*sustainability*

MDPI

*Systematic Review*

# Key Drivers of Green Logistics: A Systematic Literature Review and Conceptual Framework

**Parvaneh Rastegardehbidi * and Zhan Su**

Faculté des Sciences de L'Administration, Université Laval, Quebec, QC G1V 0A6, Canada; zhan.su@fsa.ulaval.ca
* Correspondence: parvaneh.rastegardehbidi.1@ulaval.ca

**Abstract**

The logistics sector contributes significantly to global warming, primarily through Scope 3 emissions. Green logistics practices (GLPs) can mitigate emissions and improve sustainability performance; however, their adoption remains limited due to high upfront costs and organizational barriers. This study aims to identify the driving factors of green logistics (GL) by conducting a systematic literature review following the PRISMA protocol. A total of 95 peer-reviewed articles published between 2016 and 2024 are analyzed. The review combines bibliometric and content analysis and develops a conceptual framework to guide future research. Findings reveal two main categories of drivers: (i) internal drivers, most notably top management commitment, which influences strategic direction, resource allocation, and organizational change; and (ii) external drivers, particularly institutional pressures. The study also identifies methodological patterns and theoretical gaps and proposes a theory–methodology–context agenda for future research. Practically, it shows how organizational readiness and supportive public policies can help overcome barriers, facilitate adoption, and promote more sustainable logistics systems.

**Keywords:** green logistics; environmental sustainability; internal drivers; external drivers; systematic literature review

check for updates

Academic Editor: Grigorios L. Kyriakopoulos

Received: 2 October 2025
Revised: 24 October 2025
Accepted: 25 October 2025
Published: 29 October 2025

**Citation:** Rastegardehbidi, P.; Su, Z. Key Drivers of Green Logistics: A Systematic Literature Review and Conceptual Framework. *Sustainability* **2025**, *17*, 9604. https://doi.org/10.3390/su17219604

**Copyright:** © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

## 1. Introduction

Time is running out to meet the Paris Agreement target of limiting global warming to 1.5 °C by 2030 [1]. In 2023, global temperatures reached approximately 1.36 °C above the pre-industrial average (1850–1900), marking a critical threshold, and the past decade was the warmest on record [2]. In the near term (2021–2040), global warming is very likely to exceed 1.5 °C due to cumulative $CO_2$ emissions. Long-term stabilization at or below this level depends on the speed and effectiveness of global GHG mitigation efforts [3].

The logistics sector is a significant contributor to climate change and environmental degradation, largely due to Scope 3 emissions [4,5]. These emissions, which occur across upstream and downstream supply chain activities, represent the largest share of a company's total carbon footprint. Consequently, addressing Scope 3 emissions has greater mitigation potential than focusing solely on Scope 1 and Scope 2 emissions [6]. At the sectoral level, increasing environmental awareness since the mid-1990s has driven demand for sustainable logistics in response to global warming and ecological damage [7]. The logistics sector accounts for approximately 12% of global energy-related $CO_2$ emissions, which would position it as the third-largest emitter after China and the United States if it were a country [8]. Within this sector, freight transport and warehousing generate about 7% of total emissions [5]. The growth of international trade and global supply chains has

further intensified freight-related $CO_2$ emissions [5]. Despite its substantial environmental impact, the logistics sector holds significant potential for emission reduction through GLPs, particularly decarbonization initiatives [4,8].

Previous research highlights the long-term environmental and economic benefits of green logistics, such as improved operational efficiency, reduced emissions, and enhanced competitiveness [9–11]. However, logistics service providers (LSPs) and shippers still face major adoption barriers, particularly high upfront investment costs [12,13]. Understanding what drives firms to adopt GLPs, despite these financial constraints [14], is therefore critical for advancing decarbonization efforts, supporting the Paris Agreement targets, and reducing pollution [15,16]. Existing literature examines various determinants of green logistics adoption, yet the evidence remains fragmented. Therefore, this study systematically identifies drivers that motivate firms to adopt GLPs, including—but not limited to—initiatives aimed at reducing carbon emissions. Internal drivers operate at two levels: (i) firm-level factors, such as top management commitment, and (ii) supply chain-level factors, including collaboration among LSPs, shippers, and suppliers to integrate green practices. External drivers primarily stem from institutional pressures, including regulatory requirements, customer expectations, and competitive dynamics.

Several reviews exist on sustainable logistics and supply chains [17–19]. However, most do not explicitly analyze the key drivers of GL adoption. Tetteh et al. [20] identify these drivers, but their review is restricted to logistics-specific studies published from 2001 onward, thereby overlooking broader supply chain research that covers logistics-related areas such as reverse logistics, transportation, warehousing, and distribution. Islam et al. [21] provide an overview of environmental concerns in logistics and compile drivers and barriers, but their work remains largely descriptive and does not examine how these factors influence the adoption of GLPs. To overcome these limitations and provide a more integrated understanding of GL adoption, this review broadens the analytical lens by incorporating both logistics and wider supply chain studies and adopts a more contemporary scope. Specifically, it examines articles published between 2016 and 2024—reflecting the post-Paris Agreement era—to capture recent developments, evolving environmental priorities, and emerging antecedents and enablers of GLPs. A content analysis is employed to uncover how different drivers interact and shape the implementation of GLPs. More specifically, this study aims to answer the following research questions:

RQ1: What is the publication trend and who are the major contributors to green logistics and supply chain literature?
RQ2: Which theories and methodologies are most applied in this field?
RQ3: What are the key antecedents of GLPs, and how do they influence adoption?
RQ4: What gaps exist, and what directions should future research take?

This study develops a conceptual framework to guide future research and improve understanding of how various resources, actors, and stakeholders contribute to the greening of logistics. It also provides practical contributions by offering actionable guidance for managers and policymakers, shedding light on areas such as capability building within firms, long-term supply chain collaboration, managerial cognitive commitment, and the design of balanced, context-specific regulatory frameworks for green logistics.

## 2. Materials and Methods

This study adopts a systematic literature review (SLR) methodology, which provides a transparent, rigorous, and replicable process to enhance the reliability of the findings [22,23]. The review follows the guidelines established by Tranfield et al. [24], which have been widely applied in previous SLR studies [20,21,25]. The following subsections describe the three-stage process employed in this review.

### 2.1. Planning

Data were collected in December 2024 from three academic databases: Web of Science (WoS), ABI/Inform Global, and Business Source Premier (BSP). WoS offers broad coverage of business, management, and economics research, including publications from major publishers such as Elsevier, Springer, Emerald, Wiley, and Taylor & Francis [7]. ABI/Inform Global and BSP complement this by providing strong representation of peer-reviewed journals in administrative and management sciences [26]. To design an effective search strategy, an initial scoping search was conducted in WoS to identify frequently used keywords in highly cited articles on GL. The search scope was then broadened to include supply chain studies that address at least one logistics-related component, such as reverse logistics, transportation, warehousing, and distribution. Accordingly, the final search string used across all databases was: "green logistics" OR "green logistics practices" OR "decarbonizing logistics" OR "environmental logistics" OR "green supply chain management" OR "green supply chains" (see Figure 1) (Supplementary Materials).

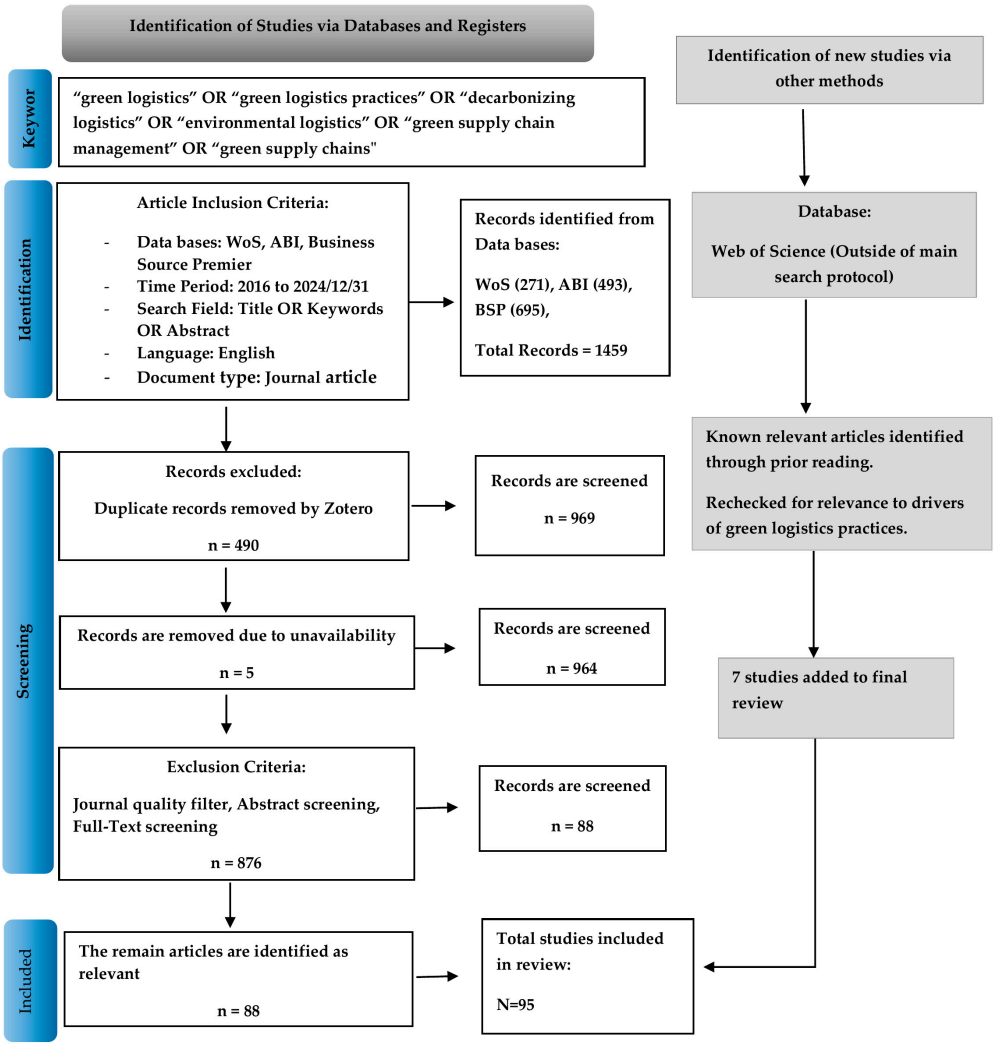


**Figure 1.** PRISMA Research design.

### 2.2. Conducting

The review period begins in 2016, aligning with the implementation of the Paris Agreement, which established an urgent global mandate to limit temperature rise by 2030 [27]. This starting point ensures that the review captures recent developments and contemporary research on green logistics. Articles containing the selected keywords in their

titles, abstracts, or author-provided keywords were retrieved to ensure comprehensive coverage of relevant studies. To ensure academic rigor and reliability, the search was limited to journal articles by applying the filters "Peer reviewed" and "Reviewed by a reading committee" [28]. Consistent with previous systematic literature reviews [20,25], only English-language publications were included to ensure quality and avoid translation inaccuracies. In addition, grey literature—such as working papers, conference proceedings, theses—as well as books and book chapters was excluded to maintain methodological consistency and focus of study. Applying these criteria resulted in a total of 1459 articles: 271 from Web of Science, 695 from Business Source Premier, and 493 from ABI/Inform Global.

