Supply Chain Control Towers: A Systematic Literature Review

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Abstract
With the development of supply chain digitalization and new technologies, supply chain control towers (SSCT) are gaining increasing attention as innovative tools to enhance supply chain management efficiency. Although researchers from various industries have studied this topic, scholars have not yet employed systematic literature review methods to explore and identify the research trends. This paper utilizes systematic literature review methods to analyze SCCT articles, selecting relevant publications from the Scopus and Web of Science (WoS) databases. The articles are evaluated and selected for systematic assessment through a series of inclusion and exclusion criteria. The findings show that SCCT has been increasingly in focus in recent years, with researchers from many regions conducting studies. The research analyzes annual publication trends, geographic distribution, research methods, and keywords. This paper represents the first exploratory attempt to analyze SCCT using systematic literature review (SLR) methods. It benefits industry practitioners and the academic community by providing a deeper understanding of SCCT and promoting its application in digital supply chains. Although this research is still in its early stages and the limited number of articles has resulted in a relatively small sample size, the future potential is significant, requiring further attention from various industries.
Keywords: Control Tower, Supply Chain Control Tower, Digital Supply Chain, Supply Chain Digital Transformation

Introduction
The term "Control Tower" originally stems from the aviation sector, signifying a high tower at airports used to monitor and guide the takeoff and landing of aircraft. Subsequently, this term was adopted by the field of supply chain management (SCM), evolving into "Supply Chain Control Tower." Initially designed as a logistics control tower, SCCT focused on transport orchestration and enhancing visibility. In 2003, Scania company commissioned a third-party

logistics company to develop and operate an SCCT. This initiative achieved 99% shipping forecast accuracy and resulted in a 10% cost reduction, showcasing the SCCT's potential to enhance supply chain predictability and efficiency (Cooke, 2014). In 2009, Unilever introduced SCCT through its internal department, UltraLogistik, which not only saved costs but also reduced the carbon footprint, highlighting the additional environmental sustainability benefits of SCCT (Sheffi, 2015). Walmart uses SCCT to monitor external environmental changes in real-time, proactively adjusting delivery routes and inventory levels to improve flexibility in responding to external changes (Trzuskawska-Grzesińska, 2017). Additionally, the internally developed SCCT system can detect weak signals within the supply chain to mitigate risks and take preventive actions before issues escalate (Gölgeci & Kuivalainen, 2020).

The complexity of supply chain planning remains challenging, resulting in slow and inflexible supply chain execution and increasing operational risks (Galasso et al., 2009; Oliva & Watson, 2011). By combining real-time information gathering with advanced analytics, SCCT simulates and executes alternative plans to optimize supply chain flexibility and responsiveness (Trzuskawska-Grzesińska, 2017).

With technological advancements and the gradual enhancement of supply chain digitalization, particularly through the development of big data, the Internet of Things, and cloud computing, the functionalities and applications of SCCT have been significantly expanded and deepened. Scholars have progressively enriched and perfected the definition of SCCT, showing that SCCT represents a concept enhanced by cloud computing, big data, and mobility. They transform supply chain management by providing real-time visibility and responsiveness to new challenges (Bentz, 2014). Studies indicate that SCCT are decision support systems integrating data from various levels, monitoring and controlling processes in real-time, and achieving optimal operations (Alias et al., 2014b).

Despite the increasing attention on SCCT in recent years, research on SCCT is still in a developmental phase. From an industry research perspective, some studies analyze from the viewpoint of a single industry, such as pharmaceuticals (Sharabati et al., 2022), shipping (Syahchari et al., 2022), and logistics service providers (Topan et al., 2020). While SCCT has been applied in some large corporations and demonstrated potential, research on its sustained implementation effects and the breadth of application across different sizes of enterprises is still immature. Case study methods have been used to examine a data case from a global IT company, which lacks strong representativeness based on the methodology and case selection (Gerrits et al., 2022).

From the perspective of the research subject, some studies are biased toward service control towers, with reviews limited to operational spare parts planning and lacking an overarching review of the entire SCCT (Topan et al., 2020). While some research presents an overall view of the SCCT, the scope focuses on discussing the exchange and analysis of logistics data, which needs a more in-depth analysis of intelligent decision-making (Schiffer & Doerr, 2020).

From a functional and technological perspective, the demand for real-time data and intelligent decision support grows as global supply chain complexity and competitiveness increases. SCCT needs to integrate various technologies, such as big data and cloud computing, but also faces challenges with SCCT technology integration and technological

adaptability. Studies discuss the market drivers and technology impetuses for SCDT, but more research is needed on technology integration and reverse logistics (Patsavellas et al., 2021). Additionally, there has not yet been a systematic literature review of relevant studies, which limits the understanding and application of SCCT as an important tool linking data and decision-making. Therefore, a systematic literature review of SCCT is necessary and timely to understand the latest development trends fully.

