THE EVALUATION OF AI INTEGRATION IN INNOVATIVE DIGITAL MARKETING STRATEGIES

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ABSTRACT
Purpose- This study aims to provide a bibliometric review of publications where the terms 'digital marketing' and 'artificial intelligence' are used together. Leading publications, authors, countries, and institutions in the Web of Science (WoS) database have been examined to achieve this goal. Additionally, this article investigates the combined use of digital marketing and artificial intelligence. Furthermore, it aims to offer insights into artificial intelligence strategies for marketing that businesses can employ.
Methodology- The research employs the technique of bibliometric analysis. The Bibliometrix package within R Studio and its web-based component, Biblioshiny, were utilized for analysis. Searches were conducted in the Web of Science database using the keywords 'Digital Marketing' and 'Artificial Intelligence' in the title, abstract, and keywords sections.
Findings- As a result of the analysis, a total of 60 publications authored by 140 researchers and distributed across 46 journals between 2017 and 2023 were identified. Examination of the included publications reveals frequent usage of terms such as 'artificial intelligence,' 'creativity,' 'analytics,' 'impact,' 'expertise,' 'social networks,' 'big data,' 'governance,' 'success,' and 'AI.' Upon scrutinizing the authors' countries, India emerged as the leading contributor, followed by Spain and the USA. Moreover, Finland (370), Spain (92), and France (58) had the highest citation counts.
Conclusion- This research aims to contribute to researchers interested in working in digital marketing and artificial intelligence by examining its past and present. For this purpose, 60 relevant studies from the literature were systematically reviewed and analyzed across various categories. Additionally, the examined publications' conceptual, intellectual, and social structures were illuminated.

Keywords: Digital marketing, artificial intelligence, AI systems, bibliometric analysis, bibliometrix.
JEL Codes: M15, M30, M31

1. INTRODUCTION

With the rapid advancement of technology in today's world, digital marketing strategies are undergoing a significant transformation. Artificial Intelligence (AI) plays a critical role in this transformation. AI technologies offer marketers a range of advantages, such as big data analysis, personalized content creation, improvement of customer experience, and automation of sales processes (Murgai, 2018).

In this study, digital marketing and artificial intelligence research, indexed in Web of Science, has been examined through a multidimensional perspective using bibliometric analysis, a qualitative research method. First, this article examines how artificial intelligence is used in digital marketing and explores its potential benefits. AI technologies support digital marketing in various areas, such as personalization, customer service, data analysis, and forecasting. The article focuses on examples of usage in these areas and highlights current research in the literature. Second, digital marketing and artificial intelligence research, indexed in Web of Science, has been examined through a multidimensional perspective using bibliometric analysis, a qualitative research method.

Combining previous research results and bibliometric information is vital in progressively enhancing scientific understanding. Applying bibliometric analysis enables an impartial evaluation of scientific writings through a quantitative methodology. Such investigations deliver an open, methodical, and replicable literature survey. This bibliometric survey enlightens individuals seeking to explore pertinent scholarly works (Zupic & Cater, 2015). Bibliometrics comprises a collection of numerical and mathematical techniques employed to assess and examine the excellence and volume of articles, books, and other written works. Enhancement of information and communication endeavors, coupled with the advancement of scientific

documentation, results from a numerical appraisal of the generation, circulation, and application of data garnered from library assemblages and amenities like WoS within bibliometric investigations.

Consequently, the objective is to enrich the comprehension of the scientific research mechanism within bibliometric studies (Osareh, 1996). Numerous bibliometric metrics like citation counts, keywords, titles, partnerships, and organizations can be generated from various databases. Utilizing these databases allows for the execution of bibliometric investigations. The exploration of bibliometrics can revolve around attributes of publications, citation influence, national evaluation, and topic scrutiny. Notably, bibliometric scrutiny differentiates itself from systematic reviews and meta-analyses (Donthu et al., 2021).

Sixty accessible studies were reached by searching with the keywords "digital marketing" and "artificial intelligence" in the title, abstract, and keywords sections on WoS.

This research is organized as follows. First, the concepts of digital marketing in the literature are explained. Then, from the marketing perspective, the artificial intelligence theoretical background is based on previous research. A bibliometric analysis process followed this given in the methodology section. In the last section, our findings are detailed, and contributions of the study are presented.)

2. LITERATURE REVIEW

2.1. Digital Marketing

Digital marketing is an approach where marketing activities are carried out through the Internet and other digital technologies. Businesses aim to reach their target audience, increase customer interactions, and boost sales using digital channels (Chaffey & Ellis-Chadwick, 2019). Digital marketing is closely related to marketing itself. Businesses use digital marketing processes to reach their target audience effectively. Digital marketing offers a more measurable, customer-centric, and interactive approach than traditional marketing methods. It also helps better understand customer behavior and makes marketing efforts more efficient. Businesses that employ marketing strategies and tactics involving digital technologies, particularly the Internet, can build brand awareness, manage customer interactions, and directly reach their target audience (Mangold & Faulds, 2009).

Additionally, businesses can analyze consumer behavior, engage with their target audience, and increase sales (Ryan & Jones, 2009). Businesses aim to reach their target audience and manage customer relationships using digital marketing through websites, social media platforms, e-mail marketing, and other digital channels (Frost & Strauss, 2016). Digital marketing encompasses marketing strategies that involve the Internet and other digital technologies. Businesses can measure their marketing outcomes using digital channels (Chaffey & Smith, 2017).

It has been noted that digital marketing is a factor that influences marketing strategies (Smith & Zook, 2011). Online platforms provide various tools for businesses to reach and engage with their target audience. This has led to the adopting of digital marketing strategies that replace traditional ones. Digital marketing has made marketing activities more measurable and trackable for businesses (Mangold & Faulds, 2009). Businesses can better understand customer behavior and optimize their marketing efforts through internet-based tools and analytical methods. Digital marketing has increased customer interaction and encouraged engagement (Chaffey & Ellis-Chadwick, 2019). Social media, blogs, and online discussion forums allow businesses to interact directly with customers and receive feedback. This interaction can enhance brand loyalty and customer satisfaction. Digital marketing has allowed businesses broader global market access (Frost & Strauss, 2016). The Internet eliminates geographical limitations, allowing businesses to reach customers worldwide. This increases the growth potential for businesses in international markets. Digital marketing can reduce costs and improve business efficiency (Hollensen, 2019). While traditional marketing methods often require higher costs, digital marketing offers a more economical and scalable option. Businesses can reduce costs and increase profitability by advertising and selling online through digital platforms.

