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Mapping the research landscape of AI in Supply Chan Management: A bibliometric study

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Abstract
Organizations' approaches to efficiency, transparency and resilience are changing as a result of the integration of Artificial Intelligence (AI) into Supply Chain Management (SCM).
Using "Scopus" as the main database, this study provides a bibliometric analysis of research arti cles from 2015 to 2025. The researchers engage "VOSviewer" software to analyse publications trend, significant authors, contributions at countries level and the development of major themes. According to the findings, there has been a significant rise in scholarly output in terms of research work over the years. Some nations have been publishing large number of academic articles (and books) while others are influencing through the higher citations route.
The results also show that research on AI in SCM is not just focused on optimization; rather, it is increasingly overlapping with block-chain technology, digital transformations and sustainability. These research trends showcases the inter-disciplinary research which is happening in the academic world.
Even with these developments, number of issues still unaddressed. Widespread and successful deployment is still hampered by problems including data governance, personnel preparedness, organizational adoption and algorithmic transparency. The paper emphasizes that artificial intelligence (AI) in supply chain management (SCM) is at a crucial point. Although its transformational potential is generally acknowledged, its success hinges on responsible adoption techniques that are adapted to ethical and organizational contexts.
By mapping the conceptual structure and detecting recurring themes, researchers had highlighted the currents of use of AI in SCM. While pointing to future paths where cross-technology integration, resilience-building frameworks and ethical considerations which will steer the next phase of advancement; this study can be for academicians, industry practitioners and policymakers.
Keywords: supply chain management, bibliometric analysis, research trends, artificial intelligence, ai in scm, artificial intelligence in supply chains

1 Introduction

We live in a VUCA environment and the element of uncertainty is increasing. As a fallback for organisations, they have to rely heavily on their respective Supply Chain Management (SCM).

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Given the global crisis and a speedily evolving digital world, it is much critical that Artificial Intelligence (AI) should get associated with it for the better as it has done for other areas of Management. There is a need for this association because of the changing tastes, global turmoil, digitization, fast expectations, pandemics and geo-politics.

AI applications are designed to orient the organization towards reduced cost, smarter operations, reduced lean times, specify forecasts and many more. It is helping organizations gain the competitive edge in the areas of production, customer interaction, procurement, decision making and inventory management. The combination of AI with other technologies like autonomous transportation, IoT, block-chain technology and machine learning.

With respect to research, there are two distinct developments happening simultaneously. On the technical side, engineering applications are beginning to set newer benchmarks and on the managerial side, the contours of applications are being recreated very fast. There are possible pitfalls and challenges as is there with any technology or thought. But every industry and Institution has to decide on the best fit solution in the AI domain befitting to its industry and that too the extent of its use basis the specific problems being faced and the possible outputs expected. The growth rate in terms of value of AI pegging with SCM predicted is staggering high; though there are various estimates, it is above 20 percent basis the recent data available.

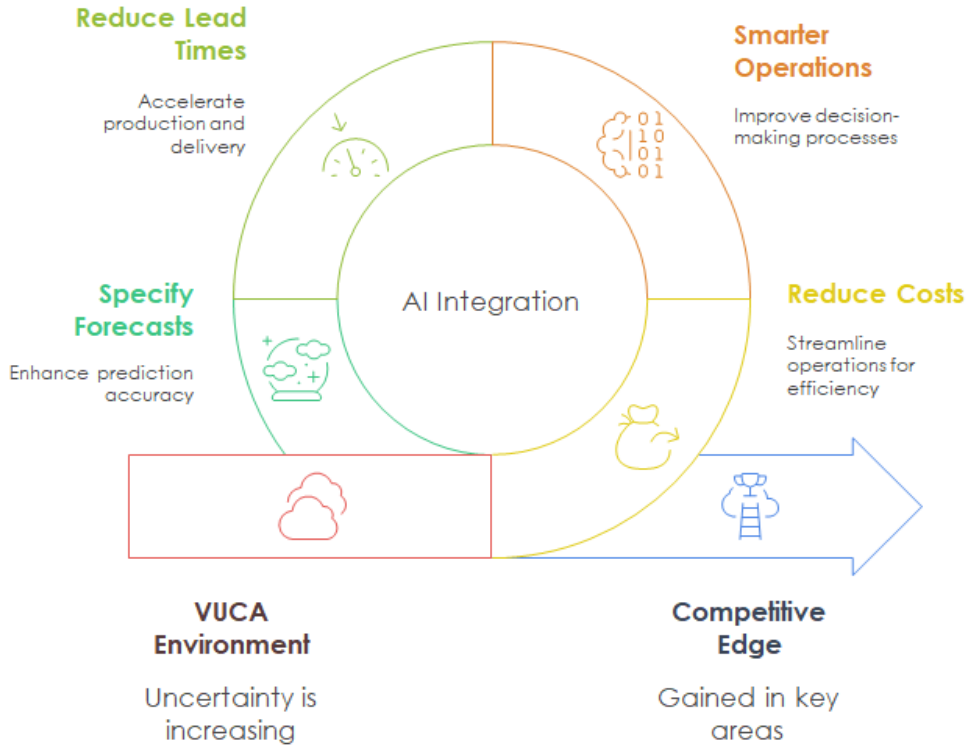

Fig 1: Insights into the AI in SCM
Source: Compiled by authors

Naysayers have been warning of the challenges like data privacy loss (or reduction) viz. finding the right-fit people, augmenting the AI quotient in the employees, intra and inter model issues, organizational resistance, senior management myopia, ethics, algorithm transparency and the

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like. The manager has to decide on these while deciding the AI model to be adopted and the extent of usage of AI in the respective department / unit. One can resort to traditional cost-benefit analysis to evaluate the decision.
There is no falling back now, one has to march ahead adopting AI.

