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Charting the Scientometric Evolution: Emerging Trends in Artificial Intelligence and Marketing Research

FRIOUI Samira	GRAA Amel *	SOUIKI Boumediene
samira.frioui@univ-sba.dz	amel.graa@univ-sba.dz	boumediene.souiki@umontpellier.fr
Djillali Liabes University (Algeria)	Djillali Liabes University (Algeria)	Lab Montpellier recherche économie (MRE)- Laboratoire d'Economie Rouen Normandie (LERN) Montpellier University (France)

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Abstract:

This study presents a scientometric analysis of the evolving integration of Artificial Intelligence (AI) in marketing research, addressing a gap in quantitative assessments of this rapidly advancing field. Drawing on data from Scopus (1984–Q1 2024) and utilizing advanced bibliometric techniques in R Studio, the research maps publication trends, author influence, institutional and geographic distributions, and thematic developments. The analysis covers 565 English-language, peer-reviewed articles, revealing a marked acceleration in publication volume since 2015, with a peak of 136 articles in 2023. The United States leads in research output and international collaboration, followed by the United Kingdom, China, and India. The Journal of Business Research emerges as the predominant outlet, while key contributors such as DWIVEDI YK, KIETZMANN J, and KAR AK shape the field's discourse. Dominant themes include "artificial intelligence," "machine learning," "decision-making," and "marketing strategies." Network analyses highlight AI's central role in connecting diverse marketing subfields and fostering interdisciplinary inquiry. The findings underscore AI's transition from a peripheral topic to a core driver of marketing scholarship, with significant implications for future research directions and strategic practice. This study provides a comprehensive mapping of the field's scientometric evolution, identifying leading voices, institutions, and emerging trends.

Key words: Artificial Intelligence, Scientometric Analysis, Marketing Strategies, Publication Networks, Research Mapping

JEL Classification Codes: M31, O33, C89, D83

* Corresponding author

Introduction:

As marketing research continues to adapt to technological change, the intersection between artificial intelligence (AI) and scientometric analysis offers new and layered ways to assess how scholarly thought is evolving and where it might be headed. This study, titled Charting the Scientometric Evolution: Emerging Trends in Artificial Intelligence and Marketing Research, takes a scientometric approach to explore key research patterns and uncover thematic developments that have begun to emerge more visibly in recent years.

AI's growing presence in marketing discourse has drawn widespread attention, not only for its practical implications but also for its theoretical depth (Mustak et al., 2021), for example, explores this through topic modeling and citation mapping, revealing how themes such as consumer sentiment and marketing strategy have become prominent areas of inquiry. Similarly, (Chintalapati & Pandey, 2022) provides a structured review of how AI is being integrated into various subfields of marketing suggesting a field in active redefinition.

Beyond the marketing sphere, the versatility of AI is also evident in other domains such as engineering and construction. (Pan & Zhang, 2021) points to cross-disciplinary applications that open new avenues for marketing innovation. (Darko et al., 2020) through scientometric tools, demonstrates how methodological overlaps between fields can enrich marketing research. Taken together, these perspectives underline the value of AI not only as a technological asset but as a catalyst for conceptual and disciplinary transformation.

This study seeks to conduct an in-depth quantitative investigation into the landscape of artificial intelligence applications in marketing, with the following specific objectives:

- To examine patterns of publication and track the evolution of yearly research output.
- To explore how academic contributions are distributed across global regions and research institutions.

- To highlight the most prominent scholars and the journals exerting major influence in the domain.
- To identify dominant research themes, key developments, and critical areas of focus in AI-driven marketing.

1. Theoretical framework:

In today's marketing landscape, artificial intelligence (AI) and big data analytics are becoming increasingly interdependent, adding depth to strategic thinking while simplifying operational processes. (M.-H. Huang & Rust, 2020) describe a layered framework for AI: mechanical AI handles routine tasks, thinking AI deciphers complex data, and feeling AI captures consumer emotion—all contributing to richer customer insights and smarter market engagement. (D'Arco et al., 2019) builds on this by illustrating how big data helps map the customer journey in more detail. The combined effect fosters more adaptive, evidence-based decision-making across marketing functions and organizational structures.

In a similar vein, (Bag et al., 2021) demonstrate how AI-driven big data facilitates knowledge creation in B2B contexts, enhancing rational decision-making and firm performance by streamlining customer, user, and market knowledge. (Ostrowski, 2018) highlights the paradigm shift brought about by big data in AI applications, where enhanced computational methods like parallel processing allow for robust marketing analytics and predictive modeling. (Zen, 2022) further examines how AI in digital marketing leverages algorithms and models to classify and predict customer behavior, enabling targeted marketing campaigns.

(Fan et al., 2015) discuss big data's disruption in business intelligence through a marketing mix framework, identifying data sources and methods that lay the groundwork for advanced marketing intelligence. (Taddy, 2018) offers a theoretical perspective on AI's economic impact, suggesting a framework for integrating various machine learning algorithms to solve complex business challenges, thus promoting a deeper understanding of market dynamics and consumer behavior. (Tiguint & Hossari,

2020) propose a meta-dynamic capability perspective on AI, emphasizing its strategic role across organizational processes, which is crucial for maintaining competitiveness in rapidly evolving markets.