This paper provides an overview of current articles on SCCT through a systematic literature review, helping to understand the current state of application and development trends of SCCT in different countries and industries and exploring the impact of geographical distribution on research focus. It identifies the research methods used and captures the core themes and trends of the research through statistical and keyword analysis in the literature. The study aids practitioners and scholars in enhancing their understanding of the field, helping the SCCT to foster supply chain collaboration, enhance supply chain visibility, and improve operational efficiency while promoting the wider application of SCCT in various industries. To further achieve this goal, the following research questions are proposed to guide future research:
1. What are the annual publication trends of SCCT?
2. What is the geographical distribution of SCCT, and how does this impact the focus of the research?
3. What are scholars' recent research methodologies in SCCT articles?
4. What are the Key and frequent keywords in SCCT articles?

The subsequent structure of this study is as follows: Section 2 discusses the adopted research methodology and strategies of this paper; Section 3 shows the results; Section 4 discusses the implications of these findings and discussions; and Section 5 shows the conclusions. The final section suggests directions for future research.

Methodology
Search Strategy
This study employs the Systematic Literature Review (SLR) method to ensure a more systematic and scientific approach to analysis. The choice of the SLR method facilitates the scientific identification, extraction, analysis, and filtration of literature to thoroughly understand the planning field (Van Dinter et al., 2021). After determining the methodology, it is crucial to develop a clear research strategy, set specific research objectives, and provide detailed explanations of the inclusion and exclusion criteria. Some operational standards require step-by-step clarification. Once the relevant information has been established, data search and collection are conducted in predefined databases, selecting articles and assessing their relevance to ensure they strictly meet the established criteria. The final articles are then thoroughly analyzed based on the research objectives, which may involve multiple analysts or discussions to finalize (Rasool et al., 2022; Rushiana et al., 2023).

Sample Identification
This research follows the standard protocol of the Systematic Literature Review (SLR) to ensure a more scientific and accurate evaluation (Khan et al., 2003). Given the considerations of data scale, quality, discipline, and research focus, the authors, like most researchers, have chosen Scopus and WoS as the databases for selection. Scopus and WoS are the two most

widely used bibliographic databases in academic research, providing essential data and literature for research evaluations and daily academic activities, with each database tending to certain fields and languages. Studies have shown that the user-friendliness of the database interface, performance, and impact metrics can influence user preferences (Pranckutė, 2021). Research also indicates that using Scopus or WoS alone may introduce biases in research evaluations due to reliability and consistency issues; however, using both databases together can provide a more reliable and comprehensive bibliometric analysis (Mongeon & Paul-Hus, 2015). Choosing Scopus and WoS for searches facilitates efficient and effective retrieval of literature related to "Supply Chain Control Tower," meeting the requirements for efficient retrieval and accurate data collection to support a high-standard review process.

When determining the selection criteria, the researchers developed and employed a literature search strategy based on a keyword-driven approach (Bhattarai et al., 2022; Rethlefsen et al., 2021). Under the guidance of this strategy, researchers defined search strings related to "Supply Chain Control Tower" and combined them using the Boolean operator "OR." This study emphasizes the importance of standardized search strategies, Boolean operators, and database indexing fields in article retrieval strategies (Nylander et al., 2021). It referenced the most common reasons for papers identified through SLR to be excluded from the review (Edinger & Cohen, 2013), and additional research showed that by comparing results retrieved from controlled vocabulary and free-text search terms, a novel optimization technique was developed to identify potential relevant candidate search terms (Bramer et al., 2018). The research chose search terms to ensure comprehensive coverage of the phrases "supply chain," "supply chain digitization," and "digital supply chain." Also, it used the asterisk "*" to accommodate variations in terminology. The research proposed design principles to support the development of search strategies in SLR, enhancing interpretability and transparency, repeatability, and replicability (MacFarlane et al., 2022). Researchers used the "Title-Abstract-Keyword" approach during the text filtering process when using Scopus. When using WoS, the "Topic" method was employed to maintain the scope and quality of the search. The final search strings are shown in Table 1, including all data retrieved up to April 28, 2024.

Table 1
Keywords and Searching Query String

	Supply chain	**Supply chain digitization**	**Digital supply chain**
Key words	Control tower*	Control tower*	Control tower*
	Supply chain control tower*	Supply chain control tower*	Supply chain control tower*
	Supply chain service tower*	Supply chain service tower*	Supply chain service tower*
	Supply chain logistics tower*	Supply chain logistics tower*	Supply chain logistics tower*
Search query string	"Control tower*" OR "Supply chain control tower*" OR "Supply chain service tower*" OR "Supply chain logistics tower*"		