1.1 Research Questions

The authors chose to address the following Research Questions (RQ)
RQ1: What has been the pattern of research publications in the research area of "AI in Supply Chain Management" over the years?
RQ2: In what ways have countries, institutions and authors helped with research in this space?
RQ3: Which journals and articles in the Climatic Refugees field have the most significant citations?
RQ4: Based on citations, which of these research works is the most widely cited in the Gig Economy?

2 Developments in the area of AI in Supply Chain Management (Literature Review)

Applications of AI in SCM

Sl. No	*Authors*	*Year*	*Key findings / discussion*
1	Toorajipour et al	2021	AI is being used in SCM through a combination of these forms: ANN, Swarm intelligence, stochastic simulation, physarum models and support vector machines.
2	Cadden, T et al	2022	The reported business value of AI is predominantly grounded in anecdotal evidence rather than rigorous, peer-reviewed research. Much of this script is basis the amplification of technological benefits made by technology vendors and business consultants, who often have a financial or reputational incentive to emphasize success stories. These narratives frequently lack the methodological transparency, empirical proven or theoretical framework necessary to validate or generalize the findings. Without a cohesive theoretical basis to synthesize disparate cases, the broader claims about AI's impact on business performance remain fragmented, context-specific and potentially overstated. This should act as caution points for practicing managers.
3	Modgil, S et al	2022	AI strengthens the supply-chain resilience on five fronts namely: Firstly, it casts a continuous light across tiers, giving planners end-to-end transparency that exposes risks before they cascade. Second, AI optimizes dynamic routing and real-time fleet decisions, ensuring that even the most complex last-mile promises are kept when the criterion changes. Third, ML models turn demand signals, weather data and customer profiles into hyper-personalized recommendations, so both input suppliers and output retailers receive configurations tuned to their exact context. Fourth, when disruption hits, AI

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			rapidly re-runs simulations to quantify impact and prescribe the lowest cost method, shrinking revenue and service losses. Finally, by perpetually scanning market signals, supplier performance and commodity volatility, AI enables an agile procurement strategy that swaps fixed, long-term contracts for flexible, data-driven sourcing decisions, keeping the network adaptable without sacrificing economies of scale.
4	Saha, R et al	2024	The industries which typically have the AI usage over SCM in the area of Demand Forecasting are: Retail, E-Commerce, Manufacturing and Logistics. So far as the different dimensions of this applicability are concerned, we do have Inventory Optimisation, Production Scheduling, variable pricing and transport optimisation.
5	Jubair, H	2025	The applications of AI can be in the following areas: Production & manufacturing, Inventory Management, Logistics & transportation, Demand planning & forecasting and customer service & order fulfillment. Agility, cost reduction, ease of decision making and better risk management are some of the key benefits.

Challenges to application of AI in SCM

Sl. No	***Authors***	***Year***	***Key findings / discussion***
1	Helo, P et al	2022	AI initiatives have chances of failures when senior management does not set a clear vision or commit resources. What typically follows is that fragmented infrastructure and poor data quality which makes enterprise-wide rollout impossible. Steep price tags for software and a shallow pool of skilled specialists may also affect the progress.
2	Richey, R G et al	2023	By turning real-time signals into forecasts, AI has started rewriting the rules of supplier collaboration and inventory control by shrinking lead times, trimming safety stock and flagging risks before they ripple. Reaping these gains, however, hinges on hardening data pipelines against breaches and guaranteeing the confidentiality of competitively sensitive demand, pricing and shipment metrics. Equally critical is keeping seasoned planners in the loop: algorithms can surface patterns, but human insight remains essential to validate exceptions, negotiate nuanced trade-offs and prevent blind over-reliance on black-box outputs.

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3	Sah, B P et al	2024	Obstacles like the difficulty of scaling solutions, making systems work together, and overcoming internal pushback continue to stall uptake. A multi-subject approach has to be adopted for the same.
4	Saha, R et al	2024	There is an absentia of proper taxonomy which can be referred while studying AI in SCM. The possible areas which it could cover are as follows: decision making, learning and sensing
5	Akter, S et al	2025	Possible technological complexity, need for specific workforce (knowledge & trained) and data privacy have been some of the key challenges as perceived by industry.
6	Olan, F et al	2025	AI spans a broad spectrum of methods for presenting and interpreting data, each suited to solving different practical problems. The designing of the requisite model thus becomes difficult.