Unstructured data often overwhelming in volume and variety has become central to how marketing analytics evolves. AI, as (Хрупович & Борисова, 2021) observes, offers a way through that complexity, allowing patterns and signals to emerge from otherwise chaotic inputs. This opens the door to more tailored, and arguably more effective, marketing strategies. (Verma et al., 2021), through an extensive literature review, adds to this by emphasizing AI's strategic value and mapping out possible research frontiers. Combined, these perspectives help form a theoretical foundation—one that continues to inform how marketers understand behavior and refine their engagement with today's increasingly data-rich consumer environments.

2. Methodology:

To examine the role of artificial intelligence in marketing, this study relies on bibliometric analysis, a research method that has gained considerable traction across various business disciplines. Whether addressing topics like creativity (Castillo-Vergara et al., 2018; Hernández-Torrano & Ibrayeva, 2020), entrepreneurship (Contreras Cruz et al., 2022; Vallaster et al., 2019; Xu et al., 2021), or big data applications (Khanra et al., 2020; Pavone et al., 2023), bibliometric methods have proven effective in managing large datasets while minimizing interpretation bias. They offer a way to identify patterns, trace intellectual lineages, and detect emergent themes in scholarly work.

Our methodological framework builds upon established bibliometric practices(Fahamsyah et al., 2023; J.-H. Huang et al., 2021; Rusydiana, 2021), particularly in terms of mapping thematic relationships and author networks. We employed the R Studio environment to construct detailed visualizations and quantitative models that reflect the structure of the research landscape. These included co-citation analysis, used to measure the frequency with which pairs of documents are cited together and co-word analysis, which examines how specific terms cluster within the literature. The dual

application of these techniques helps surface both conceptual commonalities and subtle distinctions within the field.

The bibliographic data was sourced from the Scopus database, a platform widely regarded for its comprehensive coverage of peer-reviewed business and management literature (Chung & Tsay, 2017; Sas et al., 2019). This choice ensured a rich and diverse sample of relevant publications, allowing for a nuanced view of how artificial intelligence is integrated into marketing research. The resulting maps and networks not only offer a snapshot of existing work but also help forecast where the field may be headed, highlighting areas of dense activity, gaps, and possible future intersections.

Further refinement was undertaken by restricting our corpus to English-language full-text articles, excluding formats such as conference proceedings, book chapters, editorials, book reviews, and data reports. The final selection process involved a meticulous review of each bibliometric record by one author, ultimately resulting in a curated set of 565 sources. The details of this bibliometric study are outlined in Table 1.

Table.1 Main information about the data.

Timespan	**1984:2024**
Sources (Journals, Books, etc)	251
Documents	565
Annual Growth Rate %	1.75
Document Average Age	4.42
Average citations per doc	28.35
Keywords Plus (ID)	1231
Author's keywords (DE)	1946
Authors	1517
Authors of single-authored docs	84
Single-authored docs	85
Co-Authors per Doc	3.12
International co-authorships %	32.04
Articles	565

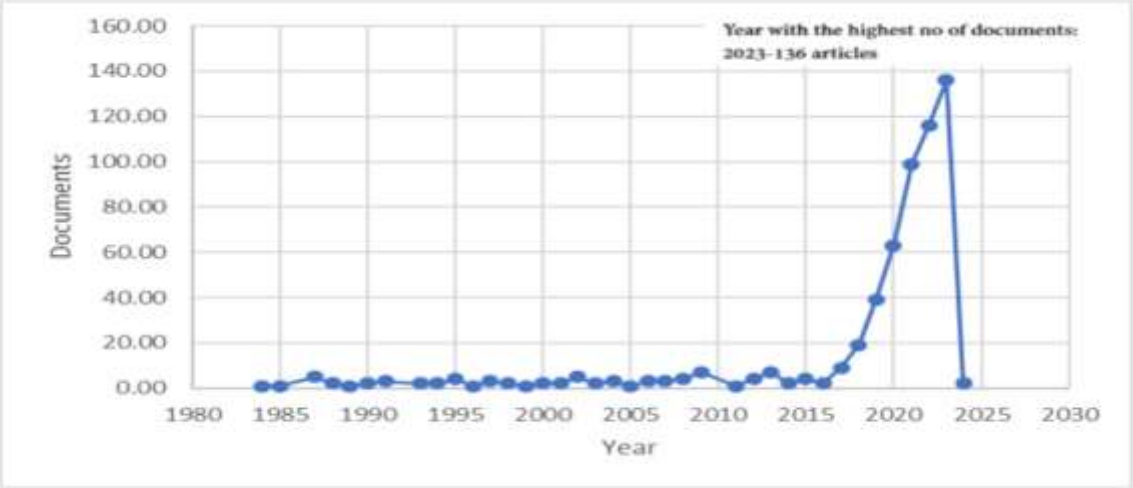
Source: Created by the authors using Biblioshiny in R Studio.

3. Results And Discussion:

3.1. Evolution of Research Publications Over Time

Fig. 1 illustrates the dramatic increase in the volume of documents published from 1980 through 2023. Initially, the growth was gradual, with a modest number of articles published each year until the early 2000s.