Therefore, digital marketing encompasses marketing activities through digital technologies and provides businesses with opportunities to enhance brand awareness, customer interaction, customer relationship management, and sales.

2.2. Artificial Intelligence

Artificial intelligence refers to a field that enables computer systems to utilize human-like cognitive abilities such as performing complex tasks, learning, reasoning, and decision-making (Nilsson, 1998). Therefore, it is an area that deals with the design and development of computer systems capable of modeling and performing these cognitive abilities exhibited by humans (Luger, 2009). Artificial intelligence represents the effort to mimic or achieve human-like intelligence using computer systems. These systems can possess cognitive abilities such as learning, reasoning, language processing, perception, and problem-solving. In this regard, artificial intelligence is a scientific discipline that enables computer systems to have human-like intelligence and employs intelligent algorithms to perform cognitive tasks (Russell & Norvig, 2016).

Artificial intelligence enhances automation processes in various sectors. It is effective in areas such as automated control of production lines, management of robotic systems, and automation in data analysis and predictions (Huang & Rust, 2021). Artificial intelligence is utilized in medicine for diagnosis, treatment, and patient care. It plays a significant role in disease diagnosis, image analysis, drug development, analysis of health records, and patient monitoring (Kumar et al., 2021). Artificial intelligence is employed in financial services for risk assessment, investment strategies, fraud detection, customer service, and trade analysis (Tiwari et al., 2020). Artificial intelligence plays a significant role in the automotive industry, particularly in autonomous vehicles and driver assistance systems. It analyzes sensor data of vehicles to evaluate environmental factors and make driving decisions (Tubaro & Casilli, 2019). Artificial intelligence is utilized in education for student assessment, personalized learning, adaptive learning, virtual teachers, and language learning (Elhajjar et al., 2021). Artificial intelligence is used in natural language processing techniques for text understanding, translation, analysis, and generation. It is widely employed in voice assistants, text-based chatbots, and language translation applications (Shankar & Parsana, 2022). Artificial intelligence enhances interaction in customer services through chatbots and virtual assistants. It performs tasks such as answering questions, resolving issues, providing recommendations, and enhancing the customer experience (Dimitrieska et al., 2018). Artificial intelligence is used in security for threat detection, prevention of cyber attacks, fraud detection, and video surveillance (Li, 2018). Artificial intelligence is also employed in artistic fields such as music, painting, and literature. It is utilized for music composition, image generation, and text creation (Eriksson et al., 2021).

Artificial intelligence is now considered a necessity in the modern corporate environment. Both small and large organizations are utilizing these technologies to enhance the efficiency of their business operations and provide customers with better, personalized experiences (Jain & Pandey, 2017). Artificial intelligence is now intelligently automating data-driven and repetitive tasks for marketers, reducing costs and accelerating revenue growth by improving their ability to make wide-scale predictions. The abundance of data, exponential growth in computing power, and the availability of artificial intelligence from leading technology companies are reducing, and sometimes replacing, the time-intensive, data-focused tasks commonly performed by marketers (Jarek & Mazurek, 2019). Traditional marketing strategies rely on intuitive and experience-based decision-making. Data analysis is limited, and predictability is low. Artificial intelligence can analyze large amounts of data and provide predictability. Machine learning and data analytics algorithms can assist in predicting customer behaviors, identifying trends, and optimizing marketing strategies (Fathali et al., 2022). Traditional marketing often involves messages and campaigns targeting general audiences. Personalization and targeting are limited. Artificial intelligence enables customer segmentation and personalization by analyzing collected data. Personalized messages, product recommendations, and experiences can increase customer engagement and conversion rates (Huang & Rust, 2021). Traditional marketing usually offers one-way communication and has a limited impact on the customer experience. Artificial intelligence can enhance the customer experience by providing interactive and personalized experiences. AI-based applications such as chatbots, voice assistants, and personalized recommendations increase customer interaction and provide a more positive experience (Marinchak et al., 2018). Traditional marketing processes are often manual and time-consuming. Automation is limited, and efficiency is low. Artificial intelligence improves efficiency by providing automation in marketing processes. It offers opportunities for automation in tasks such as data analysis, campaign management, and customer relationship management (Rathore, 2023). Traditional marketing strategies must be revised to predict conversion rates and increase sales. Artificial intelligence, through data analysis and predictability, has the potential to increase conversion rates and optimize sales. Analyzing customer behaviors can enhance conversions through personalized offers and campaigns (Haleem et al., 2022).

Artificial intelligence can make marketing processes more efficient, effective, and personalized. It contributes significantly to marketing in data analysis, predictability, automation, personalization, and customer experience. However, the human factor and creativity are essential in marketing strategies. Marketers who embrace artificial intelligence technologies can create significant and sustainable competitive advantages for themselves and their businesses. Artificial intelligence allows marketers to enhance their marketing strategies, improve customer experiences, and grow their businesses by providing various advantages.

3. DATA AND METHODOLOGY

This research will help identify the dynamics of the transition from digital marketing to artificial intelligence in the literature and provide a comprehensive perspective for future research where marketing sciences intersect with AI sciences. The bibliometric analysis method was used in the research. Fundamental studies, writers, nations, and organizations have been investigated. Biblioshiny, a web-oriented element of the Bibliometrix R package, was employed to perform the explanatory examination of document scanning. Bibliometric analysis has been extensively employed across various disciplines and serves a broad range of applications. It provides a comprehensive overview of a research area that articles, authors, and journals can categorize. Citation indexes are commonly used as data sources in bibliometric studies. According to Pritchard (1969), bibliometrics is a method involving the application of mathematics and statistics to the written communication medium for understanding the nature and progression of a discipline. Broadus (1987) defines bibliometrics as a quantitative study of

physically published units, bibliographic units, or both. In simpler terms, Norton (2001) characterizes bibliometrics as a measure of texts and information. Bibliometrics is a valuable contemporary tool that allows researchers to explore their research domains and assess outputs and outcomes. Aria and Cuccurullo (2017), the "bibliometrix" software package is crafted for utilization within the R coding language. This facilitates a thorough exploration of literature-based investigations and furnishes researchers with perspectives into advancements within diverse domains.

The study of bibliometric data consists of two segments. The first segment selects the source from which research can be analyzed. For this purpose, the Web of Science database has been chosen. A search query has been formulated for comprehensive data collection in the second segment. For this purpose, the field of social sciences has been selected, various filters have been applied to the search query, and it has been adjusted to align with the objectives and yield optimal results. The final search query is 'TITLE-ABS-KEY ("digital marketing" AND "artificial intelligence"). In the study, publications were examined in August 2023. Therefore, there will be more publications by the end of 2023. So, 60 accessible studies were reached by searching with the keywords in the title, abstract and keywords sections on WoS.

