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RESEARCH TREND ON CHATBOT IN CONSTRUCTION: A BIBLIOMETRIC ANALYSIS

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Abstract:

The rapid advancement of Artificial Intelligence (AI) technologies has catalyzed transformative changes across various sectors, including the construction industry. Among these innovations, Chatbot has gained significant attention for its potential to enhance communication, automation, and decision-making processes. Despite its growing relevance, scholarly exploration of Chatbots within the construction domain remains fragmented and under-characterized. Thus, this study aims to address this gap through a comprehensive bibliometric analysis, offering a data-driven overview of current research trends, influential contributions, and thematic structures related to Chatbots in the construction industry. Utilizing a systematic search strategy, three key terms, "chatbot," "ChatGPT," and "construction," were applied to extract data from the Scopus database. The initial search yielded 537 relevant publications. Data cleansing and refinement were performed using OpenRefine to ensure analytical precision and consistency, followed by detailed quantitative and network-based analyses conducted via Scopus Analyzer and VOSviewer software. The results reveal a noticeable increase in publication activity from 2023 onwards, with significant contributions from

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countries such as the United States, China, and Malaysia. Thematic clustering highlights core research areas, including AI-assisted project scheduling, prompt engineering, and educational applications of Chatbots in engineering curricula. High-impact authors and journals were also identified, delineating the intellectual structure of the field. Citation and keyword co-occurrence analyses further emphasize the interdisciplinary nature of the topic, linking AI, natural language processing, and construction management. In conclusion, this study offers a foundational mapping of the emerging research landscape at the intersection of Chatbot and the construction industry. It also provides valuable insights for academics, practitioners, and policymakers seeking to harness AI-driven tools for innovation in construction processes and education.

Keywords:

Chatbot, GPT, ChatGPT, Construction, Aec, Bibliometric

Introduction

The integration of Chatbot-ChatGPT, a large language model developed by OpenAI, into the construction industry represents a significant advancement in applying Artificial Intelligence (AI) technologies. Since its release in late 2022, ChatGPT has been increasingly utilized across various sectors, including construction, to enhance productivity, accuracy, and quality in project execution (Sonkor & García de Soto, 2025). The construction industry, known for its complex and resource-intensive tasks, stands to benefit immensely from ChatGPT's capabilities. This is particularly true in areas such as technical documentation, project management, and real-time data interpretation (Barreto & Vilca, 2024). However, the adoption of ChatGPT also raises critical concerns regarding data privacy and security, necessitating robust measures to ensure its secure deployment (Sonkor & García de Soto, 2025).

Recent research has highlighted the transformative potential of ChatGPT in construction, emphasizing its ability to streamline communication, improve decision-making processes, and enhance overall project efficiency (Kukreja, Arumugam, Tyagi, & Sivakumar, 2024). For instance, ChatGPT has been demonstrated to significantly reduce the time and effort required for generating daily construction reports by automating the analysis of on-site video footage (Xiao, Wang, Zhang, Chen, & Darko, 2024). Additionally, the integration of ChatGPT with predictive analytics and digital twin technologies offers promising avenues for cost savings and time reduction in construction projects (Mateev, 2023). Despite these advancements, the reliability of AI-generated content and the efficacy of content screening methods remain contentious issues, particularly in writing-intensive construction courses (Zhao, Wang, Chance, & Buckhalter, 2024). This underscores the need for detailed guidelines and policies to govern the use of AI detection tools and ensure academic integrity (Zhao et al., 2024).

The current state of research on ChatGPT in construction reveals a growing interest in its applications and implications. Studies have explored its use in various aspects of construction, including eco-friendly building practices, construction site management, and human-AI interactions (Kwon, 2023). Moreover, the potential of ChatGPT to address technical doubts during the construction process has been

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validated through comparative analyses with other conversational AI platforms. This demonstrates its superior performance in providing precise and regulatory-based answers (Abel, López Leoncio Benito, & Josue, 2024). In line with this, the integration of ChatGPT into construction education and training programs has also been investigated, highlighting its role in bridging skill gaps and enhancing foundational learning (Jelodar, 2025). Despite this, challenges such as regulatory barriers and interoperability issues persist, necessitating ongoing research and collaboration to fully realize the benefits of ChatGPT in the construction industry (Jelodar, 2025).

In conclusion, the adoption of ChatGPT in construction presents both opportunities and challenges. While its ability to revolutionize various tasks and improve project outcomes is evident, ensuring the secure and ethical use of this technology is paramount. Thus, future research should focus on developing comprehensive frameworks to address data security concerns, enhance the reliability of AI-generated content, and facilitate the seamless integration of ChatGPT into construction practices. Moreover, by aligning theoretical education with practical training and strategic professional development, the construction industry can leverage the transformative power of ChatGPT to create a future-ready workforce and redefine contemporary practices (Barreto & Vilca, 2024; Jelodar, 2025).

