

Global Research Trends In Digital Marketing: A Bibliometric Analysis From Scopus (2015–2025)

Le Thi Ut

University of Labour and Social Affairs (Campus II), Ho Chi Minh City, Vietnam

Abstract

The rapid diffusion of artificial intelligence (AI) has reshaped the foundations of digital marketing, transforming how organizations analyze data, predict consumer behavior, and design customer engagement strategies. This study aims to provide a systematic overview of global research on AI-driven digital marketing by applying bibliometric techniques to publications indexed in the Scopus database between 2018 and 2025.

A total of 1,405 documents including 1,307 articles and 98 review papers were retrieved and analyzed directly from the Scopus database to map publication performance, journal productivity, authorship patterns, thematic structures, and geographical distribution. Results indicate a sharp rise in academic attention after 2021, reflecting the growing convergence of artificial intelligence, machine learning, and consumer analytics within marketing research. The United States, India, and China remain the most influential contributors, while emerging economies such as Malaysia and Indonesia have shown increasing scholarly visibility in recent years.

Keyword and thematic analyses highlight four major research streams: (i) AI adoption and marketing automation, (ii) consumer behavior and engagement analytics, (iii) data ethics and transparency, and (iv) sustainable and responsible AI marketing. Overall, the findings demonstrate that the field is transitioning from experimental adoption toward a mature, interdisciplinary, and globally distributed research domain. The study offers valuable insights for scholars and practitioners seeking to understand how intelligent technologies are redefining marketing theory and practice in the digital era.

Keywords: Artificial Intelligence; Digital Marketing; Machine Learning; Consumer Analytics; Bibliometric Analysis; Scopus; Data-Driven Marketing; Thematic Mapping

1. Introduction

Over the past decade, digital marketing has undergone a profound transformation driven by rapid technological innovation and data proliferation. What was once limited to social media advertising and website optimization has evolved into a dynamic ecosystem powered by artificial intelligence (AI), machine learning, and predictive analytics. Organizations now rely on intelligent algorithms to personalize customer experiences, forecast market behavior, and automate decision-making. This transformation, often referred to as *AI-driven digital marketing*, represents a paradigm shift that blends creativity with computation, changing the way brands communicate and compete in the digital economy.

Despite this rapid evolution, the academic understanding of how AI reshapes marketing strategies remains fragmented. Prior studies have examined discrete topics such as AI adoption, customer engagement, and big data analytics (Dwivedi et al., 2021; Chatterjee et al., 2023), yet few have systematically mapped the intellectual structure or thematic evolution of the field. Moreover, the majority of reviews focus on either technical applications or behavioral outcomes, leaving a gap in integrative analyses that connect both technological and managerial dimensions. This lack of synthesis makes it difficult to trace how scholarly attention has shifted from traditional marketing automation toward predictive and generative AI technologies in recent years.

In response to this gap, the present study conducts a comprehensive bibliometric analysis of AI-driven digital marketing research between 2018 and 2025, based exclusively on data retrieved from the Scopus database. The selected period represents the most dynamic phase of scholarly growth, when machine

learning, social media analytics, and data-driven personalization became central themes in marketing research. Using Scopus's built-in analytical functions, this study quantitatively maps publication trends, leading journals, prolific authors, thematic structures, and geographical patterns of global research output.

The main contribution of this research lies in providing a systematic, data-based overview of how AI has influenced digital marketing scholarship and practice. The analysis not only maps research performance but also reveals conceptual linkages among themes such as automation, personalization, and ethical AI in marketing. The findings are expected to guide scholars, practitioners, and policymakers in identifying emerging directions particularly in areas combining AI, consumer behavior, and sustainability. Ultimately, this study seeks to strengthen the theoretical foundation of digital marketing by clarifying its transformation into an AI-centered, interdisciplinary research domain that continues to shape the future of marketing thought and practice.

2. Methodology

2.1. Research Design

This study adopts a bibliometric research design to systematically map and evaluate global scientific production related to *AI-driven digital marketing* from 2018 to 2025. Bibliometric analysis is particularly suitable for identifying research trends, intellectual structures, and thematic evolution within a field (Aria & Cuccurullo, 2017). Unlike narrative reviews, this method allows for quantitative assessment of publication patterns, author productivity, and network relationships, thereby ensuring transparency and replicability in the evaluation process.