Opportunities and future trends

Sl. No	***Authors***	***Year***	***Key findings / discussion***
1	Sharma, R et al	2022	There is a growing need for more exploitation of usage of AI in SCM.
2	Ferreira, B	2023	While noteworthy research is happening with respect to increasing the AI in SCM, it is also to be acknowledged that simultaneous research is happening in the areas of sustainability, environment, big data and automatization.
3	Jackson, I et al	2024	Industry 4.0 where the digital, biological, and physical realms converge depends fundamentally on AI, which is turning separate domains into one seamless, hyper-efficient, self-optimizing ecosystem.
4	Kasih, E W et al	2024	AI applied on Supply Chain Management has the potential to improve market responsiveness and mitigate the disruptions in the supply chain(s).
5	Kumar, A et al	2024	Valued at $4.8 billion in 2023, the worldwide AI-for-supply-chain market is projected to more than triple to $14.3 billion by 2028, expanding at a 24.3% compound annual growth rate.
6	Daios et al	2025	AI usage in SCM is critical in the Industry 4.0 era. Managers should not be go overboard in committing as well as expecting outputs from AI. Rather, they should be guided by the organisational readiness for the same as well as lead the organisation in integrating AI with other technologies like Big

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			Data analysis, advanced NLP, blockchain, drone technology and autonomous vehicles.

3 Methodology & Data

3.1 Need for the study

Scopus, published by Elsevier, is a comprehensive database that indexes abstracts and provides links to full-text publications, including journals, books and conference papers (Guz & Rushchitsky, 2009).

VOSviewer is a famous bibliometric software tool that visualizes bibliometric networks such as co-authorship, co-citation, co-occurrence and country-wise relationships, helping to identify influential authors and research trends more accurately than traditional methods (Van Eck & Waltman, 2009). Select keywords were used to select the right research topics.

The field of bibliometrics, originally called "statistical bibliography" evolved through the mid-20th century, with the term "bibliometrics" first used by Allan Pritchard in 1968. Bibliometrics applies quantitative methods to analyze and map written scientific communication, revealing the structure and dissemination of knowledge (Broadus, 1987; Nicholas & Ritchie, 1978; Sengupta, 1990).

3.2 Dataset

For the work, the Scopus database was searched on 05-Sep 2025. The steps involved in choosing the set of articles for review are as follows

	Include	*Exclude*	*Net*
Scopus search using the following search transcript: ("supply chain management") AND ("artificial intelligence" OR "machine learning" OR "deep learning" OR "genetic algorithm" OR "neural network") in the Search criterion of "Abstract title, Abstract, Keywords"	5019		5019
Filter & limit to Publication years from 2015 to 2025	3878		3878
Filter & limit "Document type" to "Article", "Book" and "Book Chapter"	2297		2297
Filter & limit to "Final" in "Publication Stage"	2203		2203
Filter & limit to "English" in "Language"	2173		2173
Exclude "Conference Proceedings" and "Trade Journal"		6	2167
Filter and exclude articles with the following keywords: Covid-19 and China		96	2071
Filter & limit "Subject area" to "Economics, Econometrics and Finance" and "Business, Management and Accounting"	808		808
Filter and manually exclude article(s) with missing author names		2	806
Filter and manually exclude article(s) with missing Sources		241	565
Filter and manually exclude article(s) with missing Abstracts		1	564
Filter and manually exclude article(s) with missing Publisher		2	562

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All the analysis in this paper would be basis these 562 research items. A small analysis of the concerned documents are as follows

Description	***Data***	***Description***	***Data***
Total Research documents	562	**Per Document Avg. Citation**	30
Articles	530	**# countries with publications**	89
Book Chapters	32	**Author Keywords**	4187
Authors	2357	**Index Keywords**	2921
Citations	16830	**Authors**	2357

Table 1: Summary of document types covered for the bibliometric analysis
Source: Collated by authors basis data from Scopus

4 Analysis and interpretations based on data from Scopus and VosViewer

4.1 Publications trends

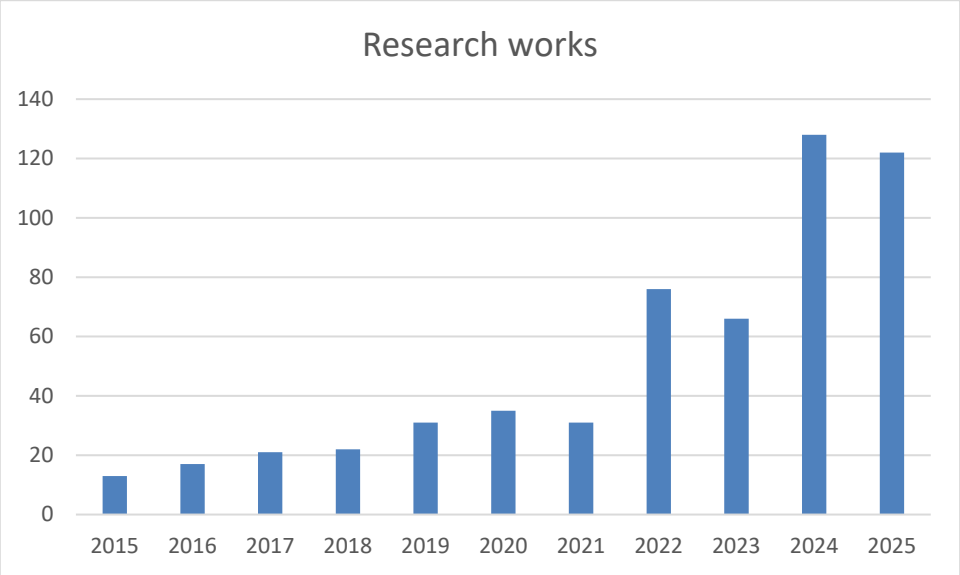

Fig 2: Publication over the years
Source: Compiled by authors based on data from Scopus

Though there has been a distinct increment in number of research works coming per year in the later years, there is no distinct trend in the same.