This research aimed to answer the following research questions:

RQ1: What is the distribution of articles related to digital marketing and artificial intelligence, indexed in Web of Science, based on years?

RQ2: Which universities and research-publishing journals contribute the most to the literature on digital marketing and artificial intelligence?

RQ3: How have the keywords of research in digital marketing and artificial intelligence changed over the years?

RQ4: Which studies and authors have made the most significant contributions regarding digital marketing and artificial intelligence citations?

In the research, these questions are answered through descriptive analysis. Furthermore, the fundamental sources, authors, countries, publications, and connections in the publications where digital marketing is used in conjunction with artificial intelligence are being analyzed. In addition to these, the analysis utilizes Bradford's Law to identify core sources (Viju & Ganesh, 2013). According to the Bradford Law, sources are divided into three zones. Zone 1 is highly productive and is considered the nuclear zone. Zone 2 is moderately efficient, and sources related to Zone 3 have low productivity. Fundamental areas of study and essential motifs are crucial in connecting diverse strands of research and shaping the future trajectory of academic inquiry. We have embraced specific technical instruments like co-occurrence maps, thematic maps, and thematic evolution analyses to achieve this objective. Our utilization of Keywords Plus is motivated by its ability to delineate the scholarly framework of the study and facilitate the recognition and interconnection of distinct research domains (Li et al., 2016). The author's chosen keywords signify the principal focal points of the investigation. Keywords sourced from the database succinctly encapsulate the article's essence. Unlike the author's designated keywords, keywords present more elaborative patterns (Tripathi et al., 2018). To unearth research streams and motifs within the literature, we employ 'biblioshiny,' a bibliometric analysis tool furnished by the R-program, centered around exploring research keywords.

4. FINDINGS

The analysis revealed 60 publications, written by 140 researchers, that were spread from 2017 to 2023. As a result of the analysis, research in scientific journals obtained from the WoS database was found in different categories during the review process. These are summarized below as the distribution of studies conducted over different years, different types of research, authors with the highest number of citations, studies with the highest number of citations, countries that produce the most research, journals that publish most frequently, and the most frequently encountered keywords in research.

4.1. Publications over the Years

Figure 1 gives the number of publications distribution in the journal from 2017 to 2023. In Figure, the publication-year distribution shows an increasing trend. One publication was made in 2017, 1 in 2018, 4 in 2019, 8 in 2020, 18 in 2021, 18 in 2022, and 10 in 2023 (August). So figure illustrates the distribution of research throughout the years within digital marketing and artificial intelligence. The annual growth rate of study counts was determined to be 44.22%. Upon considering a broad research perspective linked to marketing driven by digital marketing and artificial intelligence, a cumulative count of 60 publications of 140 authors spread across 46 journals was detected (2017-2023). In the study, publications were examined in August 2023. Therefore, there will be more publications by the end of 2023. Considering past trends, the upward trend in the number of publications will continue.

Figure 1: Publications over the Years
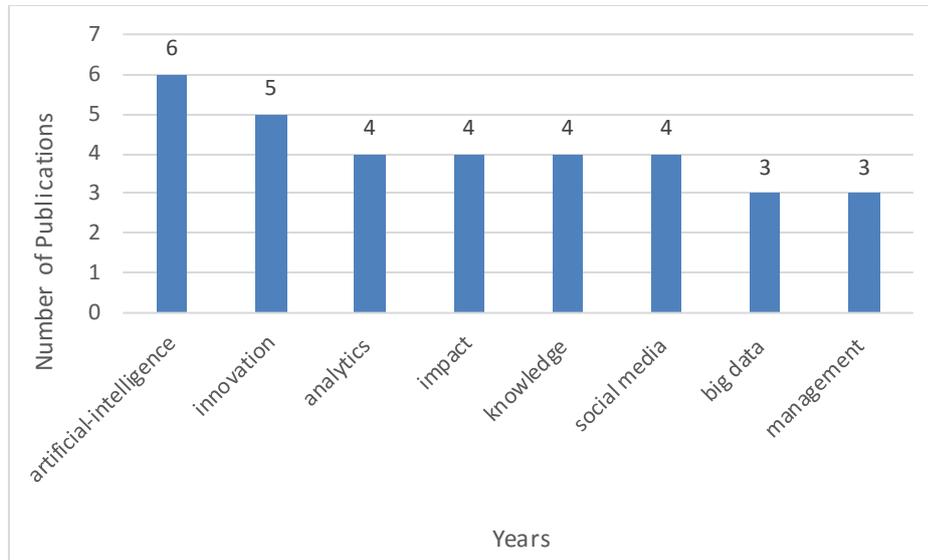
4.2. Most Relevant Sources

Most Relevant Sources refers to the most important or relevant among publications or sources in bibliometric analysis. This term is used to identify the most cited, most read, or most cited sources regarding a particular research topic or field. Figure 2 shows the most relevant sources for Digital Marketing and Articial Intellgigence in WOS. To construct this table, the beginning search results from the WOS database yielded 60 studies. When the articles examined in the field of Digital Marketing and Artificial Intelligence, these articles included in this research were most commonly published in "The Australasian Marketing Journal (AMJ)", "Industrial Marketing Management," and "International Journal of Market Research (IJMR)." So, these journals occupy the first three positions on the list, each with two publications. Subsequently, it is observed that the journals follow one publication, respectively. AMJ is an academic journal aimed at sharing cutting-edge marketing research with researchers, students, educators, scholars, and practitioners. The primary goal of AMJ is to release papers that enhance and contribute to the progress of both the field and the practical application of marketing. Industrial Marketing Management offers theoretical, empirical, and case-driven research tailored to the requirements of marketing academics and professionals who are engaged in studying and operating within industrial and business-to-business markets. Founded in 1958, the International Journal of Market Research (IJMR) is dedicated to publishing original research that tackles important challenges in the field of market research and insights. Primarily, IJMR is a practical journal that aims to foster a conversation among professionals, academics, and individuals in business or public sectors who rely on research and insights for making informed decisions, generating influence, and instigating change. The journal publishes both theoretical and empirical papers authored by established and emerging scholars with diverse methodological backgrounds. IJMR's primary goal is to create an impact through the applicability of the research it publishes. Submissions should address pertinent issues for stakeholders and offer actionable insights for practical implementation.