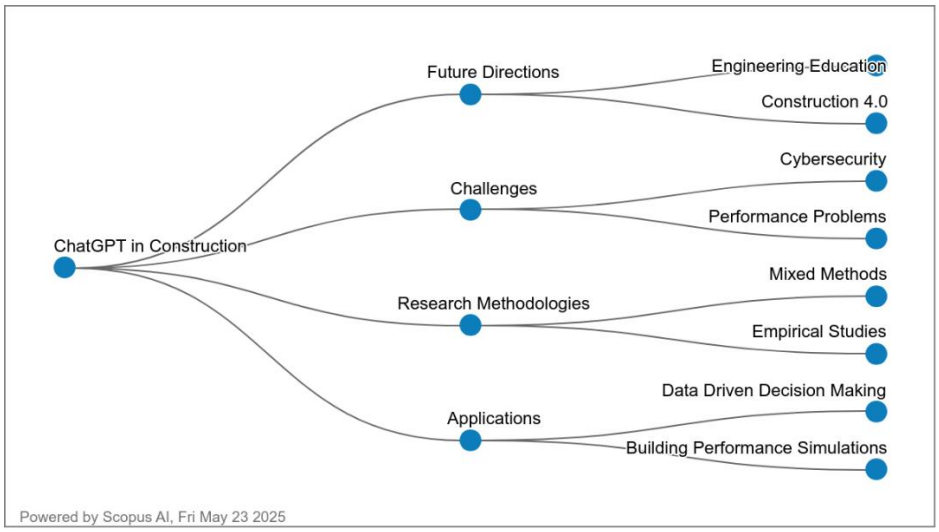

Figure 1: Overview of Chatbot in Construction

Research Question

RQ1: What are the research trends in Chatbot in construction according to the year of publication?
RQ2: What are the most cited articles?
RQ3: Where are the top 10 countries based on publication?
RQ4: What are the popular keywords related to the study?
RQ5: What is co-authorship by countries' collaboration?

Methodology

Bibliometrics involves gathering, organizing, and analyzing bibliographic data from scientific publications (Alves, Borges, & De Nadae, 2021; Assyakur & Rosa, 2022; Verbeek, Debackere, Luwel, & Zimmermann, 2002). Beyond basic statistics, such as identifying publishing journals,

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publication years, and leading authors (Y. C. J. Wu & Wu, 2017), bibliometrics includes more sophisticated techniques like document co-citation analysis. Correspondingly, conducting a successful literature review requires a careful, iterative process to select suitable keywords, search the literature, and perform an in-depth analysis. This approach helps to compile a comprehensive bibliography and achieve reliable results (Fahimnia, Sarkis, & Davarzani, 2015). With this in mind, the study focused on high-impact publications, as they provide meaningful insights into the theoretical frameworks that shape the research field. To ensure data accuracy, Scopus served as the primary source for data collection (Al-Khoury et al., 2022; di Stefano, Peteraf, & Veronay, 2010; Khiste & Paithankar, 2017). Additionally, to maintain quality, the study only considered articles published in peer-reviewed academic journals, deliberately excluding books and lecture notes (Gu, Li, Wang, Yang, & Yu, 2019). Using Elsevier's Scopus, known for its broad coverage, publications were collected from 1969 through May 2025 for further analysis.

Data Search Strategy

The study employed a screening sequence to determine the search terms for article retrieval. Afterwards, the query string was revised to ensure that the search terms ChatGPT or Chatbot can focus on the construction industry, as summarized in Table 1. This process yielded 537 results, which were used for bibliometric analysis. As of May 2025, all articles from the Scopus database relating to ChatGPT in the construction industry were incorporated in the study.

Table 1: The Search String

Scopus	TITLE (chatgpt OR Chatbot OR chat OR gpt OR llm OR bot OR gen OR genai AND construction OR aec OR contractor OR contractors OR surveyor OR surveyors OR surveying OR architect OR architecture OR engineer OR engineering OR designer OR designers OR consultant OR consultants) AND (EXCLUDE (SUBJAREA, "DENT") OR EXCLUDE (SUBJAREA, "IMMU") OR EXCLUDE (SUBJAREA, "NEUR") OR EXCLUDE (SUBJAREA, "NURS") OR EXCLUDE (SUBJAREA, "PHAR") OR EXCLUDE (SUBJAREA, "HEAL") OR EXCLUDE (SUBJAREA, "BIOC") OR EXCLUDE (SUBJAREA, "CHEM") OR EXCLUDE (SUBJAREA, "MEDI") OR EXCLUDE (SUBJAREA, "PHYS") OR EXCLUDE (SUBJAREA, "MATH"))

Data Analysis

VOSviewer is a user-friendly bibliometric software developed by Nees Jan van Eck and Ludo Waltman at Leiden University, Netherlands (van Eck & Waltman, 2010a, 2017). Widely utilized for visualizing and analyzing scientific literature, the tool specializes in creating intuitive network visualizations, clustering related items, and generating density maps. Its versatility allows for the examination of co-authorship, co-citation, and keyword co-occurrence networks, providing researchers with a comprehensive understanding of research landscapes. Moreover, the interactive interface and continuous updates ensure efficient and dynamic exploration of large datasets. In essence, VOSviewer's ability to compute metrics, customize visualizations, and its compatibility with various bibliometric data sources make it valuable for scholars seeking insights into complex research domains.

