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THE SUSTAINABLE AGRICULTURE SUPPLY CHAINS: A BIBLIOMETRIC ANALYSIS APPROACH

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ABSTRACT

The resilience and effectiveness of agricultural supply chains are widely recognized in supply chain management. Despite continuous advancements in environmental considerations and the competitiveness and effectiveness of supply chains, there needs to be a thorough evaluation in the literature regarding the influence of sustainable agricultural supply chains on these aspects. This study employs bibliometric analysis to explore sustainable agricultural supply chains, emphasizing essential aspects of supply chain effectiveness and the impact of a dynamically evolving environment. It bridges the divide between environmental science fields and agroindustry. Using the PRISMA VOSviewer methodology for bibliometric evaluation, Eight hundred sixty-one academic papers were meticulously chosen and examined using a thorough method that combines bibliometric and descriptive analysis. The comprehensive literature review uncovers the intricate and interconnected relationship between supply chain performance and sustainable agriculture, emphasizing the importance of promoting sustainability in a competitive business environment within a dynamic landscape. The research expands existing understanding by pinpointing seven clusters and comprehensively summarizing the present research environment. The primary themes and areas of interest in sustainable agricultural supply chains include food security, life cycle assessment, performance, blockchain, and energy. This research sets the course for future academic exploration in this crucial field and presents valuable perspectives for practitioners. The research highlights. The significance of incorporating sustainable methods within agricultural supply chains to enhance sustainability in today's quickly changing business environment, focusing on environmental and social aspects.

Keywords: *bibliometric analysis, energy supply chain, environmental impact, sustainability performance, supply chain security*

BACKGROUND

Supply chain management initially focused only on logistics systems, but it was adopted in 1982 (Gupta et al., 2023). Traditionally, supply chain management involves a network of companies, whether independent or grouped, working together to produce and deliver a product to the end user (from farm to table). It also includes the movement of goods, information, and money and the planning, production, inventory, transportation, retail, and waste management. Over time, supply chain management has incorporated information technology-based systems to improve innovation,

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information sharing, and collaboration among all parties involved (Sarker et al., 2019). The critical question in this context is how value is created and distributed among all the parties involved.

The supply chain management system must address economic, environmental, and social considerations to achieve company objectives, including institutional aspects (Fesharaki & Safarzadeh, 2022; Nanaki & Koroneos, 2018). This is the basis for a sustainable supply chain. The sustainable supply chain management framework is built on sustainable development (Xia et al., 2022; Yoshida & Yagi, 2021), which is the practice of meeting present needs without compromising the ability of future generations to meet their own. Sustainable supply chain management represents an advancement of traditional supply chain management, integrating economic, social, and environmental factors. Its objective is to ensure that the managed supply chain can meet consumer needs regarding quality, quantity, timely delivery, environmental sustainability, and sensitivity to social conditions (Sumardjo et al., 2023).

This paper explores the relationship between supply chain management and sustainable supply chain management, drawing from the logical structure of scientific articles. Supply chain management involves various stakeholders collaborating to design, produce, deliver, and sell a product to the end consumer (Šestak & Copot, 2023). In contrast, sustainable supply chain management not only focuses on economic factors but also considers environmental, social, and institutional factors such as governance, ethics, and compliance (Casey et al., 2022; Yekkehbash Heidari et al., 2023). This paper will thoroughly review existing literature to delve into this topic.

The research aims to fill a gap in the current literature by contributing to increasing research on sustainability within agricultural supply chains. There is broad recognition of the potential for sustainability to drive transformation, improve productivity, promote environmental friendliness, and optimize decision-making procedures in agriculture, marking a notable change in the direction of sustainable agriculture (Demattê Filho et al., 2023; Parthiban et al., 2021). The study aims to analyze trends, recognize main participants, chart knowledge connections, investigate the development of essential terms, and evaluate the influence of sustainability on the agricultural supply chain. Cooperation among scientists and organizations is essential because it will produce necessary knowledge for those making decisions in the agricultural supply chain, highlighting the significance of your possible input.

The primary objective of this research is to utilize bibliometric methods to analyze the literature on sustainability within agricultural supply chains. It also aims to comprehensively summarize existing research and identify critical areas for future sustainable agricultural product supply chain management investigation. The research framework encompasses the transformation of the supply chain management system, specific management details, and the evolving conceptual dimensions (economic, social, environmental, and institutional) of sustainable agricultural product supply chains. It covers the studied commodities and models used. Additionally, this paper provides an example of sustainable supply chain management in agricultural products and discusses important topics that researchers can use for future studies.

RESEARCH METHODS

Researchers have used numerical and descriptive methods to inspect and evaluate previous discoveries and knowledge (Paunglad, 2022). Previous studies have used various approaches, such as structured literature reviews using frameworks, extensive dataset analysis, and publication and

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citation patterns (Abdoellah et al., 2020; Armas et al., 2023; Martinho et al., 2022). This study uses science mapping to summarize the current knowledge on sustainability in the agricultural supply chain. Scientific literature and papers are analyzed using science mapping based on bibliometric data to extract the analyses (Mubarakah et al., 2023).

The Bibliometric technique is a widely used review method that allows researchers to assess sets of publications quantitatively and impartially identify relevant similarities, connections, and trends (Ayan et al., 2022). This method helps decrease the chance of subjective bias, which is often associated with qualitative assessments. It is essential to point out that scholars from various fields, like sustainability in agricultural supply chains, have extensively used Bibliometric methods to assess the influence of particular authors, journals, and articles, connecting you with a broader academic community. Additionally, combining bibliometric analysis alongside text mining and content analysis is essential to help reveal the primary themes in the literature and map the science (Pardo-Pardo & Cuervo-Bejarano, 2023). These methods have been applied to analyze the incorporation of agricultural sustainability in agricultural supply chains, study sustainability frameworks for agricultural products, and evaluate sustainability in agricultural commodity trading activities. Sustainability has potential advantages in various facets of the agricultural supply chain, such as agricultural trade, logistics management, product management, and transportation management. These methodologies provide comprehensive insights into the prospective application of sustainability in agricultural supply chains, offering a promising future for the industry. Our goal with this study was to evaluate the influence of contributions and identify key topics. We conducted a comprehensive and meticulous investigation. In order to accomplish this, we utilized a series of Analysis of publication and subject themes techniques after choosing a literature sample. The thoroughness of our methodology instills trust in the credibility of our results.

Data Extraction

We conducted a comprehensive global research review on sustainable agricultural supply chains by extensively using professional and scientific literature from Scopus databases (Hatab et al., 2019), including Elsevier, ScienceDirect, SpringerNature, SpringerLink, Emerald, and Taylor & Francis. Our study focused on electronic data from published articles related to sustainable agricultural supply chains from the Scopus repository, covering the period from 2013 to the end of 2023. Data was gathered on January 4, 2024, and we thoroughly evaluated the collected articles based on specific setting up criteria for both inclusion and exclusion, guaranteeing their applicability to the analysis and aiding in reaching informed conclusions. The detailed Scopus record contains comprehensive information, complete records, and references to citations, all saved as text files. These records provide information on the year of publication, authors, affiliations, and journals of origin (Mubarakah et al., 2023). Our search focused on titles, keywords, and summaries to investigate theories and connections within sustainable agricultural supply chains. Additionally, our search methodology utilized terms related to sustainable agricultural supply chains, such as "Supply Chains," "Agricultural Supply Chains," "Sustainable Agriculture," and "Sustainable Agricultural Supply Chains." The research focused on articles in the English language published in United Kingdom-based journals and conferences.

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Exclusion and Participation Criteria

Our research was conducted in four phases. We began by gathering data from 1925 articles on sustainable supply chains. Phase I involved a systematic literature review, focusing on sustainable agricultural supply chains from 2013 to 2023, resulting in 1512 articles. We selected this period because there was a notable uptick in publications, primarily driven by the growth of electronic journals. During Phase II, we carried out a title screening process using particular inclusion criteria, which yielded 1122 articles. Stage III involved filtering keywords to remove duplicate articles, resulting in 1089 articles. Finally, in Stage IV, we manually assessed the abstracts of the remaining 1034 articles. After applying our criteria, 861 articles met the standards for our bibliometric analysis. Our goal was to identify articles that contributed to sustainable agricultural supply chains. For this phase, papers had to meet specific criteria related to sustainable agricultural supply chains, including journal articles in English and published between 2013 and 2023, as outlined in Table 2. This methodical approach effectively reviewed the literature, guaranteeing that the chosen articles matched our research goals. The requirement for English language articles was due.