Figure 2: Most Relevant Sources
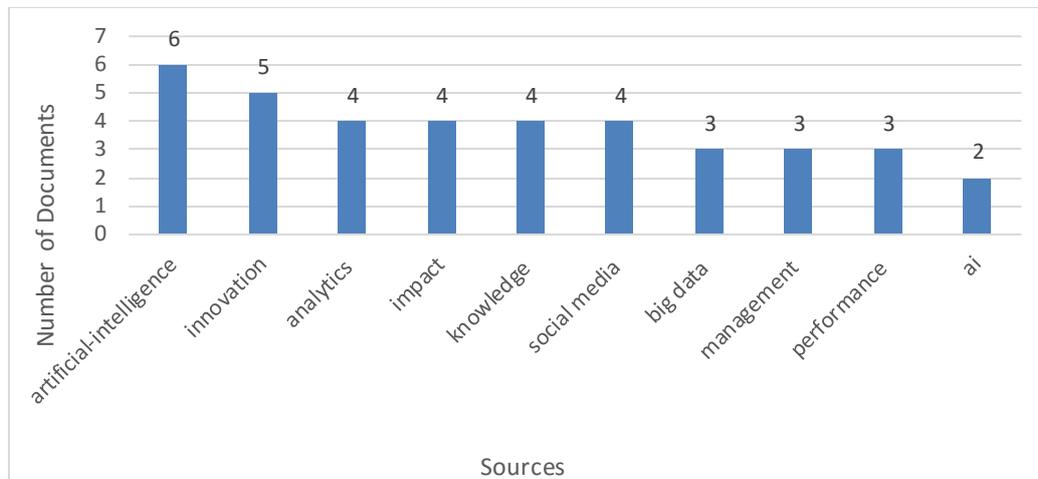
4.3. Most Relevant Affiliations

Most Relevant Affiliations refers to the institutions or organizations that are considered the most significant or important in a particular research field or for a specific set of scholarly publications. These affiliations are determined based on various bibliometric indicators, such as the number of publications, citations, or other relevant metrics associated with researchers or institutions. When conducting bibliometric analyses, researchers may be interested in identifying the institutions that are most active or influential in a given field. This information can help in assessing the research landscape, collaboration patterns, and the impact of specific organizations or academic institutions. So, this section presents the most relevant universities where the studies have been published. As shown in Figure 3, Rey Juan Carlos University (Spain) stands out with four publications. Following that, institutions like Polytech Porto University (Portugal), Swansea University (United Kingdom), University of Almeria (Spain), and University of Warsaw (Poland) each have three publications. Rey Juan Carlos University is a public university located near the capital city Madrid, founded in 1996. It offers various undergraduate, postgraduate, and doctoral programs. It is known for its strong academic presence in fields such as communication, engineering, health sciences, and social sciences. Polytech Porto University is situated in Porto, Portugal, and is considered a prominent higher education institution in the fields of engineering and technology. It offers various undergraduate programs, particularly in engineering disciplines, and prioritizes technology-focused research. Swansea University, located in the region of Wales, is one of the leading research universities in the United Kingdom. It offers a wide range of undergraduate and postgraduate programs. It is especially recognized for its research contributions in science, engineering, health sciences, and social sciences. The University of Almeria is located in the southeastern part of Spain and is known as a strong research and education center in the fields of agriculture, environmental sciences, and engineering. It plays a particularly significant role in agriculture and environmental matters. The University of Warsaw is one of Poland's oldest and largest universities. It offers a wide range of academic disciplines and makes significant contributions to science, arts, and culture. Located in the capital city of Poland, Warsaw, the university is one of the country's most prestigious educational institutions.

Figure 3: Most Relevant Affiliations
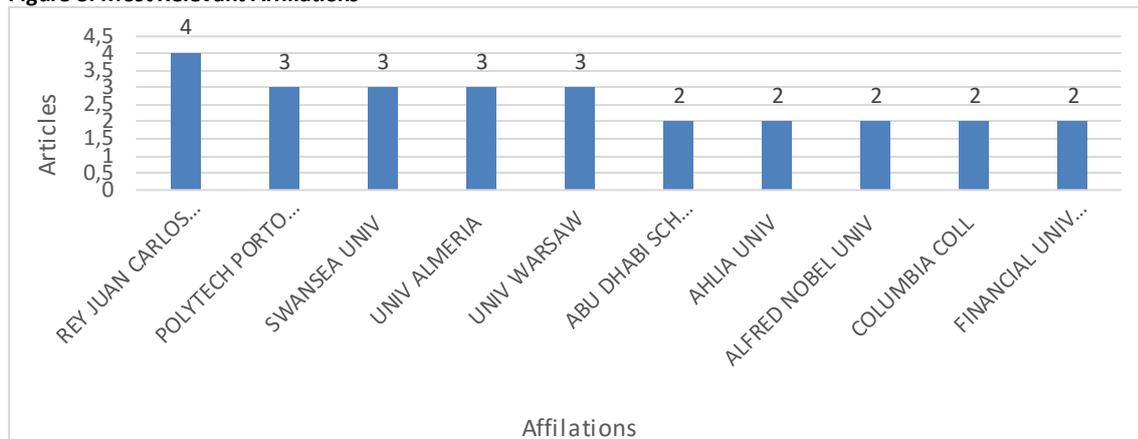
4.4. Country of the Corresponding Author

Corresponding Author's Countries information is important data to evaluate the geographical and international dimensions of the research in bibliometric analyzes and to understand how the research field is affected on a global scale. Figure 4 shows the top 20 corresponding author's countries of study. Single country publications (SCP) stands for simple country publication, and multiple country publications (MCP) stands for worldwide collaborative papers. The most striking result is that India came first, followed by Spain and the USA, for SCP and MCP. The ratio of MCP to total publications of the top 20 countries was 50% for India, indicating that Spain, Finland, France, Canada, and Ireland strongly preferred international cooperation regarding submerged study.

