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Green Supply Chain Management under Digital Empowerment: Literature Review, Framework Construction, and Future Research Agenda

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ADMINISTRATIVE INFORMATION

Support - None reported..

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 January 2025 and was last updated on 10 January 2025.

INTRODUCTION

Review question / Objective Review question / Objective: "How digital tools drive the green transformation of the supply chain? "

Rationale By synthesizing existing literature, this review aims to demonstrate the value of digitization in the process of green supply chain transformation and provide actionable knowledge to help businesses, policymakers, and researchers promote the application of digital technology to achieve a low-carbon economy.
This systematic review of research will contribute to the development of this field, highlighting the value of digital tools in promoting low-carbon transformation practices in the supply chain, ultimately achieving broader economic recognition and social practice applications.

Condition being studied With the trend of global climate change, the concepts of green and sustainable supply chain management have received more attention in the past two decades, and a large number of research results have emerged in this field.
In recent years, literature reviews on green, sustainable, and digital supply chain management have grown in scale, identifying various thematic issues covered in emerging research literature.
Each of their studies has provided insights into the field, but there has been no systematic literature review exploring the application of digital tools in promoting low-carbon transformation of the supply chain based on green supply chain management in the context of digital transformation.
To address this research gap, our study will focus on the application of digital tools in the supply chain of low-carbon economy environment, using structured methods to construct specific paths and tool frameworks for the digital transformation of green supply chains. By integrating the latest applications of digital technology in green supply chains, we will identify current research hotspots, trends, and potential future research paths.

METHODS

Search strategy To ensure the scientific and reliable nature of literature review research, we use Scopus and Web of Science databases to identify potential articles for inclusion in the review. In order to collect relevant data, we defined appropriate keywords (including green supply chain, digitalization, sustainability) and used Boolean operators for combinatorial search.
Given that "artificial intelligence" has become a new trend in supply chain digitization, we have also included it in the consideration of keyword combinations.
These keywords include:
(i) green supply chain;
(ii) Digitization;
(iii) Sustainability;
(IV) Artificial Intelligence.
Please note that as green supply chain management originates from a low-carbon economy, we also used the keyword 'low-carbon' as a supplement during the search process.
At the same time, keywords such as "green supply chain management," "supply chain," "supply chain management," "logistics," and "logistics management" are also included in our search to further expand our search scope and avoid missing relevant supply chain papers.

Participant or population This item is not applicable.

Intervention This item is not applicable.

Comparator This item is not applicable.

Study designs to be included Literature Review and Quantitative Research.

Eligibility criteria None reported.

Information sources Scopus and Web of Science (WOS) databases.

Main outcome(s) This item is not applicable.

Quality assessment / Risk of bias analysis This item is not applicable.

Strategy of data synthesis Source of evidence screening and selection: In order to achieve our research objectives, we follow three main stages in the literature screening process: (i) preliminary screening, (ii) full-text screening, and (iii) sample classification.
(i) Preliminary screening
The first stage involves preliminary screening of article titles, abstracts, and keywords determined through Scopus and Web of Science (WOS) databases.
The preliminary screening aims to select studies that are roughly allowed to be included in the criteria, with a focus on articles that mention both digitalization (DL) and green supply chain (GSCM).
(ii) Full text screening
The second stage involves a detailed review of the full text of the samples obtained in the first stage.
At this stage, each article is rigorously evaluated based on the eligibility criteria of core keywords to ensure its relevance to the context of digital transformation and green supply chain.
Articles that lack a background in digital transformation, only focus on green supply chains, or are not related to the supply chain field will be excluded at this stage.
(iii) Sample classification
The third stage will classify the final review samples obtained in the second stage, comprehensively integrate them based on author, journal, year, geographic location, theme, research methods, theory, and other conditions, and develop the core framework of the article.

Subgroup analysis This item is not applicable.

Sensitivity analysis This item is not applicable.

Language restriction Yes, language limits were imposed on the search. The review included only articles published in English to ensure accessibility and consistency in the analysis.

Country(ies) involved China.

Keywords green supply chain, digitalization, sustainability, artificial intelligence, systematic literature review.

Contributions of each author
Author 1 - XU Liyang - Author 1 drafted and completed the entire article.
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