Table 1. Criteria for Inclusion and Exclusion

Inclusion	Exclusion
1. Publications focused on sustainable agricultural supply chains. 2. Period of focus: 2013 to 2023. 3. Journal articles from League English. 4. Papers offering significant contributions to sustainable agriculture in supply chain management.	1. Publications that do not pertain to sustainable agricultural supply chains 2. Publications that fall outside the designated time frame (prior to 2016 or after 2023) 3. Publications not originating in the English League 4. Articles that do not align with the research objectives

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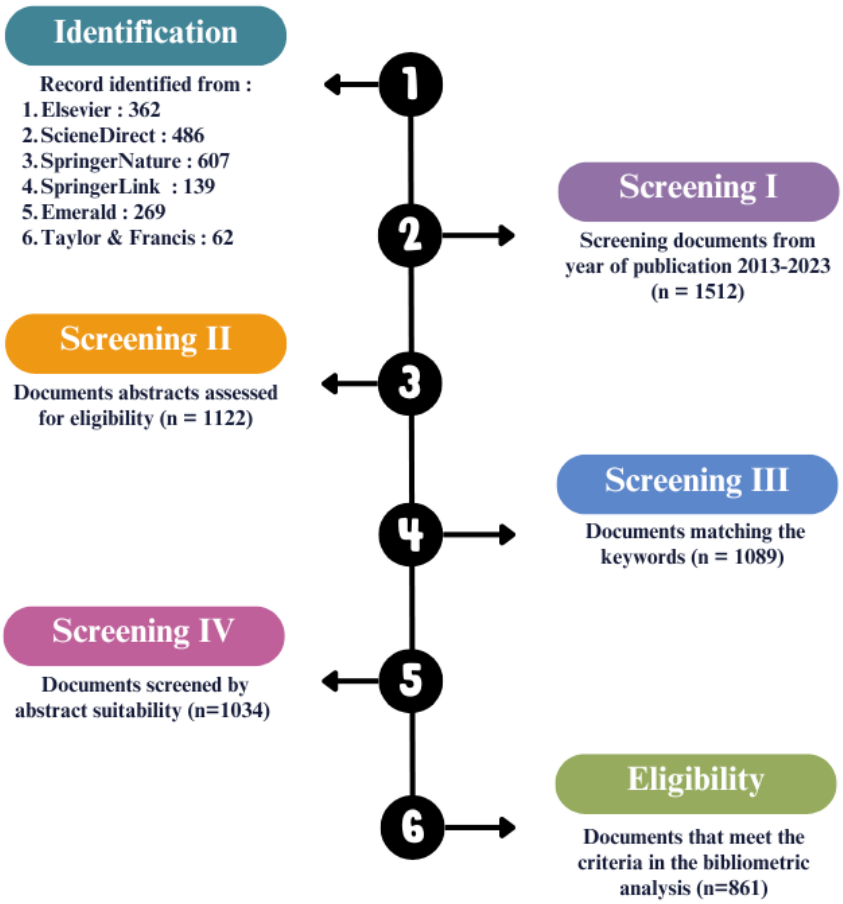

Figure 1. Publication Selection Process
Source: Research Data (2024)

Bibliometric Approach

In this study, we thoroughly analyzed the top 100 papers. Our analysis considered the number of citations, authors, journals, countries, institutions, year of publication, and author keywords. We followed the guidelines outlined by van Eck (2010) and used a multifaceted approach, including keyword maps, a network of co-authors from different countries, and bibliographic links. Our analysis focused on publications, citations, and essential journals in sustainable agriculture supply chains. To present our findings clearly, we segmented the citation distribution analysis over the past decade, allowing us to conduct a more targeted analysis of how citations trend and form patterns.

We utilized VOSviewer (accessible at www.vosviewer.com) to create bibliometric maps and networks (Pardo-Pardo & Cuervo-Bejarano, 2023). The visuals were generated using Microsoft Excel information from VOSviewer. We used various methods to illustrate science maps, such as graphical, temporal, and distance-related models. Every method includes nodes (shown as circles) and edges (lines connecting the nodes), leading to different interpretations. For instance, nodes closely connected in distance-related methods indicate strong relationships, whereas in graph-based approaches, the edges depict connections. In temporal analysis, nodes are organized based on time.

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RESULT AND DISCUSSION

Descriptive Statistics

This analysis provides detailed descriptions to classify articles based on methodology, thematic emphasis, and geographic spread. The organized overview of the current literature aids in better comprehension of the subject.

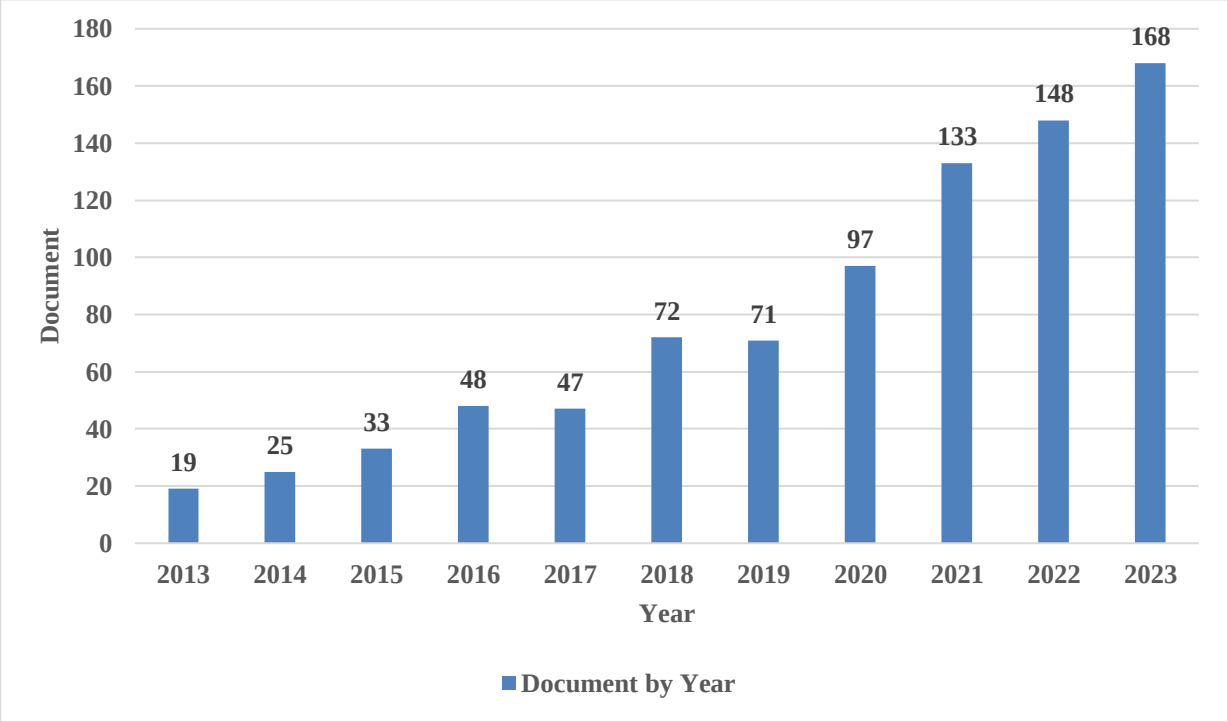

Figure 2. Articles from 2013 to 2023
Source: Research Data (2024)

The graph in Figure 2 illustrates the annual number of published papers from 2013 to 2023. The data shows a clear trend in academic output, with a slow start, followed by a period of growth and a significant increase in publications in recent years. The period from 2013 to 2017, during which relatively few publications were made, may suggest that sustainable agricultural supply chains were not a prominent academic research focus. The modest increase in subsequent years indicates a rising interest driven by new research approaches. The substantial growth in publications post-2019, especially in 2020 and 2021, suggests the influence of external factors such as the COVID-19 pandemic on the attention given to agricultural supply chain resilience and performance.

While these findings point to a growing academic interest, assessing the meaningfulness of these contributions is essential. The increase in publications requires a thorough assessment to distinguish valuable research from shallow studies that could undermine scholarly discussions. Additionally, the minimal growth in preceding years might suggest an unfulfilled demand for studies in fields like environmentally friendly farming methods, logistics management, and the influence of climate change on agriculture, which has recently attracted scholarly interest. This underscores the significance of original and comprehensive integration of past and current discoveries in the rapid expansion of sustainable agricultural supply chains. This data signifies the evolving landscape of sustainable agricultural supply chains in response to current challenges and technological

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advancements, highlighting the necessity of qualitative discernment in scientific endeavors in this context.