4.2 Basis article publications

The details of journals with the maximum published articles on AI in SCM are as follows

Journal Name	***# Articles***	***ISSN***	***Publisher***
International Journal of Production Economics	37	0925-5273	Elsevier B.V.
International Journal of Production Research	36	1366-588X	Taylor and Francis Ltd.

Citation: Tyagi, V.; Bhattacharya, S.; Swain, S. & Kalra, D. (2025). Mapping the research landscape of AI in Supply Chan Management: A bibliometric study. *International Insurance Law Review*, 33 (S4), 275-293.

Transportation Research Part E: Logistics and Transportation Review	26	1366-5545	Elsevier Ltd
Technological Forecasting and Social Change	17	0040-1625	Elsevier Inc.
Studies in Systems, Decision and Control	16	2198-4190	Springer Science and Business Media Deutschland GmbH
Journal of Cleaner Production	14	0959-6526	Elsevier Ltd
Journal of Modelling in Management	12	1746-5672	Emerald Publishing
IEEE Transactions on Engineering Management	11	1558-0040	Institute of Electrical and Electronics Engineers Inc.
Industrial Management and Data Systems	11	0263-5577	Emerald Publishing
Logistics	11	2305-6290	MDPI

Table 2: Best journals in terms of articles published on AI in SCM
Source: Authors basis data from Scopus

"International Journal of Production Economics" and "International Journal of Production Research" have the largest number of articles.

4.3 Publication basis countries

Country	***# Research works***
India	193
United States	121
China	106
United Kingdom	92
Iran	58
Germany	41
France	38
Malaysia	35
Morocco	30
Australia	26

Table 3: Country-wise publications
Source: Authors basis data from Scopus

India, United States and China have the largest publications. None of the other countries have research work outnumbering 100.

4.4 Basis journal citations

Journal Name	***# Citations***	***ISSN***	***Publisher***
International Journal of Production Economics	2729	0925-5273	Elsevier Inc.
International Journal of Production Research	2139	1366-588X	Taylor & Francis Ltd.

Citation: Tyagi, V.; Bhattacharya, S.; Swain, S. & Kalra, D. (2025). Mapping the research landscape of AI in Supply Chan Management: A bibliometric study. *International Insurance Law Review*, 33 (S4), 275-293.

Technological Forecasting and Social Change	1434	0040-1625	Elsevier Inc.
Journal of Business Research	831	0148-2963	Elsevier Inc.
Journal of Cleaner Production	821	0959-6526	Elsevier Inc.
Production and Operations Management	803	1059-1478	John Wiley and Sons Inc
International Journal of Information Management	757	0268-4012	Elsevier Inc.
Transportation Research Part E: Logistics and Transportation Review	703	1366-5545	Elsevier Inc.
Business Strategy and the Environment	500	0964-4733	John Wiley and Sons Inc
Production Planning and Control	451	0953-7287	Taylor & Francis Ltd.

Table 4: Best journals in terms of citations on articles on AI in SCM
Source: Authors basis data from Scopus

Besides the ones mentioned, we have 17 other journals with citations of atleast 100. Basis Table 2 and Table 4, it comes out that the following journals are good journals (basis large number of articles as well as citations) in the area of AI in SCM.

International Journal of Production Economics
International Journal of Production Research
Transportation Research Part E: Logistics and Transportation Review
Technological Forecasting and Social Change
Journal of Cleaner Production

4.5 Basis Article Citations

Authors	***Title***	***Year***	***Source title***	***Cited by***	***ISSN***
L.W., Wong, Lai Wan; L.Y., Leong, Lai Ying; J.J., Hew, Jun Jie; G.W.H., Tan, Garry Wei Han; K.B., Ooi, Keng Boon	Time to seize the digital evolution: Adoption of blockchain in operations and supply chain management among Malaysian SMEs	2020	International Journal of Information Management	600	0268-4012
R., Toorajipour, Reza; V., Sohrabpour, Vahid; A., Nazarpour, Ali; P., Oghazi, Pejvak; M., Fischl, Maria	Artificial intelligence in supply chain management: A systematic literature review	2021	Journal of Business Research	597	0148-2963
R., Dubey, Rameshwar; A., Gunasekaran, Angappa; S.J., Childe, Stephen J.; D.J., Bryde,	Big data analytics and artificial intelligence pathway to operational performance under the effects of entrepreneurial	2020	International Journal of Production Economics	585	0925-5273

Citation: Tyagi, V.; Bhattacharya, S.; Swain, S. & Kalra, D. (2025). Mapping the research landscape of AI in Supply Chan Management: A bibliometric study. *International Insurance Law Review*, 33 (S4), 275-293.