Figure 4: Corresponding Author's Countries
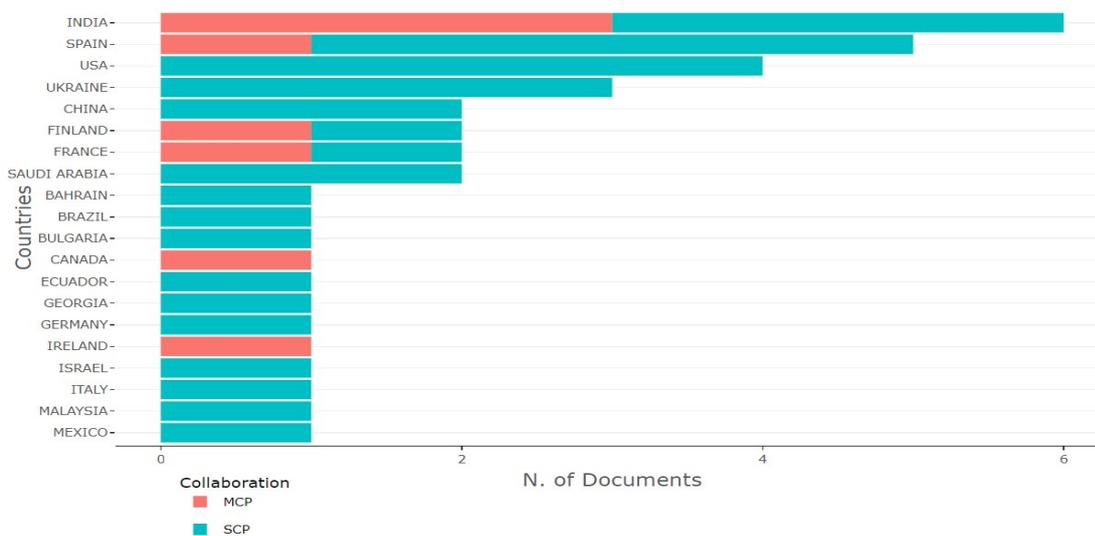
4.5. Most Cited Countries

Most Cited Countries data is important for assessing the influence of countries in a particular research area and understanding the geographical distribution of the research area. For researchers, this data provides valuable information that they can use to evaluate collaboration opportunities and improve their field. According to Figure 5, the examination of citations is applied to assess the efficiency of authors, papers, or journals by evaluating their citation frequencies. The subject of examination encompasses papers, authors, and journals. Its strengths lie in its ability to locate pivotal research within the discipline. However, a drawback is that recent publications may have a lower cumulative citation rate, with most citations being directed toward earlier works (Zupic & Cater, 2015). The most cited countries were ranked Finland (370), Spain (92), and France (58). Accordingly, citations from Finland are very high compared to other Top 9 countries. Finland stands out as the country with

the most citations on this subject and ranks first with 370 citations. This shows that Finland is influential in the production of research and publications in this field, and that work from this country has received wide international attention. Spain and France also stand out with 92 and 58 citations respectively. These countries provide significant scientific influence on a particular topic or subtopic. These results show that researchers in these countries are producing work that is recognized and cited internationally.

Figure 5: Most Cited Countries
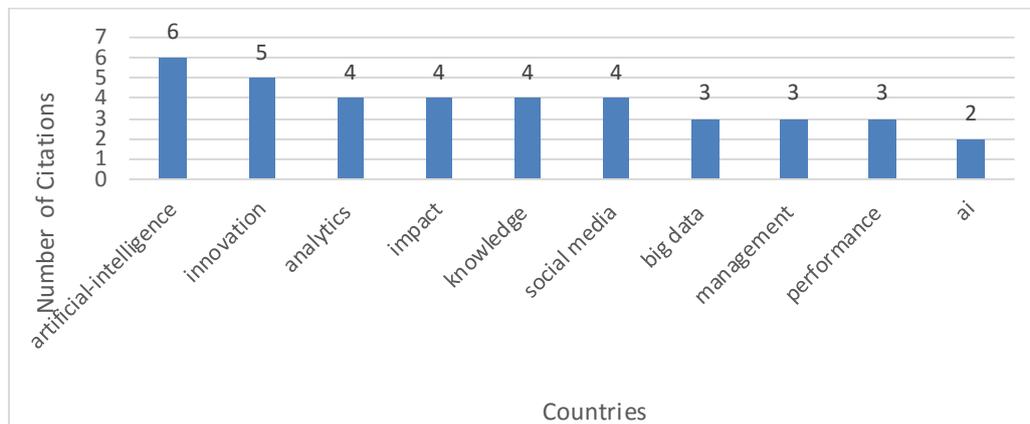
4.6. Most Local Cited References

Most Local Cited References data is important for understanding the impact, importance and collaboration opportunities of local research resources and research. Using this data, researchers can better understand local research areas and increase their scientific impact by promoting local resources internationally. This data helps measure the impact of local research on local or international literature. Seeing which local sources are cited by a wider audience can also help understand the importance and impact of those sources. This section displays the primary regional mentioned sources citation spectroscopy, prevailing terms, hierarchical visualization, lexical shifts, and emerging subjects (derived from additional keywords and the author's specified words). Regarding Figure 6, the most significant number of citations were done to Huang & Rust (2018), Huang & Rust (2021), and Kannan (2017) in the research included in this bibliometric research.

Figure 6: Most Local Cited References
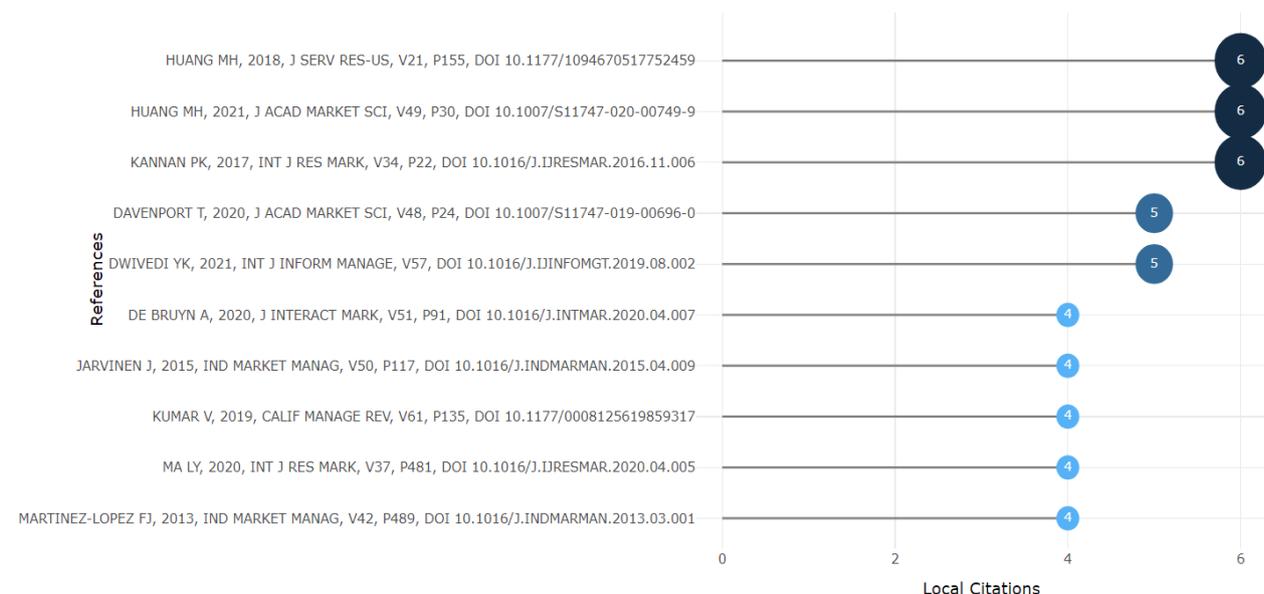
4.7. Most Frequent Words