Table 2. Article by Journal

No	Journal Name	Document
1.	Journal Of Cleaner Production	77
2.	Sustainability Switzerland	68
3.	Science Of The Total Environment	30
4.	Resources Conservation And Recycling	16
5.	Frontiers In Sustainable Food Systems	16
6.	Environmental Research Letters	16
7.	Journal Of Environmental Management	10
8.	Agriculture Switzerland	10
9.	Land Use Policy	9
10.	Food Security	9
11.	Sustainable Production And Consumption	8
12.	International Journal Of Supply Chain Management	8
13.	Environmental Science And Technology	8
14.	Computers And Electronics in Agriculture	8
15.	Agricultural Systems	8
16.	Plos One	7
17.	Journal Of Rural Studies	7
18.	Energies	7
19.	Biomass And Bioenergy	7
20.	Land	6
21.	International Journal of Production Economics	6
22.	Chemical Engineering Transactions	6
23.	Environmental Management	5
24.	Energy	5
25.	Applied Energy	5
26.	Others	499

Source: Research Data (2024)

The breakdown of scholarly articles from different sustainable agriculture supply chain journals is presented in Table 2. A thorough examination unveiled meaningful clustering of specific publications, with the Journal of Cleaner Production taking the lead with 77 articles. The prevalence of this journal indicates its extensive impact and influential standing in research on production concerning agricultural supply chain matters. The substantial impact of 'Sustainability Switzerland' and 'Science of The Total Environment,' with 68 and 30 articles, indicates their significant contribution to sustainable agricultural supply chain management discourse. However, it is essential to acknowledge the need for a more balanced distribution, as some journals have a minimal contribution. This discrepancy may reflect the specialization in sustainable agricultural supply chains or researchers' tendency to target specific, more prestigious journals aligned with their academic networks or research focus. The large "Other" category, consisting of 499 articles, demonstrates the wide distribution of research on different platforms.

While this might indicate a robust variety within the publishing realm, it could also underscore the decentralized structure of sustainable agricultural supply chains, potentially hindering the

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amalgamation of research discoveries and advancements in theory. This analysis uncovers a correlation between sustainable agricultural supply chain fields and their prominent representation in specific major journals, serving as leaders in the regulation. The diverse range of publications and the substantial quantity of articles labeled as "Other" emphasizes the necessity for a more cohesive method of disseminating research. This could improve the sharing of ideas and guarantee that essential insights are communicated and incorporated throughout the academic community, especially in agricultural supply chain management.

Figure 3 shows how the chosen articles are categorized based on the research methodology used for each project. The figure illustrates the distribution, which indicates that 55% of the articles use a quantitative approach. The high occurrence supports research based on empirical evidence and data, focusing on statistical analysis and measurable results. The preference for quantitative methods to yield findings that can be applied broadly may be pushing for this trend, indicating a tendency to verify hypotheses and theories based on measurable impact.

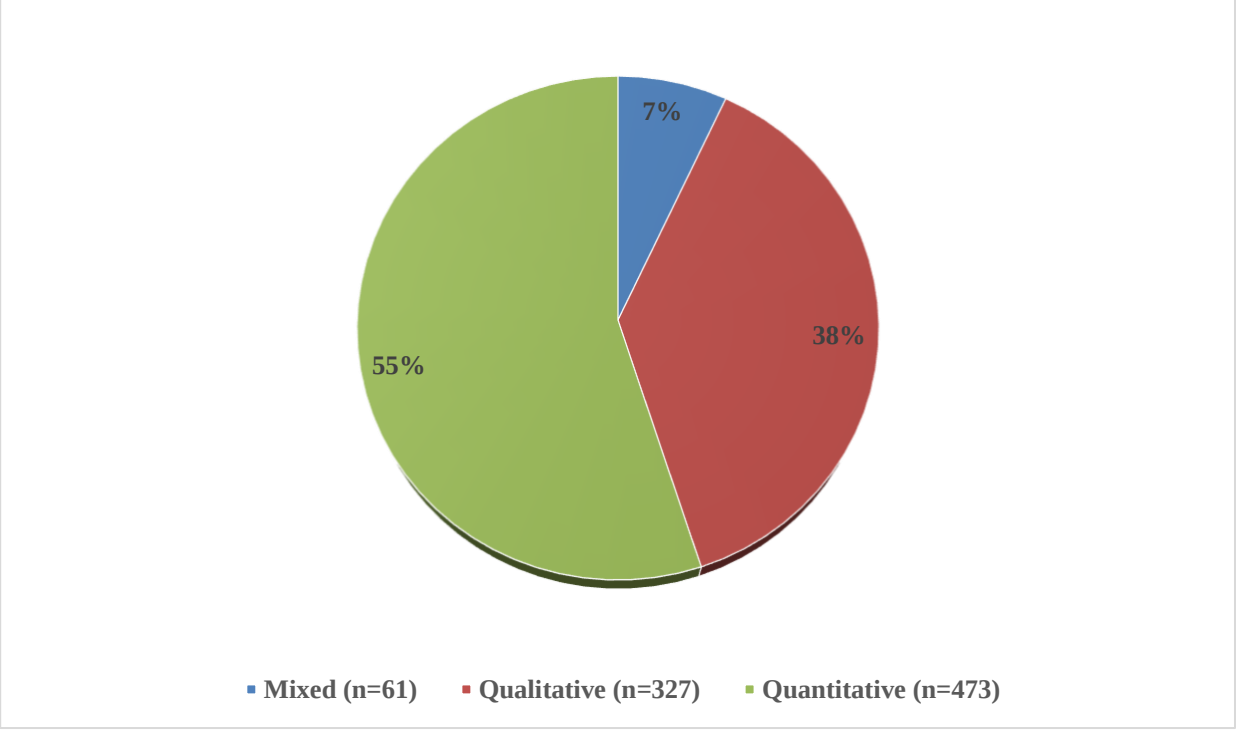

Figure 3. Classification By Research Method
Source: Research Data (2024)

Qualitative research makes up 38% of the articles on sustainable agricultural supply chains. Recognizing the depth and complexity of this method for grasping intricate occurrences, such as understanding the impact of cultural differences on workplace dynamics or the influence of personal experiences on decision-making, demonstrates its significance. By stressing contextual specifics and storytelling accounts, as well as delving into significance and personal encounters, valuable insights are gained that cannot be encapsulated by numerical data. The near-even emphasis on qualitative research underscores the acknowledgment that detailed descriptive perspectives are necessary to comprehend the subject in conjunction with numerical data fully.

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However, only 7% of the research articles are attributed to mixed-method research, indicating potential areas for improvement. Combining qualitative and quantitative approaches, mixed methods offer more comprehensive answers to research questions. The sporadic utilization of integrated research techniques might suggest a hesitation to combine different methodologies or illustrate the difficulties in publishing such works because of their rigorous nature. The analysis emphasizes the need for a well-rounded approach to research. Although quantitative methods are popular, qualitative research acknowledges diverse viewpoints within sustainable agricultural supply chains. Nonetheless, the limited quantity of mixed-methods research suggests that this field needs more advancement. Promoting mixed-methods research can result in a more thorough comprehension of different aspects of sustainable agricultural supply chains, establishing connections between quantitative data and real-world intricacies.

Table 3 displays the classification of articles according to research type. Table 3 shows that the breakdown of research articles by category indicates the most popular methodologies for sustainable agricultural supply chains. Most 54% of articles rely on empirical research, strongly focusing on data-driven research and hypothesis testing in modern literature. This preference for empirical research, which frequently yields measurable and widely relevant results, reflects the ongoing dedication of the agricultural supply chain to reaching evidence-based conclusions and supporting a positivist research framework.

Table 3. Classification By Research Type

No	Source Type	Document	Presented (%)
1.	Empirical Research	465	54
2.	Case Studies	267	31
3.	Literature Review	129	15

Source: Research Data (2024)

Case studies comprise 31% of the research, showing a significant interest in thoroughly examining events or phenomena within their contexts. Examining specific cases in depth helps us to fully understand complicated issues, capturing details that a broader empirical approach might miss. However, the lower occurrence of case study research might indicate a reduced acknowledgment of this approach in the broader research community or a more cautious utilization, which might be appropriate for preliminary research instead of testing theories. Systematic Literature Reviews comprise 15% of published articles; the academic community recognizes the significance of summarizing and evaluating existing research through systematic literature reviews (SLRs), which are crucial in appraising literature, recognizing gaps, gathering information, and frequently influencing the course of future research projects. A considerable percentage of SLRs mirrors the continuous endeavor to construct a unified knowledge base. They also play a crucial role in ensuring that research initiatives align with current comprehension and discussion concerning sustainable agricultural supply chains, thereby reassuring the relevance of their work.

The information implies a preference for empirical research methods in sustainable agricultural supply chains. The qualitative insights offered by case studies and the evaluative and guiding role of systematic literature reviews (SLRs) are acknowledged for their value. The emphasis on this approach highlights the main concerns of the sustainable agricultural supply chain sector and suggests possible avenues for improving the approach. The comparatively lower number of case

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studies may indicate areas that need improvement, advocating for researchers to conduct more detailed examinations customized for particular circumstances and the broader empirical results. Striking a harmony between empirical research, case studies, and SLRs adds to a varied and robust research environment, offering evidence-based, descriptive, comprehensive, and analytical insights.