After removing 495 duplicate and inaccessible records, 964 articles remained for screening. These were evaluated using a three-stage inclusion and exclusion process (see Table 1), aligned with the study's objective.

**Table 1.** Inclusion and exclusion criteria.

| Inclusion | Exclusion |
| --- | --- |
| Papers published 2016–2024 | Written in any language other than English |
| Full text available | Working papers, conference papers, thesis, book, book chapter |
| Written in English | |
| Articles from peer-reviewed journals by a reading committee | Not clearly focused on the drivers of green logistics adoption, focusing on barriers |
| Articles from the A and B category of ABDC ranking or from Q1 and Q2 of SJR | |
| Clearly focused on drivers of green logistics adoption. | |

(i) Quality filtering: To ensure the robustness of findings and relevance for future research, this study applied a journal quality filter during the initial screening stage. This is consistent with the approach adopted in prior reviews [28–30]. Articles published in A and B-ranked journals in the ABDC Journal Quality List and Q1–Q2 journals in the Scimago Journal Rank (SJR) were retained. A limited number of C-ranked journals were included only if they were classified within the Q1–Q2 quartiles in SJR.

(ii) Abstract screening: The abstracts of the remaining papers were reviewed to confirm their focus on critical success factors, drivers, antecedents, enablers or pressures influencing the adoption and implementation of GLPs.

(iii) Full-text assessment: Eligible full-text articles were then reviewed in detail. Studies were excluded if they focused solely on barriers and addressed green supply chain management (GSCM) without discussing at least one logistics-related component (e.g., transportation, reverse logistics, warehousing, and distribution).

Following this process, 88 articles met all inclusion criteria. An additional seven papers were identified through manual searches and relevance checks outside the database screening. In total, 95 articles were included in this review.

### *2.3. Documentation*

Following the identification and selection of relevant literature, a comprehensive documentation process was undertaken to support both bibliometric and content analyses. In accordance with the coding framework proposed by Gaur and Kumar [31], the 95 selected articles were systematically coded using Microsoft Excel. To ensure reliability, consistent coding rules were applied uniformly across all articles. The data extraction process captured:

- Bibliographic details: authors, publication year, journal, country of study, and keywords.
- Methodological characteristics: research approach, method, and analytical techniques.
- Theoretical foundations.
- Research focus: objectives, key drivers of green logistics adoption, main findings, and industry context.

Power BI Desktop RS (January 2024) was subsequently used to generate visualizations, including publication trends over time, leading journals and authors, geographical distribution of studies, frequently used theories and methodologies, and commonly occurring keywords. In parallel with the bibliometric analysis, a content analysis was conducted to identify the key factors driving the adoption of green practices and to uncover existing research gaps. This dual approach provides both an empirical overview of the field and a foundation for future research directions in green logistics.

## 3. Results

### *3.1. Bibliometric Analysis*

#### 3.1.1. Publication Trends

Figure 2 illustrates a steady increase in research on green logistics and supply chains since 2016, reflecting growing academic interest in sustainability and climate-related issues. Publication activity remained modest between 2016 and 2019, then rose notably in 2020, when 15 articles were published. Since that year, annual output has levelled off through 2024, indicating a plateau rather than ongoing growth in research productivity.

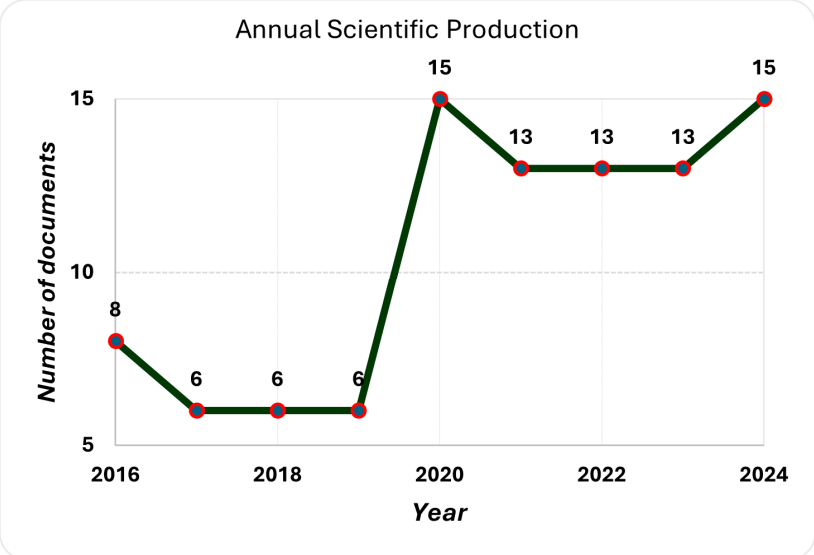


**Figure 2.** Annual scientific production.

#### 3.1.2. Key Journals

Table 2 shows the five journals that published the most articles in this field. The International Journal of Logistics: Research & Applications and the Journal of Cleaner Production each published nine articles, highlighting their key role in spreading research on green logistics and supply chains. These journals, along with the other top contributors, serve as leading platforms for scholarship in green logistics, sustainability, and supply chain management. In contrast, 30 journals published only one article on this topic, indicating that research is spread across many different outlets.

**Table 2.** Five top-contributing journals.

| Venue | Documents |
|---|---|
| International Journal of Logistics: Research & Application | 9 |
| Journal of Cleaner Production | 9 |
| Business Strategy and the Environment | 8 |
| Benchmarking: An International Journal | 5 |
| The International Journal of Logistics Management | 5 |

#### 3.1.3. Most Cited Documents

A total of 28 articles have been cited more than 50 times, indicating their strong influence on research in green logistics and supply chain management. Among these, five studies are the most frequently cited (Table 3).

**Table 3.** Top five cited documents.

| Title | Author(s) | Citation |
|---|---|---|
| Envisioning the invisible: Understanding the synergy between green human resource management and green supply chain management in manufacturing firms in Iran in light of the moderating effect of employees' resistance to change | [32] | 294 |
| The impacts of critical success factors for implementing green supply chain management towards sustainability: an empirical investigation of Indian automobile industry | [33] | 293 |
| success factors, implementation, green supply chain management, Indian manufacturing industries | [34] | 185 |
| Effect of eco-innovation on green supply chain management, circular economy capability, and performance of small and medium enterprises | [35] | 180 |
| Organizational and regulatory stakeholder pressures friends or foes to green logistics practices and financial performance: Investigating corporate reputation as a missing link | [36] | 133 |

Nejati et al. [32] highlight employee resistance to change and emphasize the role of organizational behaviour in enabling environmental initiatives. Luthra et al. [33] identify critical success factors for implementing GSCM, using evidence from the Indian automobile industry. Gandhi et al. [34] apply AHP and DEMATEL methods to evaluate success factors in Indian manufacturing. Bag et al. [35] demonstrate that institutional pressures drive eco-innovation in SMEs, which, in turn, encourage the adoption of green practices. Baah et al. [36] examine how organizational and regulatory pressures influence the adoption of GLPs. Collectively, these studies underscore the multifaceted nature of drivers in GSCM and logistics decarbonization.

#### 3.1.4. Geographical Focus

Figure 3 depicts that most studies originate from China (17 articles), followed by India (11) and Sweden (7). The regional distribution presented in Figure 4 provides a complementary perspective. Europe (including Sweden, Germany, Italy, the United Kingdom, Ireland, Greece, Finland, the Netherlands, and the Czech Republic) and East Asia (China, Taiwan, South Korea, and the Philippines) are the most represented regions, accounting for approximately 25% and 24% of the studies, respectively. South Asia (India, Pakistan, and Bangladesh) contributes around 17%, reflecting growing regional interest in green logistics and supply chains studies. By contrast, Africa, North America, South America, Southeast Asia, and Western Asia are significantly underrepresented, suggesting potential research gaps and uneven global attention to GLPs.

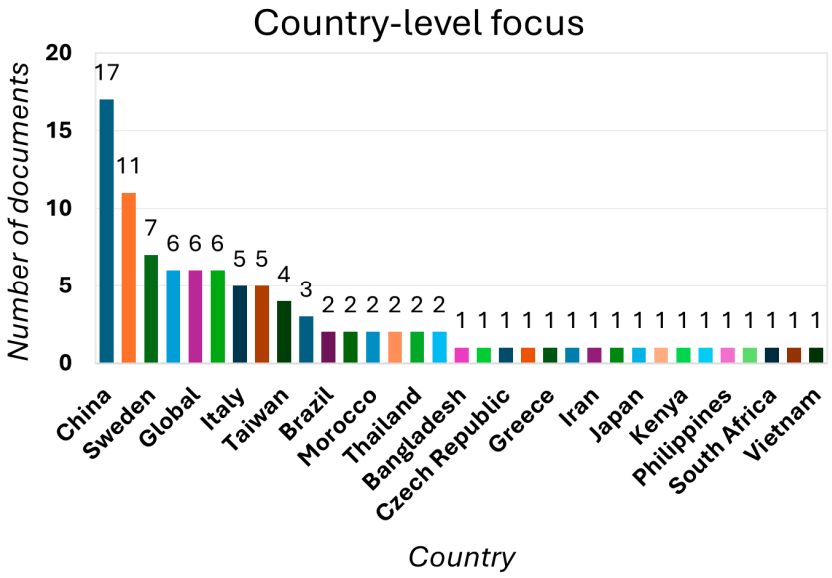


**Figure 3.** Geographical focus by country.

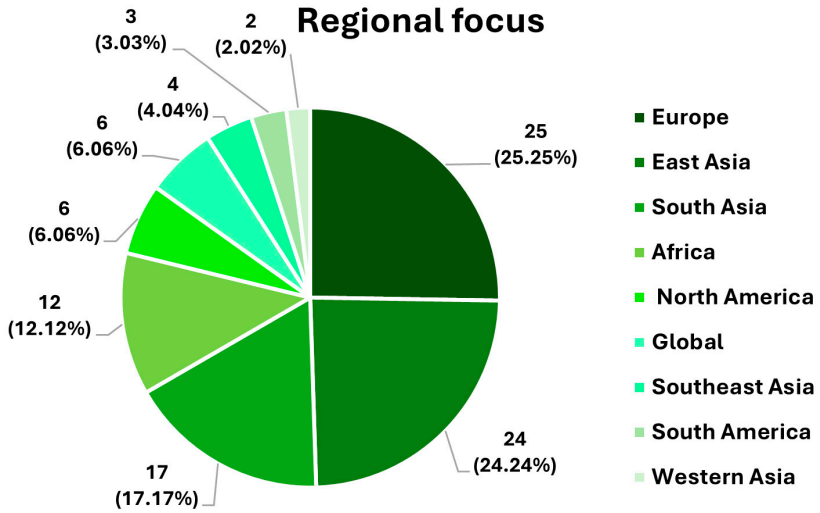


**Figure 4.** Regional focus.

### 3.1.5. Research Method Employed

Table 4 shows a predominant reliance on a quantitative approach, with 70 studies adopting statistical methods, most commonly structural equation modeling (SEM), to analyze factors influencing the adoption of green practices. In contrast, 19 studies employed qualitative techniques such as interviews, case studies, and expert evaluations. Although the qualitative approach provides deeper, context-specific insights, it remains underrepresented in this field. Only five studies used mixed methods designs that combine quantitative and qualitative approaches. This limited use suggests an opportunity for future research to employ mixed methods to achieve both statistical rigor and contextual depth.