Selection and Evaluation Process
Following the initial search using the specified keywords, the Scopus and WoS Science databases yielded 90 and 42 publications, respectively. Employing the filtering method, the counts were refined to 89 and 40 publications. Limiting the search to the "English" language and focusing on "articles or papers," the numbers were further reduced to 80 and 39 publications, respectively. Further categorization by research fields (refer to Fig. 1) led to 65 and 29 publications. After merging these records and removing duplicates, we retained 75 articles. A title screening process excluded 25 articles, and abstract screening refined the selection to 45 publications. After a detailed review of their abstracts and content, forty articles were deemed highly relevant, focusing on their strong connection to SCCT concepts. The study suggests that at least two reviewers should conduct literature searches independently, which helps to achieve a comprehensive literature search strategy with optimal transparency and reproducibility (Rao & Moon, 2021). To ensure the robustness of our selection, two researchers employed the same filtering methods and, through discussion, reached a consensus on five articles that presented differing perspectives. Ultimately, 31 articles specifically focusing on SCCT were identified. Figure 1 depicts the research process, including database searches, filtering criteria, merging, duplicate removal, manual screening, and final selection.
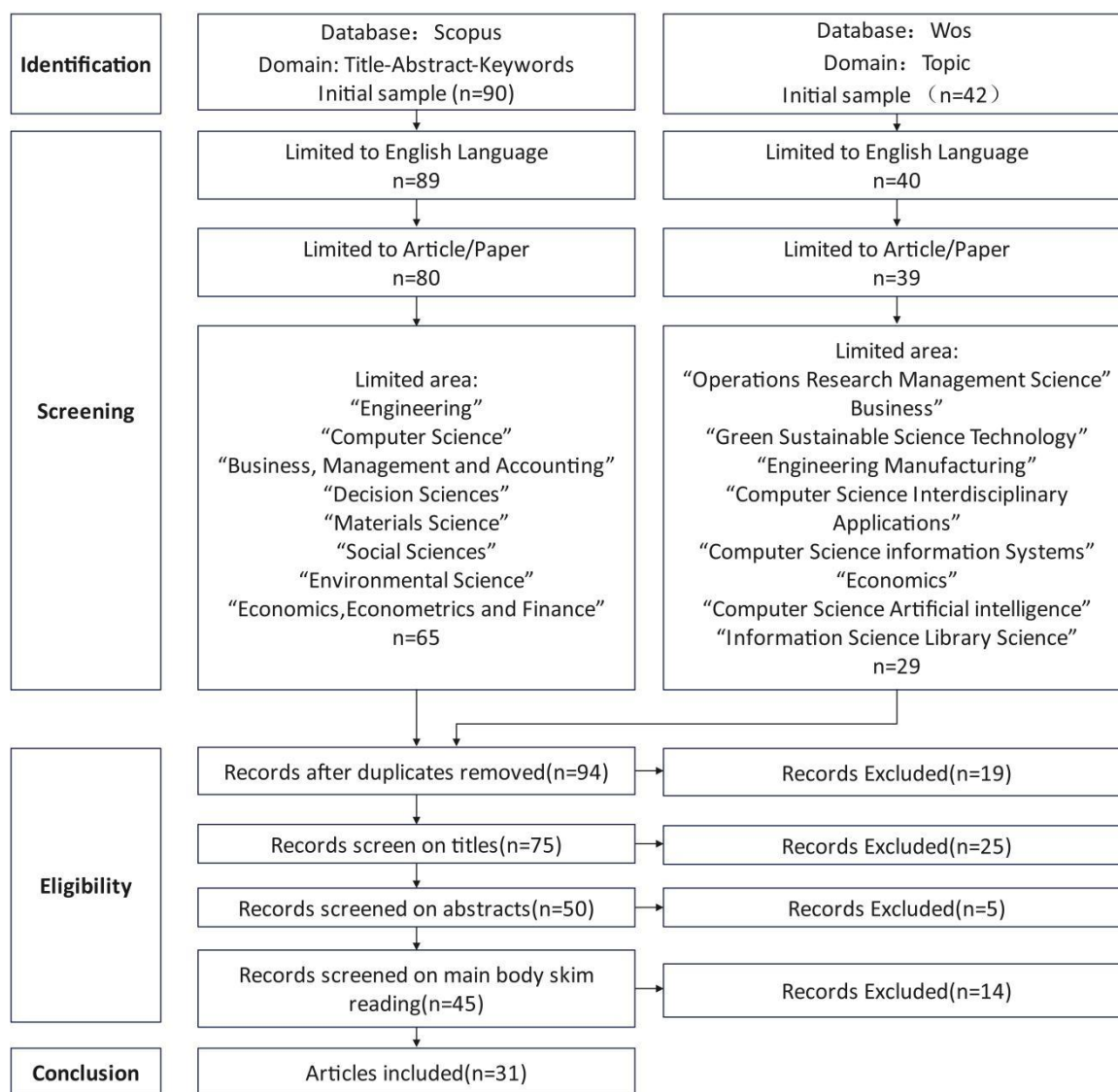
Figure 1. The Process of Searching the Literature

Quality Assessment

To ensure the quality of the screening results, The researchers focused on the number of citations in the papers, as citations can often indicate a paper's quality (Thelwall et al., 2022). The study shows that quality and eligibility assessment tasks are also completed independently by two researchers at the same time, and differences of opinion between reviewers will be resolved through discussion (Xiao & Watson, 2019). Both researchers employed identical screening procedures and methods, compared the outcomes, and identified five articles with different perspectives. The final selection was made by consensus after thorough discussions. Although data from WOS and Scopus are included, not all relevant literature may be covered. However, considering the authority of literature research, this paper still relies on these two databases, renowned for their high quality and authoritative content.