The research followed a structured protocol encompassing three phases: (i) data retrieval from the Scopus database, (ii) data cleaning and refinement, and (iii) visualization and interpretation using advanced bibliometric tools. This mixed descriptive–exploratory design enables both macro-level trend detection and micro-level analysis of research networks, topics, and disciplinary interactions.

2.2. Data Retrieval and Screening

The dataset was extracted from the Scopus database a leading source of peer-reviewed publications on October 10, 2025. The search strategy combined multiple keywords to capture the breadth of the field, focusing on intersections between *artificial intelligence* and *digital marketing*. The final search query was as follows: “TITLE-ABS-KEY(*"digital marketing" OR "online marketing" OR "internet marketing" OR "social media marketing" OR "mobile marketing" OR "content marketing" OR "digital advertising"*)AND (*"artificial intelligence" OR "data analytics" OR "machine learning"*)AND (PUBYEAR > 2017 AND PUBYEAR < 2026)AND (LIMIT-TO (LANGUAGE, *"English"*))AND (LIMIT-TO (DOCTYPE, *"ar"*) OR LIMIT-TO (DOCTYPE, *"re"*))AND (LIMIT-TO (SUBJAREA, *"BUSI"*) OR LIMIT-TO (SUBJAREA, *"ECON"*)).

This query produced 1,405 documents, comprising 1,307 research articles and 98 review papers. The dataset was filtered to ensure relevance by removing duplicates, non-English documents, and items without complete bibliographic metadata (e.g., missing author or source information). Only journal articles and review papers were retained, as they represent validated scholarly contributions.

The selected timeframe (2018–2025) reflects the period during which AI applications in digital marketing gained global prominence, coinciding with the rise of machine learning, data-driven marketing, and automation platforms.

2.3. Bibliometric Tools and Analysis Techniques

Data analysis was conducted directly within the Scopus database interface. Descriptive indicators such as annual publication trends, document types, authorship, and journal distribution were extracted and organized using built-in analytical features. Figures and tables were generated based on Scopus visualizations and manually refined for clarity and consistency. This procedure ensures transparency, replicability, and alignment with standard bibliometric reporting practices. The analytical workflow followed the steps below:

- (1) Descriptive performance analysis to examine publication trends, sources, document types, and leading authors.
- (2) Conceptual structure mapping using keyword co-occurrence and thematic mapping to reveal intellectual clusters.

- (3) Geographical analysis identifying key contributing countries and regions.
- (4) Thematic evolution and intellectual linkage detecting the progression of core research themes over time.

All figures and tables were directly extracted and processed from the Scopus database interface (2025), ensuring data accuracy and visual consistency. The visualizations were refined manually to enhance clarity and presentation quality while maintaining full transparency and replicability of the results.

3.1. Publication Performance and Trend Analysis (revised & concise version)

Table 1. Annual Scientific Production on AI-Driven Digital Marketing (2018–2025)

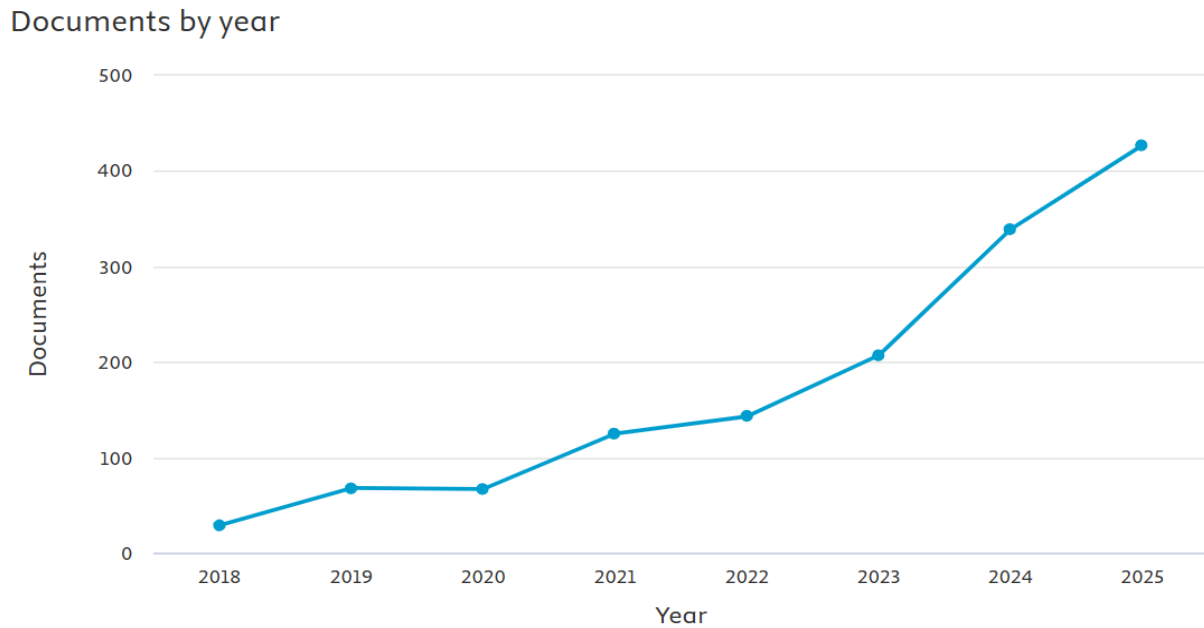
Year	Documents	Growth (%)
2018	29	–
2019	68	134.5
2020	67	–1.5
2021	125	86.6
2022	143	14.4
2023	207	44.8
2024	339	63.8
2025	427	25.9
Total (2018–2025)	1,405	—