### 3.1.6. Theoretical Framework

The donut chart (Figure 5) illustrates that 34.74% of studies adopt an integrative approach, combining two or more theories to offer a more comprehensive understanding of the drivers of green logistics. In comparison, 33.68% of studies rely on a single theoretical lens, providing focused but potentially narrower insights. Among these, institutional theory is the most frequently applied (Table 5), underscoring the role of external forces—such as regulatory pressure, customer expectations, and competitive dynamics—in shaping

organizational responses to sustainability. Notably, nearly one-third of the studies do not specify any theoretical framework, indicating a lack of theoretical grounding in parts of literature.

**Table 4.** Methodological approach.

| Approach | Number of Documents |
|---|---|
| Quantitative | 70 |
| Qualitative | 19 |
| Mixed method | 5 |
| Semi-qualitative | 1 |
| Total | 95 |

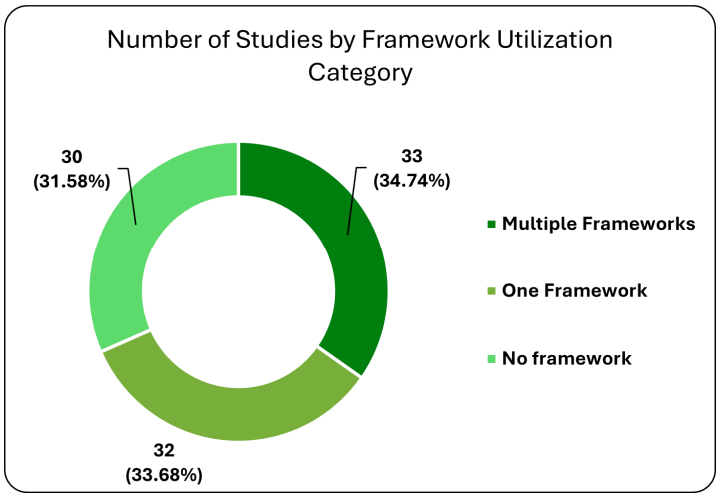


**Figure 5.** Count of studies by framework usage category.

**Table 5.** Five top theories used in green logistics and supply chain studies.

| Theory | Frequency |
|---|---|
| Institutional pressure | 23 |
| Resource-based view (RBV) | 16 |
| Natural resource-based view (NRBV) | 8 |
| Dynamic capability | 7 |
| Stakeholder theory | 7 |

### 3.1.7. Common Keywords

The word cloud (Figure 6) offers a visual overview of the most common terms in the literature, highlighting key themes explored by researchers [20,21]. The prominence of terms such as "logistics," "management," "green," and "practices" shows their importance within the field. Additionally, keywords such as "culture," "motives," and "capability" demonstrate the multidimensional nature of green logistics adoption, spanning environmental, organizational, and strategic perspectives. The bar chart (Figure 7) supplements the word cloud by displaying how often keywords appear across the 95 reviewed studies. "Green supply chain management" is the most frequently used term (36 occurrences), followed by "environmental sustainability," "green practices," "logistics service providers," "institutional pressure," and "stakeholder theory." These keywords reveal the different aspects of green logistics research, including specific practices, broader supply chain contexts, key actors, and the external or institutional forces driving adoption.




**Figure 6.** Word cloud for the most common words in publication titles.

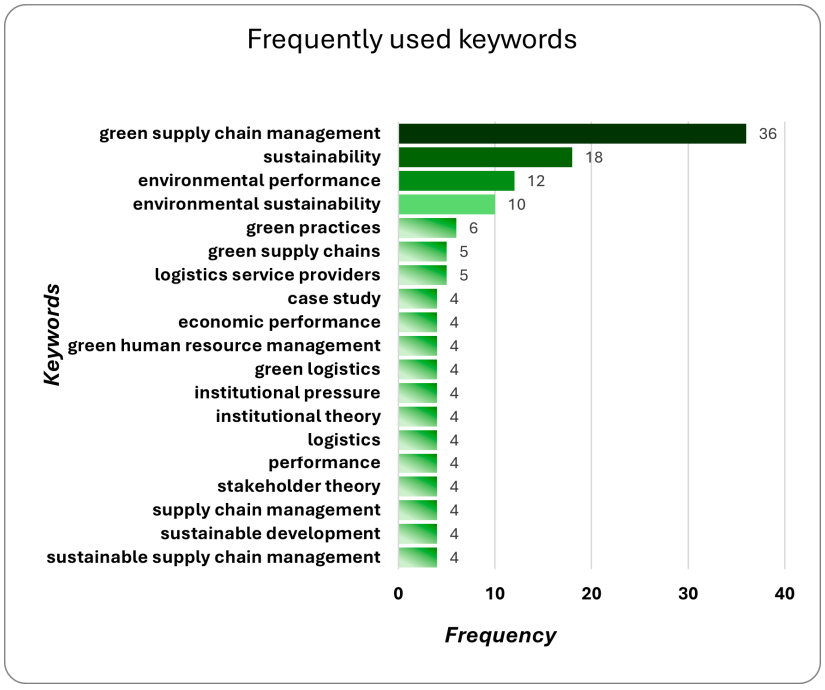


**Figure 7.** Frequently used keywords.

### *3.2. Content Analysis*

This review identifies two main categories of factors influencing the adoption of GLPs: internal drivers at the firm and supply chain levels, and external drivers (Figure 8). Top management commitment is placed at the core of internal drivers. It acts as the primary catalyst by allocating resources, shaping organizational culture, aligning strategy with environmental goals, and initiating downstream actions such as employee training, green human resource management (GHRM), technology adoption and collaboration with supply chain partners. Collaboration at the supply chain level, involving upstream and downstream partners such as shipper–LSP and buyer–supplier relationships, functions as a relational capability. It enables knowledge sharing and long-term partnerships and helps firms translate external pressures into concrete GLP implementation. External drivers refer to pressures and incentives originating outside the firm. These include regulatory requirements, market expectations and pressures from other external stakeholders.

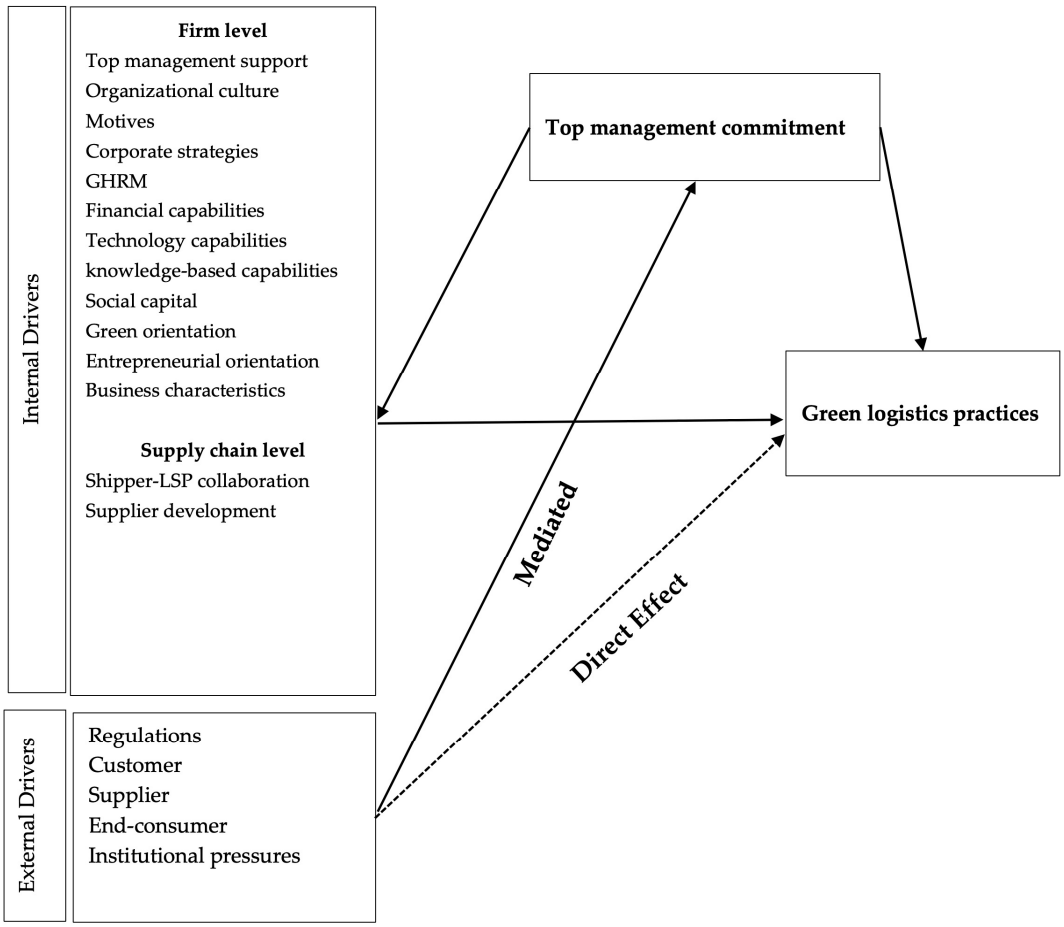


**Figure 8.** A conceptual framework of GLP antecedents (Source: Authors' own work).

#### 3.2.1. Internal Drivers

##### Firm Level

Among the key internal drivers, top management commitment and support stands out as the most critical factor driving the adoption of green practices, while its absence remains a well-recognized barrier [14,34,37–47]. Managerial commitment to sustainability stems from cognitive and behavioural mechanisms [10,48]. The motivations underlying this commitment determine not only the intensity but also the strategic depth of environmental actions. These motivations are commonly categorized as instrumental, relational, and moral or, drawing on legitimacy theory, as pragmatic, moral, and cognitive legitimacy [49–51]. The level of managerial engagement varies depending on the dominant motive. Firms driven primarily by instrumental or pragmatic motives tend to adopt green practices at a superficial or symbolic level, focusing on short-term and efficiency-oriented outcomes. Conversely, firms motivated by relational benefits, such as corporate reputation, market differentiation, and stronger stakeholder relationships [52,53], are more likely to embed sustainability into broader strategic objectives. The highest level of commitment occurs when environmental sustainability is internalized as a core organizational value, reflecting moral or cognitive legitimacy. In such cases, sustainability is integrated into the organizational culture and pursued proactively, independent of external pressures.