Results

Publication Trend

As seen in Figure 2, the exploration of technological factors critical for digital transformation

in supply chains began in 2008. Interest in this area has surged since 2015, marked by a growing amount of research. This reflects the evolving needs of supply chain development alongside technological progress, prompting the widespread application of new technologies across various business segments. The review includes the initial studies from 2017 that primarily focused on big data technologies. The research volume has notably increased, from four papers in 2019 to 26 in 2023. By April 2024, 14 more papers had been published, projecting the annual total to surpass 40. This trend underscores a significant increase in scholarly engagement with this research domain.
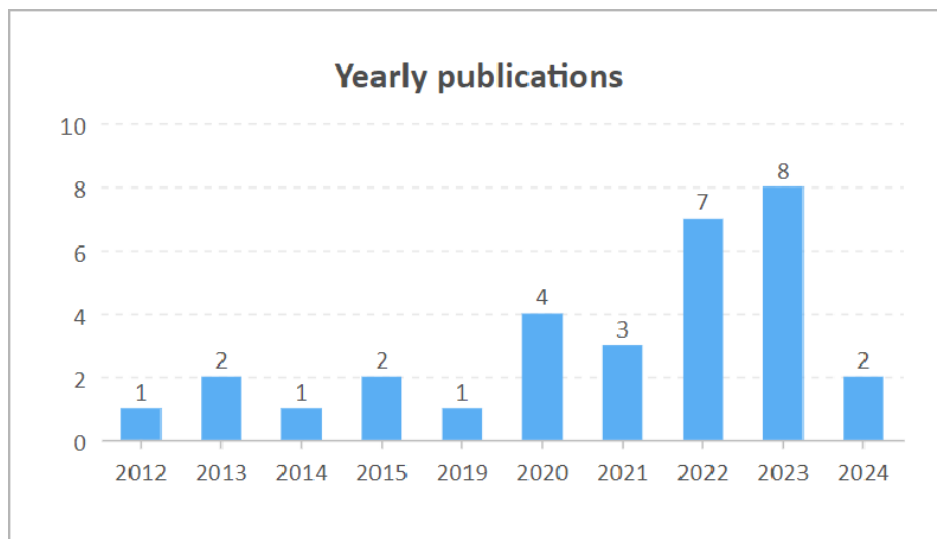

Figure 2. Yearly Publications

Geographical Distribution
As seen in Table 2, it displays the geographical distribution of all selected articles. From this distribution, it is clear that scholars from nearly every continent are involved in researching this topic, indicating a global interest in this subject. Looking at the distribution by country, Germany and the United States have the highest number of articles, each with four, suggesting that these countries play a significant role in researching this theme. They are followed by France, the Netherlands, and China, each with three articles, and then India and Brazil, each with two articles, reflecting extensive international collaboration. Also, four articles did not specify any particular country, suggesting that these scholars are discussing the universal applicability of SCCT. Another article specifically highlights SCCTs' global adaptability and scalability. A summary data analysis also shows that on an individual country basis, Asian countries publish fewer articles than the United States; on a total basis, Asian countries account for 23% of the total data, significantly lower than the 46% contributed by European countries, indicating that there is still considerable room for growth in research in this direction in Asia compared to Europe and the Americas.

Table 2

Geographical Distribution

geographic	Country	Articles	% of Articles	Sum % of Articles
Africa	Morocco	1	2.56%	2.56%
Asia	China	3	7.69%	
Asia	India	2	5.13%	
Asia	Saudi Arabia	1	2.56%	23.07%
Asia	Singapore	1	2.56%	
Asia	Indonesia	1	2.56%	
Asia	Jordan	1	2.56%	
Europe	Germany	4	10.26%	
Europe	France	3	7.69%	
Europe	Netherlands	3	7.69%	
Europe	Norway	1	2.56%	
Europe	Poland	2	5.13%	46.15%
Europe	Sweden	2	5.13%	
Europe	Belgium	1	2.56%	
Europe	Italy	1	2.56%	
Europe	U.K.	1	2.56%	
North America	USA	4	10.26%	10.26%
South America	Brazil	2	5.13%	5.13%
/	No specific country mentioned	4	10.26%	10.26%
/	International	1	2.56%	2.56%