Fig.1. Annual Publication Distribution



Source: Elaborated by authors using Excel tables based on data extracted from Scopus

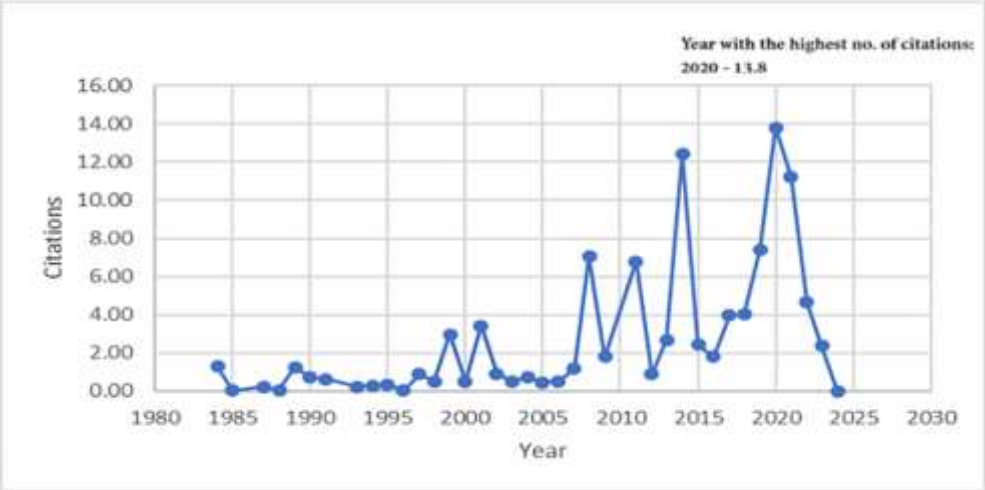
The document count remained relatively stable, with minor fluctuations until 2010. From 2010 onwards, there was a noticeable uptick in publications, leading to a significant surge starting in 2015. The most remarkable increase occurred in the last few years, where the number of publications peaked sharply in 2023, reaching 136 articles. This sudden rise represents a focal point of intensified research activity, suggesting a burgeoning interest or a pivotal development in the field during this period.

3.2.Trends in Citation Impact

Figure 2 illustrates the changing pattern of citation frequencies for publications released between 1980 and 2023. During the early period from the 1980s through the late 1990s citation levels remained minimal, reflecting the field's initial development and limited scholarly attention. A noticeable upward trend in citation activity emerged in the early 2000s, signaling increasing academic engagement. From 2010 onward, citation

patterns became more dynamic, culminating in a notable spike in 2020, when the average number of citations per document peaked at 13.8. This sharp rise suggests that the studies published in that particular year resonated deeply within the academic community perhaps due to groundbreaking ideas or highly cited syntheses. The dip following 2020 could signal either a saturation of interest or a gradual pivot toward newer questions and evolving priorities in marketing and AI research.

Fig.2. Citations Trend

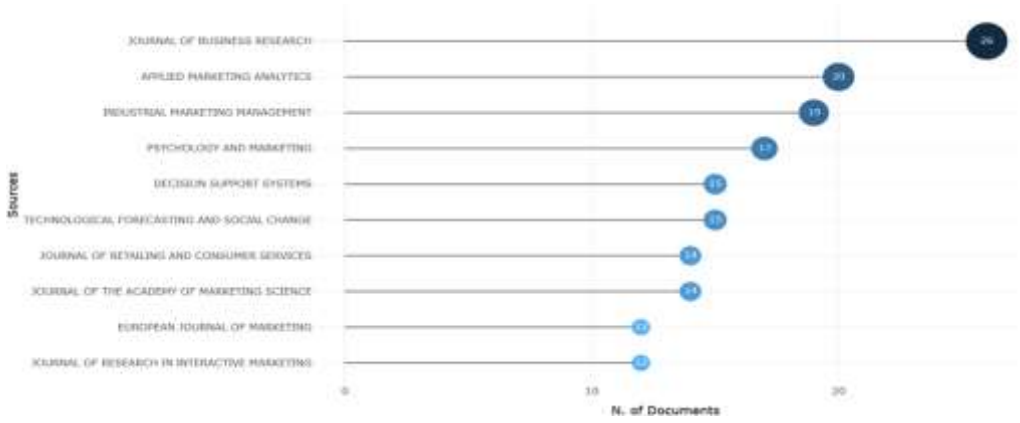


Source: Elaborated by authors using Excel tables based on data extracted from Scopus

4.3. Leading Journals in the Field

As illustrated in Figure 3, the chart highlights how scholarly publications are distributed among leading journals in the domains of marketing and business research.