The distribution of articles across different countries is depicted in Figure 4. The pie chart in Figure 4 visually represents the global research landscape in sustainable agricultural supply chains. The United States is the leader with 165 articles, reflecting its robust research infrastructure and conducive academic environment. This leadership position is not just a result of the country's substantial funding opportunities but also a testament to the crucial role of financial support in driving research and advancing sustainable agriculture. The United States, Italy, and China have each made significant contributions with 130 and 106 publications, indicating a growing research involvement in the area, likely due to economic expansion and a heightened emphasis on academic achievement. The United Kingdom also displays a robust research output of 104 articles, possibly due to support from well-established academic institutions and substantial research funding. It is worth noting that Germany and India provided 77 and 56 articles together, highlighting their substantial presence in the research field brought about by rapid technological progress and increased regional and global connectivity. The Netherlands has provided 45 articles showing the presence of a growing and engaged research community that may have been affected by recent changes in education and increased investment in research and development. Although relatively small, Australia and Canada's contributions (41 articles) demonstrate active involvement in scientific discussions; the research output of Brazil, totaling 40 articles, factors such as limited access to resources, funding constraints, and socioeconomic barriers may have an influence. This can emphasize the quality of research outcomes over quantity or indicate a specialized area of expertise within Brazil's academic sector.

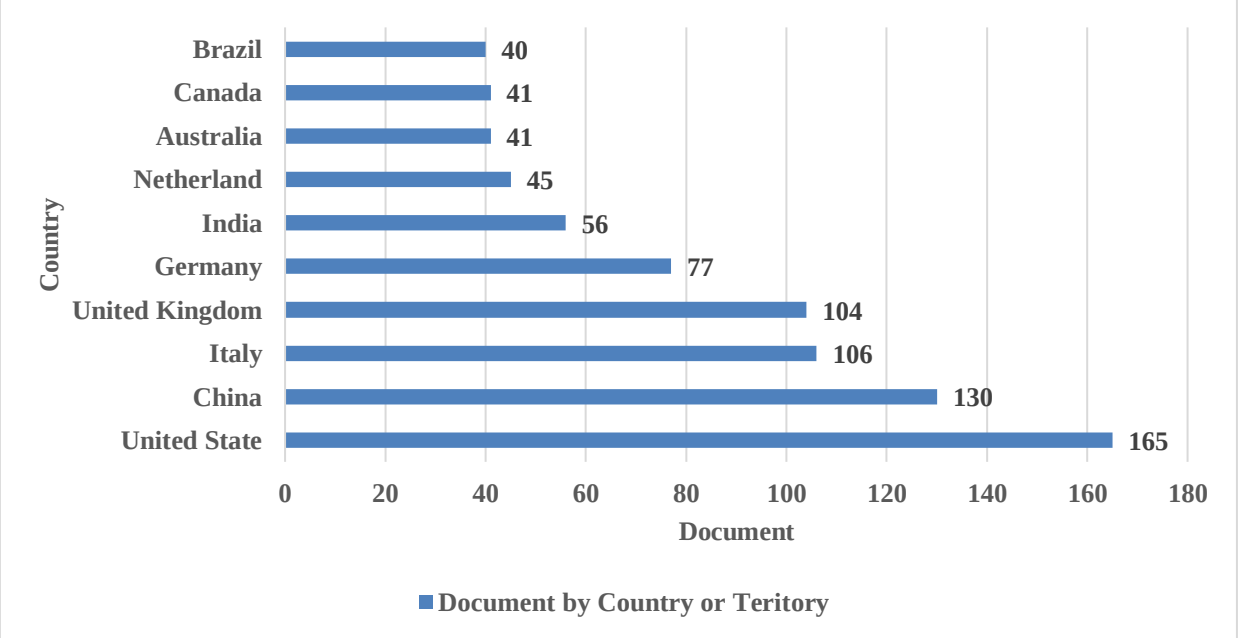

Figure 4. Classification by Country
Source: Research Data (2024)

These statistics are instrumental in promoting a more equitable global research environment. They highlight the strengths and inequalities in research contributions across different regions,

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prompting important questions about the factors influencing these patterns. The statistics underscore the need for more backing and collaboration to enhance research capabilities in less represented areas, thereby emphasizing the importance of global academic inclusiveness. Exploring various research viewpoints is crucial for addressing the intricacies of our interlinked world, and the evidence indicates potential for progress in this area. In Table 4, you can see the distribution of articles by subject area. It offers insights into the main research focus in this field by categorizing the articles based on the subject sector. Environmental science is the most researched sector, with 461 articles showing its crucial role in sustainable development. This reflects the emphasis on environmental science and its importance in driving sustainability and productivity.

Table 4. Classification By Subject Area

No	Subject Area	Document
1.	Environmental Science	461
2.	Energy	247
3.	Agricultural and Biological Sciences	224
4.	Social Sciences	222
5.	Engineering	206
6.	Business, Management and Accounting	163
7.	Computer Science	124
8.	Economics, Econometrics and Finance	75
9.	Decision Sciences	44
10.	Mathematics	37
11.	Biochemistry, Genetics and Molecular Biology	36
12.	Medicine	29
13.	Chemistry	24
14.	Chemical Engineering	24
15.	Earth and Planetary Sciences	19
16.	Multidisciplinary	18
17.	Materials Science	14
18.	Immunology and Microbiology	12
19.	Nursing	9
20.	Arts and Humanities	8
21.	Physics and Astronomy	6
22.	Veterinary	4
23.	Neuroscience	4
24.	Psychology	3
25.	Health Professions	3
26.	Pharmacology, Toxicology and Pharmaceutics	2

Source: Research Data (2024)

The category 'Energy' contains 247 articles and represents an interdisciplinary research approach, highlighting the interconnected and complex nature of the renewable energy sector. This category also emphasizes the necessity of tackling shared challenges across different sectors, managing the supply chain, sustaining sustainability, and executing digital transformation, which are all part of this. The division 'Agricultural Sciences and Biology' includes 224 articles and pertains to research endeavors for creating universal principles or frameworks that are not explicitly focused on

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agriculture. This includes the development of theories or methods that lay the foundation for more specialized research.

Social sciences are also prominent in the research, with 222 articles showing the increasing importance of social sustainability, which covers economic, social, and environmental aspects. The number of articles covering the health sector is limited, typically ranging from 2 to 4, showing the early stage of research in these domains or the requirement for more scientific focus, given the sector's crucial role in society and global sustainability endeavors. While environmental science has the highest number of articles, the variety of research across different sectors highlights the complex challenges within the health sector. The limited research in healthcare indicates potential areas for additional exploration, particularly given their influence on the worldwide economy and the welfare of people.

Bibliometric Review

Researchers have employed co-emergence analysis to explore conceptual developments in various disciplines. Grouping allows for categorizing objects with similar or dissimilar characteristics (Wang et al., 2015). Keywords with high similarity are usually grouped (Mubarakah et al., 2023). These keywords in articles can represent the main argument of a paper. Studying how often something happens and how often it happens together can give us an understanding of the most discussed topics in a particular area. Vosviewer analyzes the frequency and pinpoints articles' most frequently employed words (Pardo-Pardo & Cuervo-Bejarano, 2023). In Figure 5, a word cloud analysis illustrates the frequency and importance of specific terms, revealing the prevalence of terminology in qualitative research. This analysis highlights the importance of 'supply chains' and their variations, representing the most dominant terms at 3.14%, underscoring the significance of supply chains in the literature.

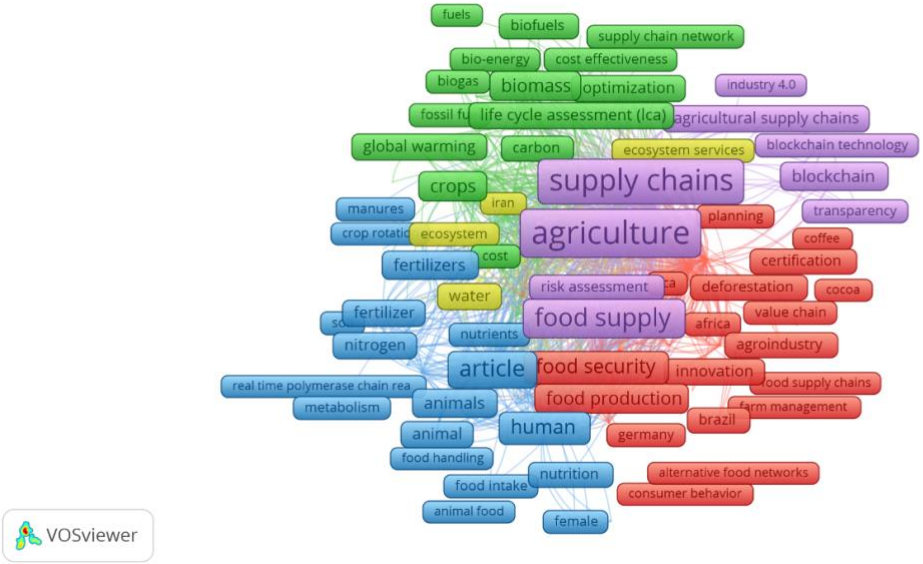

Figure 5. Most Appearing Keywords
Source: Research Data (2024)

The focus on 'supply chain' and 'agriculture' may reflect a growing interest in sustainable agricultural mechanisms, as evidenced by substantial scientific attention to supply chain integration

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and performance. Also, phrases such as 'risk evaluation,' 'human,' 'creativity,' and 'assessment of life cycle' are frequently used, indicating a strong interest in making decisions based on data, maintaining process integrity, achieving efficiency, and enhancing performance. These results align with the need for a data-focused approach to managing supply chains and promoting sustainability in agriculture. The increased use of terms like 'blockchain," 'industry 4.0', and 'artificial intelligence' shows a dedication to advanced technology and an emphasis on adaptability, possibly in reaction to current worldwide events and disruptions in supply chains. This aligns with ongoing studies advocating for the revolutionary potential of blockchain to enhance transparency and the necessity for flexibility in dealing with unpredictability (Song et al., 2022).