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One of the standout features of VOSviewer is its capacity to transform intricate bibliometric datasets into visually interpretable maps and charts. With a focus on network visualization, the software excels in clustering related items, analyzing keyword co-occurrence patterns, and generating density maps. Researchers benefit from its user-friendly interface, enabling both novice and experienced users to explore research landscapes efficiently. In addition, VOSviewer's continuous development ensures it remains at the forefront of bibliometric analysis, offering valuable insights through metrics computation and customizable visualizations. Its adaptability to various types of bibliometric data, such as co-authorship and citation networks, positions VOSviewer as a versatile and indispensable tool for scholars seeking a more profound understanding and meaningful insights within their research domains. Datasets comprising information on the publication year, title, author name, journal, citation, and keywords in PlainText format were procured from the Scopus database, spanning the period from 2004 to December 2024. These datasets were then analyzed using VOSviewer software version 1.6.19. Through VOS clustering and mapping techniques, this software facilitated the examination and generation of maps. Offering an alternative to the Multidimensional Scaling (MDS) approach, VOSviewer focuses on situating items within low-dimensional spaces, ensuring that the proximity between any two items accurately reflects their relatedness and similarity (van Eck & Waltman, 2010b). In this respect, VOSviewer is similar to the MDS approach (Appio, Cesaroni, & Di Minin, 2014). Diverging from MDS, which primarily engages in the computation of similarity metrics like cosine and Jaccard indices, VOSviewer utilizes a more fitting method for normalizing co-occurrence frequencies. This includes the Association Strength (AS_{ij}), and it is calculated as (Van Eck & Waltman, 2007):

$$AS_{ij} = \frac{C_{ij}}{w_i w_j},$$

which is "proportional to the ratio between, on the one hand, the observed number of co-occurrences of i and j and, on the other hand, the expected number of co-occurrences of i and j under the assumption that co-occurrences of i and j are statistically independent" (Van Eck & Waltman, 2007).

Findings

What Are The Research Trends In Chatbot In Construction According To The Year Of Publication?

The temporal distribution of publications reveals a pronounced surge in scholarly output over the past three years, with 2024 alone accounting for the highest share at 38.4% (206 publications). This is followed by 2025 at 13.4% and 2023 at 14.9%. This sharp rise indicates an escalating academic interest in recent years, likely driven by the rapid proliferation and integration of generative AI technologies, particularly ChatGPT, across various research domains. The significant volume of publications in this brief timeframe underscores the perceived transformative potential of these tools, prompting scholars to explore both their applications and implications with unprecedented intensity.

Earlier years, particularly the period from 2010 to 2022, exhibit a modest yet gradually increasing trend in publication output. Years such as 2020 and 2022 saw slight upticks, possibly reflecting early engagement with foundational technologies and the digital acceleration prompted by the COVID-19 pandemic. Despite relatively lower volumes, these years laid the

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groundwork for the explosive growth observed post-2022. The sporadic yet persistent contributions during this interval suggest that AI-related scholarship was gaining momentum, albeit at a slower pace, prior to the mainstreaming of tools like ChatGPT.

The data also indicates minimal activity before 2010, with publication counts largely in the single digits per year and negligible percentage contributions. This trend reflects the nascent stage of AI discourse during that era, characterized by conceptual exploration rather than widespread application. The shift from these isolated early works to a prolific and sustained research surge in recent years marks a clear inflection point in the academic landscape. Overall, the temporal analysis illustrates a dramatic reorientation of scholarly priorities, positioning generative AI as a central concern in contemporary research discourse.