While environmentally responsible values can stimulate the adoption of low-carbon practices [54], existing studies emphasize that the type of organizational culture is equally critical. In contrast to control-oriented cultures, flexible organizational cultures encourage green innovation by supporting risk-taking, reducing resistance to change, and empowering employees to participate in environmental initiatives. Such cultures also enhance

collaboration and strengthen responsiveness to customer pressures [9,55]. However, organizational culture does not influence all green practices equally. Rizzi et al. [56] argue that reverse logistics differs from other GSCM practices, as its successful implementation depends more on well-defined operational systems and processes than on cultural orientation alone. This suggests that cultural support is necessary but not sufficient unless accompanied by structural and procedural capabilities. Moreover, leadership commitment is a critical determinant of how effectively corporate strategy supports the adoption of green practices [57]. When sustainability is strategically aligned with logistics objectives, it becomes an integral part of operations rather than a secondary priority. Firms that embed GL within their competitive strategy are characterized as "leaders," proactively implementing internal and external GSCM practices. In contrast, "laggards" adopt green practices reactively in response to external pressures rather than through deliberate strategic planning [58].

Managerial commitment also involves allocating the resources and capacity needed for implementing green initiatives. A key area is green human resource management (GHRM) [59]. By highlighting the importance of human capital in environmental efforts, GHRM is seen as a crucial factor in successfully integrating green practices [32,60]. The HR department, through green selection and recruitment, ensures the hiring of environmentally conscious employees, building the foundation for greener business practices. Green training equips employees with the skills and awareness to implement sustainability initiatives, while green pay and rewards motivate eco-friendly behaviours by encouraging employees to improve environmental performance. GHRM and organizational culture support each other; a culture that promotes employee empowerment encourages environmental cooperation and innovation, while GHRM embeds environmental values into organizational processes and decision-making structures. This helps reduce resistance to change and makes it easier to integrate green initiatives into daily operations.

Trujillo-Gallego et al. [61] demonstrate that digital technologies (DTs) serve as a mediating mechanism between GHRM and green practice. By codifying tacit knowledge and turning it into explicit, technology-enabled routines, DTs help translate employees' green skills and values into standardized organizational procedures. Although the literature often highlights the role of digital technologies in driving green practice adoption [62–64], their impact rarely occurs in isolation from other organizational factors, notably top management support [43]. Fiorini et al. [65] suggest that GHRM partially mediates the relationship between information systems (IS) and green supply chain management (GSCM), thus boosting their combined effect on sustainability performance. Similarly, Luu et al. [66] find that Industry 4.0 technologies directly promote the adoption of circular economy principles, a strategic shift reflecting environmental awareness that leads to GL. Furthermore, beyond internal resources and capabilities, external contextual forces also shape the effectiveness of digital technologies. Specifically, coercive institutional pressures have been found to moderate the relationship between technological innovation and green logistics outcomes [64], suggesting that the environmental benefits of technology arise not only from internal deployment but also through its interaction with broader regulatory and institutional environments.

Financial capacity is widely recognized as both a key driver and a potential barrier to the adoption of green logistics practices [47,52,67]. Firms with more substantial financial resources are better able to invest in sustainability initiatives, particularly when supported by external funding mechanisms such as bank loans, government incentives, high-ROI opportunities, or consumers' willingness to pay premium prices [67]. Evidence from SMEs shows that while top management support facilitates early adoption, financial capability ultimately determines whether firms can move toward full implementation, given the high

costs of technology, training, and green procurement [68]. However, some studies argue that financial constraints are often symptoms of deeper issues, such as weak managerial commitment or absence of supportive policies [69]. Moreover, Lintukangas et al. [51] find no significant relationship between financial performance and supply chain engagement in carbon management. This inconsistency suggests that the role of financial capability is highly context-dependent and warrants further research.

Beyond tangible resources, several intangible organizational capabilities support the adoption of green practices, particularly across knowledge-based, relational, and cultural dimensions. Knowledge-based capabilities, including knowledge acquisition, generation, and learning, enable firms to monitor supply chain activities, adapt to technological and regulatory advancements, and develop solutions to environmental challenges [70,71]. These capabilities facilitate inter-organizational learning and support coordinated green operations across supply chain partners. Relational capabilities, especially social capital, strengthen trust, collaboration, and knowledge-sharing among supply chain actors, thereby enhancing partners' willingness to invest financial, physical, and firm-specific assets in sustainability initiatives [72]. From a cultural perspective, a strong green orientation embeds environmental values into corporate strategy. Internally, this orientation fosters intra-organizational learning, knowledge sharing, and a shared sense of environmental responsibility across departments. Externally, it translates institutional pressures into action, enhances legitimacy, and supports long-term competitiveness [73,74]. Relatedly, green intellectual capital (GIC)—encompassing environmental knowledge, skills, commitment, structures and strong relationships with supply chain partners—plays a key role in integrating sustainability into supply chain processes. It aligns environmental values with operational practices, thereby facilitating the successful implementation of green practices [75]. Finally, entrepreneurial orientation (EO) enables SMEs to proactively identify, combine, and implement green practices best suited to their specific organizational and market contexts [76].

Business characteristics—such as firm size, level of industrialization, industry sector, and degree of internationalization— play a crucial role in driving the adoption of green practices while also moderating how firms respond to institutional pressures. Larger firms are generally more proactive due to greater financial and operational resources and higher public visibility, which increases stakeholder scrutiny. Companies operating in sectors with high environmental impacts, such as manufacturing and transportation, face stronger regulatory and societal pressures to implement green practices [47,77]. Firms in highly industrialized contexts also possess the technological capabilities needed for cleaner production and logistics systems [78]. Additionally, internationally active firms are more likely to adopt sustainability initiatives in response to environmentally conscious customers and international market standards [14].

### Supply Chain-Level

Collaboration mechanisms represent a capability that enables firms to recognize and access external green resources and expertise from their partners, and subsequently internalize, integrate, and reconfigure these capabilities [12]. It evolves from basic data collection to transactional performance management, and ultimately to strategic collaborative partnerships that drive innovation and shared value creation [79], thereby turning green collaboration into both environmental benefits and commercial outcomes. In Shipper–LSP dyads, collaboration is widely recognized as a critical driver of green logistics practices, facilitated by two key mechanisms: relation-specific investments and knowledge-sharing processes. The former enables LSPs to justify sustainability investments by securing long-term returns, while the latter—through joint learning, personnel exchange, and IT

integration—supports shared environmental improvements [80]. A broader scope of outsourcing increases 3PLs' embeddedness in shipper operations, strengthening relational ties and enhancing the likelihood of jointly pursuing low-carbon supply chain initiatives. Government regulatory pressures further encourage such efforts, particularly among 3PLs with lower internal green capabilities [81]. However, effective collaboration depends on strategic alignment and long-term commitment between partners [12,13]. It is undermined when shippers impose conflicting expectations—such as demanding ultra-fast delivery with minimal emissions—or prioritize short-term contracts and cost reductions over sustainability objectives [82,83].

On the other hand, firms' ability to respond to customers' green expectations is often contingent upon the environmental capabilities of their suppliers [84]. In buyer–supplier relationships, focal firms leverage green supplier development capabilities to co-develop sustainable practices and enhance suppliers' capacity for environmental innovation [85]. These efforts involve both indirect and direct development initiatives, each influencing suppliers' perceptions of the financial, strategic, and co-creation value of adopting green practices [86]. Indirect initiatives—such as setting environmental standards (e.g., ISO 14001 compliance) and implementing supplier evaluation systems—support suppliers in aligning with buyers' expectations, reducing costs, and accessing environmental knowledge [87,88]. These monitoring approaches, while effective in ensuring compliance, provide limited relational engagement and therefore contribute little to suppliers' long-term commitment or innovation capacity. However, in emerging markets such as Pakistan, where the adoption of green practices remains nascent, firms tend to rely more on monitoring-based mechanisms rather than collaborative approaches [89]. In contrast, direct supplier development practices, including training programs, joint innovation projects, and site visits, are rooted in trust-based collaboration [11,90]. Such initiatives facilitate open communication, knowledge transfer, and mutual learning, fostering relational trust and strengthening suppliers' confidence to invest in long-term environmental improvements.

#### 3.2.2. External Drivers

Government acts as an antecedent of green logistics and supply chain practices by combining mandatory standards with financial incentives [52,91,92]. Whether firms respond "reactively" or "proactively" to environmental regulation largely depends on the strength of social pressures and the presence of internal capabilities. Evidence from emerging economies such as China [54,93–95], Taiwan [96], India [33,97], Indonesia [68], Ghana [36], and Morocco [98] shows that firms tend to demonstrate reactive compliance—adopting green practices only to meet regulatory requirements and avoid penalties. High investment costs, weak customer demand, limited supply chain collaboration, and underdeveloped technological capabilities often prevent regulations from translating into full-scale implementation or green innovation in logistics. Only when market forces or internal capabilities complement regulatory pressure does an "innovation compensation effect" [93] emerge, enabling firms to pursue environmental initiatives for reputational gains or competitive advantage. By contrast, in developed economies such as Europe and the United States, regulation tends to exert a weaker direct influence because firms often behave proactively, driven by high environmental awareness, long-standing regulatory histories, and institutionalized sustainability norms [38]. In such settings, regulations are sometimes perceived as lagging behind industry practice. For instance, Jazairy and von Haartman [14] find that European LSPs consider current rules to be weak logistics and view themselves as already "ahead of regulation." However, even in these contexts, the absence of strong customer or competitive pressure can still result in mere compliance behaviour; for example, firms may

meet low-emission zone requirements through minor operational adjustments rather than investing in low-emission vehicle technologies [99].

Beyond regulation, other external stakeholders also play a critical role in driving green practices. Customer pressure is frequently identified as a major driver of environmental initiatives, driven by rising environmental awareness and concerns about brand reputation [18], particularly in emerging markets [34,100]. However, as Van den Berg and De Langen [101] argue, customer sustainability expectations become transformative only when accompanied by concrete procurement requirements and measurable environmental performance metrics; otherwise, they remain largely symbolic. This pressure must also be realistic and consistent. Overly specific requirements, short-term contracts, or fragmented procurement strategies can discourage LSPs from investing in long-term green innovations [102]. Moreover, customer influence tends to be weaker in green transportation because logistics activities are less visible to end users, thereby reducing their ability to make informed purchasing decisions or to affect brand reputation [103]. Sallnäs and Björklund [104] similarly reveal that end consumers exert minimal influence on greening in distribution and transportation, with their impact confined mainly to packaging choices.

Within the broader context of GSCM, supplier pressure often outweighs customer demand. Suppliers occupy an upstream position and can diffuse environmental practices downstream through direct mechanisms, particularly in green transportation [103]. Agarwal et al. [38] identify both direct and indirect pathways: suppliers' green innovations cascade downstream, while supplier pressure also stimulates managerial commitment, which in turn mediates the adoption of GSCM practices, including green logistics.

Studies adopting an institutional theory perspective classify external pressures into coercive, normative, and mimetic forces to explain how regulations interact with market and societal expectations to shape green practices. The relative strength of these three pressures is not universal; it varies across institutional contexts.

Ye et al. [105], based on a survey of 440 firms from the global manufacturing research group, demonstrate that in institutional environments with intense regulatory, normative, or cognitive pressures, green practices are more likely to be translated into environmental performance improvements. In contrast, in emerging markets characterized by weak regulatory enforcement, low public awareness, and cultural tendencies toward uncertainty avoidance, this translation effect is weakened. Evidence from China's chemical industry shows that all three pressures significantly influence GSCM adoption, but their effectiveness in improving economic outcomes depends on the moderating role of top management commitment [106]. Similarly, in Taiwan's electronics sector, coercive and mimetic pressures are the primary drivers of adoption, while their impact is partly mediated through managerial environmental stewardship; normative pressure influences adoption only indirectly through this managerial pathway [10]. In the Philippines, coercive pressure from strict environmental regulation is dominant, but its influence is exerted through supplier integration and resource capabilities rather than directly [107].