On the other hand, terms such as 'managing food,' 'metabolic process,' 'biogas,' and 'agricultural industry' are not as widely discussed, indicating either saturation of research in these areas or the necessity to increase scientific focus due to their global importance. The keywords analysis reveals a network of qualitative investigations closely linked to sustainable growth, food distribution, and supply chain administration; everything falls within the larger supply chain management framework. The findings emphasize focal points in present research and identify potential areas where future research can expand the discussion. This analysis highlights the significance of evaluating terms' frequency and contextual importance in the literature.

Networking Examination

In Figure 6, VOSviewer was used to visualize and highlight the connection between keywords and abstracts. The zoom and scroll functions of VOSviewer allow for focusing on specific areas of the map while displaying clusters and maps simultaneously, which is advantageous. Node size indicates keyword frequency and abstract prominence; larger nodes represent more frequently used keywords. The width of the line connecting two terms graphically represents the strength of the relationship between them. Supply chains in agriculture that are sustainable are connected to adoption, energy, and security, indicating the need for further research. Different colors categorize related keywords into six groups, delineating network relationships.

Figure 5. Network Visualization
Source: Research Data (2024)

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These grouped keywords encompass similar topics, with some categories having varying occurrences of topic keywords. VOSviewer's breakdown of each group is displayed in Table 5. Cluster analysis enables the grouping of keywords and abstracts into different themes, providing a summary of the primary focus of each cluster.

Table 5. Network Clustering from Visualization

Cluster	Keywords	Theme
Cluster 1	147 Items	Supply Chain Security
Cluster 2	87 Items	Supply Chain Energy Management
Cluster 3	63 Items	Water Supply Chain Management
Cluster 4	58 Items	Control Loss in the Supply Chain
Cluster 5	52 Items	Deforestation
Cluster 6	33 Items	Urban Supply Chain
Cluster 7	4 Items	Social Impact Supply Chain

Source: Research Data (2024)

Cluster 1: Security of the Supply Chain

Cluster 1 revolves around improving the security of the supply chain and highlights keywords such as "Security," "Blockchain," "Adoption," and "resilience." The emphasis on developing a resilient and adaptable agricultural supply chain, coupled with leveraging information and communication technology, underscores its significance. Today's rapidly evolving business landscape highlights the critical role of agricultural supply chains in attaining a sustainable competitive edge. The adaptability inherent in agricultural supply chains allows companies to promptly respond to shifting market demands, technological advances, and unforeseen events such as the COVID-19 pandemic. As reported by Rocchi et al. (2022), the efficient exchange of information and connectivity resources within agricultural supply chains significantly impacts their adaptability, flexibility, and alignment, especially in cases where there is a firm commitment from top management. The ability to modify and change within the agricultural products supply chain was essential for handling sudden shifts in food consumption patterns during the pandemic. As a result, flexible investments provide strength during challenging times and encourage continued creativity and value creation within agricultural supply chains.

Cluster 2: Supply Chain Energy Management

Cluster 2 is centered on the strategic management of energy within the supply chain and highlights concepts such as "Scenarios," "Impact on the Environment," and "Emissions." This group highlights the importance of employing originality and flexibility in the strategic execution of environmental conservation. Within Energy Scenario Management, Cluster 2 emphasizes the importance of environmental management models and strategic planning to ensure the sustainability of a dynamic and adaptable manufacturing industry. According to Tansuchat et al. (2022), Strategic planning should be prioritized to promote long-term innovation, especially during the COVID-19 pandemic. Medici et al. (2021) that the future success of small and medium-sized manufacturing businesses is significantly influenced by thoughtfully devised strategies and innovations in environmental sustainability, particularly in an unpredictable business environment. Additionally, Hashim et al. (2017) emphasized the significance of strategic management in making progress through open innovation, stressing the importance of understanding the viewpoints of entrepreneurs

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and residents for successful energy planning. Companies must integrate adaptable production, creativity, and strategic decision-making into their sustainable operational frameworks to maintain a competitive edge in today's fast-paced market.

Cluster 3: Water Supply Chain Management

The presence of keywords like "climate," "water usage," and "crop yield" serves as an indicator. The critical role of resilience capabilities in managing disruptions in agricultural supply chains was highlighted by Yagi (2021), who proposed that a certain degree of complexity in the supply chain could enhance the efficiency of post-disruption operational recovery. Additionally, Yoshida and Yagi (2021) Emphasize the importance of supply chain resilience in upholding operational efficiency during the COVID-19 pandemic; the focus is on proactive and reactive actions like teamwork and synchronization. Similarly, Faruquee and the team explored the enhancement of supply chain resilience in agriculture through digital innovation, trust, and collective resolution of issues. The use of digital technology as a substitute for trust was cautioned against. Furthermore, Weber et al. (2020) explored the impact of emphasizing entrepreneurship on strengthening resilience in the presence of natural resources, underscoring the importance of striking a harmony between immediate operational measures and future strategic perspectives. Establishing trust and cultivating resilience capacities are essential for getting ready to deal with and manage supply chain disturbances proficiently.

Cluster 4: Control Loss in the Supply Chain

Cluster 4 focuses on mitigating control loss in the supply chain in the logistics and customer service industries. This is indicated by keywords such as "Food Loss," "Food Waste," and "Covid." Chari and Ngcamu (2017) examined the challenges of aligning efforts to mitigate loss risk, underscoring the significance of having a solid risk-management strategy. Additionally, Kumari et al. (2023) studied the complexities of customer service in logistics. They advocated for applying middle-class theory to comprehend the practical elements and environmental factors affecting agricultural product loss's potential risk and unpredictability. Dibattista et al. (2023), explored the effects of consolidating shipping policies in the face of customer order uncertainty and the risk of product loss, developing a mathematical model for long-term supply chain management. Meanwhile, Hu et al. (2021) developed a theoretical framework for handling supply chain uncertainties in third-party logistics firms in China, explicitly emphasizing the One Belt One Road initiative. Effectively managing the hazards and unknowns linked to the changes brought about by the COVID-19 pandemic is essential for maximizing logistics efficiency and improving customer support.

Cluster 5: Deforestation

Cluster 5 primarily focuses on deforestation's impact on the supply chain, particularly the potential negative implications for adaptability and competitive edge. The study delves into the strategic decision-making processes, employing concepts such as "efficiency," "strengthening," and "validation." It investigates how companies leverage the efficiency of the supply chain to uphold a competitive advantage, particularly in ambiguous circumstances. The research also looks into the effects of investment on agricultural businesses, identifying "intensification" as a critical factor for success through Fintech. The influence of having a competitive edge on creating new products, encompassing quality, productivity, and creativity, is analyzed. The connection between certification

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and competitive advantage is also explored, revealing that the effectiveness of decision-making plays a partial role in shaping this link. The following statements emphasize the importance of adaptability, technological tools, and strategic choices in shaping a company's competitive strategy within the agricultural product distribution network.

Cluster 6: Urban Supply Chain

Cluster 6 highlights the critical role of metropolitan areas in managing supply chains, particularly in the consumer goods sector moving quickly. Key terms such as "Urban farming," "local manufacturing," and "sustainable urban areas" show a strong focus on improving agricultural supply chains within cities. This cluster highlights the need to include urban agricultural performance in supply chain processes, especially in the fast-paced world of fast-moving consumer goods (FMCG). Medici et al. (2021) studied the impact of urban agriculture on enhancing agricultural supply chain performance, highlighting the importance of sustainable agricultural production. Amongo et al. (2021) explored how local production affects the agricultural supply chain and logistics, recognizing its potential to improve security, adaptability, and transparency. Kourmpetli et al. (2022) explored sustainable urban areas by integrating environmental factors into the agricultural supply chain, emphasizing social and infrastructure factors as crucial considerations.

Cluster 7: Social Impact of the Supply Chain

The group of seven concentrates on how combining social impact can enhance overall supply chain performance, with a strong focus on the connection between organizational performance and social impact in agricultural supply chain networks. The significance of data quality and how it affects organizational systems is underscored by phrases such as "content analytics" and "themes," demonstrating a dedicated effort to delve into this topic. Jamaludin et al. (2020) highlighted the potential for information quality to improve delivery, flexibility, and cost efficiency, bridging the gap the connection between incorporating customer input and operational effectiveness. Cortner et al. (2019) deliberated on challenges associated with evaluating integrated services, and a structure was proposed that emphasizes the importance of measuring performance and utilizing information systems. Vicziany & Plahe (2017), Research indicates that implementing Enterprise Resource Planning (ERP) systems in small and medium-sized enterprises (SMEs) in India substantially enhances organizational performance. The research emphasizes how significant social impact is for enhancing the performance of organizations in agricultural supply chain networks.