Research Methods

As shown in Figure 3, Scholars have employed various research methods to study SCCTs, including quantitative, qualitative, and mixed methods. Specifically, qualitative feedback was collected through interviews, while quantitative data was gathered via surveys. From 2019 to 2022, mixed research methods became increasingly popular. However, from 2022 to 2023, quantitative research methods became predominant, with more studies focusing on their benefits. In recent years, the number of qualitative studies has fluctuated. By leveraging different research methods, scholars aim to understand the impact of SCCT better.
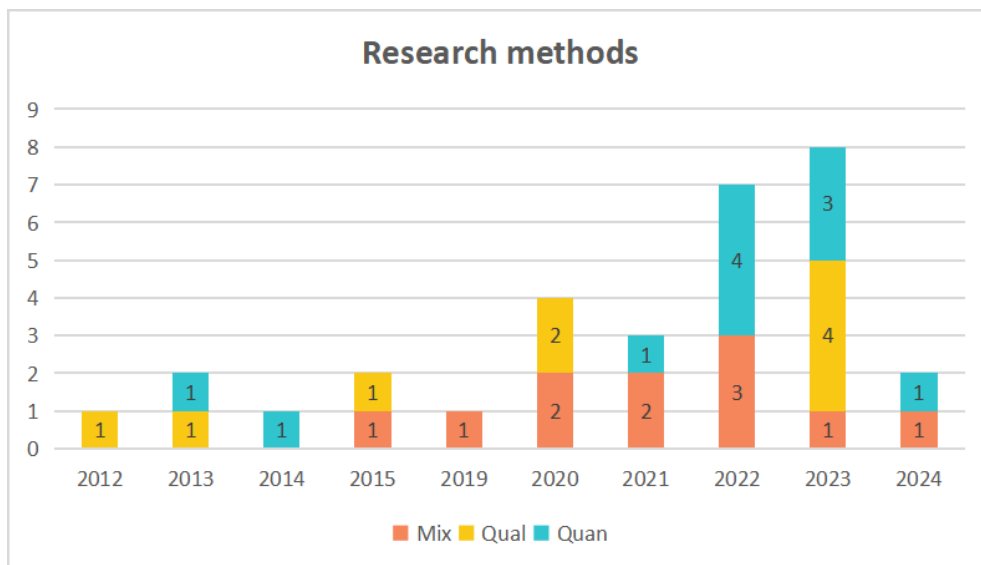

Figure 3. Research Methods for SCCT

Key and Frequent Keywords

As shown in Figure 4, the researchers used VOSviewer to analyze the titles, abstracts, and keywords of 31 articles. Several key terms and their frequencies are visually displayed, highlighting the content the researchers focus on, specifically the keywords related to SCCT and those that appear frequently. It is observable that terms such as "supply chain," "control tower," and "supply chain control tower" appear most prominently, indicating their high frequency of mention in the literature and the degree of attention and research frequency these keywords receive. Following these are terms like "supply chain visibility," "inventory management," "supply chain risk," and "intelligent decision-making," which represent current areas of application for SCCT that may require further attention to enhance their application scope. Additionally, terms such as "case study," "Industry 4.0," "machine learning," and "IoT" also appear frequently, indicating the technological solutions employed by SCCT and the research methods used in the articles. In summary, this analysis clearly illustrates the keywords, application directions, technologies used, and research methodologies, which helps us understand SCCT from various perspectives more comprehensively.
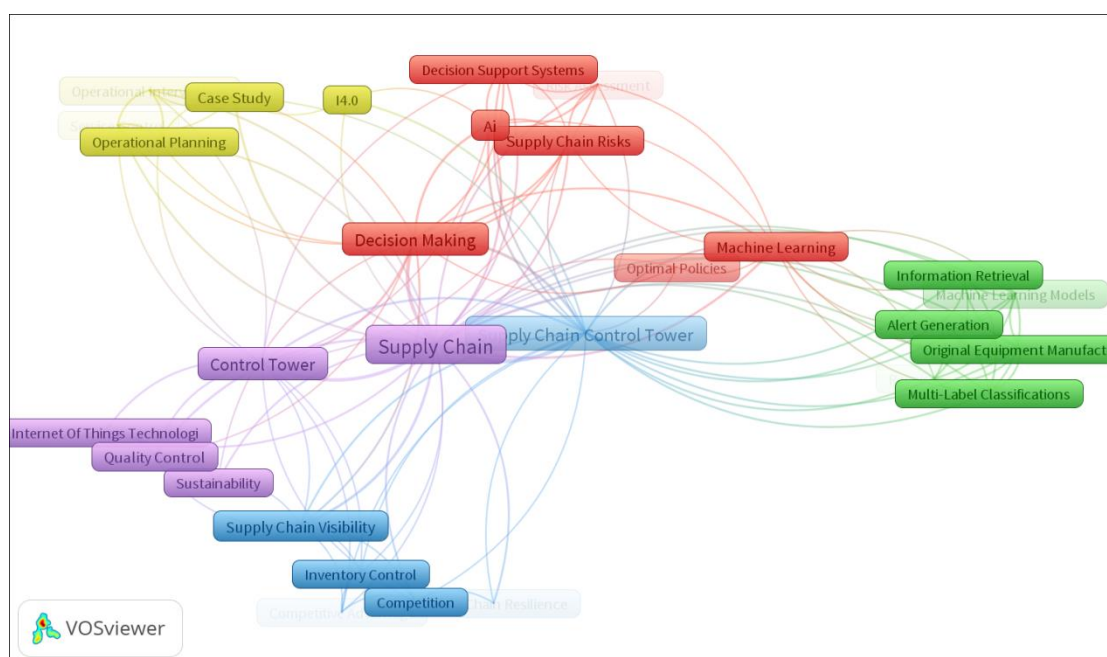

Figure 4. Most Frequent Keywords for SCCT

Findings and Discussion

Analysis of the selected articles reveals a sustained growth trend in the literature on SCCT, especially with the deepening research into new technologies such as the Internet of Things, big data, and artificial intelligence (Liotine, 2019; Malmstedt & Bäckstrand, 2022; Roch et al., 2015) As literature continues to reflect growth and the development of new technologies supporting SCCT technologies, the trend of annual publications is expected to continue increasing.