Fig.3. Top 10 Journals



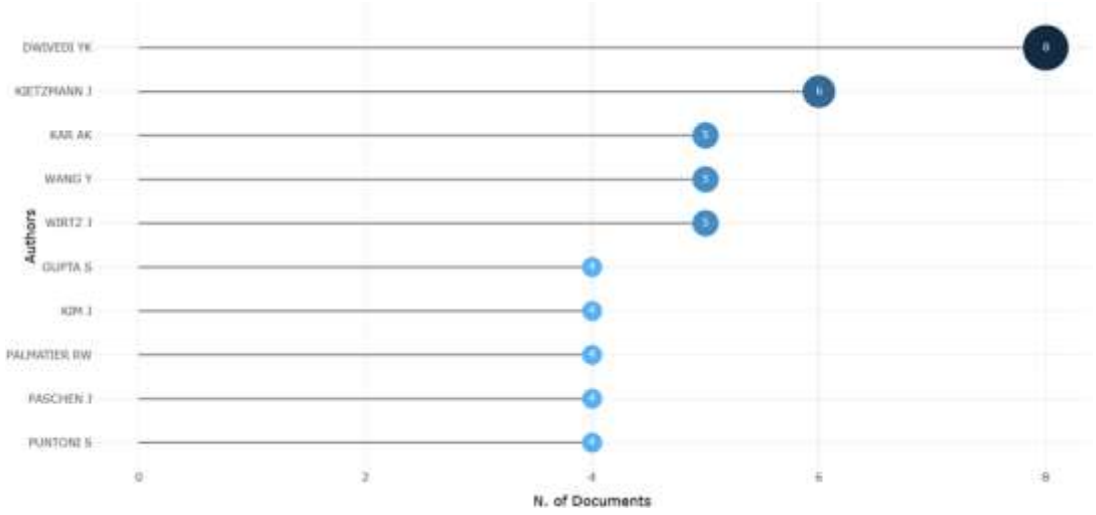
Source: Created by the authors using Biblioshiny in R Studio

The Journal of Business Research stands out with 26 contributions, underscoring its central role as a preferred outlet for academic work in this area. Other prominent journals—such as Applied Marketing Analytics and Industrial Marketing Management—also appear frequently, reflecting a broad engagement with themes like marketing analytics and industrial practices. This distribution reveals not only the thematic diversity of the field but also the perceived authority and relevance of these journals within the academic community.

4.4. Key Authors and Their Contributions

Figure 4 presents a visual representation of author productivity and influence within the scholarly landscape. Standing out among the leading contributors, "DWIVEDI YK" holds the top position with eight publications—an indication of sustained influence in the field. Close behind are "KIETZMANN J" and "KAR AK", with six and five contributions, respectively. This concentration of output among a few scholars underscores their central role in steering current debates and advancing research at the intersection of artificial intelligence and marketing.

Fig.4. Leading Authors by Year



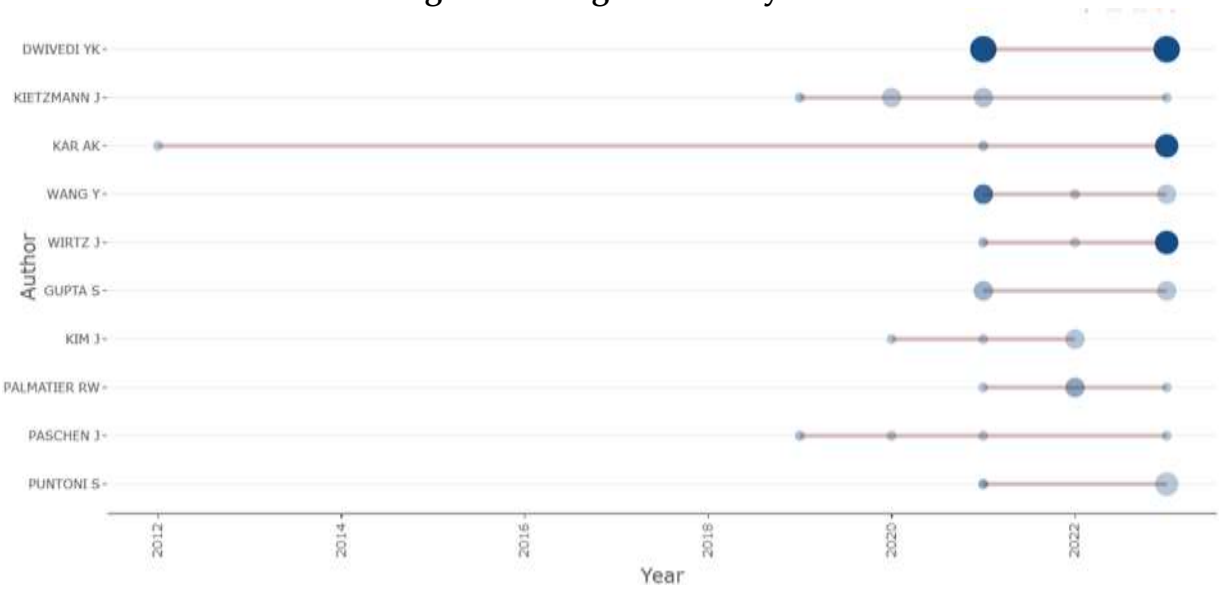
Source: Created by the authors using Biblioshiny in R Studio

Figure 5 takes a step back to chart how ten key researchers have contributed over time, revealing patterns not just of productivity, but also of intellectual persistence. At

the forefront, “DWIVEDI YK” emerges with eight publications—a clear marker of both presence and sustained scholarly output. Following him, “KIETZMANN J” shows steady momentum through six papers, hinting at a consistent role in shaping the discourse. Authors like “KAR AK” and “WANG Y” each appear five times, possibly reflecting targeted or ongoing research efforts. Others—“WIRTZ J,” “GUPTA S,” “KIM J,” “PALMIER RW,” “PASCHEN J,” and “PUNTONI S”—each contribute four pieces, demonstrating continued engagement. Overall, the visualization reflects shifting research dynamics and varying degrees of commitment within the scholarly community over time.