Analysis of the Density of Networks

In Figure 6, a visual representation shows item density and helps us understand the importance of these terms. In this visualization, nodes symbolize objects resembling a network map. The hue of each node signifies the richness of its attributes, spanning from yellow to green across the color spectrum. A node with a yellowish tint signifies a greater abundance of features, indicating a diverse set of nearby objects. Conversely, a node will exhibit a greener shade if fewer objects with lighter feature sets surround it. Our study indicates that "security," "energy," "scenario," and "water" are closely connected keywords, suggesting extensive research on these subjects (Gomes et al., 2019; Raheem et al., 2022; Tricarico et al., 2019; Van Tassell et al., 2023). Notably, the green regions on the map have a higher concentration of keywords than the yellow regions. This implies that there are fewer essential study areas in the yellow regions, some of which have yet to be uncovered.

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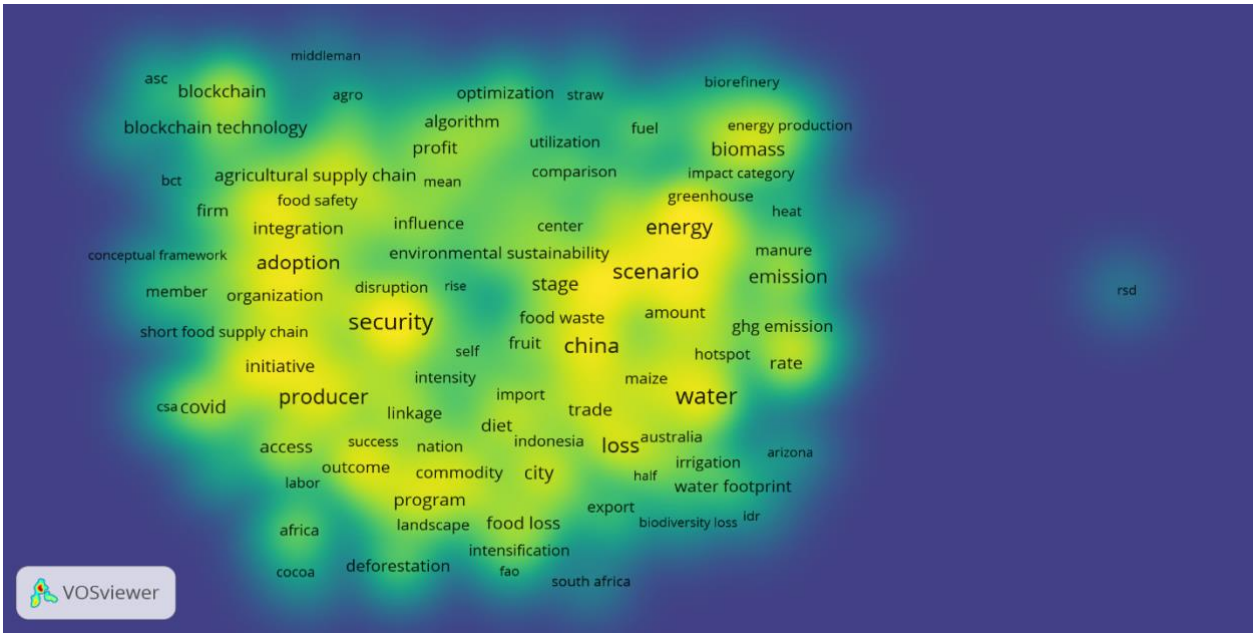

Figure 6. Density Visualization
Source: Research Data (2024)

The interconnections among the security, adoption, producer, blockchain technology, and agriculture sectors are depicted in Figure 7. The visual representation in the network diagram showcases interconnected ideas central to ongoing discussions about sustainable agricultural supply chains. It emphasizes the core elements of "security," "adoption," and "producer," highlighting their importance in the agricultural supply chain operations. The diagram also demonstrates the significant role of digital innovation, particularly blockchain technology, in enhancing agility and responsiveness to market fluctuations and disruptions in agricultural supply chains.

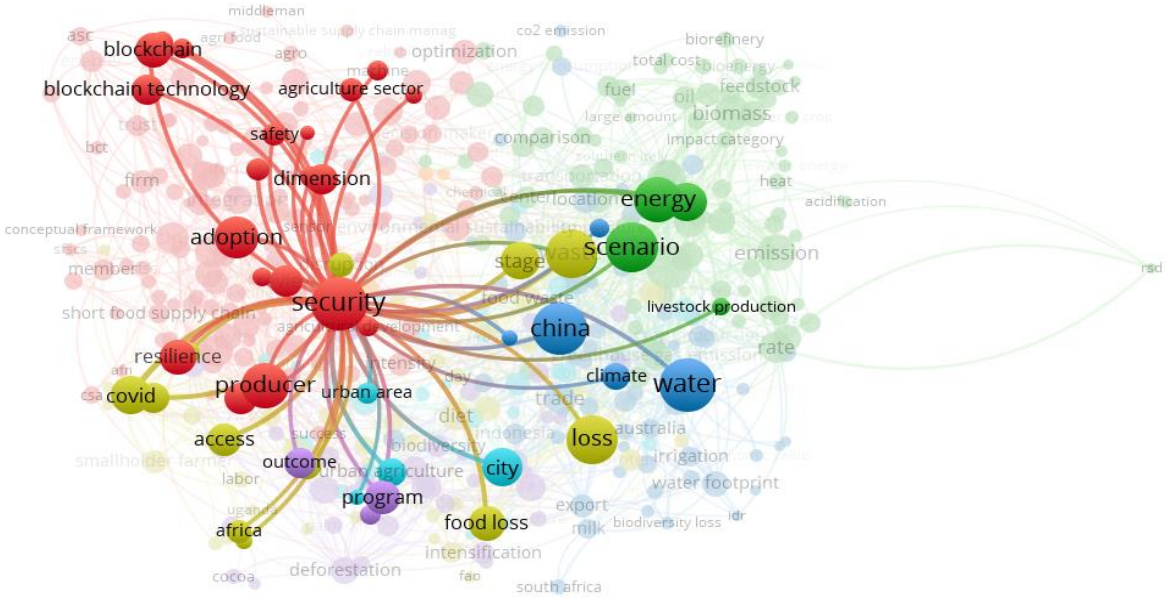

Figure 7. Security Relationship with Other Networks
Source: Research Data (2024)

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The correlation between "competitive advantage" and "integration" highlights the importance of agility and technology in improving internal efficiency, competitive position, and the smooth coordination of supply chain operations. "Integration" involves strategically aligning business procedures and information systems, which is essential for attaining a comprehensive and flexible reaction to external and internal factors within the sustainability framework. The relationships between "agricultural supply chains" and "environmental impacts," "effectiveness," and "risk management" suggest that sustainable agricultural supply chains rely on information flow, adaptability to change, and effective risk mitigation. The significance of considering environmental impact, adaptability, and risk assessment is underscored to uphold a resilient, flexible, and sustainable agricultural supply chain. The connections between sustainable supply chains, environmental impacts, and performance are illustrated in the network diagram. Sustainability is emphasized as a critical factor in flexibility, which impacts performance. This examination is consistent with current literature and emphasizes the essential need for companies to allocate resources to environmental capabilities to improve their agricultural supply chains' ability to act promptly and a decisive advantage in competition.

The authors conducted a bibliometric analysis to explore the evolving patterns and present comprehension of sustainable agricultural supply chains. Using the PRISMA method, Microsoft Excel, and VOSviewer, our study revealed significant findings and associations in these pivotal domains. The paper examines the evolution of sustainable agricultural supply chains, moving from focusing on food security and environmental impact in the logistics sector to companies' ability to adapt to changes and quickly maintain market sustainability. This shift signifies a transition from an operational-centered viewpoint to a strategic and environmentally-focused approach. The literature increasingly emphasizes the importance of agility in agricultural supply chains for competitive performance. Sustainable agricultural supply chains are improving their ability to adjust to market demands, meet customer requirements, and effectively handle disruptions.

Furthermore, sustainability in agriculture has become a driving force in supply chain management. Integrating social and environmental aspects has revolutionized traditional supply chain management practices, leading to a more efficient and intelligent supply chain. This adjustment has enhanced operations and strategically involved customers in the supply chain system, enhancing performance with a focus on sustainability. Real-time data analysis, predictive modeling, and automated decision-making greatly enhance sustainability-focused performance, improving environmental conservation. Our analysis also points out significant patterns and regional focus in the research. The increase in publication frequency from 2013 to 2023 suggests growing academic interest, with significant contributions from the United States, China, and Italy. The gaps in our study's findings demonstrate potential areas for further research, particularly in underrepresented regions. A distinct analysis of sustainable agricultural supply chains indicates that environmental science continues to be prevalent in research, reflecting economic, social, and environmental impacts. The cross-sectoral relevance of sustainable agricultural supply chain principles gains emphasis as interdisciplinary studies become more prominent, highlighting the universal importance of supply chain research.