(Source: Scopus database, retrieved October 2025)

Our analysis suggests that scholarly attention to AI-driven digital marketing has risen sharply since 2018. The field began with just 29 papers, but output more than doubled in 2019 (+134.5%), signaling a turning point in how researchers perceived artificial intelligence as a marketing enabler. The brief slowdown in 2020 (–1.5%) likely reflects the global research disruption caused by the COVID-19 pandemic, yet the momentum quickly recovered afterward.

Between 2021 and 2025, publications expanded rapidly as machine learning, data analytics, and social-media intelligence became mainstream. The sharpest growth occurred in 2023–2024 (+63.8%), when AI applications shifted from peripheral use toward core marketing functions. By 2025, output had reached 427 papers, almost fifteen times that of 2018, suggesting that artificial intelligence had evolved from a novelty into a defining paradigm of modern marketing research.

Figure 1. Annual Publication Trend (2018–2025)



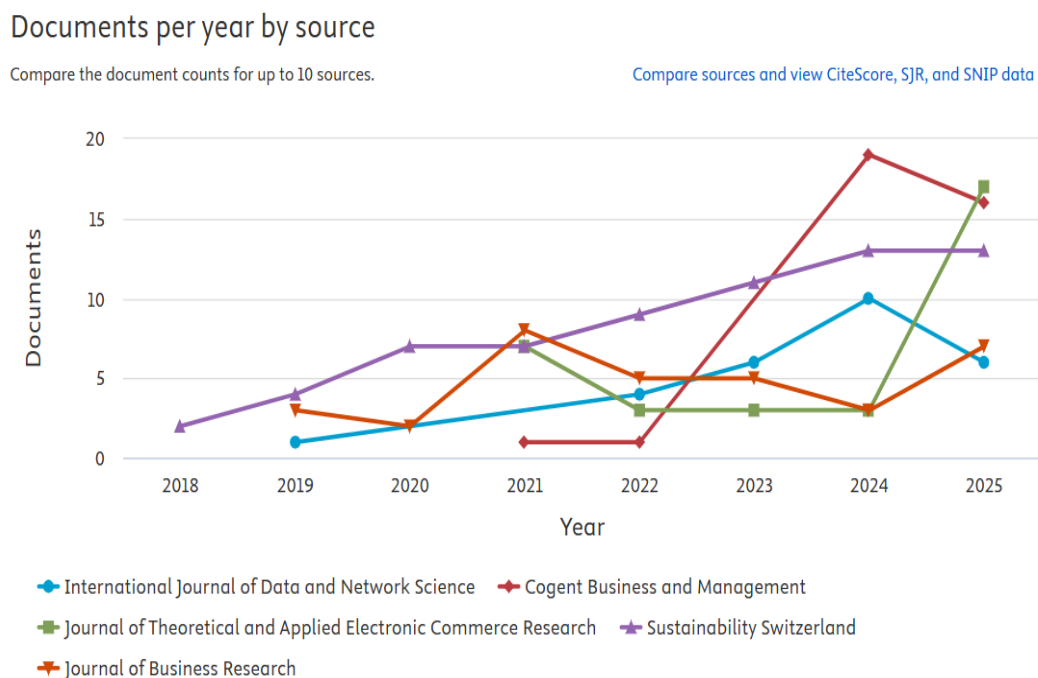
(Source: Scopus database, retrieved October 2025)