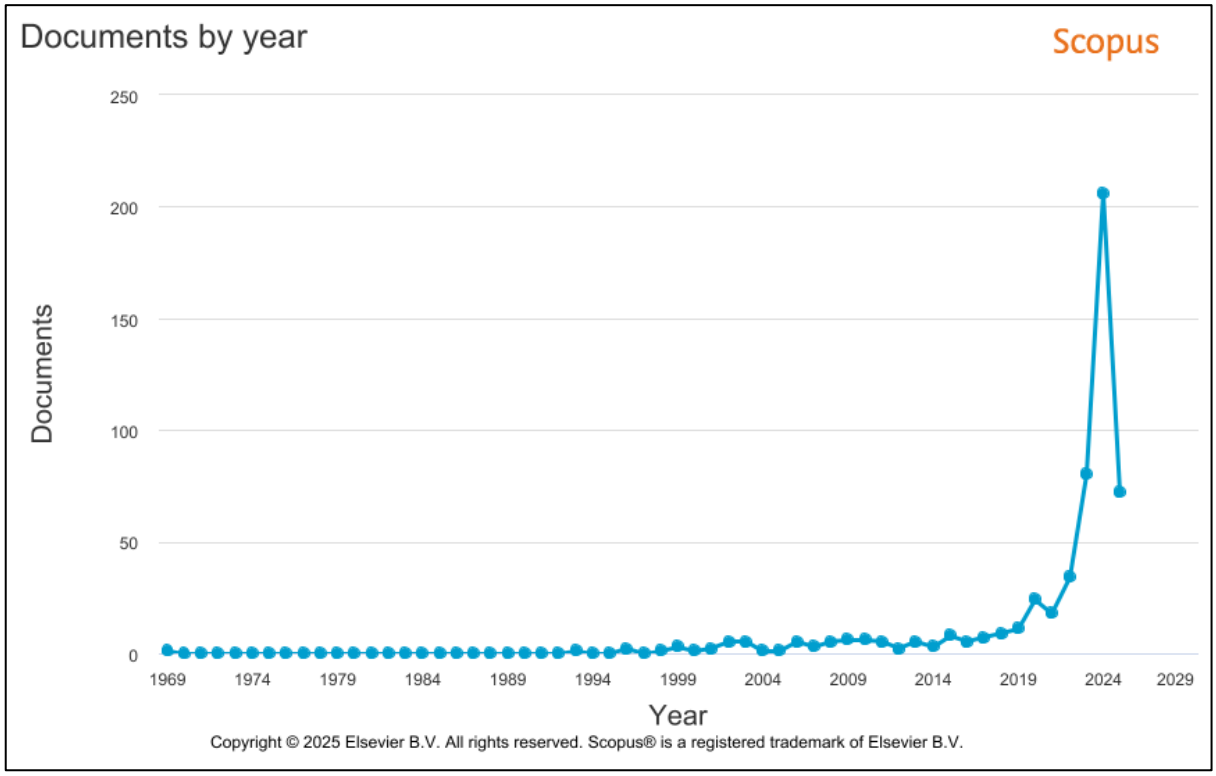

Figure 2: Trend Of Research in Chatbots in Construction by Years

Table 2: The Trend Percentage of Research on Chatbots in Construction by Years

Year	Total publication	Percentage (%)
2025	72	13.4
2024	206	38.4
2023	80	14.9
2022	34	6.3
2021	18	3.4
2020	24	4.5
2019	11	2.0
2018	9	1.7
2017	7	1.3
2016	5	0.9
2015	8	1.5

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2014	3	0.6
2013	5	0.9
2012	2	0.4
2011	5	0.9
2010	6	1.1
2009	6	1.1
2008	5	0.9
2007	3	0.6
2006	5	0.9
2005	1	0.2
2004	1	0.2
2003	5	0.9
2002	5	0.9
2001	2	0.4
2000	1	0.2
1999	3	0.6
1998	1	0.2
1996	2	0.4
1993	1	0.2
1969	1	0.2

What Are The Most Cited Articles?

The Scopus citation data for the top ten most cited authors highlights an emergent and robust research focus on the applications of ChatGPT and generative AI across various disciplines. The most cited work by Qadir (2023), with 376 citations, reflects deep academic engagement with the pedagogical implications of AI in engineering education. This is closely followed by Giray (2023), whose study on prompt engineering in academic writing (294 citations) underscored the growing interest in equipping learners and educators with new AI-enhanced communication tools. Similarly, Nikolic et al. (2023) and Short and Short (2023) delved into assessment integrity and entrepreneurial rhetoric, respectively. This suggests that the educational and professional potential of ChatGPT is a rapidly developing area of scholarship with cross-disciplinary relevance.

The inclusion of Subrahmanyam et al.'s (2006) highly cited study (297 citations) on adolescent identity formation in online spaces provides a historical anchor in the dataset. This demonstrates the longstanding academic interest in the interaction between digital technologies and human development. While indirectly linked to ChatGPT, this work complements contemporary AI-focused research by illustrating continuity in scholarly attention to digital self-presentation and mediated communication. More recent studies, such as Wu et al. (2024) and Daun and Brings (2023), continue this trajectory by examining AI-facilitated blended learning and the transformation of software engineering education, respectively. This reveals a persistent interest in how AI reshapes learning environments and cognitive processes.

In parallel, notable attention has been given to the integration of AI in more applied and technical domains. For example, Prieto et al. (2023) investigated AI scheduling in construction projects, while Ayanouz et al. (2020) and Villegas-Ch et al. (2020) proposed intelligent Chatbot architectures for healthcare and educational campuses. These studies illustrate how ChatGPT

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and related technologies are being adapted to domain-specific challenges, contributing to theory and practical innovation. This body of work collectively signals a decisive shift in academic priorities toward the systemic integration of AI, reflecting both the opportunities and critical questions it raises across education, technology, and society.

Table 3: Most Cited Author

Authors	Title	Year	Source title	Cited by
Qadir J.	Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education (Qadir, 2023)	2023	IEEE Global Engineering Education Conference, EDUCON	376
Subrahmanyam K.; Smahel D.; Greenfield P.	Connecting developmental constructions to the Internet: Identity presentation and sexual exploration in online teen chat rooms (Subrahmanyam, Smahel, & Greenfield, 2006)	2006	Developmental Psychology	297
Giray L.	Prompt Engineering with ChatGPT: A Guide for Academic Writers (Giray, 2023)	2023	Annals of Biomedical Engineering	294
Nikolic S.; Daniel S.; Haque R.; Belkina M.; Hassan G.M.; Grundy S.; Lyden S.; Neal P.; Sandison C.	ChatGPT versus engineering education assessment: a multidisciplinary and multi-institutional benchmarking and analysis of this generative artificial intelligence tool to investigate assessment integrity (Nikolic et al., 2023)	2023	European Journal of Engineering Education	163
Short C.E.; Short J.C.	The artificially intelligent entrepreneur: ChatGPT, prompt engineering, and entrepreneurial rhetoric creation (Short & Short, 2023)	2023	Journal of Business Venturing Insights	122
Prieto S.A.; Mengiste E.T.; García de Soto B.	Investigating the Use of ChatGPT for the Scheduling of Construction Projects (Prieto, Mengiste, & García de Soto, 2023)	2023	Buildings	95
Ayanouz S.; Abdelhakim B.A.; Benhmed M.	A Smart Chatbot Architecture based NLP and Machine Learning for Health Care Assistance (Ayanouz, Abdelhakim, & Benhmed, 2020)	2020	ACM International Conference Proceeding Series	92
Villegas-Ch W.; Arias-Navarrete	Proposal of an Architecture for the Integration of a Chatbot	2020	Sustainability (Switzerland)	86

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A.; Palacios-Pacheco X.	with Artificial Intelligence in a Smart Campus for the Improvement of Learning (Villegas-Ch, Arias-Navarrete, & Palacios-Pacheco, 2020)			
Wu T.-T.; Lee H.-Y.; Li P.-H.; Huang C.-N.; Huang Y.-M.	Promoting Self-Regulation Progress and Knowledge Construction in Blended Learning via ChatGPT-Based Learning Aid (T.-T. Wu, Lee, Li, Huang, & Huang, 2024)	2024	Journal of Educational Computing Research	85
Daun M.; Brings J.	How ChatGPT Will Change Software Engineering Education (Daun & Brings, 2023)	2023	Annual Conference on Innovation and Technology in Computer Science Education, ITiCSE	83

What Are The Top 10 Countries Based On Publication?