The theory surrounding sustainable agricultural supply chains has firmly established a body of knowledge. This model highlights flexibility, the efficient use of resources, and gaining a competitive edge, laying a solid foundation for comprehending the interactions within sustainable

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agricultural supply chains. However, there is potential for further advancement in theory, especially when combining these viewpoints to clarify the complex connections between these ideas.

Theoretical framework exploration goes further, comprehensively comprehending similar and different principles within sustainable agricultural supply chains. Scholars such as Fan et al. (2021), Gong et al. (2022), and Raheem et al. (2022) have previously carried out research that examined the sustainability capacities, environmental influence, and the importance of internal resources in various cases. Nonetheless, our investigation reveals critical deficiencies in the current body of work, especially the intricate interplay of upstream and downstream capacities in environmentally friendly agricultural supply chains. The discoveries highlight the significance of scholarly investigation, and the potential for further research is on the horizon.

The papers chosen for our research exhibit a strong inclination toward quantitative research methods. This suggests that data-driven, empirical approaches substantially influence sustainable agricultural supply chains, allowing for statistical analysis and generalizable findings. Nonetheless, qualitative methods offer valuable perspectives and contextual comprehension, and evidence extensively supports their efficacy. The area of sustainable agricultural supply chains is founded on a robust theoretical basis, highlighting flexibility, efficient use of resources, and a competitive edge. Even though this structure provides a broad comprehension of the interactions within sustainable agricultural supply chains, there is still room for additional theoretical progress, especially in incorporating diverse viewpoints to elucidate the intricate relationships between these concepts fully.

Our research also looked at the approaches utilized in the chosen articles, uncovering an apparent inclination toward quantitative research methods within sustainable agricultural supply chains. Although this methodology allows for statistical analysis and findings that can be applied more broadly, qualitative approaches are also well-presented, providing deep insights and a nuanced understanding of the context. The absence of research combining quantitative and qualitative methods is worth noting, suggesting an area that could be explored further. Furthermore, an analysis of publications and networks indicates interconnected topics and high scholarly interest in sustainable agricultural supply chains, including food safety, adoption, environmental impact, and competitiveness. Seven clusters have been identified, indicating these domains' continued evolution and maturation. While these fields have comprehensive theories, they require more in-depth theoretical involvement. Despite being extensively researched, key subjects and topics such as food security, life cycle assessment, performance, blockchain, and energy have been recognized as requiring additional investigation through co-emergence analysis and keyword frequency analysis.

CONCLUSION AND SUGGESTION

A bibliometric analysis examined the most frequently referenced publications on sustainable agriculture supply chains. This area has garnered considerable academic interest, leading to a noticeable increase in publications. The findings from this research provide essential direction for researchers by recognizing key authors, crucial keywords, and appropriate publication platforms for studying sustainable agriculture supply chains. This in-depth review of the sustainable agriculture literature has thoroughly understood the primary authors, publications, and countries influencing this area. Consequently, these discoveries can benefit aspiring researchers studying sustainable agriculture's agricultural supply chains. This will help them comprehend the research environment and add to the collective knowledge in this field. Based on these findings, future research on

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sustainable agriculture supply chains should focus on four areas: food security, blockchain technology, life cycle assessment, and energy management, each offering diverse opportunities for further exploration.

Additionally, the geographic distribution analysis provides valuable insights into the dynamics of sustainable agricultural supply chains. This information is crucial for firms looking to broaden or customize their strategies for particular areas. The emphasis on research in the agricultural sector centers on addressing the particular supply chain obstacles businesses encounter. Nevertheless, it is essential to emphasize that there remains much to discover in the agriculture and distribution sector, offering potential prospects for companies to create new ideas and achieve a competitive advantage. In addition, digital technology has dramatically modernized sustainable agricultural supply chains. Recognizing and dealing with the inherent limitations of our research methodology is essential. The field of research on sustainable agriculture supply chains is constantly changing, and there may have been new publications since we chose our articles. We recognize that there may be significant additions to the recent literature that we should have included in our study. Nevertheless, the significance of the findings examined in this document remains unchanged, as our conclusions were primarily based on established scientific databases. Furthermore, focusing only on English-language articles might restrict the scope of our findings. Valuable perspectives and insights can be discovered in languages other than our own. Hence, upcoming studies should contemplate a broader method for choosing databases and incorporating additional languages to guarantee a comprehensive comprehension of the topic.

REFERENCES

Abdoellah, O. S., Schneider, M., Nugraha, L. M., Suparman, Y., Voletta, C. T., Withaningsih, S., Heptiyanggit, A., & Hakim, L. 2020. Homegarden commercialization: extent, household characteristics, and effect on food security and food sovereignty in Rural Indonesia. Sustainability Science, 15(3): 797–815. https://doi.org/10.1007/s11625-020-00788-9

Amongo, R., Larona, M., Onal, M., Resurreccion, A., Lalap, G., & Limbo, M. 2021. Land consolidation (contiguous farming) for sustainable crop production for the agro-industry. IOP Conference Series: Earth and Environmental Science, 733(1). https://doi.org/10.1088/1755-1315/733/1/012023

Armas, K. L., Jacoba, F. P., & Hipolito, M. C. 2023. Blockchain Technology for Traceability and Transparency in the Onion Industry of the Philippines. International Journal of Engineering Trends and Technology, 71(9), 162–169. https://doi.org/10.14445/22315381/IJETT-V71I9P215

Ayan, B., Güner, E., & Son-Turan, S. 2022. Blockchain Technology and Sustainability in Supply Chains and a Closer Look at Different Industries: A Mixed Method Approach. Logistics, 6(4). https://doi.org/10.3390/logistics6040085

Casey, L., Freeman, B., Francis, K., Brychkova, G., McKeown, P., Spillane, C., Bezrukov, A., Zaworotko, M., & Styles, D. 2022. Comparative environmental footprints of lettuce supplied by hydroponic controlled-environment agriculture and field-based supply chains. Journal of Cleaner Production, 369. https://doi.org/10.1016/j.jclepro.2022.133214

Chari, F., & Ngcamu, B. S. 2017. An assessment of the impact of disaster risks on dairy supply chain performance in Zimbabwe. Cogent Engineering, 4(1). https://doi.org/10.1080/23311916.2017.1409389

Cortner, O., Garrett, R. D., Valentim, J. F., Ferreira, J., Niles, M. T., Reis, J., & Gil, J. 2019. Perceptions of integrated crop-livestock systems for sustainable intensification in the

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (1): 250-272, March 2025

Brazilian Amazon. Land Use Policy, 82: 841–853. https://doi.org/10.1016/j.landusepol.2019.01.006

Demattê Filho, L. C., de Carvalho, Í. C. S., Mendes, C. M. I., Nacimento, R. A., & Vieira, L. M. 2023. Assessing smallholder farmers' perception of value creation and appropriation in sustainable production. International Journal of Environment and Sustainable Development, 22(2): 226–253. https://doi.org/10.1504/IJESD.2023.129937

Dibattista, I., Camara, A. R., Molderez, I., Benassai, E. M., & Palozza, F. 2023. Socio-environmental impact of mining activities in Guinea: The case of bauxite extraction in the region of Boké. Journal of Cleaner Production, 387. https://doi.org/10.1016/j.jclepro.2022.135720

Fan, X., Nan, Z., Ma, Y., Zhang, Y., & Han, F. 2021. Research on the spatio-temporal impacts of environmental factors on the fresh agricultural product supply chain and the spatial differentiation issue—an empirical research on 31 chinese provinces. International Journal of Environmental Research and Public Health, 18(22). https://doi.org/10.3390/ijerph182212141

Fesharaki, M. H., & Safarzadeh, H. 2022. Modeling the Sustainable Supply Chain Network Design for Food-Agricultural Industries considering Social and Environmental Impacts. Computational Intelligence and Neuroscience, 2022. https://doi.org/10.1155/2022/6726662

Gomes, J. F. B., Gomes, R. S. B., & Souza, A. O. 2019. The multifunctionality of urban horticulture and its integration with the city ecosystem: A brief review of concepts and the case of São Luís. Horticultura Brasileira, 37(3): 252–259. https://doi.org/10.1590/s0102-053620190301

Gong, H., Guo, Y., Wu, J., Wu, H., Nkebiwe, P. M., Pu, Z., Feng, G., & Jiao, X. 2022. Synergies in sustainable phosphorus use and greenhouse gas emissions mitigation in China: Perspectives from the entire supply chain from fertilizer production to agricultural use. Science of the Total Environment, 838. https://doi.org/10.1016/j.scitotenv.2022.155997

Gupta, S., Rikhtehgar Berenji, H., Shukla, M., & Murthy, N. N. 2023. Opportunities in farming research from an operations management perspective. Production and Operations Management, 32(6): 1577–1596. https://doi.org/10.1111/poms.13967