As visualized in Figure 1, the curve follows an exponential pattern, steepening notably after 2021. This trajectory mirrors the widespread diffusion of intelligent technologies and the growing academic focus on data-centric, algorithmic, and consumer-oriented marketing approaches across global contexts.

3.2. Documents per Year by Source (2018–2025)

Figure 2 shows the annual publication distribution across the five most active journals contributing to AI-driven digital marketing research between 2018 and 2025. The output demonstrates a clear upward tendency, with notable acceleration after 2021. *Sustainability (Switzerland)* emerges as the most consistent source, maintaining steady growth from 2018 to 2025, which reflects the journal's emphasis on digital transformation and sustainability convergence.

Figure 2. Documents by Source (2018–2025)



(Source: Scopus database, retrieved October 2025)

The *International Journal of Data and Network Science* displays a gradual but steady increase, highlighting the growing methodological linkage between data science and marketing analytics. Meanwhile, *Cogent Business & Management* and *Journal of Theoretical and Applied Electronic Commerce Research* both exhibit sharp publication surges in 2024–2025, suggesting an emerging wave of empirical and conceptual studies integrating AI with consumer engagement and e-commerce applications.

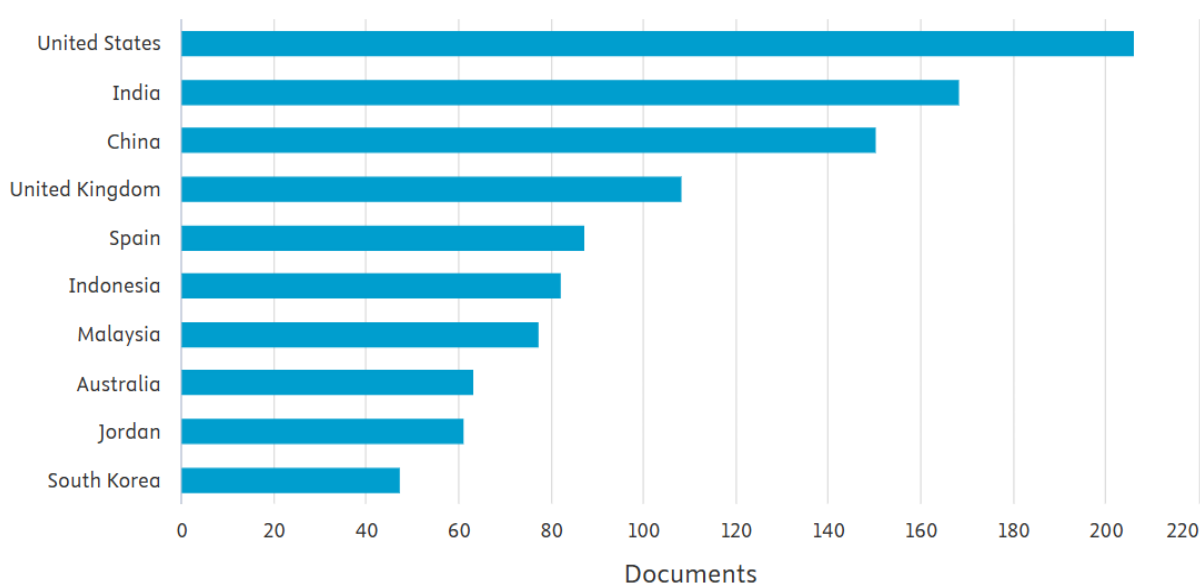
Although *Journal of Business Research* shows fluctuations, its sustained presence indicates that AI-enabled marketing has penetrated mainstream marketing scholarship. Overall, the pattern reveals that the research field is broadly multidisciplinary, spanning sustainability, data analytics, and business management outlets, which underscores its growing relevance across diverse academic domains.

3.3 Documents by Country or Territory (2018–2025)

Figure 3. Documents by Country or Territory (2018–2025)

Documents by country or territory

Compare the document counts for up to 15 countries/territories.