The timeline chart captures the evolution of author contributions between 2012 and 2022, shedding light on patterns of sustained scholarly activity. "DWIVEDI YK" stands out as the most active researcher, with eight publications clustered mainly in the later years—pointing to an ongoing and deepening engagement. Alongside, "KIETZMANN J" shows a stable rhythm of six publications, indicating enduring involvement and a consistent research trajectory in the field. "KAR AK" and "WANG Y" each have 5 publications, with activity spikes at different intervals suggesting phases of intensive research. The authors "WIRTZ J", "GUPTA S", "KIM J", "PALMIER RW", "PASCHEN J", and "PUNTONI S" are consistently contributing with 4 publications each, showing sustained contributions over a range of years.

Fig.5. Leading Authors by Year



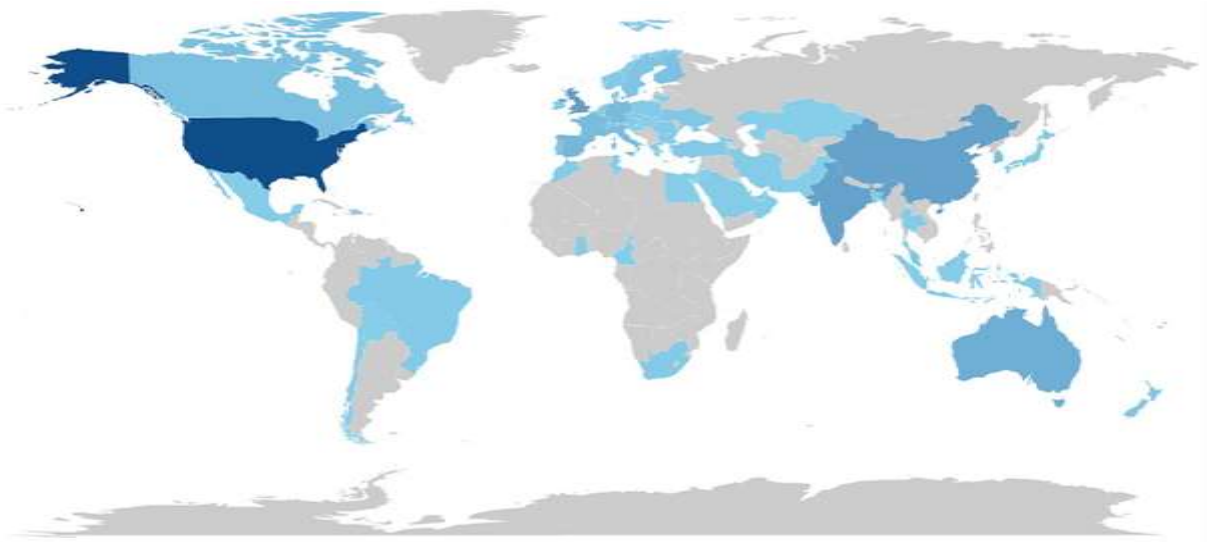
Source: Created by the authors using Biblioshiny in R Studio

This visualization not only highlights the productivity of individual researchers but also provides insights into the dynamics of their research careers and their persisting influence in the field.

4.5. Geographical Distribution of Research

Figure 2 illustrates the changing pattern of citation frequencies for publications released between 1980 and 2023. During the early period from the 1980s through the late 1990s citation levels remained minimal, reflecting the field's initial development and limited scholarly attention. A noticeable upward trend in citation activity emerged in the early 2000s, signaling increasing academic engagement. From 2010 onward, citation patterns became more dynamic, culminating in a notable spike in 2020, when the average number of citations per document peaked at 13.8 This sharp rise suggests that the studies published in that particular year resonated deeply within the academic community perhaps due to groundbreaking ideas or highly cited syntheses. The dip following 2020 could signal either a saturation of interest or a gradual pivot toward newer questions and evolving priorities in marketing and AI research.

Fig.6. Countries scientific production



Source: Created by the authors using Biblioshiny in R Studio

Table 2 provides a clear overview of the scientific output of the top 10 countries in a given field, measured by the frequency of published research. The United States leads significantly with 327 publications, indicating a dominant position in this research area, likely reflecting strong institutional support and funding. The United Kingdom follows with 115 publications, which is substantially lower than the USA but still highlights the UK's strong research capabilities.

China and India are tied at 104 publications each, showing their substantial growth and investment in research infrastructure. This indicates their emerging prominence in the global research landscape. Australia, with 74 publications, also shows a strong research output, likely driven by its well-funded universities and research institutions.

Spain, with 56 publications, and Germany, with 44, demonstrate solid contributions, albeit on a smaller scale compared to the leaders. This could reflect focused research efforts in specific areas of expertise within the country. France and Italy show similar levels of output, with 41 and 39 publications respectively, suggesting a steady but less pronounced engagement in this field compared to the top producers.

Table. 2 Countries scientific production (Top 10).

Country	Frequency
USA	327
UK	115
CHINA	104
INDIA	104
AUSTRALIA	74
SPAIN	56
GERMANY	44
FRANCE	41
ITALY	39
SOUTH KOREA	35

Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

South Korea, rounding out the list with 35 publications, indicates active involvement in the field, possibly highlighting specific niche areas of research strength. This table effectively maps the geographical distribution of research activity, highlighting both leading and actively participating nations in the scientific community.