David James; M., Giannakis, Mihalis; C.R., Foropon, Cyril R.H.; D., Roubaud, David; B.T., Hazen, Benjamin Thomas	orientation and environmental dynamism: A study of manufacturing organisations				
D., Kannan, Devika	Role of multiple stakeholders and the critical success factor theory for the sustainable supplier selection process	2018	International Journal of Production Economics	311	0925-5273
R., Cui, Ruomeng; S., Gallino, Santiago; A., Moreno, Antonio; D.J., Zhang, Dennis J.	The Operational Value of Social Media Information	2018	Production and Operations Management	284	1059-1478
P.T., Helo, Petri T.; Y., Hao, Yuqiuge	Artificial intelligence in operations management and supply chain management: an exploratory case study	2022	Production Planning and Control	277	0953-7287
Y., Cai, Yajun; C.K.Y., Lo, Chris Kwan Yu	Omni-channel management in the new retailing era: A systematic review and future research agenda	2020	International Journal of Production Economics	256	0925-5273
B., Meindl, Benjamin; N.F., Ayala, Néstor Fabián; J., Mendonça, Joana; A.G., Frank, Alejandro Germán	The four smarts of Industry 4.0: Evolution of ten years of research and future perspectives	2021	Technological Forecasting and Social Change	250	0040-1625
M., Rusch, Magdalena; J.P., Schöggl, Josef Peter; R.J., Baumgartner, Rupert J.	Application of digital technologies for sustainable product management in a circular economy: A review	2023	Business Strategy and the Environment	234	0964-4733
S.S., Kamble, Sachin S.; A., Gunasekaran, Angappa; V., Kumar, Vikas; A., Belhadi, Amine; C.R., Foropon, Cyril R.H.	A machine learning based approach for predicting blockchain adoption in supply Chain	2021	Technological Forecasting and Social Change	233	0040-1625

Citation: Tyagi, V.; Bhattacharya, S.; Swain, S. & Kalra, D. (2025). Mapping the research landscape of AI in Supply Chan Management: A bibliometric study. *International Insurance Law Review*, 33 (S4), 275-293.

S.S., Kamble, Sachin S.; A., Gunasekaran, Angappa; H., Parekh, Harsh; M., Venkatesh, Mani; A., Belhadi, Amine; R., Sharma, Rohit	Digital twin for sustainable manufacturing supply chains: Current trends, future perspectives, and an implementation framework	2022	Technological Forecasting and Social Change	232	0040-1625
X., Wu, Xiuli; Y., Sun, Yangjun	A green scheduling algorithm for flexible job shop with energy-saving measures	2018	Journal of Cleaner Production	226	0959-6526

Table 5: Best articles in terms of citations on articles on AI in SCM
Source: Authors basis data from Scopus
The research articles have been chosen basis the citations of atleast 200.

4.6 Basis Productive Co-Authors

The details with respect to the best productive authors are as follows

Names of authors	***# Articles***
N., Rezki, Nisrine; M., Mansouri, Mohamed	2
Q., Yin, Qingwei; Q., Tian, Qian	2

Table 6: Productive authors basis number of articles on AI in SCM
Source: Authors basis data from Scopus
These are the only pair of authors who have atleast 2

4.7 Basis Productive Authors

The details of paper publications basis authors are as follows

Author	***# Research works***
Gunasekaran, Angappa	8
Fosso Wamba, Samuel Fasso	6
Kamble, Sachin	5
Kumar Mangala, Sachin Kumar	5
Pal, Kamalendu	5
Ivanov, Dmitry	5
Tseng, Minglang	5
Amin, Saman Hassanzadeh	5

Table 7: Productive authors' basis number of articles on AI in SCM
Source: Authors basis data from Scopus
These authors have been selected basis minimum 5 articles in the subject. There are 49 authors who have atleast 3 research works in this area.

4.8 Country coupled bibliometric analysis

We used the minimum number of documents for a country as 5 and arrived at 45 countries. The screenshot of Vosviewer result is appended below.

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Countries	***Documents***	***Citations***	***Total link strength***	***Citations per document***
India	193	2308	2548	11.96
United States	117	4083	2233	34.90
United Kingdom	94	3693	2216	39.29
China	107	3311	1842	30.94
France	39	2325	1272	59.62
Malaysia	35	829	792	23.69
Morocco	30	861	736	28.70
Iran	58	1108	721	19.10
Germany	43	1557	713	36.21
Australia	26	481	580	18.50

Table 8: Country couple data basis total link strength
Source: Vosviewer results basis data from Scopus

India has the largest number of articles. However, when it comes to quality (referred by citations / research work), France, United Kingdom, Germany and United States rate very high.