Research on SCCT spans globally, with advanced technological countries like Germany and the USA remaining leaders in this field. In contrast, Asian countries, though not as numerous as Europe and America, still show strong growth potential, especially with the rapid development of digital technologies and connectivity and the increasing attention paid to

supply chain (SC) visualization, especially in some Asian countries (Chen et al., 2024; Patsavellas et al., 2021; Vlachos, 2023). Geographical differences may lead to variations in research focus and objectives, with regions that experience rapid technological development prioritizing innovations and applications in supply chain technology. Future research should explore the differences in adopting and implementing SCCT technologies and strategies across different regions.

Researchers employ various methodologies. Some studies have explored using quantitative methods and data analytics, evaluating and optimizing supply chain operations through big data analytics and statistical methods (Liotine, 2019; Malmstedt & Bäckstrand, 2022). Other research has used case study approaches to delve into the practical applications and effectiveness of SCCT, revealing challenges and solutions in specific environments (Alacam & Sencer, 2021; Maheshwari et al., 2023). Considering some limitations of quantitative and qualitative research, some scholars have adopted mixed-method approaches, collecting qualitative feedback through interviews and quantitative data through surveys to understand better the impacts of SCCT (Wu et al., 2021).

Analysis of 31 articles' titles, abstracts, and keywords using VOSviewer shows that "supply chain control tower," "supply chain visibility," "intelligent decision-making," and "risk management" are frequent terms in the studies. Research explores control towers to optimize supply chain risk management and enhance management efficiency by integrating multiple data sources (Ye et al., 2022; Zhang & Xiao, 2023). Research exploring "Supply chain visibility" indicates that SCCT effectively improves information flow transparency within supply chains (Shou-Wen et al., 2013). Research explores how AI and machine learning technologies can improve the systems and operational architecture of SCCT in the pharmaceutical industry by increasing decision visibility and managing complexity (Liotine, 2019).

Through the analysis above, research findings have been linked with research questions, and by addressing certain issues and engaging in in-depth discussions, the researchers have further understood the current status and future trends of SCCT. The research discussed in this paper demonstrates the significance and potential of SCCT. However, the studies are extensive, most of which are concentrated on specific technologies or industry applications, such as supply chain control in warehouse management (Maheshwari et al., 2023), the pharmaceutical industry (Liotine, 2019), and logistics services (Alacam & Sencer, 2021). The limited industry scope of the studies affects a comprehensive understanding of the cross-industry application of SCCT. Moreover, the existing literature may only cover some relevant recent practices, impacting the timeliness and breadth of the research results, which need focused attention in subsequent studies.

During the research, the researchers also identified some contradictory or inconsistent results that may stem from differences in research methods or sample selection. For example, some studies emphasize the central role of control towers in enhancing supply chain adaptability, efficiency, and globalization (Schiffer & Doerr, 2020). However, other research finds that the actual effectiveness of these systems is limited by the quality of implementation and the context of use (Wyciślak & Pourhejazy, 2023). Furthermore, studies discuss the enhancement of decision making visibility in the pharmaceutical industry's SCCT through AI and machine

learning technologies (Liotine, 2019); however, the effectiveness of these technologies may vary in other industries or application scenarios. Adopting new technologies in supply chains promotes the spread of SCCT but, to some extent, also affects the likelihood of successful implementation of control tower projects. Researchers need to pay more attention to these differing views during the research.

Conclusion

With the rapid development of digital technologies, the demand for visibility in various key business nodes within supply chains has intensified. The emergence of the digital control tower concept offers new management insights for enhancing supply chain resilience and visibility and has become a new tool in supply chain management. Although the academic community and practitioners have analyzed SCCT from some perspectives, there has yet to be a systematic literature review on SCCT. Meanwhile, the literature research on SCCT needs to be more comprehensive. In this paper, comprehensive searches were conducted using keywords such as "Control tower," "Supply chain control tower," and "Supply chain logistics tower," and researchers found 90 and 42 articles from the Scopus and Web of Science databases. After multiple stages of filtering by language, document type, title, and abstract, and thorough reading and comparison—to minimize discrepancies—even two researchers using the same methods conducted extensive discussions on documents with differing opinions, narrowing the sample to 31 articles. This paper synthesizes these articles, discussing annual trends, regional distribution, research methods, and keywords, and further outlines the future research directions for SCCT.

This study shows that based on steady development in previous years, the topic of SCCT has been increasingly researched since 2020 and is expected to continue to rise in the coming years. The United States and Germany, based on the number of published papers, remain the leading countries in researching this topic. At the same time, Asian countries like China and India have also seen rapid research development in recent years. Attention is given to different regions and countries' research focus and innovative directions, promoting the study and adoption of SCCT in more regions. Scholars employ various research methods, both quantitative and qualitative approaches, as well as mixed methods, to better understand the impact of SCCT. Through keyword analysis, "supply chain visibility," "intelligent decision-making," and "risk management" emerged as frequent terms in the studies, reflecting how control towers effectively enhance the transparency of supply chain information, optimize risk management, and improve management efficiency.