The data on publication output by country reflects a significant concentration of scholarly contributions from the United States, which leads with 134 publications, nearly 2.5 times more than the second-ranking country, China (54). This dominance suggests the United States' central role in advancing research in the relevant field, likely driven by substantial institutional investment, technological infrastructure, and early adoption of AI tools such as ChatGPT in academic and industry contexts. At the same time, China's substantial output further underscores its rapid ascension as a global research powerhouse, bolstered by national policies prioritizing technological innovation and AI integration.

Following the top two contributors, countries such as India (35), Germany (33), South Korea (21), and the United Kingdom (21) form a middle tier of research activity. These nations have demonstrated consistent scholarly engagement, likely supported by well-established higher education systems and growing interest in digital transformation across disciplines. The relatively balanced output between countries in this group suggests a diffusion of AI-related research capacity beyond traditional Western strongholds, highlighting a more globally distributed academic discourse on emerging technologies.

The lower tier, represented by Australia (19), Italy (14), Canada (12), and Japan (12), still reflects meaningful participation, though at a smaller scale. While their contributions are less voluminous, they likely indicate focused research efforts within specialized areas of AI application. Notably, the presence of diverse geographic regions within the top ten suggests broadening global participation in this field, even as the United States and China maintain a leadership position. Overall, the data reveals a tiered yet increasingly interconnected international research landscape in which AI and related technologies command growing and widespread scholarly attention.

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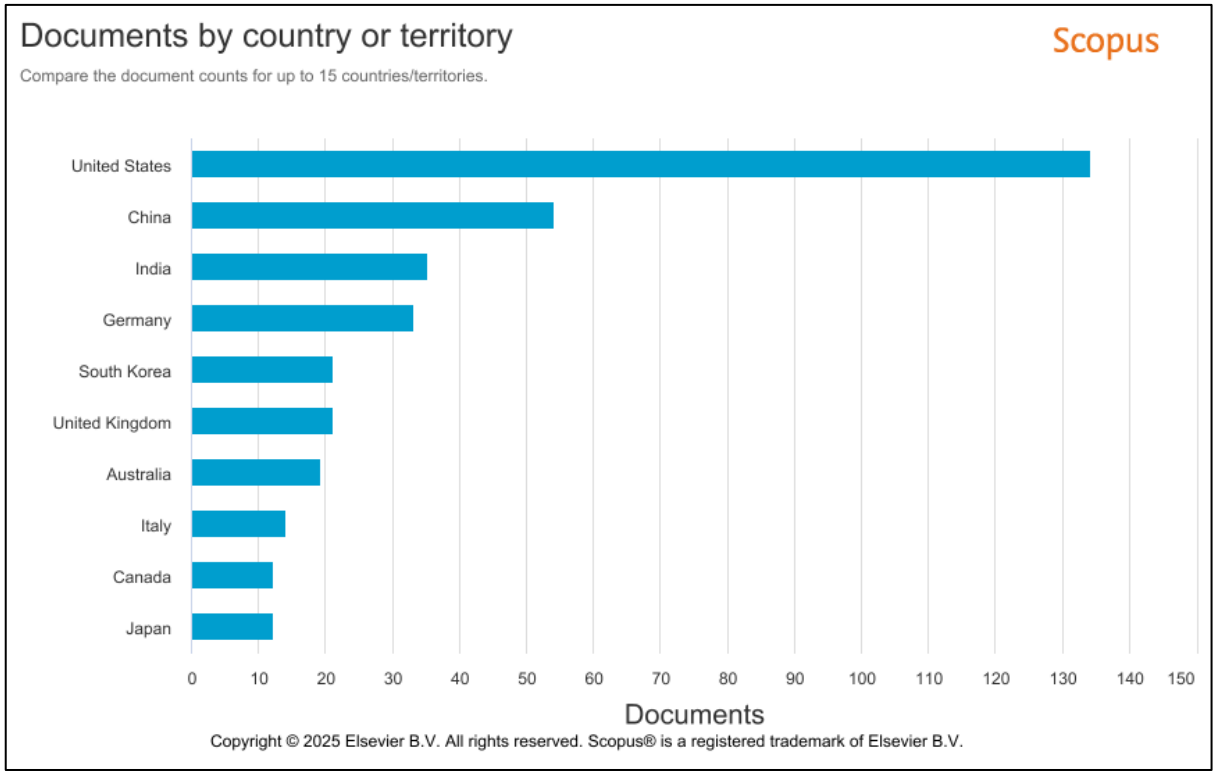