Most Frequent Words data is useful for analyzing the content of texts, identifying major themes, identifying keywords, and examining language use. This analysis can help researchers uncover important information and patterns in texts. This field can help researchers better understand the literature, identify trends and areas of interest, create research strategies, and identify research gaps. When the articles included in this research were examined, it was seen that keywords such as artificial intelligence (f=6), innovation (f=5), analytics (f=4), impact (f=4), knowledge (f= 4), social media (f=4), big data (f= 3), management (f= 3), performance (f= 3), and ai (f= 2) were used (see Figure 7). The frequent use of the words "artificial intelligence" and "innovation" together may indicate that artificial intelligence plays an important role in innovation processes. The frequent use of the terms "analytics" and "big data" indicates that the use of data analysis and big data is important in the fields of digital marketing and artificial intelligence. A research focus could be set to examine how analytical methods and big data analysis are being used in this field. When the words "social media" and "performance" are used together, it may indicate that digital marketing strategies focus on performance on social media platforms. "Management" and " Using the words "impact" together may indicate that you want to evaluate the impact on AI and digital marketing management. Highlighting the word "information" provides an opportunity to understand how information is used as a communication tool in digital marketing strategies and AI applications.

Figure 7: Most Frequent Words
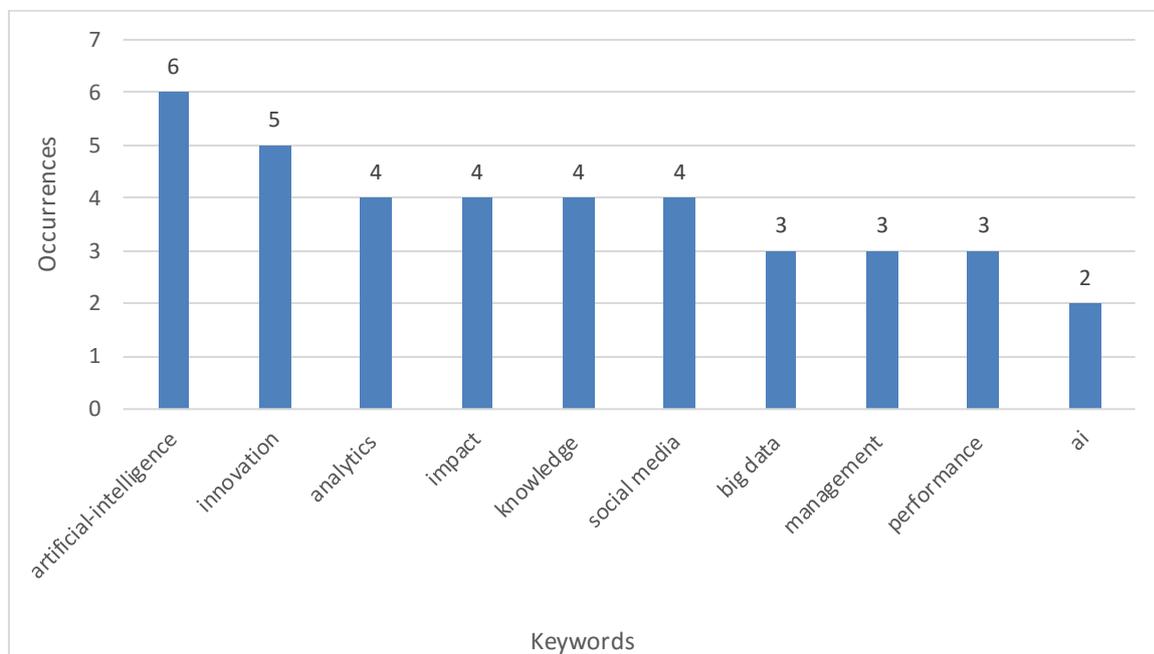
4.8. Tematic Map

Thematic maps present the results of text mining and bibliometric analyzes in a more understandable and visual way, providing researchers with deeper understanding and valuable information. These maps are an important tool for visually representing and analyzing literature. In this study, the thematic map had five clusters. When the author's keywords were considered, niche themes were internet and power (see Figure 8). Emerging theme was social media. The Basic theme was impact. Motor themes were artificial intelligence-knowledge-big data and innovation-analytics-management. The fact that the emerging theme is "social media" indicates the importance of research and literature in this field. This shows that researchers are interested in the power, influence and use of social media and that this topic is important. The underlying theme of "impact" indicates the focus of the research. The research is likely focused on understanding the impacts and implications of studies on digital marketing, artificial intelligence, or similar topics. The "motor themes" mentioned in the analysis, "artificial intelligence-information-big data" and "innovation-analytics-management," determine the sub-themes of the research. These concepts highlight specific subtopics in the literature and reflect areas of greater focus of analysis.

Figure 8: Tematic Map
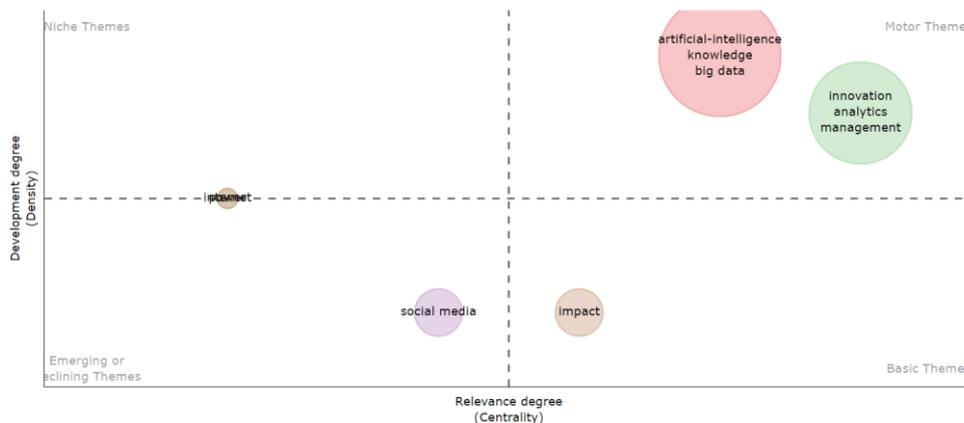
4.9. Core Sources by Bradford's Law