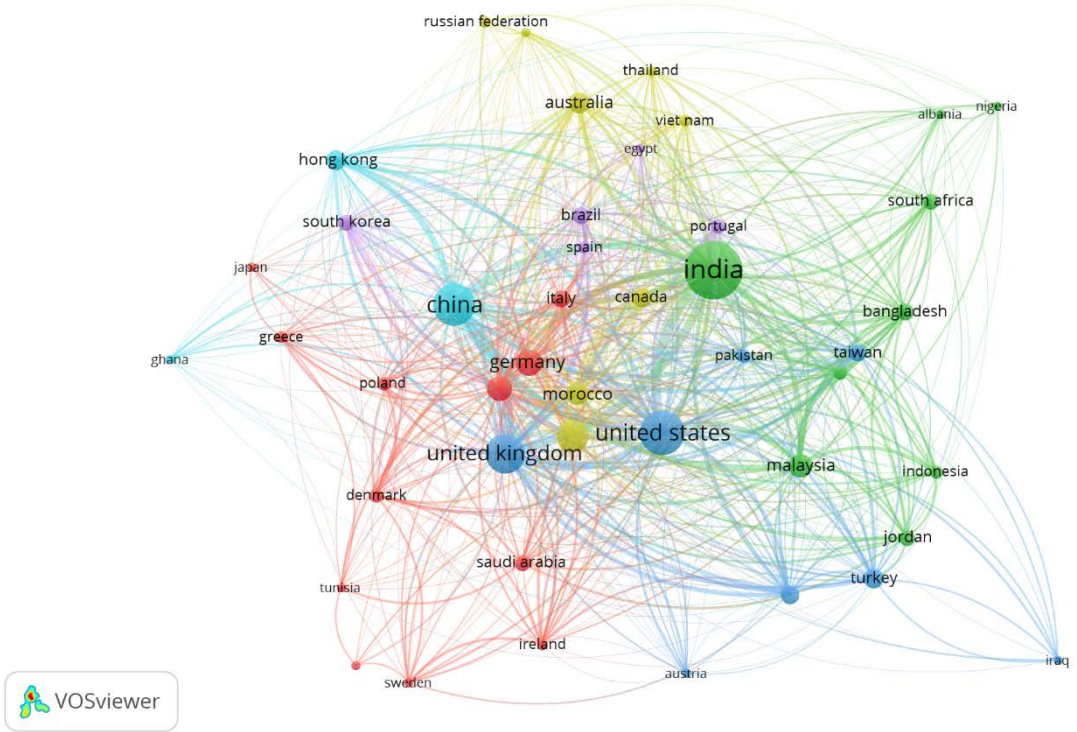

Fig 3: Country coupled data basis total link strength
Source: Vosviewer basis data from Scopus

4.9 Co-occurrence of author keywords

We used the minimum number of co-occurrence of author keywords as 10 and we arrived at 102 keywords out of 4187, which meet the threshold. The screenshot of Vosviewer result is appended below.

Citation: Tyagi, V.; Bhattacharya, S.; Swain, S. & Kalra, D. (2025). Mapping the research landscape of AI in Supply Chan Management: A bibliometric study. *International Insurance Law Review*, 33 (S4), 275-293.

Keyword	***Occurrences***	***Total link strength***
supply chain management	483	2118
artificial intelligence	229	1007
decision making	91	563
machine learning	120	535
supply chains	78	527
chain management	84	475
machine-learning	63	431
sustainable development	55	345
information management	44	296
block-chain	46	282
inventory control	39	255
genetic algorithms	46	248
learning systems	32	246

Table 9: Author keywords basis total strength
Source: Vosviewer results basis data from Scopus

It is clear from the keywords that researchers are also looking at "sustainable development", "information management", "block-chain" and "genetic algorithms" while doing research on AI in SCM. "supply chain management" literally overshadows every other keyword proving thereby that our research methodology is on the right track.