4.6. Central Themes and Keywords in Research

Presented in Fig.7, the word cloud represents the frequency of keywords used in the research papers analyzed.

Fig.7. Research Themes Word Cloud

Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

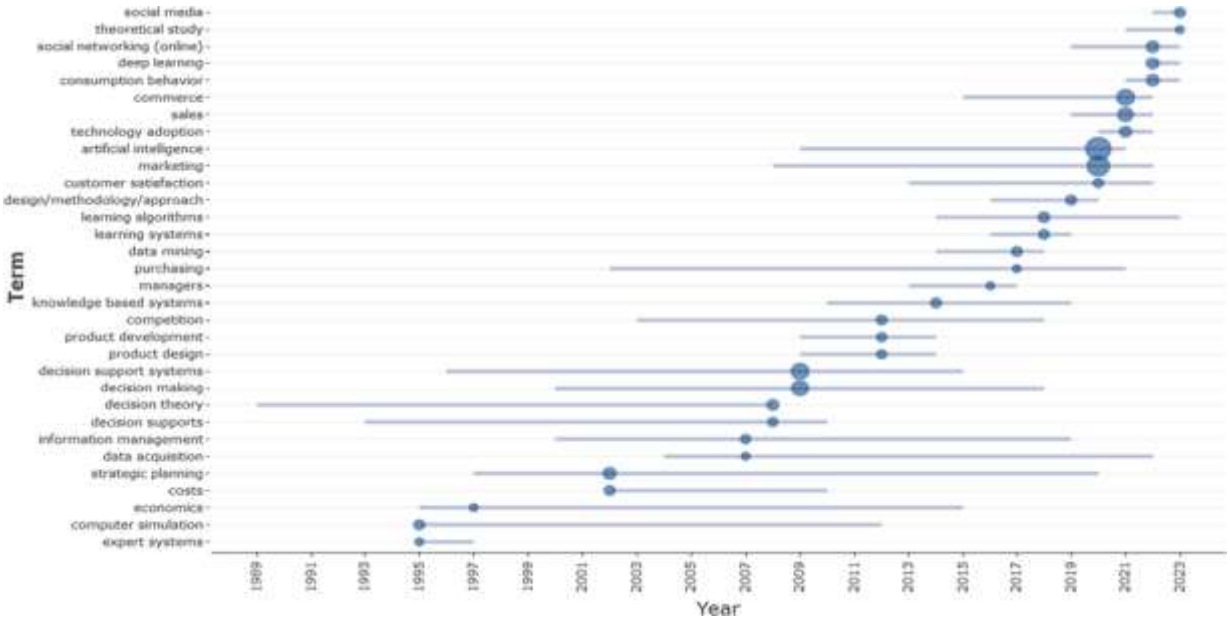
"Artificial Intelligence" and "Marketing" dominate, indicating these are hot topics within the current research landscape. Other prominent terms like "decision making," "commerce," "sales," and "machine learning" further suggest a strong focus on

how AI can be integrated into commercial activities and decision-support systems. This visualization serves as a quick reference to identify prevailing research themes and areas of concentrated interest.

4.7. Development of Research Themes Over Time

In the early 2000s, a noticeable uptick in the use of terms like "machine learning" and "data mining" began to take shape—mirroring the rise of analytical tools that would later become indispensable to marketing research. The emergence of "social media" around 2005 marked a turning point, reflecting the rapid ascent of digital platforms and their transformative effect on both marketing strategy and consumer interaction. Around the same time, growing references to "e-commerce" and "consumer behavior" began to suggest a deepening interest in online shopping habits and AI's ability to anticipate them. Taken together, the visual data underscores how marketing research is being continuously reoriented by advancing technology and a sharper focus on user experience.