A domain is generally dominated by a few journals as per Bradford's law (Bradford, 1985), formulated by S. C. Bradford. It states that journals can be classified into three distinct zones, each with one-third of the total articles. Bradford's law is also utilized to gain insights into the central cluster of journals and the scholarly output of authors in this domain. In the realm of bibliometric scrutiny, various instruments are accessible, including VOSviewer, Bibliometrix, and CiteSpace; each software application presents its advantages and limitations (Batra et al., 2023). This serves as the focal point where most research papers with cross-referencing are issued. Scholars readily discern that the core journals host a substantial portion of the pertinent articles within the designated field. This holds within the realm of cross-listing investigations (See Table 1). In the first two rows of the table, there are two sources such as "AUSTRALASIAN MARKETING JOURNAL" and "INDUSTRIAL MARKETING MANAGEMENT". Both sources appear with a frequency of 2 (Freq). This indicates that these sources are important references on a particular topic or field and are frequently cited in the literature. The "CumFreq" column shows the cumulative frequency of sources. That is, it represents the total frequency of sources added sequentially, starting with the first source. For example, the source "INFORMATION SYSTEMS FRONTIERS" in rank 3 reached 6 in cumulative frequency. This means that the first six sources were cited 6 times in total The "Zones" column indicates the conclusion of Bradford's Law. This column divides sources into different zones, or "zones." Generally, Bradford's Law lists the most frequently cited sources in the first zone (Zone 1) and the second (Zone 2)) predicts slightly less frequently cited ones and so on. According to the table, all sources are located in "Zone 1", meaning that these sources are generally cited with the same frequency.

Table 1: Core Sources by Bradford's Law

Sources	Rank	Freq	cumFreq	Zones
AUSTRALASIAN MARKETING JOURNAL	1	2	2	Zone 1
INDUSTRIAL MARKETING MANAGEMENT	2	2	4	Zone 1
INFORMATION SYSTEMS FRONTIERS	3	2	6	Zone 1
INTERNATIONAL JOURNAL OF MARKET RESEARCH	4	2	8	Zone 1
13TH INTERNATIONAL CONFERENCE INTERDISCIPLINARITY IN ENGINEERING (INTER-ENG 2019)	5	1	9	Zone 1
2018 INTERNATIONAL CONFERENCE ON HIGH TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT (HITECH)	6	1	10	Zone 1
2019 19TH IEEE INTERNATIONAL CONFERENCE ON DATA MINING (ICDM 2019)	7	1	11	Zone 1
2019 IEEE 9TH INTERNATIONAL CONFERENCE ON SYSTEM ENGINEERING AND TECHNOLOGY (ICSET)	8	1	12	Zone 1
2020 FIFTH INTERNATIONAL CONFERENCE ON FOG AND MOBILE EDGE COMPUTING (FMEC)	9	1	13	Zone 1
4TH INTERNATIONAL CONFERENCE ON INNOVATIVE COMPUTING (IC)	10	1	14	Zone 1

5. CONCLUSION

This article offers a different perspective on artificial intelligence for academics in digital marketing and contributes to the existing literature. AI is a significant factor in transforming digital marketing and shaping future marketing trends. AI technologies in extensive data analysis, personalized content creation, improving customer experience, and automating sales processes offer marketers a competitive advantage. AI-based marketing systems are predicted to advance, making marketing strategies more efficient, effective, and personalized. AI will intelligently automate data-driven and repetitive tasks for marketers in the future. Accordingly, digital marketing costs will decrease, and the ability to make large-scale forecasts will improve, accelerating revenue growth. Marketers must adapt to these trends and explore new opportunities by utilizing AI.

Furthermore, it aimed to conduct a bibliometric analysis of digital marketing and artificial intelligence articles searched in WoS with the biblioshiny interface obtained using the R bibliometrix package in this research. Bibliometric analysis methods are categorized in various manners. This study discussed citation, author, word, and bibliometric coupling analysis. Combining preceding research discoveries and bibliometric information constitutes a pivotal stride toward the progressive enhancement of scientific understanding. Bibliometric investigation objectively evaluates the scientific written works through a quantifiable methodology. Such inquiries offer a transparent, methodical, and replicable scrutiny of the literature. This bibliometric evaluation illuminates individuals desiring to delve into pertinent scholarly literature (Büyükkidik, 2022). Bibliometric analyzes provide researchers with a better understanding of their position in the literature and their potential contributions. These analyzes can help researchers make more informed and strategic decisions, conduct better research, and follow developments in the relevant field.

Han et al. (2021) systematically examined artificial intelligence-supported B2B marketing literature by applying a bibliometric research method on artificial intelligence and business-to-business marketing. Their study summarized 221 journal articles published between 1990 and 2021. In this regard, they suggested future research directions on this subject to researchers. Although this study considers B2B strategies and artificial intelligence, which are innovations in the field of digital marketing, since our research directly examines artificial intelligence and digital marketing, it contains more general findings and differs from the other studies. Faruk et al. (2021) examined 925 articles published in Scopus between 2000 and 2019 to understand the current situation in digital marketing and show how effective studies shape it. The findings reveal that an average of 2.18 authors contributed to each digital marketing article, and the collaboration index was 2.71. It also shows that the top contributing countries in digital marketing are the USA, India, and the UK. Research studies in the field of digital marketing It divided into three main groups: strategic planning and digital marketing, application development and mobile marketing, and studies on customer demographic profiles. Varsha et al. (2021) examined the impact of artificial intelligence on brands in their exploratory research. This research was conducted using the Scopus database, which contains 117 articles covering the period 1982-2019. The study used bibliometric methods such as collaboration, citation analysis, and co-citation analysis. The empirical research investigated the value propositions of artificial intelligence on brands. The study identified nine distinct topic clusters, four clusters of citation analysis, and four co-citation analyses. As a result, the study provided up-to-date information on the impact of AI on brands, revealing merger and spin-off patterns and multi-disciplinary involvement on the topic. Chae (2022) used a bibliometric approach, aiming to map the academic literature in digital business. The study examined 1,868 articles covering the 20 years between 2000 and early 2021. The research focused on research trends in digital business, publication sources, highly cited articles and prolific researchers, popular themes, and their changes over time. Bawack et al. (2022) combine research on artificial intelligence in e-commerce and provide guidelines through which information systems research can contribute to this field. Bibliometric analysis and literature review are combined using an innovative approach. Bibliometric data was analyzed on 4335 documents, and 229 articles published in leading information systems journals were examined. The research shows that studies on artificial intelligence in e-commerce mainly focus on recommendation systems. Additionally, main research themes such as sentiment analysis, trust, personalization, and optimization have been identified. China-based institutions have been determined to be leaders in this field. The study's literature review reveals the main topics and themes of interest to information systems experts. Based on these findings, recommendations for future research are offered.