Figure 3: Top 10 Countries Based on Publication of Chatbots in Construction

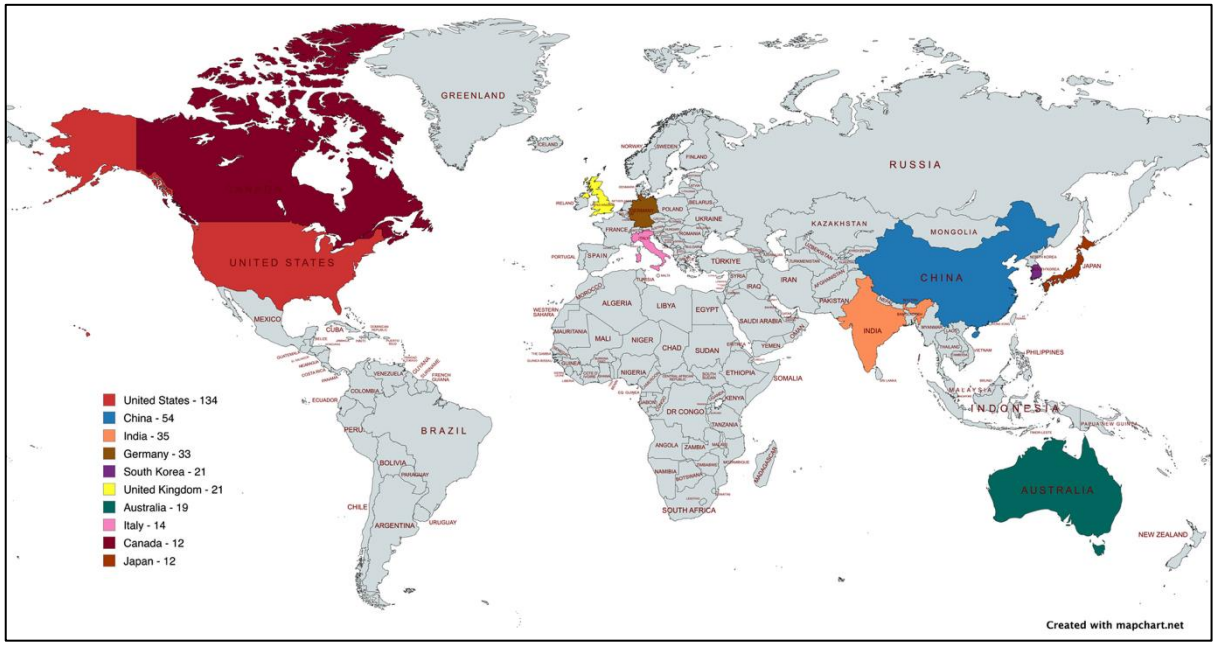

Figure 4: World Map of the Top 10 Countries Based on Publication of Chatbots in Construction

What Are The Popular Keywords Related To The Study?

The analysis of popular keywords derived from the VOSviewer mapping indicates a clear dominance of terms directly related to ChatGPT and large language models in contemporary scholarly discourse. The keyword **"chatgpt"** demonstrates the highest number of occurrences (155) and total link strength (376), underscoring its central role in current academic

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conversations. Closely following are terms such as **"large language models"** (80 occurrences, 196 link strength), **"ai"**(71, 191), and **"chatbot"** (68, 114), reflecting the prevailing interest in the broader ecosystem of generative AI. This concentration of focus suggests that the academic community is increasingly oriented toward examining the implications, capabilities, and applications of these technologies.

Moreover, keywords like **"prompt engineering"** (53 occurrences, 128 link strength) and **"generative ai"** (43, 121) highlight the methodological and technical aspects of generative tools. This indicates a shift from mere conceptual engagement to more applied and implementation-focused inquiries. Meanwhile, the presence of **"engineering education"** (41, 107) further reveals a significant research trajectory exploring how generative AI is transforming pedagogical paradigms, especially in technical and higher education contexts. The inclusion of **"natural language processing"** and **"software engineering"** also reflects an interdisciplinary interest that bridges AI technologies with established fields, further emphasizing the integrative and transformative impact of these developments.

A second cluster of keywords with moderate frequency and linkage, such as **"knowledge graph," "construction," "education,"** and **"machine learning,"** suggests emerging or complementary lines of inquiry. Although less prominent, these terms underline the diverse application domains and conceptual intersections where generative AI is making inroads. For example, terms like **"architecture," "information security,"** and **"gen-z,"** suggest broader socio-technical implications, including concerns over privacy, youth engagement, and built environment innovation. The breadth of these keywords indicates that while core discussions remain centered around ChatGPT and foundational AI models, the academic landscape is gradually expanding to encompass a wider spectrum of interdisciplinary and application-driven research.