In several contexts, normative pressure, particularly from customers, international buyers, or supply chain partners, can exceed the influence of regulation. In Pakistan and Brazil, customer-driven normative pressure cascades upstream as a "green bullwhip effect", where firms adopt green logistics primarily to gain market credibility, while government regulation plays a reinforcing rather than initiating role [73,108]. In India's pharmaceutical industry, normative pressure from suppliers and the public, together with mimetic pressure, outweighs coercive regulations [109]. Similarly, in India's ceramic sector, mimetic pressure is the dominant driver of green practices such as eco-design and certification, reflecting imitation of sustainability leaders rather than regulatory enforcement [110].

## 4. Discussion

Green transformation does not occur in isolation; it results from the dynamic interplay between micro-level (firm) and macro-level (institutional) drivers (see Figure 8). Prior studies employing multi-theoretical frameworks underscore this synergy well. External pressures create the initial impetus and legitimacy imperative for firms to adopt green practices. However, these pressures are insufficient without the firm's capacity to translate them into concrete action (the dashed line in Figure 8 indicates this direct but limited effect of institutional pressures). Internal capabilities and resources mediate institutional pressures by serving as interpretive, absorptive, and operational mechanisms that convert legitimacy demands into organizational routines and performance outcomes. When firms confront coercive, normative, or mimetic pressures to implement green practices, capabilities such as managerial support, green orientation, internal environmental management, tangible green resources, supply chain relationships, and green technology provide the behavioural, cognitive, and structural foundations through which these pressures are absorbed and enacted. These capabilities enable firms to interpret regulatory and stakeholder expectations, allocate resources, and reconfigure existing processes to align with environmental objectives. Moreover, cross-functional cooperation and information sharing facilitate knowledge diffusion across departments, ensuring that institutional signals are translated into coordinated action rather than fragmented compliance. Top-management commitment emerges in literature as the central mechanism performing this translational and orchestration function. By embedding leadership commitment within organizational-support systems [47], employee engagement [59], internal impetus [43], and cross-functional coordination processes [43], prior studies depict it as an enduring willingness and authority to (i) define environmental objectives and key performance indicators, (ii) allocate financial, technological, and human resources, and (iii) institutionalize cross-functional routines and a culture that integrate green goals into daily operations. Through these functions, top-management commitment bridges institutional expectations with firm-level resource deployment, ensuring that external legitimacy demands are transformed into coordinated organizational action. Yet existing studies tend to situate top management commitment within structural and organizational systems, leaving the individual-level agency underexplored, through which managers cognitively interpret and translate external pressures into action. Factor-ranking studies employing AHP–DEMATEL consistently identify top management commitment as a critical success factor in developing-country contexts [34,39,41]. However, these methods emphasize salience over causality: they indicate what is most influential but reveal little about how managerial commitment evolves over time or under specific contextual conditions.

The mediating role of top management extends beyond interpreting external pressures into adoption decisions; it is equally vital for sustaining implementation. How managers perceive and frame environmental demands determines whether the firm's response remains reactive or becomes proactive. When environmental demands are seen as costly burdens, organizational engagement remains limited, risking symbolic compliance or greenwashing [42]. Conversely, when these demands are viewed as opportunities for long-term profitability and legitimacy, leaders mobilize resources, embed sustainability into corporate values, and translate external expectations into meaningful organizational change. Institutional pressures and top management commitment should therefore be regarded as complementary drivers. Empirical evidence from Taiwan, the United States, and Europe (Sweden and Germany) supports this complementary relationship, demonstrating that managerial interpretation mediates the link between institutional pressures and the adoption of green practices [10,14,42]. However, empirical validation across diverse institutional contexts, particularly in developing economies, remains limited. Moreover,

the interaction between institutional pressures and managerial agency within the logistics sector is underexamined, especially among LSPs, whose strategic importance has intensified amid the proliferation of logistics outsourcing [47]. Furthermore, managerial commitment is shaped by individual characteristics, beliefs, and cognitive frames developed through professional experience. Adusei et al. [37], drawing on Upper Echelons Theory, demonstrate that demographic characteristics such as age, gender, and experience influence GSCM-related decision-making among 270 Ghanaian SMEs. Similarly, Preuss and Fearne [48] conceptually argue that managerial cognitive framing—shaped by functional experience, industry exposure, and cultural context—determines whether sustainability is interpreted as a constraint or as a strategic opportunity. Their work suggests that managers with broader international or cross-functional experience are more capable of pursuing sustainability even when its short-term economic benefits are not evident. This implies that differences in individual background and operating context critically shape the level and nature of managerial commitment. However, empirical understanding of how these antecedents function across institutional environments, organizational types, and cultural settings remains limited, underscoring the need for further research.

Although inter-organizational collaboration is widely recognized as a key driver of GL, current research provides only a fragmented understanding of the dyadic relationship between shippers and LSPs. Specifically, only a small number of studies (approximately five) examine this dyad and explicitly investigate how it influences the adoption of GLPs across the full range of operational dimensions [12,13,80,82,83]. Notably, all these studies were conducted in European countries, and most relied on qualitative case study methods. While these studies provide valuable insights into relational tensions, goal misalignments, and power asymmetries that hinder effective green collaboration, they remain contextually and methodologically limited. There is still a lack of large-scale quantitative research that statistically assesses the extent to which shipper–LSP collaboration—through mechanisms such as asset-specific investments, knowledge sharing, information integration, or contractual arrangements—drives the implementation of GLPs and improves environmental performance across diverse institutional settings.

*Future Research*

Drawing on the theory–context–methodology framework adopted in this review, the following directions outline key avenues for advancing research on the drivers of GL adoption, emphasizing theoretical refinement, methodological development, and contextual diversification.

Theory. Institutional theory dominates research on green logistics and supply chains because green practices adoption requires substantial upfront investments in technologies and infrastructure, whose uncertain long-term benefits often fail to provide sufficient economic incentives for voluntary adoption. Organizations adopt green practices primarily in response to formal coercive pressures that reshape the decision-making context. Governments and international regulatory agencies initially establish environmental regulations and standards, which then catalyze broader environmental awareness across society. In this institutionally driven environment, firms move beyond mere compliance and adopt green practices to maintain legitimacy, enhance brand reputation in the eyes of environmentally conscious stakeholders, and gain a competitive advantage. While institutional theory explains "why" organizations adopt green practices, its combination with the resource-based view and its extensions provides a more nuanced understanding of "how" and "when" adoption succeeds.

However, these theories do not explain individual-level decision-making processes. Since CEOs and top managers ultimately make decisions and shape organizational re-

sponses to external pressures [48], psychological, sociological, and behavioural theories could better explain why some managers embrace sustainability as a strategic opportunity while others view it merely as regulatory compliance. Our review reveals that although many studies acknowledge managerial commitment to green practices, they rarely examine the underlying cognitive, motivational, and attitudinal factors that shape this commitment.

Methodology. This study echoes the methodological agenda identified by Tetteh et al. [20], who suggested employing qualitative, mixed-method, and longitudinal approaches in green logistics research. Our findings reinforce this recommendation by revealing significant methodological imbalances in the 95 studies analyzed (see Table 4). Quantitative approaches dominate, with an overwhelming reliance on survey analysis using SEM or PLS-SEM. While these methods effectively test hypothesized relationships between drivers and outcomes, they provide limited insight into the underlying mechanisms, temporal dynamics, and contextual factors that shape GL adoption. While quantitative methods remain essential for certain underexplored areas—such as statistically assessing the extent to which specific collaboration mechanisms drive GL adoption across diverse institutional settings—the field should shift its primary focus from "what" questions to "how" and "when" questions. Beyond case studies, employing other qualitative methods, such as narrative analysis, ethnographic analysis, and discourse analysis, can offer a richer understanding of underlying factors, including cultural nuances, psychological traits, human sustainability behaviour, levels of industrialization, and political or institutional settings that influence green logistics adoption. Mixed methods can bridge the gap between breadth and depth, thereby significantly reducing the limitations of using either approach alone and substantially enhancing research validity and confidence [111]. Furthermore, Panel data and longitudinal designs can track how micro-level and macro-level drivers interact to shape green logistics adoption over time, revealing how their relative influence evolves throughout the implementation process.

Context. Future research could systematically explore these five dimensions to provide a more complete understanding of the antecedents and/or drivers of GL adoption: (i) Organizational context: SMEs generate substantial economic value across countries but often lag in adopting green practices due to constraints such as low environmental awareness, limited resources, and insufficient managerial expertise [37,76]. Nevertheless, their appetite for improving sustainability [12] makes them a critical focus for research on green logistics. Despite this, SME-focused research in this study is limited (with eight studies). Existing studies primarily focus on internal factors—such as top management commitment and entrepreneurial orientation—and on external pressures, including regulatory requirements and stakeholder expectations. Future studies should investigate whether resource constraints suppress the effectiveness of internal and external drivers differently across SMEs. Key questions include: Are institutional pressures stringent enough to motivate SMEs with limited resources? Is top management commitment in SMEs strong enough to translate external pressures into meaningful actions despite financial and expertise constraints? (ii) Functional focus: Studies on green logistics, particularly green transportation, remain limited, with only about 30% of the literature focusing on these areas; most research instead highlights broader supply chain management activities that include logistics. This imbalance points to the need for more in-depth investigations dedicated exclusively to GL. Notably, transportation is a significant source of GHG emissions. Still, its lower visibility [103,104] to end consumers makes it less compelling for shippers to invest in greener freight solutions compared to packaging, which is more tangible and visible. Future research should examine how contextual factors unique to transportation moderate the effectiveness of drivers for green adoption. Key questions include: How do regulatory stringency and enforcement mechanisms influence shipper and LSP adoption

of low-emission transport modes? How do contract types (long-term vs. short-term) and power dynamics between shippers and LSPs affect investment in green transportation technologies? Can increased end-consumer awareness of transportation emissions, driven by policy interventions or labelling schemes, create sufficient market pressure to motivate the adoption of greener freight solutions? (iii) Industry scope: while manufacturing is the predominant industry examined in existing studies [62,74,112], with limited attention to the electronics and construction, pharmaceutical, and automobile sectors. Future research could broaden the scope by exploring other underrepresented industries such as retail, food and beverage, agri-culture and agribusiness. (iv) Regional diversity: The reviewed literature shows a significant concentration in Asian and European countries (see Figures 3 and 4). However, critical gaps remain in Latin America, North America, Africa and the Middle East. Future research should extend and elaborate on existing theories in these underrepresented regions to determine whether the drivers of green logistics adoption differ across diverse economic, regulatory, cultural, and institutional contexts. (v) Civil-society engagement: future research should investigate the role of civil society actors—including NGOs, local communities, international standard-setting bodies (e.g., ISO), and national cultural norms—in shaping green logistics decision-making. While several studies conceptually identify these actors as secondary stakeholders capable of exerting institutional pressure [67], designing support programs for environmental practices [107], and establishing informal environmental regulations [64], their influence is rarely examined empirically [55,64]. Critical research questions warrant investigation: How do civil society actors shape managerial environmental commitment through mechanisms such as legitimacy concerns, stakeholder pressure, or reputational risk? To what extent do customer expectations, influenced by civil society advocacy, translate into tangible demand for greener logistics solutions? Furthermore, how do contextual factors—such as the strength of civil society institutions, national cultural green orientations, and the regulatory environment—moderate the effectiveness of civil society pressure in driving GL adoption?