(Source: Scopus database, retrieved October 2025)

Figure 4 illustrates the global geographical distribution of research output on AI-driven digital marketing between 2018 and 2025. The United States leads the academic landscape with over 200 publications, confirming its dominant role in advancing data-driven marketing and artificial intelligence applications. The U.S. research ecosystem has benefited from robust funding, extensive industry–academia collaboration, and a mature digital economy, which collectively foster innovation in marketing analytics and consumer insight modeling.

Following closely, India and China occupy the second and third positions, reflecting the rapid digital transformation and the widespread adoption of AI technologies in Asian markets. Both countries have demonstrated strong policy and institutional support for digital innovation, leading to significant increases in scholarly output after 2020.

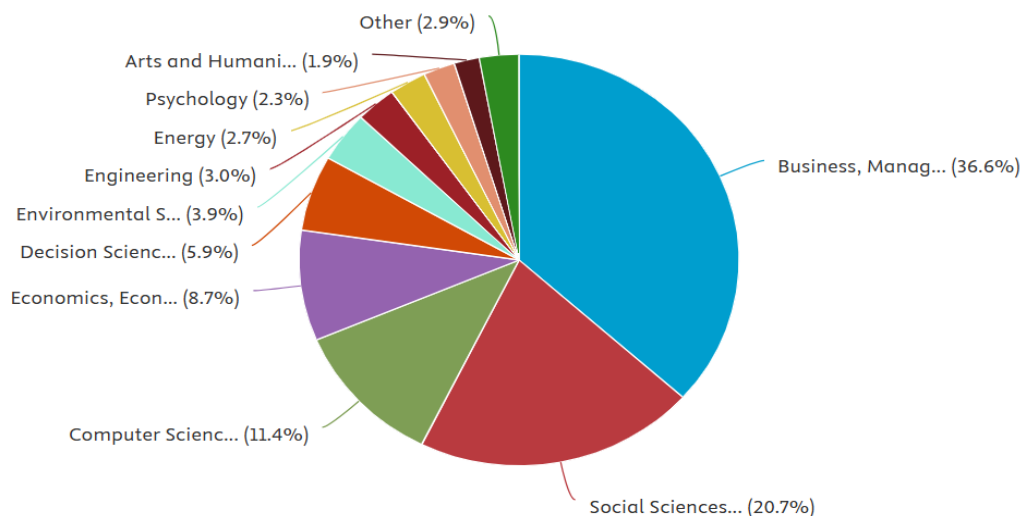
The United Kingdom and Spain also appear among the leading contributors, signifying Europe’s growing involvement in AI marketing ethics, digital consumer behavior, and algorithmic transparency. Emerging economies, including Indonesia, Malaysia, and Jordan, show remarkable progress in recent years, indicating that AI-driven marketing research is expanding beyond Western contexts toward the Global South.

This geographical pattern suggests a clear shift from Western-centric to more globally distributed research activity, where Asia and developing regions are increasingly shaping the discourse on digital transformation, marketing intelligence, and sustainable business strategies.

3.4 Documents by Subject Area (2018–2025)

Figure 4 . Documents by Subject Area (2018–2025)

Documents by subject area



(Source: Scopus database, retrieved October 2025)

Figure 4 presents the disciplinary distribution of publications on AI-driven digital marketing between 2018 and 2025. The data show that Business, Management, and Accounting is the dominant field, accounting for 36.6% of total documents. This confirms that most studies approach digital marketing through managerial and strategic perspectives, emphasizing business performance, customer engagement, and marketing analytics.

The Social Sciences field ranks second (20.7%), reflecting the growing attention to consumer psychology, behavioral intention, and social influence in digital ecosystems. Meanwhile, Computer Science (11.4%) represents a strong technological foundation that supports research on artificial intelligence, data analytics, and algorithmic marketing models.

Smaller but relevant contributions are observed from Economics (8.7%), Decision Sciences (5.9%), and Environmental Science (3.9%), indicating the broad diffusion of AI-related marketing research into economic forecasting, decision optimization, and sustainable consumption contexts.