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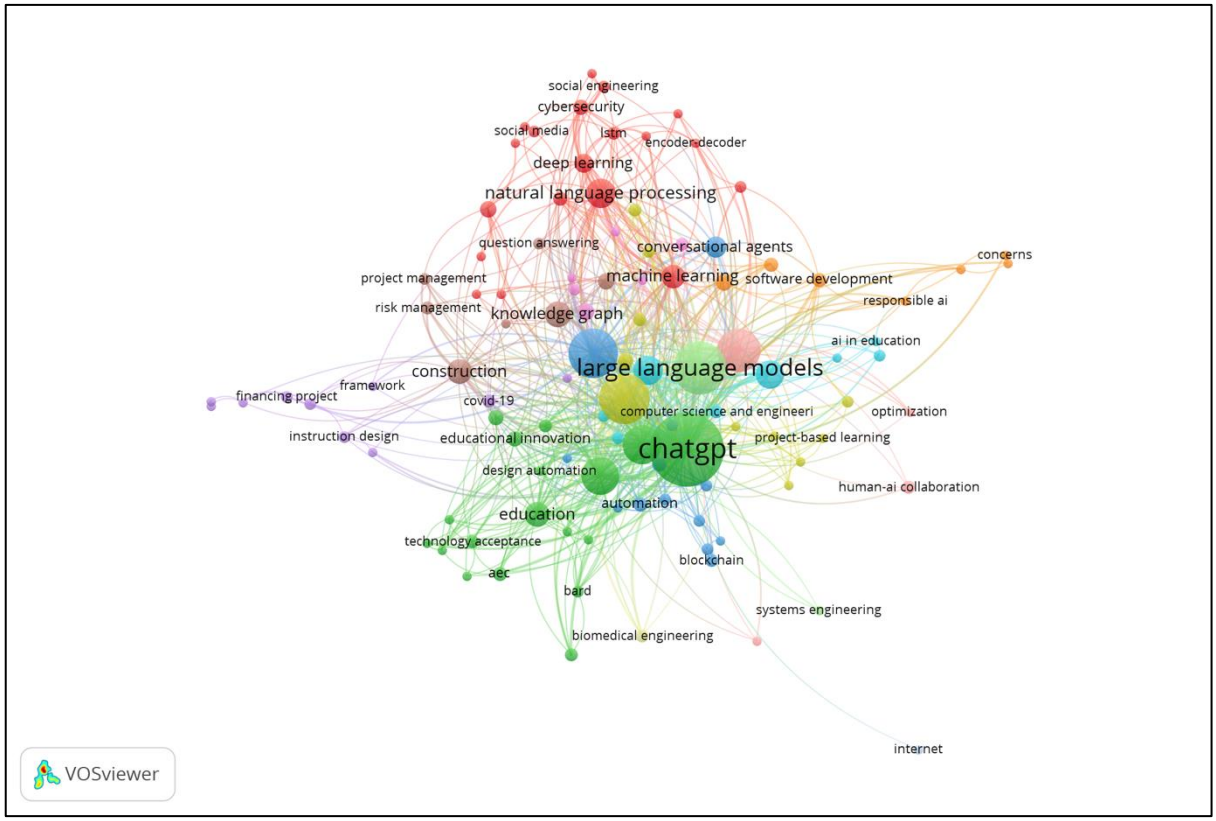

Figure 5: Network Visualization Map of Keywords' Co-Occurrence More Than 3 Times

Table 4: Keywords And Total Link Strength

No	Keyword	Occurrences	Total Link Strength
1	chatgpt	155	376
2	large language models	80	196
3	ai	71	191
4	chatbot	68	114
5	prompt engineering	53	128
6	generative ai	43	121
7	engineering education	41	107
8	llm	24	60
9	natural language processing	24	72
10	software engineering	23	46
11	knowledge graph	19	32
12	construction	18	47
13	education	17	54
14	machine learning	16	52
15	conversational agents	13	27
16	deep learning	11	35
17	architecture	8	20
18	gen-z	8	13
19	generative pre-trained	8	15
20	information security	8	19

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What Is Co-Authorship By Countries' Collaboration?

The data derived from the VOSviewer analysis highlights the United States as the predominant contributor to the literature, with 151 documents and a significant 1,322 citations, underscoring its centrality and influence in the network with the highest total link strength (47). This suggests a high level of scholarly output and substantial integration and collaboration within the research landscape, reflecting its leadership in thematic development and cross-national academic partnerships. China and Canada follow with 61 and 15 documents, respectively, yet Canada's citations (130) relative to its output demonstrate a high impact per document, paralleling China's stronger document count and citation tally of 292. Accordingly, both nations exhibit a robust network connectivity with equal total link strengths of 20, reflecting their role in bridging research clusters.

Middle-tier contributors such as India, the United Kingdom, and Germany offer a diverse picture. India and Germany, each with 39 documents, report 188 and 231 citations, respectively, while the UK, with 23 documents and 243 citations, showcases high citation intensity. All three countries exhibit moderate total link strengths (10-12), indicative of consistent yet less dense collaborative linkages than the leading nations. In particular, Australia stands out with 20 documents and a citation count of 267, suggesting a high impact-to-output ratio, similar to that of the UK. These metrics reveal the nuanced contributions of each country in terms of volume, scholarly influence, and the degree of international research interconnectivity.

The data from France, the Netherlands, and Brazil suggest more modest participation, with lower document counts and citations. France and Brazil, despite their smaller output (9 and 12 documents respectively), maintain a presence within the citation and link strength networks, albeit at a lower scale. While having only ten documents, the Netherlands achieves 62 citations and a link strength of 14, indicating targeted engagement in specific research clusters. This pattern highlights the significance of both quantity and network integration in assessing a country's influence within a research domain. Together, these insights reveal a globalized yet stratified landscape of scholarly communication and collaboration.