## 5. Conclusions

This study, by developing a conceptual framework that illustrates the antecedents and drivers of green logistics, offers valuable insights for both managers and policymakers.

### *5.1. Implications for Managers*

Managers should invest in employee training, establish cross-functional teams, and implement internal knowledge-sharing systems to ensure that environmental objectives are well understood and effectively implemented across all departments rather than confined to compliance functions. Furthermore, coordinating financial and operational units and institutionalizing a green culture across decision-making processes can reduce functional misalignment and enhance organizational coherence. Building relational trust with supply chain partners is equally critical. Long-term collaboration mechanisms—such as joint investments, knowledge sharing mechanisms, and long-term contracts—can facilitate the adoption of green logistics practices that often require substantial upfront investment in infrastructure and technology.

### *5.2. Implications for Policymakers*

This study highlights the need for policy initiatives that enhance environmental awareness within society, thereby cascading demand pressures from environmentally conscious end-consumers downstream to suppliers upstream. Given the growing reliance on outsourced logistics services, policymakers should examine whether existing environmental

regulations are stringent and well-balanced enough to motivate both shippers and LSPs to adopt green practices. Overly burdensome regulations on LSPs, without corresponding customer demand, risk discouraging meaningful investment in green infrastructure. Furthermore, recognizing the pivotal role of top management commitment, policymakers should also promote training programs to strengthen managerial cognition and environmental stewardship behaviours. Finally, policymakers can use financial or fiscal incentives to encourage long-term contracts and collaborative partnerships among supply chain actors—mechanisms that have been shown to enhance the adoption and effectiveness of green logistics practices.

### *5.3. Limitations*

This review acknowledges several limitations. First, applying journal quality filters (ABDC A/B and SJR Q1–Q2) may have introduced publication bias by excluding relevant studies from lower-ranked journals. Second, restricting the search to English-language articles may have omitted studies from non-English-speaking regions, particularly emerging economies. Finally, the review focuses mainly on drivers and enabling factors of GL and does not fully address organizational barriers or implementation challenges. Future studies should complement this driver-focused approach by examining barriers and resistance to GL adoption. This dual perspective would provide a more comprehensive understanding of both the motivations and constraints shaping organizational decisions.

**Supplementary Materials:** The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su17219604/s1, Table S1: PRISMA 2020 Checklist. Reference [113] is cited in Supplementary Materials.

**Author Contributions:** Conceptualization, P.R. and Z.S.; methodology, P.R.; software, P.R.; formal analysis, P.R.; data curation, P.R.; writing—original draft preparation, P.R.; writing—review and editing, P.R. and Z.S.; visualization, P.R.; supervision, Z.S. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** No new data were created or analyzed in this study.

**Conflicts of Interest:** The authors declare no conflicts of interest.

## Abbreviations

The following abbreviations are used in this manuscript:

| | |
|---|---|
| GLPs | Green Logistics Practices |
| GL | Green Logistics |
| GSCM | Green Supply Chain Management |
| DTs | Digital Technologies |
| GHRM | Green Human Resource Management |

## References

1. Pathak, M.; Slade, R.; Shukla, P.R.; Skea, J.; Pichs-Madruga, R.; Ürge-Vorsatz, D. *Technical Summary. Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, UK, 2022; pp. 1–102.
2. Fox, K.; Rohloff, K. *NASA Analysis Confirms 2023 as Warmest Year on Record*; Headquarters: Washington, DC, USA, 2024.
3. IPCC. *Climate Change 2023*; IPCC: Geneva, Switzerland, 2023.

4. Mckinnon, A.; Browne, M.; Piecyk, M.; Whiteing, A. *Green Logistics: Improving the Environmental Sustainability of Logistics*, 3rd ed.; Kogan Page: London, UK; Philadelphia, PA, USA, 2015; ISBN 9780749471859, 0749471859.
5. Tinnes, E.; Kandel, M.; Probst, T. Decarbonizing Logistics Charting the Path Ahead. 2024. Available online: https://www.mckinsey.com/capabilities/operations/our-insights/decarbonizing-logistics-charting-the-path-ahead (accessed on 24 October 2025).
6. Mackinsey & Company. What Are Scope 1, 2, and 3 Emissions? 2024. Available online: https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-are-scope-1-2-and-3-emissions (accessed on 24 October 2025).
7. Wang, J.; Lim, M.K.; Wang, C.; Tseng, M.L. Comprehensive Analysis of Sustainable Logistics and Supply Chain Based on Bibliometrics: Overview, Trends, Challenges, and Opportunities. *Int. J. Logist. Res. Appl.* **2023**, *26*, 1285–1314. [CrossRef]
8. McKinnon, A.C. Logistics and Climate: An Assessment of Logistics' Multiple Roles in the Climate Crisis. *Int. J. Logist. Res. Appl.* **2024**, *27*, 2556–2570. [CrossRef]
9. Chu, Z.; Wang, L.; Lai, F. Customer Pressure and Green Innovations at Third Party Logistics Providers in China: The Moderation Effect of Organizational Culture. *Int. J. Logist. Manag.* **2019**, *30*, 57–75. [CrossRef]
10. Huang, Y.C.; Huang, C.H.; Yang, M.L. Drivers of Green Supply Chain Initiatives and Performance: Evidence from the Electrical and Electronics Industries in Taiwan. *Int. J. Phys. Distrib. Logist. Manag.* **2017**, *47*, 796–819. [CrossRef]
11. Karaman, A.S.; Ellili, N.O.D.; Uyar, A. Do Sustainable Supply Chain Practices Mitigate Carbon Emissions? The Role of Supplier Environmental, Social and Governance Training. *Bus. Strategy Environ.* **2024**, *33*, 8126–8148. [CrossRef]
12. Creazza, A.; Colicchia, C.; Evangelista, P. Leveraging Shippers-Logistics Providers Relationships for Better Sustainability in Logistics: The Perspective of SMEs. *Int. J. Logist. Manag.* **2024**, *35*, 1009–1039. [CrossRef]
13. Huge-Brodin, M.; Sweeney, E.; Evangelista, P. Environmental Alignment between Logistics Service Providers and Shippers—A Supply Chain Perspective. *Int. J. Logist. Manag.* **2020**, *31*, 575–605. [CrossRef]
14. Jazairy, A.; von Haartman, R. Analysing the Institutional Pressures on Shippers and Logistics Service Providers to Implement Green Supply Chain Management Practices. *Int. J. Logist. Res. Appl.* **2020**, *23*, 44–84. [CrossRef]
15. Ocko, I.B.; Hamburg, S.P.; Jacob, D.J.; Keith, D.W.; Keohane, N.O.; Oppenheimer, M.; Roy-Mayhew, J.D.; Schrag, D.P.; Pacala, S.W. Unmask Temporal Trade-Offs in Climate Policy Debates. *Science* **2017**, *356*, 492–493. [CrossRef]
16. Tambo, E.; Duo-quan, W.; Zhou, X.N. Tackling Air Pollution and Extreme Climate Changes in China: Implementing the Paris Climate Change Agreement. *Environ. Int.* **2016**, *95*, 152–156. [CrossRef]
17. Jazairy, A.; Pohjosenperä, T.; Prataviera, L.B.; Juntunen, J. Innovators and Transformers Revisiting the Gap between Academia and Practice: Insights from the Green Logistics Phenomenon. *Int. J. Phys. Distrib. Logist. Manag.* **2024**, *55*, 341–360. [CrossRef]
18. Mishra, R.; Singh, R.; Govindan, K. Net-Zero Economy Research in the Field of Supply Chain Management: A Systematic Literature Review and Future Research Agenda. *Int. J. Logist. Manag.* **2023**, *34*, 1352–1397. [CrossRef]
19. Shaharudin, M.S.; Fernando, Y.; Chiappetta Jabbour, C.J.; Sroufe, R.; Jasmi, M.F.A. Past, Present, and Future Low Carbon Supply Chain Management: A Content Review Using Social Network Analysis. *J. Clean. Prod.* **2019**, *218*, 629–643. [CrossRef]
20. Tetteh, F.K.; Owusu Kwateng, K.; Mensah, J. Green Logistics Practices: A Bibliometric and Systematic Methodological Review and Future Research Opportunities. *J. Clean. Prod.* **2024**, *476*, 143735. [CrossRef]
21. Islam, M.S.; Moeinzadeh, S.; Tseng, M.L.; Tan, K. A Literature Review on Environmental Concerns in Logistics: Trends and Future Challenges. *Int. J. Logist. Res. Appl.* **2021**, *24*, 126–151. [CrossRef]
22. Lim, W.M. Systematic Literature Reviews: Reflections, Recommendations, and Robustness Check. *J. Consum. Behav.* **2025**, *24*, 1498–1510. [CrossRef]
23. Spanaki, K.; Sivarajah, U.; Fakhimi, M.; Despoudi, S.; Irani, Z. Disruptive Technologies in Agricultural Operations: A Systematic Review of AI-Driven AgriTech Research. *Ann. Oper. Res.* **2022**, *308*, 491–524. [CrossRef]
24. Tranfield, D.; Denyer, D.; Smart, P. Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *Br. J. Manag.* **2003**, *14*, 207–222. [CrossRef]
25. Mahran, K.; Elamer, A.A. Chief Executive Officer (CEO) and Corporate Environmental Sustainability: A Systematic Literature Review and Avenues for Future Research. *Bus. Strategy Environ.* **2024**, *33*, 1977–2003. [CrossRef]
26. Tucker, J.C. Database Support for Research in Public Administration. *Behav. Soc. Sci. Libr.* **2005**, *24*, 47–60. [CrossRef]
27. Crippa, M.; Guizzardi, D.; Pagani, F.; Banja, M.; Muntean, M.; Schaaf, E.; Becker, W.E.; Monforti-Ferrario, F.; Quadrelli, R.; Risquez, M.A.; et al. *GHG Emissions of All World Countries*; Publications Office of the European Union: Luxembourg, 2023.
28. Fatima, T.; Elbanna, S. Corporate Social Responsibility (CSR) Implementation: A Review and a Research Agenda Towards an Integrative Framework. *J. Bus. Ethics* **2023**, *183*, 105–121. [CrossRef]
29. Hoque, Z. 20 Years of Studies on the Balanced Scorecard: Trends, Accomplishments, Gaps and Opportunities for Future Research. *Br. Account. Rev.* **2014**, *46*, 33–59. [CrossRef]
30. Lu, Y.; Ntim, C.G.; Zhang, Q.; Li, P. Board of Directors' Attributes and Corporate Outcomes: A Systematic Literature Review and Future Research Agenda. *Int. Rev. Financ. Anal.* **2022**, *84*, 102424. [CrossRef]