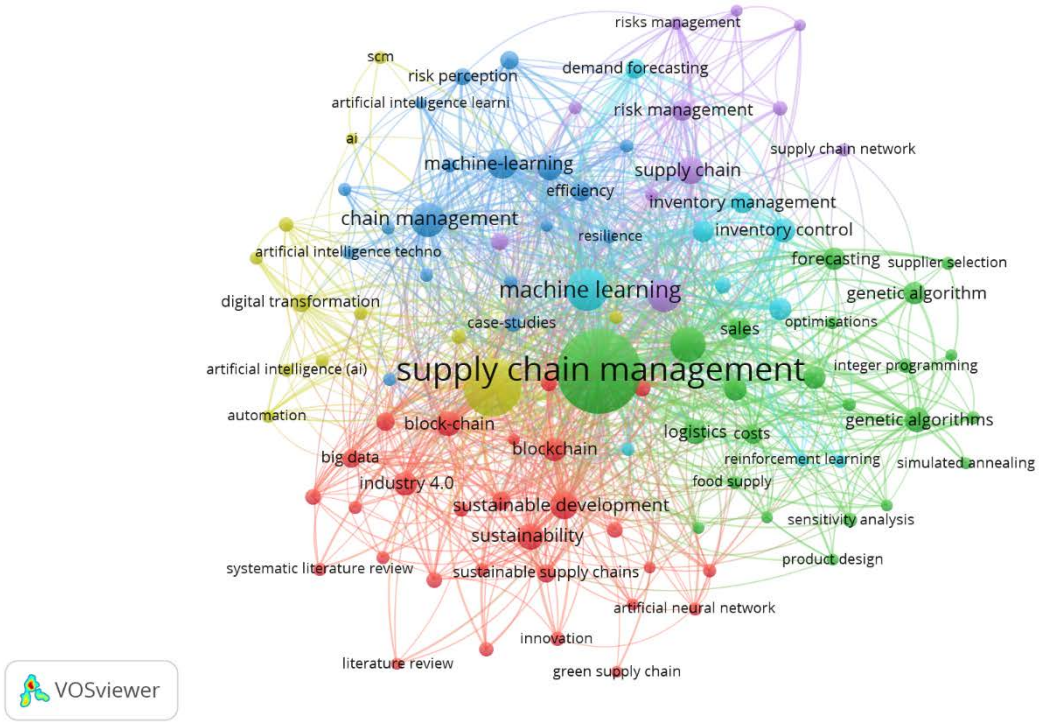

Fig 4: Author keywords basis total strength
Source: Vosviewer basis data from Scopus

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Clearly, "supply chain management" stands apart. It is virtually at the center stage suggesting clearly that all other words and areas of research are linked to it.

4.10 Co-occurrence of index keywords

We used the minimum number of co-occurrence of index keywords as 10 and we arrived at 79 keywords out of 2921, which meet the threshold. The screenshot of Vosviewer result is appended below.

Keyword	***Occurrences***	***Total link strength***
supply chain management	352	1637
artificial intelligence	126	569
decision making	90	493
supply chains	70	446
chain management	84	429
machine-learning	63	372
machine learning	52	289
sustainable development	51	280
information management	40	261
block-chain	46	249
inventory control	34	224
learning systems	32	220
genetic alorithms	43	209
sales	37	196

Table 10: Index keywords basis total strength
Source: Vosviewer results basis data from Scopus

The observations are similar to that of author key words. Here also, we see that research is happening in "sustainable development", "block-chain" and "genetic algorithms" besides the core areas of "supply chain management". It is also clear that "inventory control" and "sales" are probably the areas under Supply Chain Management which are seeing the practical utilization of AI in SCM.

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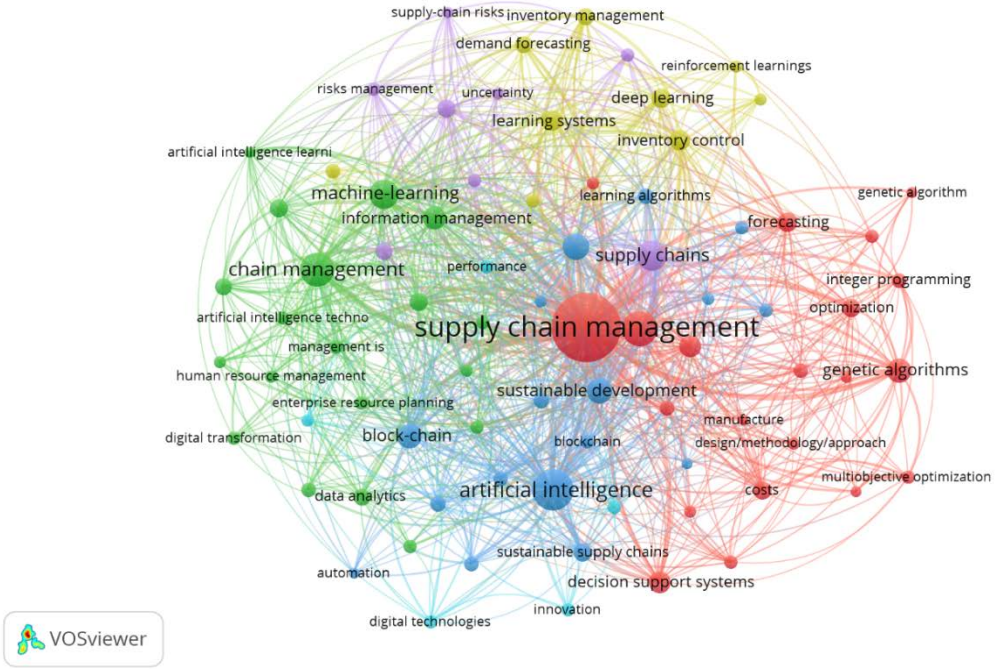

Fig 5: Index keywords basis total strength
Source: Vosviewer basis data from Scopus

"supply chain management" clearly overshadows all other index keywords. One thing is also clear that the subject is so vast that so many index words have been used and linked to supply chain management.

4.11 Co-authorship Countries Analysis

With a minimum criterion of 5 documents per country, we arrive at 45 countries out of a total of 89 countries.

Countries	***Documents***	***Citations***	***Total link strength***
United Kingdom	94	3693	117
India	193	2308	107
United States	117	4083	105
China	107	3311	88
France	39	2325	65
Malaysia	35	829	55
Germany	43	1557	34
Australia	26	481	32
Hong Kong	23	1124	28
Turkey	25	384	28

Table 11: Country wise co-authorship analysis
Source: Vosviewer results basis data from Scopus

The countries have been arranged in terms of total strength.