Hashim, M., Nazam, M., Yao, L., Baig, S. A., Abrar, M., & Zia-ur-Rehman, M. 2017. Application of multi-objective optimization based on genetic algorithm for sustainable strategic supplier selection under fuzzy environment. Journal of Industrial Engineering and Management, 10(2Special Issue): 188–212. https://doi.org/10.3926/jiem.2078

Hatab, A. A., Cavinato, M. E. R., & Lagerkvist, C. J. 2019. Urbanization, livestock systems and food security in developing countries: A systematic review of the literature. Food Security, 11(2): 279–299. https://doi.org/10.1007/s12571-019-00906-1

Hu, Y., Sun, J., & Zheng, J. 2021. Comparative analysis of carbon footprint between conventional smallholder operation and innovative largescale farming of urban agriculture in Beijing, China. PeerJ, 9. https://doi.org/10.7717/peerj.11632

Jamaludin, M., Fauzi, T. H., Nugraha, D. N. S., & Adnani, L. 2020. Service supply chain management in the performance of national logistics agency in national food security. International Journal of Supply Chain Management, 9(3): 1080–1084. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85087785509&partnerID=40&md5=8aac0128580572d90aa561b5904228c2

Kourmpetli, S., Falagán, N., Hardman, C., Liu, L., Mead, B., Walsh, L., & Davies, J. 2022. Scaling-up urban agriculture for a healthy, sustainable and resilient food system: the postharvest benefits, challenges and key research gaps. International Journal of Postharvest Technology and Innovation, 8(2–3): 145–157. https://doi.org/10.1504/IJPTI.2022.121791

Kumari, S., Venkatesh, V. G., & Shi, Y. 2023. A study of sustainable agriculture value chain: a multi-method research perspective. International Journal of Value Chain Management, 14(3): 247–286. https://doi.org/10.1504/IJVCM.2023.133076

Martinho, V. J. P. D., Cunha, C. A. D. S., Pato, M. L., Costa, P. J. L., Sánchez-Carreira, M. C.,

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (1): 250-272, March 2025

Georgantzís, N., Rodrigues, R. N., & Coronado, F. 2022. Machine Learning and Food Security: Insights for Agricultural Spatial Planning in the Context of Agriculture 4.0. Applied Sciences (Switzerland), 12(22). https://doi.org/10.3390/app122211828

Medici, M., Canavari, M., & Castellini, A. 2021. Exploring the economic, social, and environmental dimensions of community-supported agriculture in Italy. Journal of Cleaner Production, 316. https://doi.org/10.1016/j.jclepro.2021.128233

Mubarakah, S. L., Miftah, H., Yoesdarti, A., Masithoh, S., Hastuti, A., & Anwar, S. 2023. BIBLIOMETRICS ON THE DIGITALIZATION OF THE AGRIBUSINESS SUPPLY CHAIN. Journal of Engineering Science and Technology, 18: 30–38. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85174971925&partnerID=40&md5=abcd2e2a467fc207c3e040bc981e15a9

Nanaki, E. A., & Koroneos, C. J. 2018. Sustainable peach compote production: A life cycle thinking approach. Sustainability (Switzerland), 10(11). https://doi.org/10.3390/su10114229

Pardo-Pardo, A. M., & Cuervo-Bejarano, W. J. 2023. Assessing the impact of emerging technologies on sustainable fruit production: A systematic review of the literature. Agronomia Colombiana, 41(3). https://doi.org/10.15446/agron.colomb.v41n3.107255

Parthiban, K. T., Fernandaz, C. C., Sudhagar, R. J., Sekar, I., Kanna, S. U., Rajendran, P., Devanand, P. S., Vennila, S., & Kumar, N. K. 2021. Industrial agroforestry—a sustainable value chain innovation through a consortium approach. Sustainability (Switzerland), 13(13). https://doi.org/10.3390/su13137126

Paunglad, B. 2022. Research Evaluation: Project To Promote Organic Food And The Nutrition In Ubon Ratchathani. Humanities, Arts and Social Sciences Studies, 22(2): 255–264. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85134166236&partnerID=40&md5=2363a2776fbcb0a2409f129a9d55f614

Raheem, D., Soltermann, A. T., Tamiozzo, L. V., Cogo, A., Favén, L., Punam, N. J., Sarmiento, C. R., Rainosalo, E., Picco, F., Morla, F., Nilson, A., & Stammler-Gossmann, A. 2022. Partnership for International Development: Finland– Argentina Conference on Circular Economy and Bioeconomy with Emphasis on Food Sovereignty and Sustainability. International Journal of Environmental Research and Public Health, 19(3). https://doi.org/10.3390/ijerph19031773

Rocchi, L., Farneselli, M., Paolotti, L., Falcinelli, B., Guiducci, M., & Boggia, A. 2022. Life Cycle Inventory for Safflower Production in Southern Europe. Environmental and Climate Technologies, 26(1): 862–870. https://doi.org/10.2478/rtuect-2022-0065

Sarker, B. R., Wu, B., & Paudel, K. P. 2019. Modeling and optimization of a supply chain of renewable biomass and biogas: Processing plant location. Applied Energy, 239: 343–355. https://doi.org/10.1016/j.apenergy.2019.01.216

Šestak, M., & Copot, D. 2023. Towards Trusted Data Sharing and Exchange in Agro-Food Supply Chains: Design Principles for Agricultural Data Spaces. Sustainability (Switzerland), 15(18). https://doi.org/10.3390/su151813746

Song, L., Luo, Y., Chang, Z., Jin, C., & Nicolas, M. 2022. Blockchain Adoption in Agricultural Supply Chain for Better Sustainability: A Game Theory Perspective. Sustainability (Switzerland), 14(3). https://doi.org/10.3390/su14031470

Sumardjo, S., Firmansyah, A., & Dharmawan, L. 2023. Social Transformation in Peri-Urban Communities toward Food Sustainability and Achievement of SDGs in the Era of Disruption. Sustainability (Switzerland), 15(13). https://doi.org/10.3390/su151310678

Tansuchat, R., Suriyankietkaew, S., Petison, P., Punjaisri, K., & Nimsai, S. 2022. Impacts of COVID-19 on Sustainable Agriculture Value Chain Development in Thailand and ASEAN. Sustainability (Switzerland), 14(20). https://doi.org/10.3390/su142012985

Tricarico, J. M., Slimko, M. L., Graves, W. B., Eve, M. D., & Thurston, J. A. 2019. Elevating dairy research and extension through partnership: Outcomes from the United States Department

ISSN 2580-0566; E-ISSN 2621-9778
http://ejournal2.undip.ac.id/index.php/agrisocionomics
Vol 9 (1): 250-272, March 2025

of Agriculture and National Dairy Council collaborative meeting to develop a coordination roadmap. Journal of Dairy Science, 102(10): 9518–9524. https://doi.org/10.3168/jds.2019-16579

Van Tassell, C. P., Rosen, B. D., Woodward-Greene, M. J., Silverstein, J. T., Huson, H. J., Sölkner, J., Boettcher, P., Rothschild, M. F., Mészáros, G., Nakimbugwe, H. N., Gondwe, T. N., Muchadeyi, F. C., Nandolo, W., Mulindwa, H. A., Banda, L. J., Kaumbata, W., Getachew, T., Haile, A., Soudre, A., … Sonstegard, T. S. 2023. The African Goat Improvement Network: a scientific group empowering smallholder farmers. Frontiers in Genetics, 14(August): 1–19. https://doi.org/10.3389/fgene.2023.1183240

Vicziany, M., & Plahe, J. 2017. Extending traditional food knowledge into new marketing institutions for small farmers in India. South Asia: Journal of South Asia Studies, 40(3): 645–668. https://doi.org/10.1080/00856401.2017.1342183

Wang, S., Liu, D., Wang, K., & Meng, P. 2015. Fuzzy comprehensive evaluation on water consumption characteristics and yield of summer corn under different furrow irrigation patterns. Nongye Gongcheng Xuebao/Transactions of the Chinese Society of Agricultural Engineering, 31(24): 89–94. https://doi.org/10.11975/j.issn.1002-6819.2015.24.014

Weber, H., Wiek, A., & Lang, D. J. 2020. Sustainability entrepreneurship to address large distances in international food supply. Business Strategy and Development, 3(3): 318–331. https://doi.org/10.1002/bsd2.97

Xia, Y., Long, H., Li, Z., & Wang, J. 2022. Farmers' Credit Risk Assessment Based on Sustainable Supply Chain Finance for Green Agriculture. Sustainability (Switzerland), 14(19). https://doi.org/10.3390/su141912836

Yekkehbash Heidari, S., Taleizadeh, A. A., & Thaichon, P. 2023. Sustainable plant-based dietary supply chain design to reduce malnutrition in deprived areas. Computers and Industrial Engineering, 181. https://doi.org/10.1016/j.cie.2023.109234

Yoshida, S., & Yagi, H. 2021. Long-term development of urban agriculture: Resilience and sustainability of farmers facing the covid-19 pandemic in japan. Sustainability (Switzerland), 13(8). https://doi.org/10.3390/su13084316