31. Gaur, A.; Kumar, M. A Systematic Approach to Conducting Review Studies: An Assessment of Content Analysis in 25 Years of IB Research. *J. World Bus.* **2018**, *53*, 280–289. [CrossRef]
32. Nejati, M.; Rabiei, S.; Chiappetta Jabbour, C.J. Envisioning the Invisible: Understanding the Synergy between Green Human Resource Management and Green Supply Chain Management in Manufacturing Firms in Iran in Light of the Moderating Effect of Employees' Resistance to Change. *J. Clean. Prod.* **2017**, *168*, 163–172. [CrossRef]
33. Luthra, S.; Garg, D.; Haleem, A. The Impacts of Critical Success Factors for Implementing Green Supply Chain Management towards Sustainability: An Empirical Investigation of Indian Automobile Industry. *J. Clean. Prod.* **2016**, *121*, 142–158. [CrossRef]
34. Gandhi, S.; Mangla, S.K.; Kumar, P.; Kumar, D. A Combined Approach Using AHP and DEMATEL for Evaluating Success Factors in Implementation of Green Supply Chain Management in Indian Manufacturing Industries. *Int. J. Logist. Res. Appl.* **2016**, *19*, 537–561. [CrossRef]
35. Bag, S.; Dhamija, P.; Bryde, D.J.; Singh, R.K. Effect of Eco-Innovation on Green Supply Chain Management, Circular Economy Capability, and Performance of Small and Medium Enterprises. *J. Bus. Res.* **2022**, *141*, 60–72. [CrossRef]
36. Baah, C.; Jin, Z.; Tang, L. Organizational and Regulatory Stakeholder Pressures Friends or Foes to Green Logistics Practices and Financial Performance: Investigating Corporate Reputation as a Missing Link. *J. Clean. Prod.* **2020**, *247*, 119125. [CrossRef]
37. Adusei, E.; Demah, E.; Boso, R.K. Top Management Commitment in Greening Supply Chain Operations: Post-COVID-19 Perspectives from an Emerging Economy. *J. Glob. Oper. Strateg. Sourc.* **2023**, *16*, 773–797. [CrossRef]
38. Agarwal, A.; Giraud-Carrier, F.C.; Li, Y. A Mediation Model of Green Supply Chain Management Adoption: The Role of Internal Impetus. *Int. J. Prod. Econ.* **2018**, *205*, 342–358. [CrossRef]
39. Agrawal, V.; Mohanty, R.P.; Agarwal, S.; Dixit, J.K.; Agrawal, A.M. Analyzing Critical Success Factors for Sustainable Green Supply Chain Management. *Environ. Dev. Sustain.* **2023**, *25*, 8233–8258. [CrossRef]
40. Ali, A.; Bentley, Y.; Cao, G.; Habib, F. Green Supply Chain Management–Food for Thought? *Int. J. Logist. Res. Appl.* **2017**, *20*, 22–38. [CrossRef]
41. Banik, A.; Taqi, H.M.M.; Ali, S.M.; Ahmed, S.; Garshasbi, M.; Kabir, G. Critical Success Factors for Implementing Green Supply Chain Management in the Electronics Industry: An Emerging Economy Case. *Int. J. Logist. Res. Appl.* **2022**, *25*, 493–520. [CrossRef]
42. Kitsis, A.M.; Chen, I.J. Do Stakeholder Pressures Influence Green Supply Chain Practices?Exploring the Mediating Role of Top Management Commitment. *J. Clean. Prod.* **2021**, *316*, 128258. [CrossRef]
43. Lai, K.H.; Feng, Y.; Zhu, Q. Digital Transformation for Green Supply Chain Innovation in Manufacturing Operations. *Transp. Res. E Logist. Transp. Rev.* **2023**, *175*, 103145. [CrossRef]
44. Muduli, K.K.; Luthra, S.; Kumar Mangla, S.; Jabbour, C.J.C.; Aich, S.; de Guimarães, J.C.F. Environmental Management and the "Soft Side" of Organisations: Discovering the Most Relevant Behavioural Factors in Green Supply Chains. *Bus. Strategy Environ.* **2020**, *29*, 1647–1665. [CrossRef]
45. Nureen, N.; Liu, D.; Ahmad, B.; Irfan, M. Exploring the Technical and Behavioral Dimensions of Green Supply Chain Management: A Roadmap toward Environmental Sustainability. *Environ. Sci. Pollut. Res.* **2022**, *29*, 63444–63457. [CrossRef]
46. Singh, R.K.; Rastogi, S.; Aggarwal, M. Analyzing the Factors for Implementation of Green Supply Chain Management. *Compet. Rev.* **2016**, *26*, 246–264. [CrossRef]
47. Sureeyatanapas, P.; Poophiukhok, P.; Pathumnakul, S. Green Initiatives for Logistics Service Providers: An Investigation of Antecedent Factors and the Contributions to Corporate Goals. *J. Clean. Prod.* **2018**, *191*, 1–14. [CrossRef]
48. Preuss, L.; Fearne, A. Cognitive Frames Held by Supply Chain Managers: Implications for the Management of Sustainability in Supply Chains. *Supply Chain Manag.* **2022**, *27*, 681–695. [CrossRef]
49. Ellram, L.M.; Tate, W.L.; Saunders, L.W. A Legitimacy Theory Perspective on Scope 3 Freight Transportation Emissions. *J. Bus. Logist.* **2022**, *43*, 472–498. [CrossRef]
50. Kitsis, A.M.; Chen, I.J. Do Motives Matter? Examining the Relationships between Motives, SSCM Practices and TBL Performance. *Supply Chain Manag.* **2020**, *25*, 325–341. [CrossRef]
51. Lintukangas, K.; Arminen, H.; Kähkönen, A.K.; Karttunen, E. Determinants of Supply Chain Engagement in Carbon Management. *J. Bus. Ethics* **2023**, *186*, 87–104. [CrossRef]
52. Youngswaing, W.; Jomnonkwao, S.; Cheunkamon, E.; Ratanavaraha, V. Key Factors Shaping Green Logistics in Thailand's Auto Industry: An Application of Structural Equation Modeling. *Logistics* **2024**, *8*, 17. [CrossRef]
53. Lo, S.M.; Shiah, Y.A. Associating the Motivation with the Practices of Firms Going Green: The Moderator Role of Environmental Uncertainty. *Supply Chain Manag.* **2016**, *21*, 485–498. [CrossRef]
54. Fu, C.; Liu, Y.Q.; Shan, M. Drivers of Low-Carbon Practices in Green Supply Chain Management in Construction Industry: An Empirical Study in China. *J. Clean. Prod.* **2023**, *428*, 139497. [CrossRef]
55. Iddik, S. The Role of Cultural Factors in Green Supply Chain Management Practices: A Conceptual Framework and an Empirical Investigation. *RAUSP Manag. J.* **2024**, *59*, 96–122. [CrossRef]
56. Rizzi, F.; Gigliotti, M.; Annunziata, E. Exploring the Nexus between GSCM and Organisational Culture: Insights on the Role of Supply Chain Integration. *Supply Chain Manag.* **2023**, *28*, 300–323. [CrossRef]

57. Prataviera, L.B.; Creazza, A.; Perotti, S.; Rodrigues, V.S. How to Align Logistics Environmental Sustainability with Corporate Strategy? An Italian Perspective. *Int. J. Logist. Res. Appl.* **2023**, *28*, 931–953. [CrossRef]
58. Laari, S.; Töyli, J.; Ojala, L. The Effect of a Competitive Strategy and Green Supply Chain Management on the Financial and Environmental Performance of Logistics Service Providers. *Bus. Strategy Environ.* **2018**, *27*, 872–883. [CrossRef]
59. Graham, S.; Cadden, T.; Treacy, R. Examining the Influence of Employee Engagement in Supporting the Implementation of Green Supply Chain Management Practices: A Green Human Resource Management Perspective. *Bus. Strategy Environ.* **2023**, *32*, 4750–4766. [CrossRef]
60. Acquah, I.S.K.; Agyabeng-Mensah, Y.; Afum, E. Examining the Link among Green Human Resource Management Practices, Green Supply Chain Management Practices and Performance. *Benchmarking* **2021**, *28*, 267–290. [CrossRef]
61. Trujillo-Gallego, M.; Sarache, W.; Sousa Jabbour, A.B.L.d. Digital Technologies and Green Human Resource Management: Capabilities for GSCM Adoption and Enhanced Performance. *Int. J. Prod. Econ.* **2022**, *249*, 108531. [CrossRef]
62. Liu, Y.; Fang, W.; Feng, T.; Gao, N. Bolstering Green Supply Chain Integration via Big Data Analytics Capability: The Moderating Role of Data-Driven Decision Culture. *Ind. Manag. Data Syst.* **2022**, *122*, 2558–2582. [CrossRef]
63. Umar, M.; Khan, S.A.R.; Zia-ul-haq, H.M.; Yusliza, M.Y.; Farooq, K. The Role of Emerging Technologies in Implementing Green Practices to Achieve Sustainable Operations. *TQM J.* **2022**, *34*, 232–249. [CrossRef]
64. Liu, Y.; Chung, H.F.L.; Mi, L. Fostering Sustainable Logistics Businesses: The Role of Innovation Ecosystems and Institutional Contexts for Logistics Firms in China. *Asia Pac. J. Mark. Logist.* **2023**, *35*, 35–53. [CrossRef]
65. Fiorini, P.C.; Jabbour, C.J.C.; Latan, H.; De Sousa Jabbour, A.B.L.; Mariano, E.B. Green Emerging Digital Technologies, Green Supply Chains, and the Performance of Environmentally Friendly Firms: The Underpinning Role of Human Resources. *IEEE Trans. Eng. Manag.* **2024**, *71*, 13134–13148. [CrossRef]
66. Van Luu, T.; Chromjaková, F.; Nguyen, H.Q. A Model of Industry 4.0 and a Circular Economy for Green Logistics and a Sustainable Supply Chain. *Bus. Strategy Dev.* **2023**, *6*, 897–920. [CrossRef]
67. Prataviera, L.B.; Creazza, A.; Perotti, S. A Call to Action: A Stakeholder Analysis of Green Logistics Practices. *Int. J. Logist. Manag.* **2024**, *35*, 979–1008. [CrossRef]
68. Susanty, A.; Sari, D.P.; Rinawati, D.I.; Setiawan, L. The Role of Internal and External Drivers for Successful Implementation of GSCM Practices. *J. Manuf. Technol. Manag.* **2019**, *30*, 391–420. [CrossRef]
69. Dube, A.S.; Gawande, R.S. Analysis of Green Supply Chain Barriers Using Integrated ISM-Fuzzy MICMAC Approach. *Benchmarking* **2016**, *23*, 1558–1578. [CrossRef]
70. Zhang, W.; Zhang, X.; Zhou, Q. How Does Knowledge Seeking and Knowledge Generation Promote Green Supply Chain Management? An Empirical Study from China. *Int. J. Logist. Res. Appl.* **2023**, *26*, 37–57. [CrossRef]
71. Bae, H.S.; Grant, D.B. Investigating Effects of Organisational Culture and Learning on Environmental Collaboration and Performance of Korean Exporting Firms. *Int. J. Logist. Res. Appl.* **2018**, *21*, 614–630. [CrossRef]
72. Acquah, I.N. Antecedents and Consequences of Green Supply Chain Management Practices in Ghana's Manufacturing Sector. *J. Manuf. Technol. Manag.* **2024**, *35*, 524–543. [CrossRef]
73. Ahmed, W.; Najmi, A.; Arif, M.; Younus, M. Exploring Firm Performance by Institutional Pressures Driven Green Supply Chain Management Practices. *Smart Sustain. Built Environ.* **2019**, *8*, 415–437. [CrossRef]
74. Borazon, E.Q.; Huang, Y.C.; Liu, J.M. Green Market Orientation and Organizational Performance in Taiwan's Electric and Electronic Industry: The Mediating Role of Green Supply Chain Management Capability. *J. Bus. Ind. Mark.* **2022**, *37*, 1475–1496. [CrossRef]
75. Maaz, M.A.M.; Ahmad, R.; Abad, A. Antecedents and Consequences of Green Supply Chain Management Practices: A Study of Indian Food Processing Industry. *Benchmarking* **2022**, *29*, 2045–2073. [CrossRef]
76. Silva, G.M.; Gomes, P.J.; Carvalho, H.; Geraldes, V. Sustainable Development in Small and Medium Enterprises: The Role of Entrepreneurial Orientation in Supply Chain Management. *Bus. Strategy Environ.* **2021**, *30*, 3804–3820. [CrossRef]
77. Chen, Y.; Zhu, Q.; Sarkis, J. Heterogeneity in Corporate Green Supply Chain Practice Adoption: Insights from Institutional Fields. *Bus. Strategy Environ.* **2024**, *33*, 389–406. [CrossRef]
78. Thanh Ha, L. Is It a Good Idea to Select Green Logistics to Enhance Environmental Sustainability? Insights from Global Sample. *Int. J. Logist. Res. Appl.* **2024**, *28*, 558–579. [CrossRef]
79. Dahlmann, F.; Roehrich, J.K. Sustainable Supply Chain Management and Partner Engagement to Manage Climate Change Information. *Bus. Strategy Environ.* **2019**, *28*, 1632–1647. [CrossRef]
80. Jazairy, A.; von Haartman, R.; Björklund, M. Unravelling Collaboration Mechanisms for Green Logistics: The Perspectives of Shippers and Logistics Service Providers. *Int. J. Phys. Distrib. Logist. Manag.* **2021**, *51*, 423–448. [CrossRef]
81. Liu, X.; Qian, C.; Wang, S. When Do 3PLs Initiate Low-Carbon Supply Chain Integration? *Int. J. Oper. Prod. Manag.* **2020**, *40*, 1367–1395. [CrossRef]
82. Björklund, M.; Forslund, H.; Ülgen, V.S. The Paradoxical Nature of Greening Transportation: An Analysis of Tensions in Buyer–Supplier Dyads. *Int. J. Phys. Distrib. Logist. Manag.* **2024**, *54*, 532–557. [CrossRef]