This research is the first systematic literature review on SCCT. Results suggest that through a creative, systematic literature review of current literature, scholars' and practitioners' understanding of SCCT can be enhanced, broadening the practical application of SCCT to create more transparent and efficient supply chain systems, helping businesses gain competitive advantages and sustainable growth.

Future Research

In the discussions earlier in this systematic literature review, the researchers explored how the focus on SCCT has predominantly been on specific technologies or industry applications, such as logistics and pharmaceuticals. Future research should specifically address these issues to further enhance the understanding and implementation of SCCT. Firstly, current research

is largely concentrated in specific pharmaceuticals, logistics, and manufacturing sectors. Future studies should expand into retail, automotive, and energy industries. Additionally, building on current advancements, future research should integrate emerging technologies like blockchain and advanced machine learning algorithms to provide diversified solutions for SCCT, potentially providing new insights into the scalability and security of SCCT.

The uneven geographical distribution mentioned in previous research, where developed countries contribute significantly while emerging economies are still catching up, highlights a potential area to explore SCCT strategies' adaptability across different cultural and economic backgrounds. Research should also focus on mature solutions in developed countries while exploring how SCCT can be adapted to different business scenarios in emerging economies and the successful implementation and spread of SCCT. Future research directions could specifically examine the challenges faced when implementing SCCT in emerging markets due to the lack of technological infrastructure, which could be mitigated by adopting customized low-cost technological solutions—an excellent area for future research.

Furthermore, future research might need more hybrid methodologies to provide a broader, statistically significant understanding of SCCT impacts, and this requires more scholars and practitioners to focus on this field to advance the rapid and sustained development of SCCT. Through the development and integration of keywords and new technologies, the evolution of SCCT requires, on the one hand, more research frameworks that reflect and support real business connections. On the other hand, it necessitates incorporating new technologies or integrated solutions to optimize the business architecture and models of SCCT. This approach aims to provide more solutions demonstrating the competitive advantages of SCCT in the overall corporate information system architecture, strategic risk management, information transmission and analysis, and intelligent decision-making, thereby accelerating the adoption of SCCT.

References
Alacam, S., & Sencer, A. (2021). Using blockchain technology to foster collaboration among shippers and carriers in the trucking industry: A design science research approach. *Logistics*, *5*(2), 37.

Alias, C., Jawale, M., Goudz, A., & Noche, B. (2014a). Applying novel future-internet-based supply chain control towers to the transport and logistics domain. *ASME Bienn. Conf. Eng. Syst. Des. Anal., ESDA*, *3*, V003T10A012.

Bentz, B. (2014). Supply chain control towers help organizations respond to new pressures. *Supply Chain Management Review*, *18*(4).

Bhattarai, U., Maraseni, T., & Apan, A. (2022). Assay of renewable energy transition: A systematic literature review. *Science of The Total Environment*, *833*, 155159.

Bramer, W. M., De Jonge, G. B., Rethlefsen, M. L., Mast, F., & Kleijnen, J. (2018). A systematic approach to searching: An efficient and complete method to develop literature searches. *Journal of the Medical Library Association*, *106*(4), 531–541.

Chen, S., Cohen, M. A., & Lee, H. (2024). Enhancing customer–supplier coordination through customer-managed inventory. *Management Science*, mnsc.2021.03658.

Cooke, J. A. (2014). *Protean supply chains: Ten dynamics of supply and demand alignment*.

Edinger, T., & Cohen, A. M. (2013). A large-scale analysis of the reasons given for excluding articles that are retrieved by literature search during systematic review. *AMIA Annual*

Symposium Proceedings, *2013*, 379–387.

Galasso, F., Merce, C., & Grabot, B. (2009). Decision support framework for supply chain planning with flexible demand. *International Journal of Production Research*, *47*(2), 455–478.

Gerrits, B., Topan, E., & Van Der Heijden, M. C. (2022). Operational planning in service control towers – heuristics and case study. *European Journal of Operational Research*, *302*(3), 983–998.

Gölgeci, I., & Kuivalainen, O. (2020). Does social capital matter for supply chain resilience? The role of absorptive capacity and marketing-supply chain management alignment. *Industrial Marketing Management*, *84*, 63–74.

Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *Journal of the Royal Society of Medicine*, *96*(3), 118–121.

Liotine, M. (2019). Shaping the next generation pharmaceutical supply chain control tower with autonomous intelligence. *Journal of Autonomous Intelligence*, *2*(1), 56–71.

MacFarlane, A., Russell-Rose, T., & Shokraneh, F. (2022). Search strategy formulation for systematic reviews: Issues, challenges and opportunities. *Intelligent Systems with Applications*, *15*, 200091.

Maheshwari, P., Kamble, S., Kumar, S., Belhadi, A., & Gupta, S. (2023). Digital twin-based warehouse management system: A theoretical toolbox for future research and applications. *International Journal of Logistics Management*.