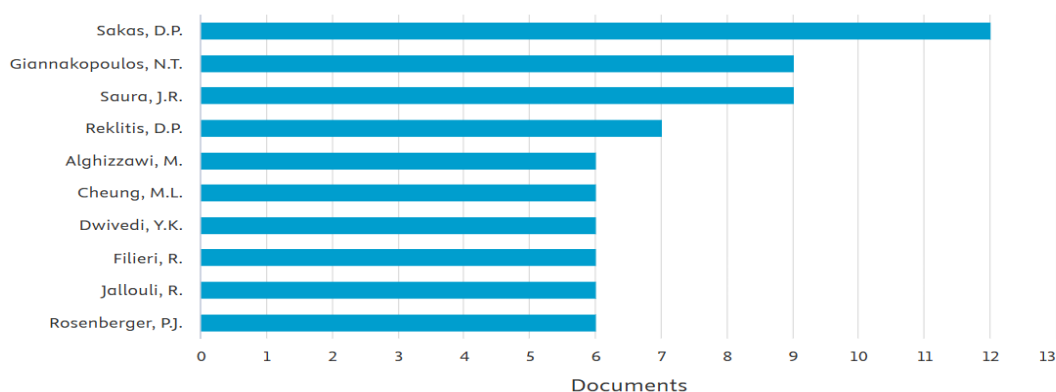
This disciplinary diversity highlights the interdisciplinary convergence of AI, data science, and marketing signaling a paradigm shift from traditional marketing management toward technology-enabled, data-driven decision-making frameworks.

3.5. Documents by Author (2018–2025)

Figure 4. Documents by Author (2018–2025)

Documents by author

Compare the document counts for up to 15 authors.



(Source: Scopus database, retrieved October 2025)

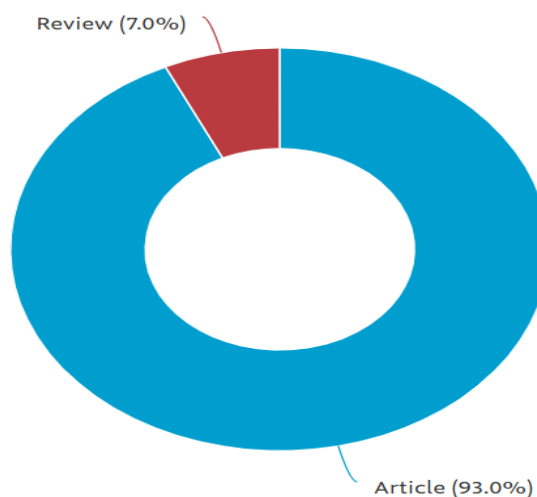
Figure 5 highlights the most prolific authors contributing to the development of AI-driven digital marketing research from 2018 to 2025. Among them, Sakas D.P., Giannakopoulos N.T., and Saura J.R. lead the field, each with 8 to 9 publications. Their works primarily focus on integrating artificial intelligence, data-driven decision-making, and consumer analytics within digital marketing ecosystems.

Authors such as Reklitis D.P., Alghizzawi M., and Cheung M.L. demonstrate consistent engagement with applied perspectives, including digital consumer behavior, online brand engagement, and AI-based personalization. Likewise, Dwivedi Y.K. and Filieri R. are well-known for their cross-disciplinary contributions connecting marketing technology, social media, and information systems.

The pattern of authorship indicates that research in this field is not dominated by a single scholar or country, but rather characterized by a globally distributed and collaborative research community. This balanced author contribution supports the notion that AI-driven marketing has evolved into a mainstream interdisciplinary domain, attracting academics from marketing, computer science, and management backgrounds alike.

3.6. Documents by Type (2018–2025)

Figure 6. Documents by Type (2018–2025)
Documents by type



(Source: Scopus database, retrieved October 2025)

Figure 6 displays the distribution of publication types within the AI-driven digital marketing dataset. Out of 1,405 documents, 93 % are research articles (1,307 records), while only 7 % (98 records) are review papers. This dominance of empirical and conceptual articles indicates that the field remains in a dynamic expansion stage, emphasizing data collection, model testing, and methodological innovation rather than secondary synthesis.

The limited share of review studies suggests that systematic consolidation of existing knowledge is still emerging, offering future scholars opportunities to conduct comprehensive literature reviews and meta-analyses. This pattern aligns with other fast-evolving technology domains, where rapid methodological development precedes the stage of theoretical integration. Overall, the composition of document types underscores the research vitality of the discipline and reflects a strong orientation toward empirical validation and practical application.