83. Sallnäs, U.; Huge-Brodin, M. De-Greening of Logistics?—Why Environmental Practices Flourish and Fade in Provider-Shipper Relationships and Networks. *Ind. Mark. Manag.* **2018**, *74*, 276–287. [CrossRef]
84. Kim, S.; Foerstl, K.; Schmidt, C.G.; Wagner, S.M. Adoption of Green Supply Chain Management Practices in Multi-Tier Supply Chains: Examining the Differences between Higher and Lower Tier Firms. *Int. J. Prod. Res.* **2022**, *60*, 6451–6468. [CrossRef]
85. Nkrumah, S.K.; Asamoah, D.; Annan, J.; Agyei-Owusu, B. Examining Green Capabilities as Drivers of Green Supply Chain Management Adoption. *Manag. Res. Rev.* **2021**, *44*, 94–111. [CrossRef]
86. Wamalwa, L.S.; Nang'ole Meyer, P. Green Supplier Development and Sustainable Supply Chain Management. *Bus. Strategy Dev.* **2024**, *7*, e357. [CrossRef]
87. Eggert, J.; Hartmann, J. Purchasing's Contribution to Supply Chain Emission Reduction. *J. Purch. Supply Manag.* **2021**, *27*, 100685. [CrossRef]
88. Li, E.L.; Zhou, L.; Wu, A. The Supply-Side of Environmental Sustainability and Export Performance: The Role of Knowledge Integration and International Buyer Involvement. *Int. Bus. Rev.* **2017**, *26*, 724–735. [CrossRef]
89. Ahmed, W.; Ashraf, M.S.; Khan, S.A.; Kusi-Sarpong, S.; Arhin, F.K.; Kusi-Sarpong, H.; Najmi, A. Analyzing the Impact of Environmental Collaboration among Supply Chain Stakeholders on a Firm's Sustainable Performance. *Oper. Manag. Res.* **2020**, *13*, 4–21. [CrossRef]
90. Qiao, J.; Li, S.; Capaldo, A. Why and How Do Suppliers Develop Environmental Management Capabilities in Response to Buyer-Led Development Initiatives? *Supply Chain Manag.* **2024**, *29*, 112–134. [CrossRef]
91. Asif, M.S.; Lau, H.; Nakandala, D.; Fan, Y.; Hurriyet, H. Adoption of Green Supply Chain Management Practices through Collaboration Approach in Developing Countries—From Literature Review to Conceptual Framework. *J. Clean. Prod.* **2020**, *276*, 124191. [CrossRef]
92. Song, Z.; He, S.; Wang, Y.; An, J. Green Pharmaceutical Supply Chain Coordination Considering Green Investment, Green Logistics, and Government Intervention. *Environ. Sci. Pollut. Res.* **2022**, *29*, 63321–63343. [CrossRef] [PubMed]
93. Yang, B.; Wang, Z. Environmental Regulation, Green Technology Innovation and Green Logistics Development Level of Fresh Agricultural Products. *Int. J. Logist. Res. Appl.* **2024**, 1–22. [CrossRef]
94. Li, A.; Chen, Y.; Wang, D. An Empirical Study of the Factors Influencing the Willingness to Implement Green Coal Logistics in China. *J. Clean. Prod.* **2020**, *245*, 118932. [CrossRef]
95. Leung, T.C.H.; Guan, J.; Lau, Y.Y. Exploring Environmental Sustainability and Green Management Practices: Evidence from Logistics Service Providers. *Sustain. Account. Manag. Policy J.* **2023**, *14*, 461–489. [CrossRef]
96. Huang, Y.C.; Borazon, E.Q.; Liu, J.M. Antecedents and Consequences of Green Supply Chain Management in Taiwan's Electric and Electronic Industry. *J. Manuf. Technol. Manag.* **2021**, *32*, 1066–1093. [CrossRef]
97. Singh, A.; Misra, S.C. Ordering Drivers of Green Supply Chain Management Practices in Indian Construction Industry: An Impact Assessment Framework. *Int. J. Qual. Reliab. Manag.* **2022**, *39*, 1869–1895. [CrossRef]
98. El Baz, J.; Laguir, I. Third-Party Logistics Providers (TPLs) and Environmental Sustainability Practices in Developing Countries: The Case of Morocco. *Int. J. Oper. Prod. Manag.* **2017**, *37*, 1451–1474. [CrossRef]
99. Hartmann, J.; Inkpen, A.; Ramaswamy, K. An FsQCA Exploration of Multiple Paths to Ecological Innovation Adoption in European Transportation. *J. World Bus.* **2022**, *57*, 101327. [CrossRef]
100. Jum'a, L.; Ikram, M.; Alkalha, Z.; Alaraj, M. Factors Affecting Managers' Intention to Adopt Green Supply Chain Management Practices: Evidence from Manufacturing Firms in Jordan. *Environ. Sci. Pollut. Res.* **2022**, *29*, 5605–5621. [CrossRef]
101. Van den Berg, R.; De Langen, P.W. Environmental Sustainability in Container Transport: The Attitudes of Shippers and Forwarders. *Int. J. Logist. Res. Appl.* **2017**, *20*, 146–162. [CrossRef]
102. Jazairy, A. Aligning the Purchase of Green Logistics Practices between Shippers and Logistics Service Providers. *Transp. Res. D Transp. Environ.* **2020**, *82*, 102305. [CrossRef]
103. Tetteh, F.K.; Owusu Kwateng, K.; Mensah, J. Enhancing Carbon Neutral Supply Chain Performance: Can Green Logistics and Pressure from Supply Chain Stakeholders Make Any Differences? *Sustain. Account. Manag. Policy J.* **2024**, *16*, 521–551. [CrossRef]
104. Sallnäs, U.; Björklund, M. Consumers' Influence on the Greening of Distribution—Exploring the Communication between Logistics Service Providers, e-Tailers and Consumers. *Int. J. Retail. Distrib. Manag.* **2020**, *48*, 1177–1193. [CrossRef]
105. Ye, F.; Huang, G.; Zhan, Y.; Li, Y. Factors Mediating and Moderating the Relationships Between Green Practice and Environmental Performance: Buyer-Supplier Relation and Institutional Context. *IEEE Trans. Eng. Manag.* **2023**, *70*, 142–155. [CrossRef]
106. Wen, X.; Cheah, J.H.; Lim, X.J.; Ramachandran, S. Why Does "Green" Matter in Supply Chain Management? Exploring Institutional Pressures, Green Practices, Green Innovation, and Economic Performance in the Chinese Chemical Sector. *J. Clean. Prod.* **2023**, *427*, 139182. [CrossRef]
107. Layaoen, H.D.; Abareshi, A.; Abdulrahman, M.D.A.; Abbasi, B. Impacts of Institutional Pressures and Internal Abilities on Green Performance of Transport and Logistics Companies. *Int. J. Logist. Manag.* **2024**, *35*, 2087–2113. [CrossRef]

108. Seles, B.M.R.P.; de Sousa Jabbour, A.B.L.; Jabbour, C.J.C.; Dangelico, R.M. The Green Bullwhip Effect, the Diffusion of Green Supply Chain Practices, and Institutional Pressures: Evidence from the Automotive Sector. *Int. J. Prod. Econ.* **2016**, *182*, 342–355. [CrossRef]
109. Sabat, K.C.; Krishnamoorthy, B.; Bhattacharyya, S.S. Green Drivers and Green Enablers in Pharmaceuticals Supply Chain: In the Context of an Emerging Economy. *TQM J.* **2023**, *35*, 1349–1377. [CrossRef]
110. Choudhary, K.; Sangwan, K.S. Adoption of Green Practices throughout the Supply Chain: An Empirical Investigation. *Benchmarking* **2019**, *26*, 1650–1675. [CrossRef]
111. Johnson, R.B.; Onwuegbuzie, A.J. Toward a Definition of Mixed Methods Research. *J. Mix. Methods Res.* **2007**, *1*, 112–133. [CrossRef]
112. Geng, R.; Lin, S.; Dai, J. Examining Customer Pressure and Green Supply Chain Management in Emerging Market: An Institutional Logics Perspective. *Int. J. Prod. Econ.* **2024**, *278*, 109431. [CrossRef]
113. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *bmj* **2021**, *372*, n71. [CrossRef] [PubMed]


**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.