Fig.8. Emerging Research Trends

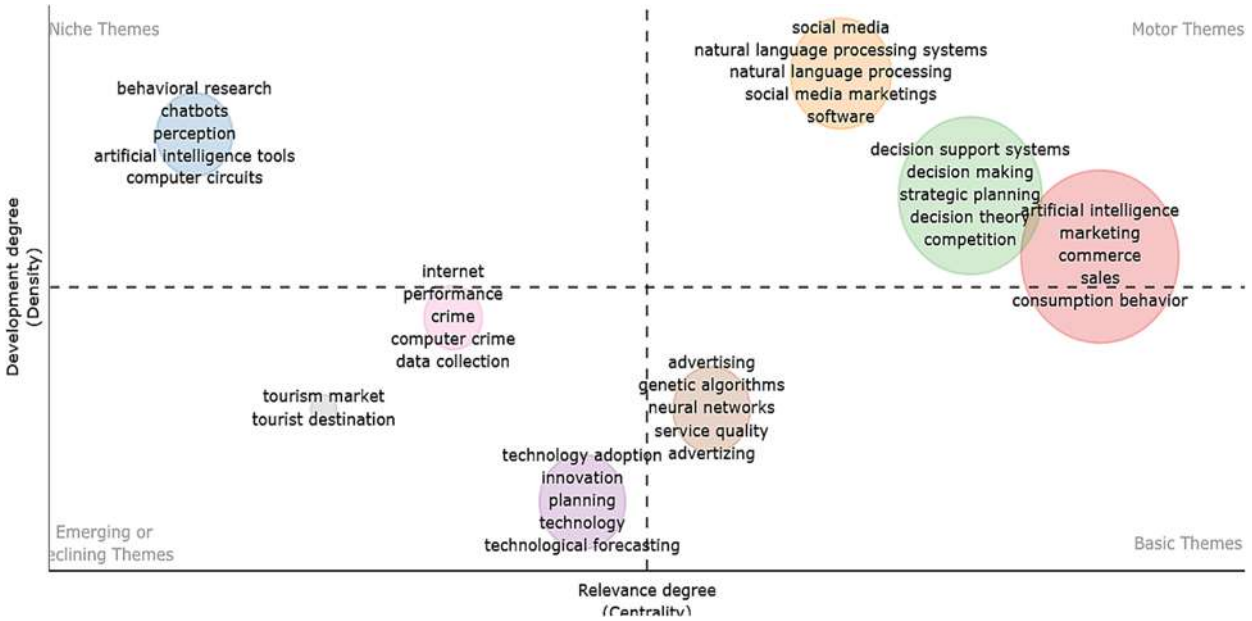


Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

Figure 9 offers a thematic snapshot of current research, organized by how developed and academically central each area appears to be. Fields like "artificial

intelligence" and "decision support systems" stand firmly established, pointing to their strong roots in the literature. On the other hand, concepts such as "chatbots" and "AI tools" seem to be gaining traction, though they're still in earlier stages of exploration. For scholars navigating the field, this kind of thematic mapping serves a practical purpose: it helps distinguish mature topics from those that are still unfolding and full of potential for deeper theoretical development.

Fig.9. Topic Distribution Map

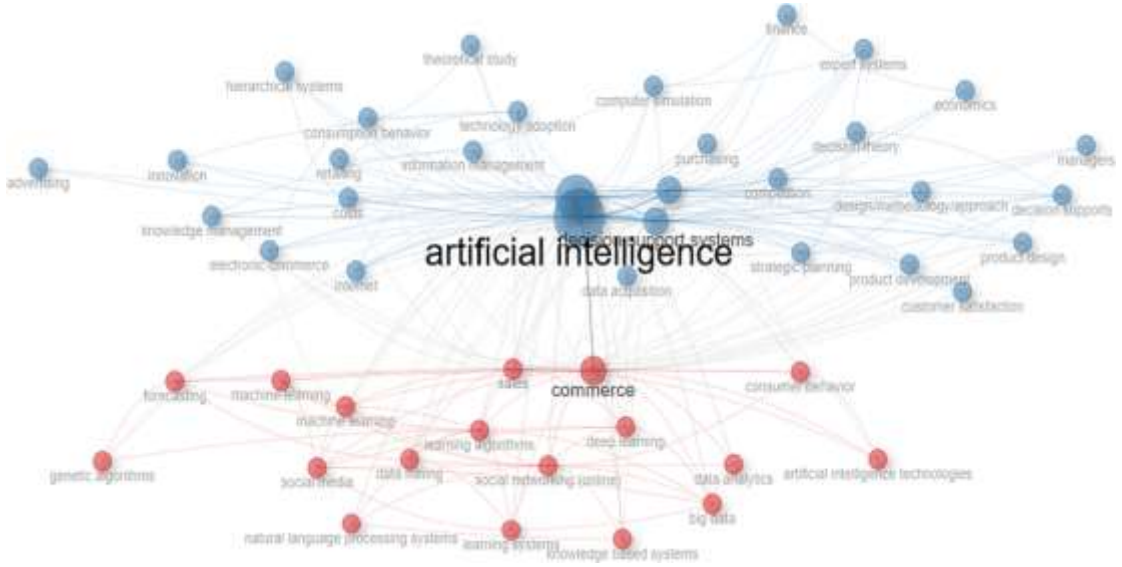


Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

4.8. Network Analysis of Research Themes

Figure 10 maps the relationships between key research terms, with "artificial intelligence" placed unmistakably at the center signaling its central importance across intersecting academic areas. Its close ties with expressions like "machine learning," "commerce," and "decision support systems" reflect just how wide AI's intellectual footprint has grown. Meanwhile, terms such as "decision making" appear to function as bridges, linking broader ideas to more niche investigations. Taken as a whole, this interconnected structure reveals AI not just as a central theme, but as a unifying thread running through much of marketing and tech-related scholarship.