Table 2. Distribution of Documents by Type (2018–2025)

Document Type	Number of Documents	Percentage (%)
Article	1,307	93.00%
Review	98	7.00%

Total	1,405	100%
--------------	--------------	-------------

(Source: Scopus database, retrieved October 2025)

Interestingly, the dataset is dominated by research articles (93%), while reviews make up only a small share (7%). Such imbalance indicates that the domain remains in an exploratory stage, emphasizing empirical model testing and data-driven applications rather than theoretical synthesis. The limited number of reviews also implies an opportunity for future scholars to conduct integrative or meta-analytic studies once the field matures.

4. Discussion

Our analysis suggests that research on AI-driven digital marketing has evolved from a peripheral niche into a consolidated and interdisciplinary field over the past eight years. The remarkable surge in publication volume after 2021 reflects how artificial intelligence has become embedded in marketing theory, consumer analytics, and strategic management practices. This growth is not merely quantitative; it mirrors a structural transformation in how marketing scholars conceptualize value creation and consumer interaction in the digital era.

Interestingly, the dominance of business, management, and social science outlets indicates that the focus has shifted from algorithmic novelty toward human-centered applications. Scholars now emphasize how AI reshapes marketing decision-making, customer engagement, and ethical governance. This convergence of technology and behavioral insight suggests that marketing scholarship is moving closer to a techno-social paradigm, where predictive analytics and emotional intelligence coexist in digital strategy design.

Another notable pattern is the global diffusion of research leadership. The United States, India, and China continue to anchor the field, yet emerging economies such as Malaysia, Indonesia, and Jordan have begun to assert academic visibility. This decentralization of research productivity points to a more inclusive and diversified academic ecosystem, one where localized innovation particularly in Asia and the Global South contributes substantively to global discourse. It appears that AI marketing research is no longer dominated by Western frameworks, but is progressively shaped by multi-contextual, cross-border collaborations.

The thematic distribution of journals and document types reinforces this observation. The predominance of empirical articles underscores the field's experimental and application-driven nature, while the scarcity of review papers implies a lack of theoretical consolidation. In practical terms, this gap opens room for integrative frameworks that bridge algorithmic design with marketing ethics, sustainability, and consumer trust. Moreover, the increasing publication in outlets such as *Sustainability (Switzerland)* and *Cogent Business & Management* highlights a growing awareness of the sustainability–technology nexus, where AI is not only a tool for efficiency but also a means to promote responsible and inclusive marketing ecosystems.

Overall, the discussion reveals three key takeaways: first, AI-driven digital marketing has entered a maturity phase characterized by methodological pluralism and global participation; second, the intellectual structure of the field is becoming more interconnected, linking technological affordances with human behavior; and third, there remains a pressing need for theoretical integration to ensure that AI applications in marketing evolve not only efficiently but also ethically and sustainably.

5. Conclusion and Implications

This bibliometric analysis provides a comprehensive overview of the global research landscape on AI-driven digital marketing between 2018 and 2025. The study highlights a sharp escalation in academic output, reflecting how artificial intelligence has evolved from a peripheral support technology into a central paradigm of modern marketing thought and practice. The rapid growth in publications since 2021 signals a decisive transition marketing is no longer driven solely by creativity and intuition but increasingly by algorithmic intelligence, automation, and predictive analytics.

From a theoretical perspective, our findings confirm that the field has entered a phase of conceptual convergence, where business management, computer science, and social psychology intersect. This

convergence underscores the emergence of a new hybrid paradigm what can be termed a *techno-behavioral synthesis* in which machine learning, big data, and consumer cognition collectively redefine marketing value creation. Yet, the relatively small proportion of review studies suggests that theory-building and conceptual integration remain underdeveloped. Future scholars are therefore encouraged to consolidate the fragmented body of knowledge through meta-analyses and cross-disciplinary frameworks linking AI ethics, consumer trust, and marketing performance.

In practical terms, the evolution of AI marketing research offers valuable lessons for policymakers and practitioners. The dominance of empirical studies reveals a strong orientation toward application-driven innovation, supporting firms in automating campaigns, personalizing engagement, and enhancing decision accuracy. However, as AI technologies become more pervasive, questions related to ethics, data transparency, and sustainable digital governance become increasingly urgent. Marketing practitioners should adopt human-centered AI strategies that balance efficiency with accountability, ensuring that technological advancement aligns with social and environmental responsibility.

