaptive and responsive to changes in market demand. Further research is expected to examine the wider application of inventory management strategies across various industrial sectors and to develop a more integrated approach between digital technology and inventory management systems.

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