Fig.10. Keyword Co-occurrence Network

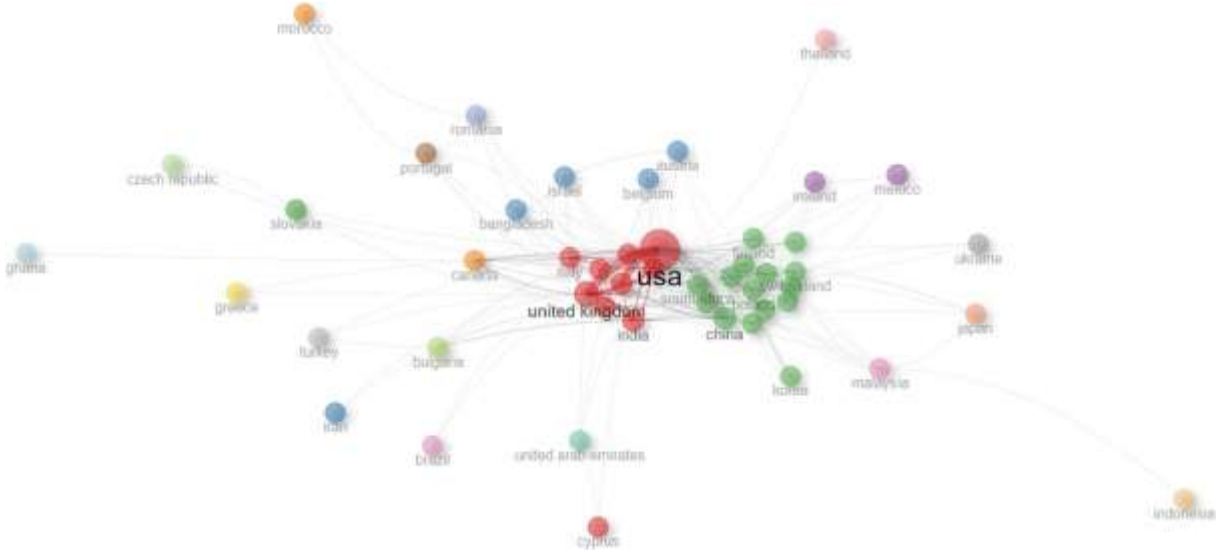


Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

4.9. Global Collaboration Networks in Research

Figure 11 visualizes the international network of research collaborations, revealing how various countries are intertwined in shaping this field.

Fig.11. Research Collaboration Network



Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

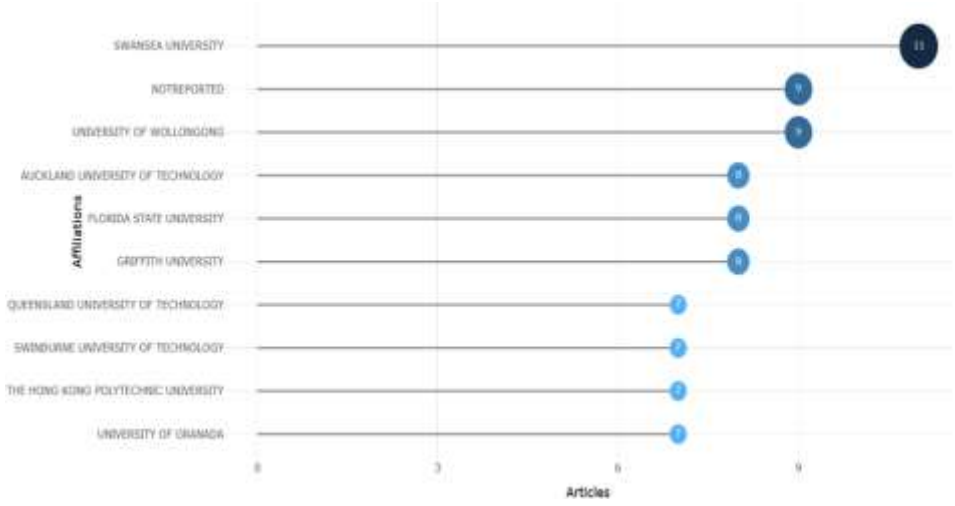
The United States occupies a central node, highlighting its leadership in fostering global academic exchange. The United Kingdom, China, and India also emerge as key participants, reflecting their strong presence in cross-national initiatives. Ultimately, the

map offers a window into how knowledge flows across borders and points to the nations most actively propelling progress in AI-focused marketing scholarship.

4.10. Institutional Contributions to Research

Figure 12 presents a comparative overview of academic institutions, ranked by their publication volume in the field of Artificial Intelligence and Marketing Research. Leading the chart is Swansea University, with 11 published works—indicating a strong research orientation and potential thought leadership. Close behind are the University of Wollongong and Auckland University of Technology, each contributing nine studies. These numbers point not only to institutional commitment but also to the pivotal role of specialized research centers. Overall, the distribution highlights how key universities are actively shaping discourse, driving innovation, and expanding both the conceptual and applied horizons of AI-driven marketing scholarship.

Fig.12. Key Institutional Affiliations



Source: Elaborated from a Scopus dataset via R Studio-based Biblioshiny

4. Conclusion:

Over the course of this analysis, we've traced the contours of a research landscape that continues to shift beneath our feet particularly at the intersection of Artificial Intelligence and Marketing. From 1984 to 2024, the growing body of literature reflects more than just academic interest; it signals a broader momentum, culminating in a notable publication peak in 2023.

Citation trends and topic analyses make it clear: AI is no longer a side topic. It has moved to the center of marketing conversations, both in theory and practice. The United States leads in output and global reach, but countries like the UK, China, and India are also shaping the narrative through high-impact research and international collaboration.

On the institutional front, universities such as Swansea, Wollongong, and Auckland University of Technology stand out—not simply for the number of papers produced, but for how their research centers are driving the field forward. Network analyses show a dense web of thematic overlap and shared focus, reinforcing the idea that AI is being examined through increasingly interdisciplinary lenses.

Rather than closing the discussion, this study invites further inquiry. As AI tools continue to evolve and marketing contexts become more complex, new questions emerge. The value of this work lies in how it helps us orient ourselves in a field that is dynamic, collaborative, and constantly rewriting its own priorities.

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