Finally, the global spread of AI-driven marketing research from Western economies to rapidly developing regions demonstrates that this transformation is not geographically confined. It represents a shared intellectual movement toward more adaptive, data-literate, and ethically grounded marketing ecosystems. Our analysis suggests that the next frontier will likely revolve around integrating generative AI, emotional intelligence, and sustainability-driven marketing models, thereby paving the way for a more inclusive and resilient digital marketing paradigm.

References

1. Aria, M., & Cuccurullo, C. (2017). *bibliometrix: An R-tool for comprehensive science mapping analysis*. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
2. Chatterjee, S., Rana, N. P., Tamilmani, K., & Sharma, A. (2023). *Artificial intelligence in marketing: A systematic literature review and future research agenda*. *Journal of Business Research*, 160, 113829. <https://doi.org/10.1016/j.jbusres.2023.113829>
3. Dwivedi, Y. K., Hughes, D. L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., & Buhalis, D. (2021). *Metaverse marketing: How the future of consumer interaction will unfold*. *Psychology & Marketing*, 39(8), 1556–1580. <https://doi.org/10.1002/mar.21669>
4. Kumar, V., Dixit, A., Javalgi, R. G., & Dass, M. (2023). *AI-powered marketing: Emerging trends, opportunities, and research directions*. *Industrial Marketing Management*, 110, 132–148. <https://doi.org/10.1016/j.indmarman.2023.04.012>
5. Saura, J. R. (2021). *Using data science in digital marketing: Framework, methods, and performance metrics*. *Journal of Innovation & Knowledge*, 6(2), 92–102. <https://doi.org/10.1016/j.jik.2020.08.001>
6. Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2021). *How to improve firm performance using big data analytics capability and business strategy alignment? International Journal of Production Economics*, 224, 107568. <https://doi.org/10.1016/j.ijpe.2019.107568>
7. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., ... & Williams, M. D. (2021). *Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy*. *International Journal of Information Management*, 57, 101994. <https://doi.org/10.1016/j.ijinfomgt.2019.101994>
8. Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2021). *Social media marketing and artificial intelligence: Opportunities and challenges*. *Technological Forecasting & Social Change*, 172, 121037. <https://doi.org/10.1016/j.techfore.2021.121037>
9. Jabeen, F., Al-Kassem, A. H., & Faisal, M. N. (2022). *Artificial intelligence and digital marketing: A systematic review and future research agenda*. *Sustainability*, 14(16), 10344. <https://doi.org/10.3390/su141610344>
10. Syam, N., & Sharma, A. (2018). *Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice*. *Industrial Marketing Management*, 69, 135–146. <https://doi.org/10.1016/j.indmarman.2017.12.019>
11. Bag, S., Wood, L. C., Xu, L., Dhamija, P., & Kayikci, Y. (2021). *Big data analytics in marketing and supply chain management: Bibliometric and content analyses*. *Industrial Marketing Management*, 101, 1–18. <https://doi.org/10.1016/j.indmarman.2021.01.008>

12. Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). *Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model*. *Information Systems Frontiers*, 21(3), 719–734. <https://doi.org/10.1007/s10796-017-9774-y>
13. Verma, S., Sharma, R., & Deb, M. (2023). *Exploring the role of generative AI in digital marketing communication: A research agenda*. *Technological Forecasting and Social Change*, 196, 122943. <https://doi.org/10.1016/j.techfore.2023.122943>
14. Mariani, M. M., & Borghi, M. (2022). *Big data and marketing: A bibliometric and network analysis*. *Journal of Business Research*, 139, 1315–1331. <https://doi.org/10.1016/j.jbusres.2021.10.020>
15. Taroun, A., & Yang, J. B. (2020). *The integration of artificial intelligence in marketing decision-making: A bibliometric review*. *Computers in Human Behavior Reports*, 2, 100028. <https://doi.org/10.1016/j.chbr.2020.100028>
16. Gursoy, D., Chi, O. H., & Lu, L. (2019). *Artificial intelligence applications in service marketing and customer experience management*. *Journal of Service Management*, 31(5), 1053–1079. <https://doi.org/10.1108/JOSM-05-2019-0154>