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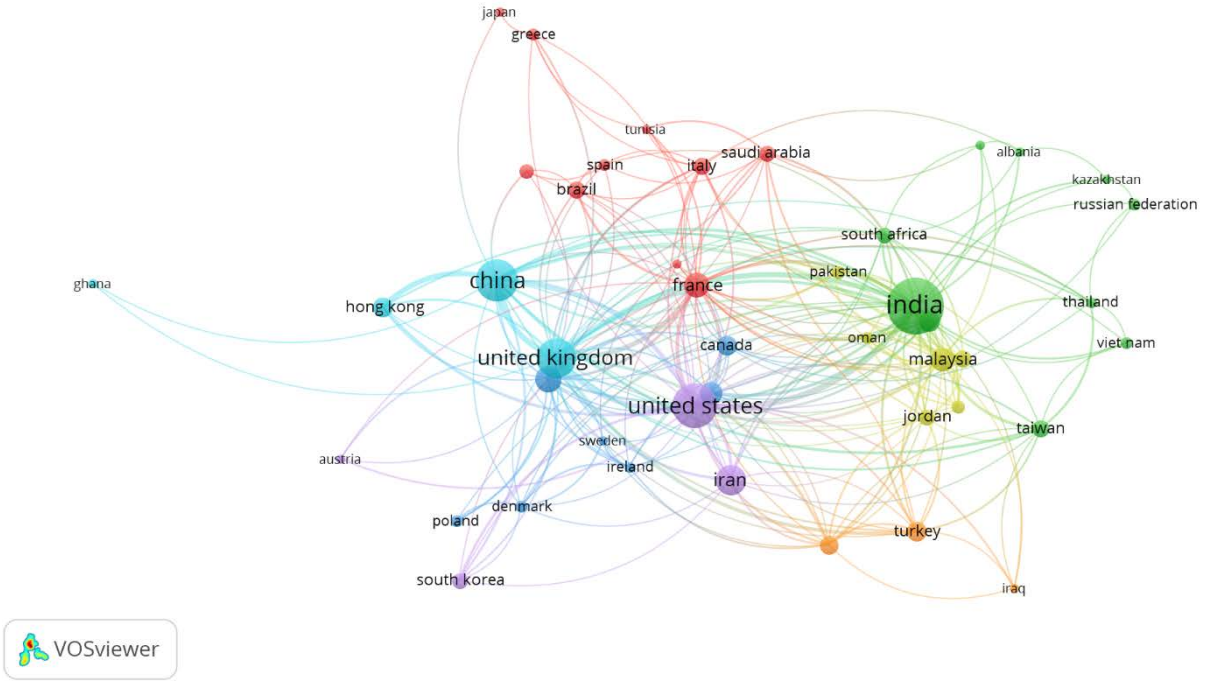

Fig 6: Co-authorship-countries analysis
Source: Vosviewer basis data from Scopus
Newer countries emerge here w.r.t. country-collaborations i.e. Hong-Kong and Turkey.

4.12 Funding

"National Natural Science Foundation" of China is the leading sponsor with over 40 projects.

5 Limitations of the Research

There are few limitations of the study namely
a The database of searches has been taken from Scopus. There could be good research works which are present in other databases like Web of Science and Dimensions. There could be papers which are published in journals or books beyond the domains of the databases.
b The selected papers and research works have been taken from the lot of English articles. There could be good articles in the non-English group.
c The keywords have been carefully chosen basis discussion, feedback from other researches and researchers. However, there could be some omissions which might result in missing out of important and relevant studies.

6 Future directions

Basis the defined focus of the paper, we will limit the future direction of research in this domain to the applications front rather than getting into the technical aspects of the same. Accordingly, we envision the following: improved optimization in supply chain processes, enhanced transparency (leading to traceability & accountability) and improved resilience in the supply chains. As per the research and industry indications, we forsee usage of AI models of enhanced

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transparency, more and more handshaking between different technologies (AI with Block-Chain and IoT).

7 Conclusion

This bibliometric analysis of research works from 2015-2025 clearly highlight the transition of the theme "AI in SCM" from a peripheral curiosity to a global research boom. Extensive research is still happening and there is no vision of the zenith. Technological improvement and the managerial applications are deciding the contours of this intersection. India, the United States and China dominate the volume podium in terms of research works generation. France and the U.K. punch far above their weight in citation impact. Core journals (IJPE, IJPR, TRE, TFSC, JCP) act as the central nervous system. Journals like the "*International Journal of Production Economics*", "*International Journal of Production Research"* and "*Technological Forecasting and Social Change"* emerge as good resorts for future researchers intending to venture into this area.

The growth rate basis forecast ($4.8 B in 2023 → $14.3 B by 2028 as predicted) should be an indication for descent attractiveness. The co-occurrence of keywords underscores that AI in SCM is no longer confined to operational improvements alone but is increasingly intersecting with sustainability, blockchain, IoT and Industry 4.0 initiatives. Despite these advancements, challenges such as data privacy, organizational vision, workforce availability and algorithmic transparency continue to act as barriers to seamless adoption. Taken together, the findings emphasize that the integration of AI into SCM is not only inevitable but also essential for organizations striving to remain competitive in a VUCA environment. However, adoption strategies must be carefully tailored to organizational context, technological maturity, and ethical considerations.

Future reviews must weave together transparency, resilience and green objectives into a single empirical fabric, turning today's scattered sparks into tomorrow's reliable, ethical and planet-proof supply-chain intelligence.

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