As a result, in this bibliometric analysis study, after considering a comprehensive research perspective related to digital marketing and artificial intelligence-driven marketing, a total of 60 publications written by 140 authors distributed among 46 journals were identified (2017-2023). In the realm of Digital Marketing and Artificial Intelligence, the articles encompassed in this exploration most frequently surfaced in "Australasian Marketing Journal," "Industrial Marketing Management," and "International Journal of Market Research". For researchers who want to study this subject in the future, these resources will help them determine the most effective resources. Therefore, these sources can be an important reference source for researchers and can be used as basic sources of information for future studies. On the other hand, Rey Juan Carlos University (Spain) stands prominent with four published works. Subsequently, establishments like Polytech Porto University (Portugal), Swansea University (United Kingdom), University of Almeria (Spain), and University of Warsaw (Poland) each boast three

publications. The countries of the corresponding authors were examined, and India took the lead, followed by Spain and the USA. The countries with the highest citations were Finland (370), Spain (92), and France (58). The highest number of references were attributed to Huang & Rust (2018), Huang & Rust (2021), and Kannan (2017) within the study encompassed by this bibliometric analysis. Upon reviewing the articles included in this research, it became evident that terms such as "artificial intelligence, creativity, analytics, influence, expertise, social networks, extensive data, governance, achievement, and AI" were employed.

By examining the publications, authors, universities and authors' countries in this study, it may be possible to increase the level of collaboration between researchers from different countries. In particular, articles with communication authors from many different countries establish international collaboration and research networks. Therefore, for researchers who will work by combining digital marketing and artificial intelligence, this study provides general ınformation about the status of the literature, trends and changes in the field are expressed, and important publications and researchers are ıntroduced. these gains will benefit researchers in identifying research gaps. Additionally, the countries of study authors working on digital marketing and artificial intelligence are useful for understanding how a particular topic or field is affected by different geographical, cultural or social contexts. This allows you to evaluate the generalizations or contextual limitations of research results. The results obtained emphasize the importance of international cooperation. It would be especially appropriate to have a highly cited country like Finland, and for international researchers working in the field of artificial intelligence and digital marketing to cooperate with this country. Moreover, the results show that countries such as Spain and France can innovate and pioneer in a particular field of research. Researchers in these countries can also lead future studies in this field.

Digital marketing encompasses marketing activities that aim to reach target audiences, engage with them, and achieve businesses' goals through digital technologies. Digital marketing offers advantages such as reaching wider audiences, personalized marketing approaches, real-time measurement and analysis, and higher conversion rates. Businesses can gain a competitive advantage and enhance their success through digital marketing strategies.

Artificial intelligence (AI) with personalization can deliver personalized marketing content by analyzing user behaviors. AI algorithms can analyze users' preferences, past shopping experiences, and other data to provide tailored content and offers to each customer. Through big data analysis and learning capabilities, AI can give marketers more insights into customers' preferences, behaviors, and needs. This enables marketers to offer their target audience more personalized content. AI can make recommendations based on customers' past interactions and make real-time adaptations to enhance the customer experience further.

Regarding customer service, AI-powered chatbots can provide instant support to users and automate customer service processes. Chatbots can answer customer queries, resolve issues, and even facilitate sales. AI enables faster and more effective customer service. AI will accelerate the development of automated customer service tools like chatbots and virtual assistants. AI-based chatbots can answer customer questions, resolve issues, and even perform sales transactions. This enables companies to provide customer service more efficiently and increase customer satisfaction.

In content creation and creative processes, AI will play a significant role and automate content creation processes. AI algorithms can generate and edit text, videos, or graphics. This can assist marketers in producing content faster and more efficiently. Digital marketing strategies can be supported by big data analytics and predictive analysis. AI can rapidly analyze millions of data points and shape future marketing strategies with insights derived from these data. This allows companies to understand consumer behaviors better and provide more relevant content to their target audiences. AI can assist marketers in analyzing large datasets and predicting trends. AI algorithms can analyze customer behaviors and market trends to predict future demands, enabling companies to plan their strategies more effectively.

Through AI-powered automated ad management, AI can facilitate the automatic management and optimization of advertising campaigns. AI continuously monitors campaign performance and can automatically adjust advertising budgets and targeting parameters. This can improve advertising efficiency and reduce costs. AI can contribute to developing more targeted and personalized advertisements in advertising. By analyzing customer data, AI can optimize decisions such as which users to show ads to, which content to use, and which channels to prefer. This can enable more effective utilization of advertising budgets. AI algorithms can analyze large amounts of data and detect patterns indicating fraudulent activities or security breaches. Marketers can leverage AI to enhance trust and reliability, protect customer data, prevent fraud, and ensure secure transactions. Future digital marketing trends include AI and machine learning applications, integration with voice search and smart devices, data privacy, and ethical considerations. Businesses need to adapt to these trends and stay updated to remain competitive. There are numerous benefits for businesses in utilizing AI and digital marketing, including improved customer experience, more effective marketing strategies, increased efficiency, and competitive advantage. However, there are also challenges associated with this integration. For instance, AI algorithms must be trained correctly, and issues such as data privacy and ethics should be carefully addressed.

AI provides marketers with valuable insights, automation capabilities, and personalized customer experiences. By harnessing AI technologies, marketers can optimize their strategies, improve campaign performance, and ultimately accelerate business growth in today's data-driven and customer-centric environment. Including AI in marketing can significantly enhance productivity, efficiency, and performance.

6. LIMITATIONS

This study provides a significant resource for researchers working in artificial intelligence and digital marketing and acknowledges that the results come with certain limitations. The resources examined in the study have been restricted to the WoS (Web of Science) database. While the WoS database is recognized as an essential repository by numerous international academic institutions, it has excluded a considerable portion of the studies available in the literature. Future researchers could conduct similar bibliometric analyses using different databases. Another constraint within the study stems from the number of publications examined. Subsequent studies could explore the intersection of artificial intelligence and marketing using different keywords.

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