Malmstedt, A., & Bäckstrand, J. (2022). How to predict disruptions in the inbound supply chain in a volatile environment. In Ng A.H.C., Syberfeldt A., Hogberg D., & Holm M. (Eds.), *Adv. Transdiscipl,* 638–649.

Mongeon, P., & Paul-Hus, A. (2015). The journal coverage of Web of Science and Scopus: A comparative analysis. *Scientometrics*, *106*, 213–228.

Nylander, E., Ramstrand, N., Hjort, M., & Rusaw, D. F. (2021). Development and validation of a sensitive MEDLINE search strategy to identify literature relevant to limb prostheses. *Prosthetics & Orthotics International*, *45*(3), 289–294.

Oliva, R., & Watson, N. (2011). Cross-functional alignment in supply chain planning: A case study of sales and operations planning. *Journal of Operations Management*, *29*(5), 434–448.

Patsavellas, J., Kaur, R., & Salonitis, K. (2021). Supply chain control towers: Technology push or market pull—An assessment tool. *IET Collaborative Intelligent Manufacturing*, *3*(3), 290–302.

Pranckutė, R. (2021). Web of Science (WoS) and Scopus: The Titans of bibliographic information in today's academic world. *Publications*, *9*(1), Article 1.

Rao, S., & Moon, K. (2021). Literature search for systematic reviews. In S. Patole (Ed.), *Principles and Practice of Systematic Reviews and Meta-Analysis*, 11–31.

Rasool, F., Greco, M., & Grimaldi, M. (2022). Digital supply chain performance metrics: A literature review. *Measuring Business Excellence*, *26*(1), 23–38.

Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., Koffel, J. B., Blunt, H., Brigham, T., Chang, S., Clark, J., Conway, A., Couban, R., de Kock, S., Farrah, K., Fehrmann, P., Foster, M., Fowler, S. A., Glanville, J., … PRISMA-S Group. (2021). PRISMA-S: An extension to the PRISMA statement for reporting literature searches in systematic reviews. *Systematic Reviews*, *10*(1), 39.

Roch, Y. L., Ballot, E., & Perraudin, X. (2015). A new framework for the management of returnable 'containers' within open supply networks. *Studies in Computational*

Intelligence, *594*, 293–294.

Rushiana, R. A., Sumarna, O., & Anwar, S. (2023). Efforts to develop students' critical thinking skills in chemistry learning: Systematic literature review. *Jurnal Penelitian Pendidikan IPA*, *9*(3), Article 3.

Schiffer, M., & Doerr, D. M. (2020). Development of the supply chain management 2040—Opportunities and challenges. In Nyhuis P., Herberger D., & Hübner M. (Eds.), *Proc. Conf. Prod. Syst. Logist.*, 29–37.

Sharabati, A.-A. A., Al-Atrash, S. A., & Dalbah, I. Y. (2022). The use of supply chain control tower in pharmaceutical industry to create a competitive advantage. *International Journal of Pharmaceutical and Healthcare Marketing*, *16*(3), 354–375.

Sheffi, Y. (2015). Preparing for disruptions through early detection. *MIT Sloan Management Review*, *57*(1), 31–42.

Shou-Wen, J., & Ying, T. G. Y.-H. (2013). Study on supply chain information control tower system. *Information Technology Journal*, *12*(24), 8488–8493.

Syahchari, D. H., Sudrajat, D., Lasmy, L., Herlina, M. G., Kiatama, C., & Jordaan, H. K. W. (2022). Achieving supply chain resilience through supply chain control tower and supply chain agility. *ACM Int. Conf. Proc. Ser.*, 195–198.

Topan, E., Eruguz, A. S., Ma, W., van der Heijden, M. C., & Dekker, R. (2020). A review of operational spare parts service logistics in service control towers. *European Journal of Operational Research*, *282*(2), 401–414.

Trzuskawska-Grzesińska, A. (2017). Control towers in supply chain management—Past and future. *Journal of Economics and Management*, *27*(1), 114–133.

Van Dinter, R., Tekinerdogan, B., & Catal, C. (2021). Automation of systematic literature reviews: A systematic literature review. *Information and Software Technology*, 136, 106589.

Vlachos, I. (2023). Implementation of an intelligent supply chain control tower: A socio-technical systems case study. *Production Planning and Control*, *34*(15), 1415–1431.

Wyciślak, S., & Pourhejazy, P. (2023). Supply chain control tower and the adoption of intelligent dock booking for improving efficiency. *Frontiers in Energy Research*, 11.

Xiao, Y., & Watson, M. (2019). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, *39*(1), 93–112.

Ye, C., Zaraté, P., & Kamissoko, D. (2022). *A DSS based on a control tower for supply chain risks management*. In Cabral Seixas Costa A.P., Papathanasiou J., Jayawickrama U., & Kamissoko D. (Eds.), *Lect. Notes Bus. Inf. Process.: Vol. 447 LNBIP*, 124–136.

Zhang, X., & Xiao, G. (2023). *Digital control tower empowers supply chain resilience improvement from a dynamic capability perspective*. In Dwyer R.J. (Ed.), Front. Artif. Intell. Appl ,186–194.