Table 5: 10 Co-Authorship Countries With 5 Papers and More

No	Country	Documents	Citations	Total Link Strength
1	United States	151	1322	47
2	Canada	15	130	20
3	China	61	292	20
4	Netherlands	10	62	14
5	India	39	188	12
6	United Kingdom	23	243	12
7	Australia	20	267	10
8	France	9	18	10
9	Germany	39	231	10
10	Brazil	12	67	9

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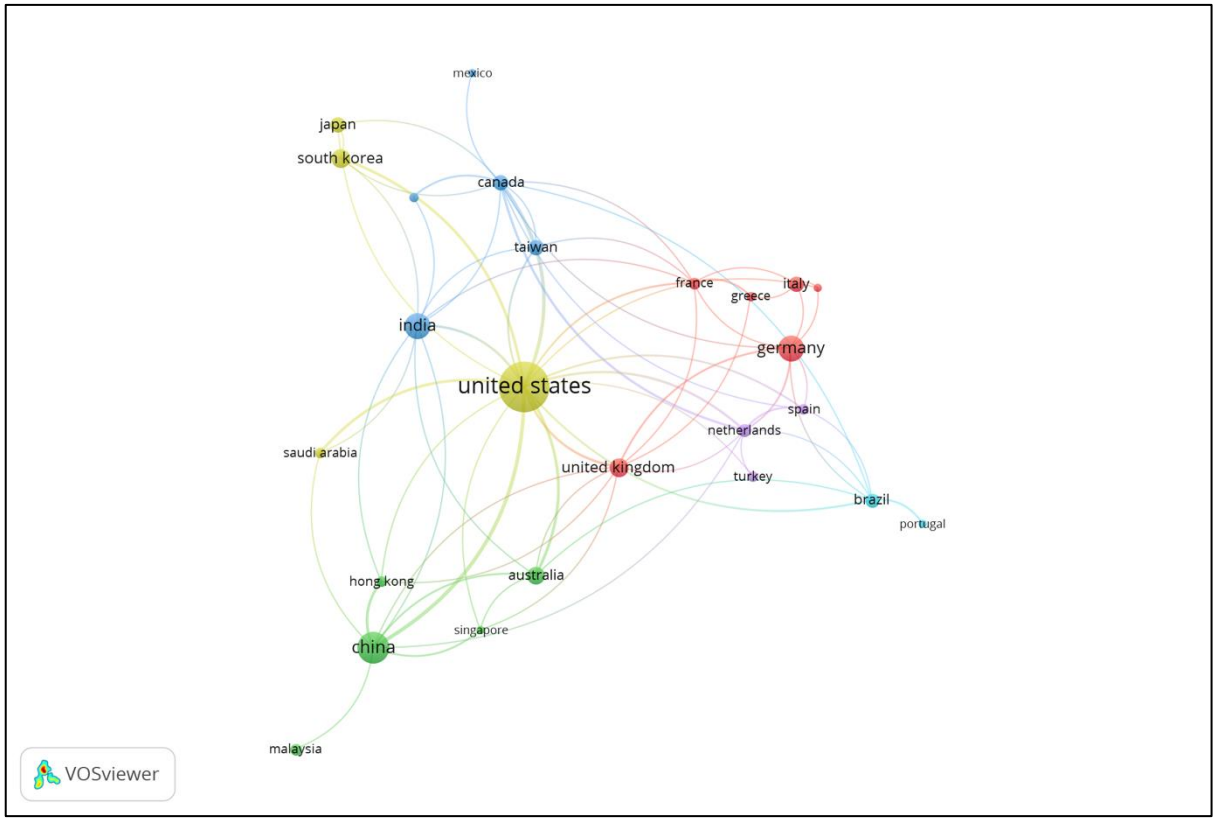

Figure 6: Network Visualization Map of Co-Authorship Countries With 5 Papers and More

Conclusion

This study aimed to examine the evolving landscape of Chatbot-related research within the construction industry through a bibliometric approach, aiming to identify prevailing trends, influential contributions, and collaboration patterns. The analysis was guided by key research questions concerning temporal publication patterns, citation impact, geographic distribution, keyword relevance, and co-authorship networks. Using a dataset of 537 records retrieved from the Scopus database and refined through OpenRefine, the data was subsequently analyzed using Scopus Analyzer and VOSviewer software to generate both quantitative and network-based insights.

The findings reveal a pronounced surge in scholarly output beginning in 2023, reflecting a growing academic interest in integrating generative AI, particularly ChatGPT, within construction-related domains. Notably, the United States emerged as the leading contributor both in terms of volume and citation impact, followed by China and Malaysia. Meanwhile, thematic clusters highlight concentrated research on AI-assisted scheduling, prompt engineering, and educational applications. The keyword analysis highlights "ChatGPT," "large language models," and "AI" as dominant terms, emphasizing the centrality of these technologies in the discourse. Furthermore, citation and co-authorship mapping suggest increasing international collaboration, with notable contributions from both established and emerging research economies.

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This analysis contributes to the literature by offering a comprehensive overview of the current state and developmental trajectory of Chatbot research in the construction context. It extends prior work by mapping intellectual and collaborative structures, offering empirical evidence of the field's rapid expansion and interdisciplinary character. Moreover, the practical implications are multifaceted, suggesting that AI-driven tools like ChatGPT may enhance productivity and decision-making in construction projects and enrich educational and training environments. However, limitations include the exclusive reliance on Scopus-indexed articles and the scope constrained to selected keywords. Therefore, future research should incorporate broader databases and more refined thematic filters to deepen understanding of the technological, ethical, and operational dimensions of AI in construction. Ultimately, bibliometric analyses such as this are essential for charting the knowledge landscape, informing strategic research directions, and fostering innovation in applying generative AI within the built environment.

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